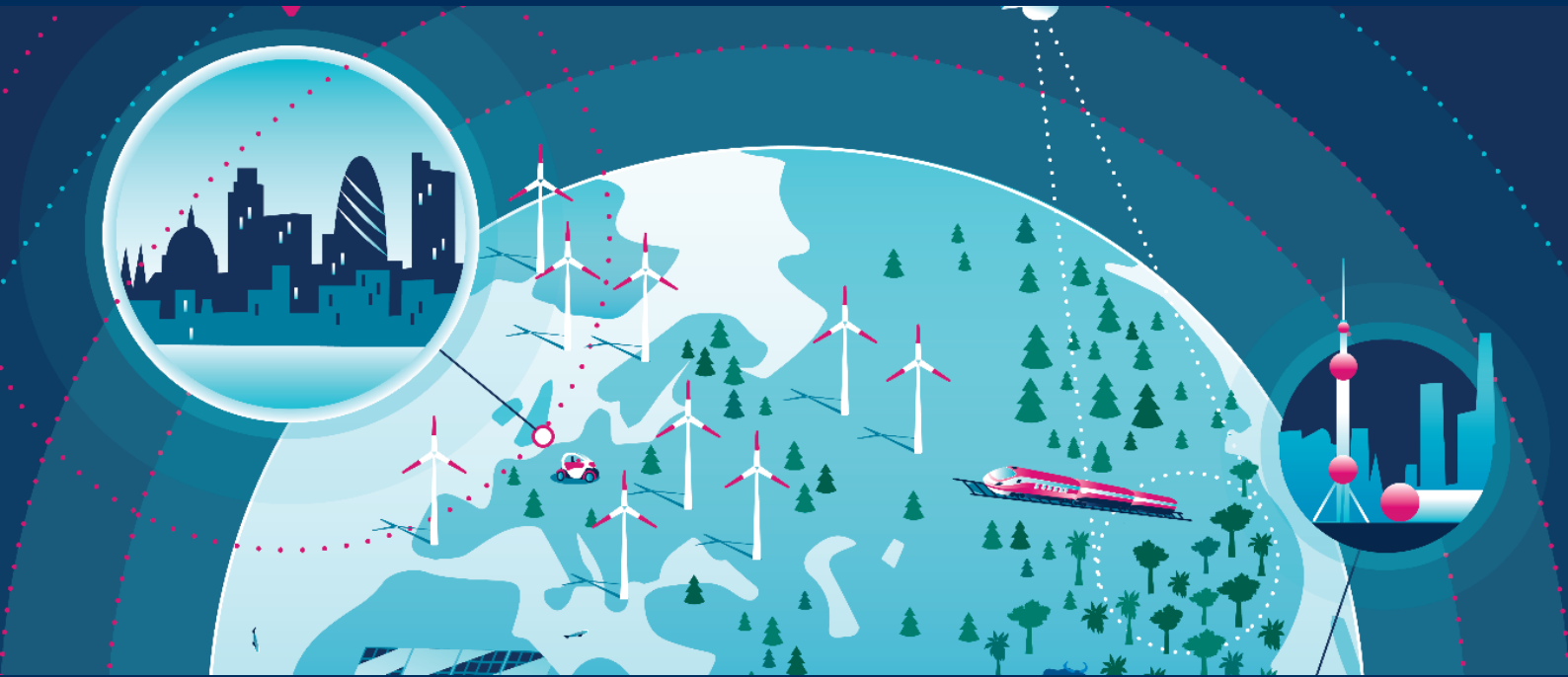


• Net Zero business models for a Just Transition



Prepared for Innovate UK, Local Trust and Friends of the Earth

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Foreword

When it comes to tackling the climate crisis, we have a once in a generation opportunity to do the right thing, not just for our planet, but for our people and our communities: to build a fairer, more equitable society.

The UK has legally binding targets to reach net zero carbon emissions by 2050 at the latest. Given the increasing complexity in reducing emissions the closer we get to zero, the government has pledged to cut emissions by 68% by the end of this decade. Even greater cuts may be needed in that timescale - [recent research](#) has suggested reductions of between 75 - 90% are probably necessary to ensure the transition is socially and economically just.

This is not simply a technological challenge and cannot be left to market forces. Change on this scale has not been seen since the Industrial Revolution two centuries ago: an overhaul of industry - and therefore society - like nothing that had come before. Old ways of life disappeared, to be replaced by a radically new urban industrial civilisation. Poverty and destitution was rife, as social mores, governance and regulation struggled to adapt. It has been estimated that the material benefits of that shift took between 25 and 150 years to reach the 'average worker'. Fast-forward to the second half of the twentieth century, when heavy industry and the coalfields began to close down, communities were hit hard again. Four decades later, many neighbourhoods in former industrial areas are still to recover. We cannot repeat the mistakes of those transitions.

We talk today of the need for a 'Just Transition', of ensuring that as the economy changes, and its reliance on fossil fuels diminishes, people's livelihoods and wellbeing, particularly of the poorest in society, do not suffer. In doing so, we often focus on the need to protect jobs. That is important of course, but there is perhaps still not enough attention paid to the fact that the forging of a new sort of economy brings a wider range of different opportunities. Not just the opportunity of limiting the harmful effects of global heating - but the opportunity to rebalance our society and economy so it is fairer and more equal.

The transition to a zero carbon economy is a chance perhaps like no other to help close some of the divides in our society and build healthier, stronger and more vibrant communities, particularly in places that have previously felt left behind. Indeed, many of the changes of the next decade and beyond will be noticed most in our local communities. As stated in 2020 in the [Climate Change Committee's Sixth Carbon Budget advice report to government](https://www.theccc.org.uk/) (<https://www.theccc.org.uk/>) "More than half of the emissions cuts needed rely on people and businesses taking up low-carbon solutions – decisions that are made at a local and individual level." Recommendations in an ancillary report aimed at local authorities noted that "Top-down policies go some way to delivering change, but can achieve a far greater impact if they are focused through local knowledge and networks."

Business has a vital role to play, by deploying its considerable creativity and innovative capacity to devise business models that can both decarbonise the economy and improve people's lives. A singular focus on reducing carbon emissions will not be sustainable.

However, the analysis in this report shows that many of the approaches being adopted by business to reduce carbon emissions fall short. They are not systematically responding to community needs, nor in general do they help to build social capital or support the viability of critical local social infrastructure. But small changes in approach could make a huge difference – and benefit businesses. There is a clear opportunity to:

- design for more localised supply chains, that prevent wealth from draining out of our communities, and build future-fit employment skills in the local area
- design to support the viability of local social infrastructure that gives people in a community a place to meet and work together, and even create new social infrastructure where it is lacking

Net Zero business models for a Just Transition

- design to enable greater connectivity, both within a community and between communities, leading to the growth of social capital
- design to address the real needs of people in communities
- ensure value is created and retained locally to bring wider economic benefits

This can only benefit business. As the report shows, business models that help to decarbonise and promote a just transition can lead to short and long term cost savings, opportunities for growth, enhanced reputation and improved staff and customer relationships.

If we are to design solutions and support businesses that help the UK prosper from the transition, then they need to be solutions that allow everyone to participate and contribute. We need everyone everywhere taking action, and that means solutions from business that meet all people's needs in a net zero way.

This project is a collaboration between three organisations – Local Trust, Friends of the Earth, and Innovate UK.

Local Trust (www.localtrust.org.uk) is a place-based funder, delivering the Big Local programme that supports residents in 150 neighbourhoods across England with £1.15m each over 10 - 15 years, to spend on priorities determined by the community itself.

Friends of the Earth (friendsoftheearth.uk) is a charity dedicated to protecting the natural world and the wellbeing of everyone in it. We lead campaigns, provide resources and information, and drive real solutions to the environmental problems facing us all.

Innovate UK (www.ukri.org/) is the UK's innovation agency and is part of UK Research and Innovation, a non-departmental public body funded by a grant-in-aid from the UK government. We drive productivity and economic growth by supporting businesses to develop and realise the potential of new ideas, including those from the UK's world-class research base.

Acronyms

GHG	Greenhouse gases
CHP	Combined heat and power
EPP	Energy Projects Plus
EV	Electric vehicles
IPPR	Institute for Public Policy Research
MDM	Multiple Deprivation Measure
MHOS	Mutual Home Ownership Society
SURF	Scotland's Regeneration Forum
ULEZ	Ultra-low emission zone
V2G	Vehicle-to-grid

Executive Summary

Study context

The UK has made a legally binding agreement to become Net Zero by 2050, and the transition to Net Zero must embed Just Transition principles to ensure no one is left behind. Local place-based and community-led climate action will not only contribute to achievement of the UK's Net Zero targets but also empower communities, making them an active part of the transition and bringing them economic and social opportunities. This is especially important for communities that are currently marginalised.

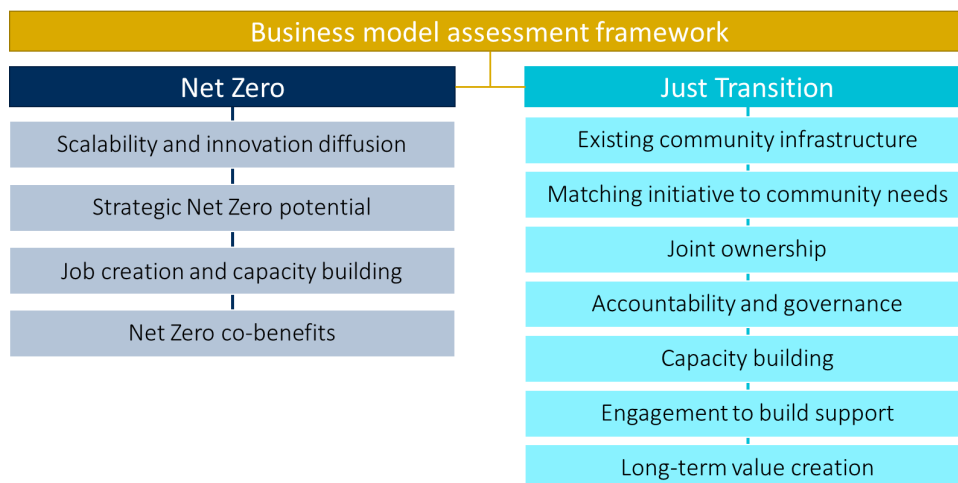
The project environment of this study focuses on the place-based urban community development strand of the Just Transition. A place- and people-based approach underlines community development as a process where people come together to act on what is important to them. The development of local industrial and business strategies provides a mechanism for connecting climate change with bottom-up ambitions and priorities to generate inclusive growth and community development.

Acknowledging the important role that businesses will play in both Net Zero and the Just Transition, the purpose of this study is to assess Net Zero business models and determine how they can be better aligned with the Just Transition. This has been done by developing a two-part framework that captures Just Transition alignment criteria as well as criteria that assess a business model's Net Zero impact. Interviews were with business leaders, charitable and non-profit organisations, and representatives of local authorities. These findings are used to develop a set of viable and actionable enhancement measures for how Net Zero business models can be better aligned with a Just Transition.

Assessing Net Zero business models in the context of Just Transition

The business model evaluation framework enabled systematic assessment of business models on their alignment with a Just Transition and the Net Zero agenda. Business models in the energy, transport, housing, public/community spaces, waste and food were systematically assessed since these represent key areas of need for marginalised urban communities. Trends in good practice and areas for improvement emerge through consistently evaluating business models, identifying those which are important for achieving Net Zero objectives and which also support a Just Transition, capturing key elements for community empowerment and local community value creation.

The business model assessment framework incorporates both Net Zero and Just Transition elements



Source: Vivid Economics

Current landscape of Net Zero alignment with a Just Transition

The systematic mapping of business models reveals that although they have a strong alignment with the Net Zero agenda, most have limited alignment with the Just Transition. Using this evaluation framework, business models were mapped according to their alignment with Net Zero and the Just Transition, as shown below. Business models in the top left quadrant lacked elements including community members with joint financial ownership; accountability to local community and governance structures; community engagement to build support; and long-term community empowerment impact, all associated with supporting a Just Transition agenda through community empowerment.

Business models mapped according to their alignment with the Net Zero agenda and their Just Transition impact



Source: Vivid Economics

Illustrating the nexus between Net Zero and there was a smaller subset of business models which harness high Next Zero impact as well as introduce components that support long-term community empowerment. Models in top right quadrant represent those which demonstrate good practice on how a Net Zero aligned business model can support a Just Transition. These business models demonstrate scalable and innovative Net Zero solutions as well as strong components of community engagement and shared ownership, local job creation and community re-skilling.

The smallest subset of business models illustrates those which have strong Just Transition elements, but which demonstrate a comparatively smaller Net Zero impact. These business models are representative of small-scale community focused initiatives which are aligned with a Net Zero transition, but which may have limited scope for impact due to limited scalability and a lack of elements which target behavioural change beyond the services offered. However, due to their strong focus on community empowerment and ownership, they perform well against Just Transition alignment criteria.

Enhancement measures to align Net Zero business models with a Just Transition

Measures to improve the alignment of Net Zero business models with a Just Transition can be grouped under ten core objectives linked to employment and skills, engagement and inclusion and community investment. Enhancement measures relate to all aspects of business models, including for example engaging with key partners (inputs), training activities and value propositions (value creation), and quality job creation

and community investment opportunities (value distribution). The proposed ten objectives are summarised in the figure below.

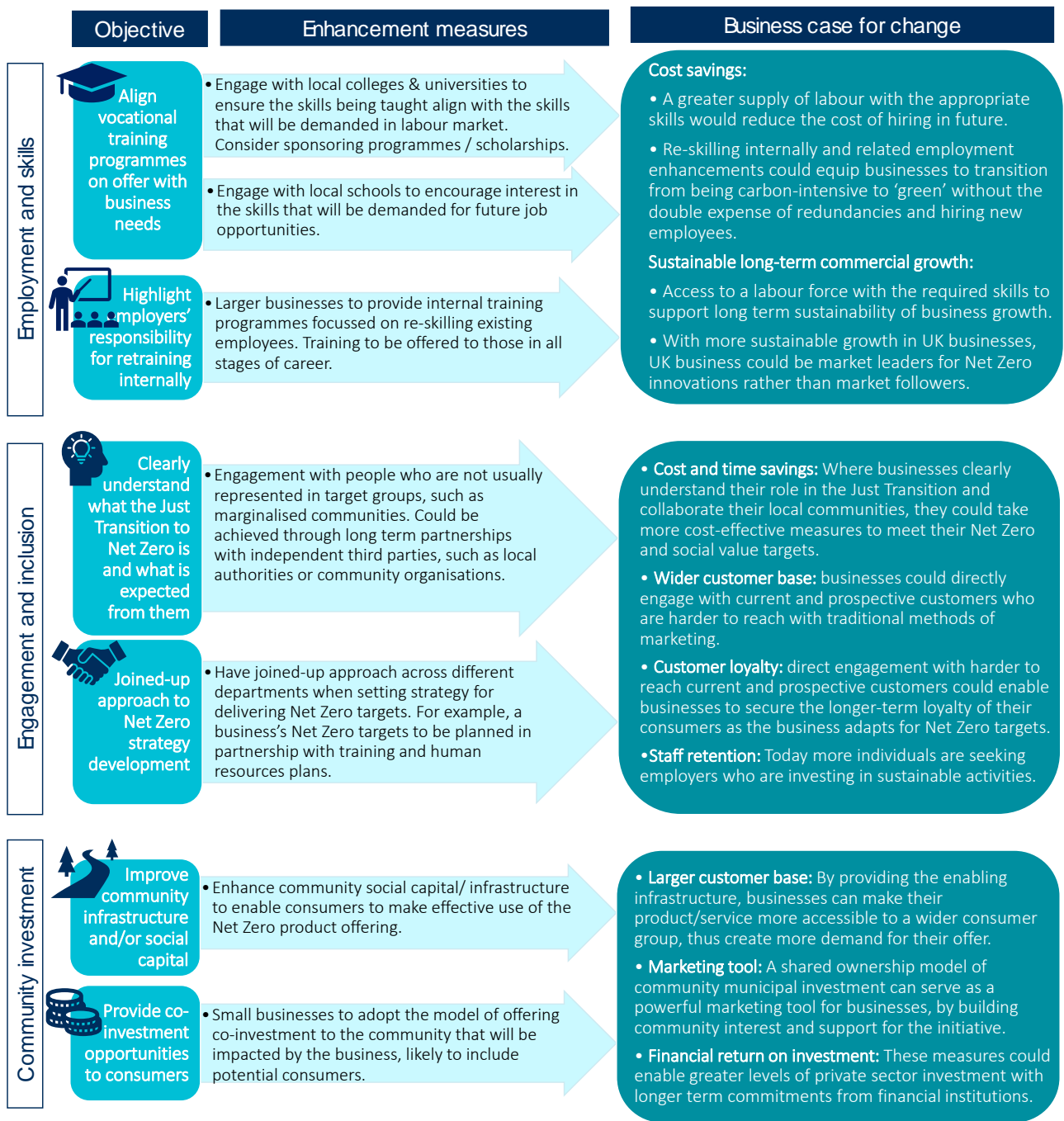
Ten objectives of proposed measures for enhancing the alignment of Net Zero business models with a Just Transition



Source: Vivid Economics

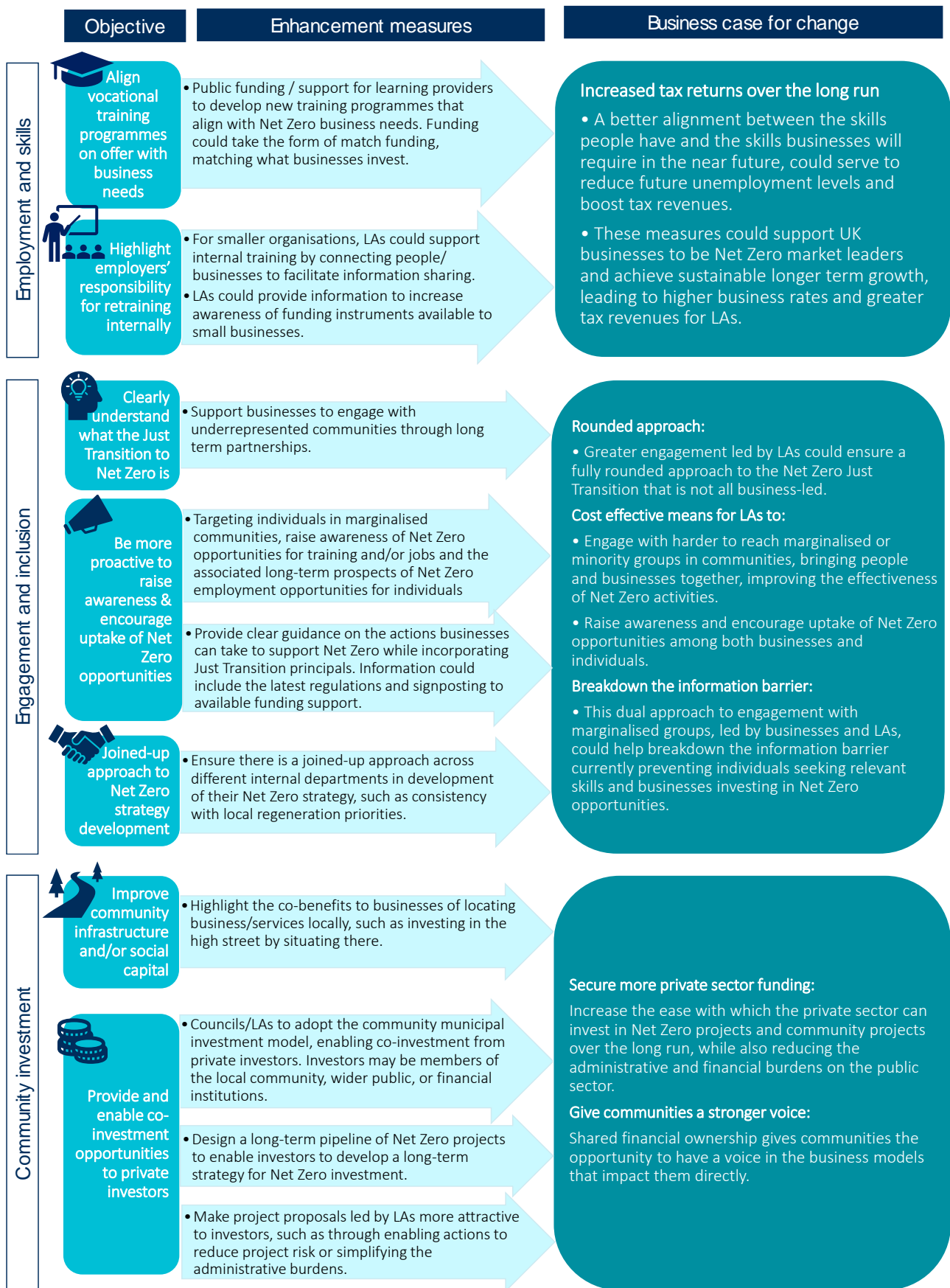
Acknowledging that business models operate in a multi-stakeholder enabling environment with local authorities, the public sector and learning providers, enhancement measures can be identified for each group. The figures below summarise the enhancement measures for four target groups who could have an impact on the design and implementation of Net Zero business models and could therefore play a pivotal role in aligning the models with the Just Transition. Each group stands to benefit from successful implementation of enhancement measures.

Enhancement measures targeting businesses



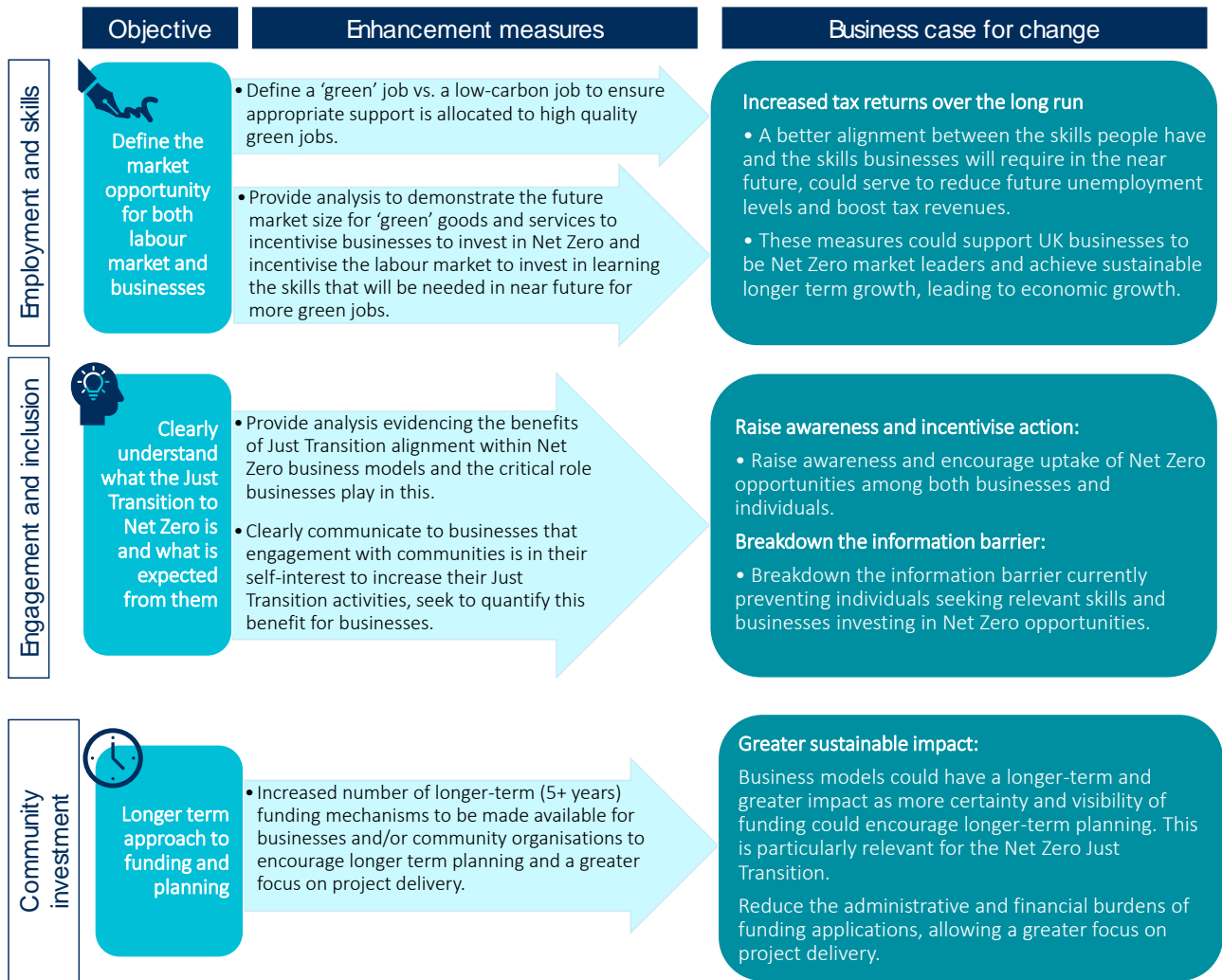
Source: Vivid Economics

Enhancement measures targeting Local Authorities (LAs)



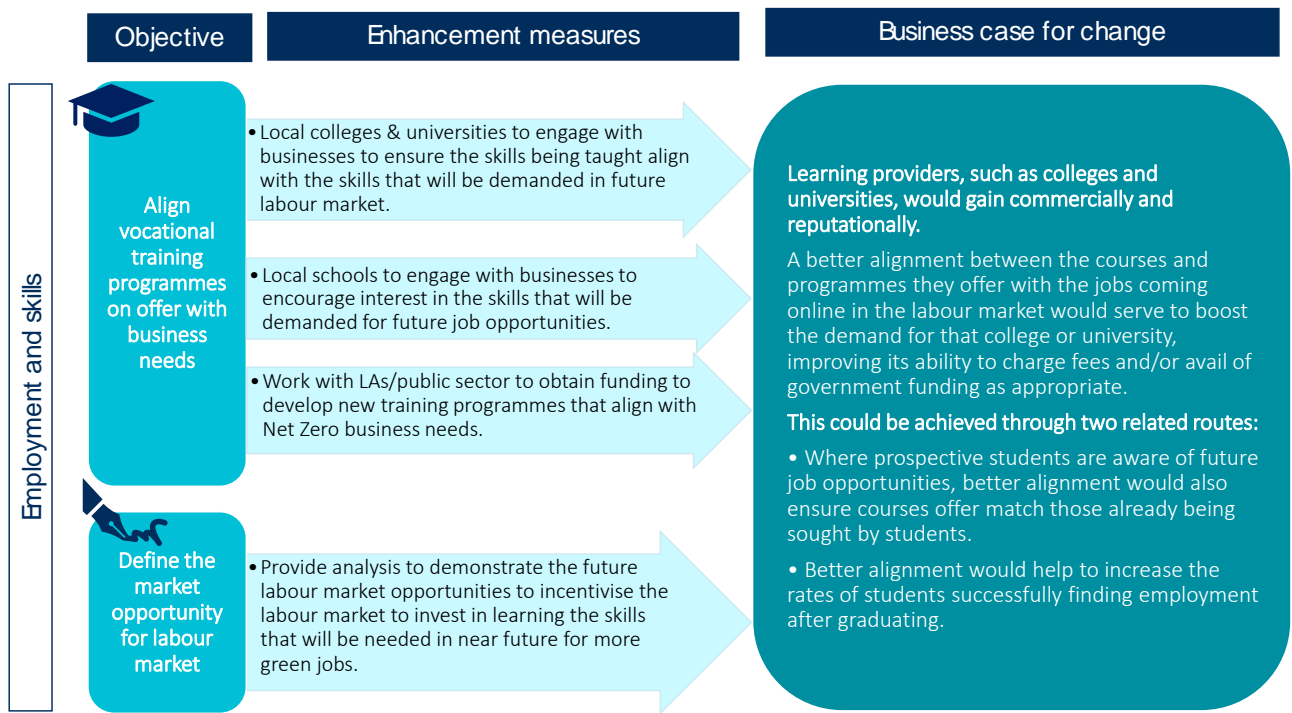
Source: Vivid Economics

Enhancement measures targeting the broader public sector



Source: Vivid Economics

Enhancement measures targeting learning providers



Source: Vivid Economics

1 Introduction

1.1 Study context

The UK has made a legally binding agreement to become carbon neutral (i.e. achieve Net Zero) by 2050, which means that its emissions of greenhouse gases (GHG, including carbon dioxide) must become equivalent to or less than the emissions it offsets and sequesters. This target to achieve Net Zero by 2050 has been affirmed in England, Northern Ireland and Wales, with Scotland committed to achieving this by 2045. Achieving this ambitious goal will require significant reductions in GHG emissions as well as an unprecedented shift in the economy towards businesses and business models that prioritise sustainability.

The impact of the UK reaching Net Zero targets will have a transformational impact on its communities. To ensure no one is left behind and communities are empowered, the transition must embed Just Transition principles. As the inevitable transition impacts several sectors of society, differentiated by geographies, demographics and income class, the UK will need to ensure that the costs and benefits of the transition are shared and felt equally. Local place-based and community-led climate action will not only contribute to achievement of the UK's Net Zero targets but also empower communities, making them an active part of the transition and bringing them economic and social opportunities. This is especially important for communities that are currently marginalised.

The concept of a Just Transition emphasises the imperative for the transition to a Net Zero and resilient economy to incorporate core social priorities. Originating in the labour movement, the notion of a 'Just Transition' was incorporated in the 2015 Paris Agreement as a way of signalling the importance of minimising negative repercussions from climate policies and maximising positive social impacts for workers and communities.¹ It is crucial to understand 'where' the impact of the policies will be felt and 'what' policies will be implemented to ensure the transition can happen at speed and scale. One of the key elements of a successful transition includes empowering those impacted so human rights are respected, enabling people to participate and improve livelihoods in the process of the change.

In the UK, the Climate Change Committee's Sixth Carbon Budget emphasises the importance of a Just Transition, where the vulnerable must be protected from the costs of the transition to Net Zero and benefits should be shared broadly.² The critical themes of the Just Transition in the UK include 1) *inclusive green growth*, ensuring high quality green jobs while empowering communities 2) *responsible decarbonisation*, ensuring workers and communities in high-carbon sectors benefit from the process and transition 3) *equitable resilience*, ensuring people and communities are protected from the physical impacts of climate change, and 4) *place based development*, ensuring the transition is rooted in the priorities of the place.³

In Scotland, the Just Transition Commission published recommendations around four key messages for Scottish Ministers, one of which was focused on communities. The commission highlighted the need to "empower and invigorate our communities and strengthen local economies" in the Just Transition.⁴

The project environment of this study focuses on the place-based urban community development strand of the Just Transition. A place- and people-based approach combines relatively centralised political and economic decision-making with high-levels of regional divergence. This underlines community development as a process where people come together to act on what is important to them. The development of local industrial and business strategies provides a mechanism for connecting climate change with bottom-up ambitions and priorities to generate inclusive growth and community development.

¹ <https://www.unpri.org/download?ac=7092>

² <https://www.theccc.org.uk/wp-content/uploads/2020/12/The-Sixth-Carbon-Budget-The-UKs-path-to-Net-Zero.pdf>

³ https://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2019/02/Investing-in-a-just-transition-in-the-UK_policy-brief_8pp-1.pdf

⁴ Just Transition Commission (2021). A National Mission for a fairer, greener Scotland.

Acknowledging the important role that businesses will play in both Net Zero and the Just Transition, the purpose of this study is to assess Net Zero business models and determine how they can be better aligned with the Just Transition. This has been done by developing a two-part framework that captures Just Transition alignment criteria as well as criteria that assess a business model's Net Zero impact. Interviews were conducted with approximately 20 stakeholders, including business leaders, charitable and non-profit organisations, and representatives of local authorities.⁵ These findings are used to develop a set of 20 viable and actionable enhancement measures for how Net Zero business models can be better aligned with a Just Transition.

1.2 Structure of this report

The report is structured as follows:

- **Section 2** reviews community needs across the UK and develops four archetypes for marginalised urban communities.
- **Section 3** explores the principles for community development in existing literature and defines eight common principles for successful community action and initiatives.
- **Section 4** details the approach to assessing Net Zero business models in the context of the Just Transition and communities.
- **Section 5** presents the results of mapping the framework components against the selected business models and draws conclusions regarding actionable enhancement measures.

⁵ A full list of the organisations spoken to as part of this study can be found in Appendix 2.

2 Identifying the needs of marginalised urban communities in the context of Net Zero

2.1 Introduction

This section defines what is meant by **community and community needs** and reviews the needs of marginalised communities across the UK. Marginalised urban communities in each of the four nations have different characteristics and particular needs, which correspond to Net Zero challenges and opportunities. In light of these different types of marginalised communities across the UK, a set of four archetypes has been defined for marginalised urban communities.

2.2 Defining community and community needs

Communities are broadly defined as **groups of people tied together through common interests or identity, often residing in close geographic proximity**.⁶ Communities are the building blocks of society, and they serve as the main unit of analysis in this report. For the purpose of this analysis, communities have been defined spatially as groups of people living in the same local area, regardless of other identifying factors, such as ethnicity or age.

Marginalisation may take the form of unfavourable economic outcomes in terms of jobs and income, or it may involve a lack of access to resources and opportunities that cause unmet needs in the realms of education, housing, services, and wellbeing. Often, these two forms of marginalisation go hand in hand, and they tend to be geographically concentrated. Marginalised areas may be referred to as “left-behind” areas, which are the target of the levelling up agenda in England, Wales and Northern Ireland, while the inclusive growth framework serves a similar purpose for marginalised areas in Scotland.⁷

The first stage of this analysis has used existing research and literature to identify the needs of communities in the UK, focussing on marginalised urban communities. To identify marginalised communities, the UK’s various indices of deprivation were drawn upon,⁸ as well as additional sources of literature. These sources include government publications, newspaper articles and research reports produced by organisations such as Scotland’s Regeneration Forum (SURF) and Local Trust.

To increase the applicability and relevance of this work, the focus is on urban communities. Due to their different geographies, urban and rural communities often have differing needs, and it could be less robust and meaningful to create archetypes that encompass them both. For example, rural communities are more likely to experience difficulty accessing services⁹ whereas this dimension of deprivation is significantly less likely in urban settings, where people and services are more geographically concentrated. This research also found that urban areas contain the majority of the most marginalised areas in each of the four nations. Findings are summarised in the subsequent section.

2.3 Review of community needs across the UK

2.3.1 England

Marginalised communities in England are generally characterized by low household income, lack of employment opportunities in decent and high-paying jobs, and a lack of access to public spaces that could

⁶ This definition draws upon the Scottish Parliament’s (2015) Community Empowerment Act.

⁷ HM Treasury, Ministry of Housing, Communities & Local Government and Department for Transport (2021): Levelling up fund: Prospectus.

⁸ Ministry of Housing, Communities & Local Government (2019): English Indices of Deprivation; Welsh Government (2019): Welsh Index of Multiple Deprivation; Housing and Social Justice Directorate (2020): Scottish Index of Multiple Deprivation; Northern Ireland Statistics and Research Agency (2017): Northern Ireland Multiple Deprivation Measure.

⁹ For example, see page 68 of the Welsh Government’s (2019) Welsh Index of Multiple Deprivation (WIMD) 2019: Results report.

facilitate community-building opportunities. Analysis derived from the Indices of Multiple Deprivation¹⁰ and OCSI/Local Trust¹¹ shows that most marginalised communities in England are found in urban areas. The inequalities across regional economies have been recognised in the government's 'levelling up' agenda. Within England, there are four main categories of marginalised communities as detailed in Appendix 3: peri-urban housing estates, inner-city areas, post-industrial settings, and coastal towns.

2.3.2 Scotland

Marginalised urban communities in Scotland are generally characterized by a shortage of affordable housing, a lack of access to employment opportunities in decent and high-paying jobs, and a lack of access to public spaces that could facilitate community building opportunities. Analysis derived from the Scottish Index of Multiple Deprivation¹² and SURF¹³ shows that marginalised communities in Scotland are found in both urban and rural areas. Within urban areas, there are two main categories of marginalised communities that share socio-demographic characteristics and community needs. To improve outcomes in these and other marginalised areas, Scotland has developed an inclusive growth framework. Within Scotland, there are two main categories of marginalised communities that share socio-demographic characteristics and community needs as detailed in Appendix 3: inner-city areas and post-industrial urban communities.

2.3.3 Wales

Marginalised communities in Wales are generally characterised by low household income, lack of employment opportunities, and poor outcomes on additional domains of deprivation. Analysis derived from the Index of Multiple Deprivation¹⁴ and Thriving Places Wales¹⁵ shows that marginalised communities in Wales are found in urban areas as well as some rural areas. Within urban areas, there are four main categories of marginalised communities as detailed in Appendix 3: peri-urban communities, post-industrial urban communities, coastal towns and urban communities in border towns.

2.3.4 Northern Ireland

Marginalised communities in Northern Ireland are generally characterised by poor economic outcomes, with a mismatch of jobs and skills, relatively high levels of crime and poor health outcomes. Analysis derived from the Multiple Deprivation Measure¹⁶ (MDM) shows that marginalised communities in Northern Ireland are almost exclusively urban; only five of the MDM's top 100 most deprived areas are classified as rural, and 50 of the MDM's top 100 most deprived areas are found in Belfast. Within urban areas, there are two main categories of marginalised communities as detailed in Appendix 3: inner-city areas and post-industrial urban communities.

2.4 Developing an archetype for marginalised communities

In light of the different types of marginalised urban communities found in each of the four nations, a set of archetypes has been created for marginalised urban communities in the UK. Each archetypal community has particular needs, which correspond to Net Zero challenges and opportunities. In most cases, there is an opportunity to meet community needs in a way that is aligned with both Net Zero values and the Just Transition. The four community archetypes, as summarised in the figure below, include the following: peri-urban communities, inner-city areas, post-industrial urban communities and coastal towns.

¹⁰ Ministry of Housing, Communities & Local Government (2019): English Indices of Deprivation.

¹¹ OCSI/Local Trust (2019): Left Behind? Understanding communities on the edge.

¹² Housing and Social Justice Directorate (2020): Scottish Index of Multiple Deprivation.

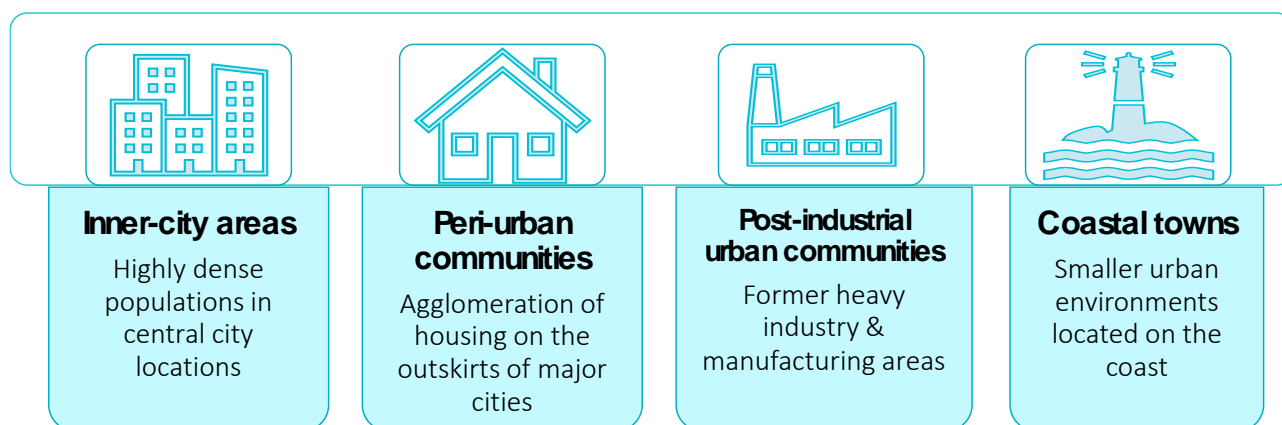
¹³ SURF (2019): Culture and regeneration: An ideal match?

¹⁴ Welsh Government (2019): Welsh Index of Multiple Deprivation.

¹⁵ Thriving Places Wales (2020): The index.

¹⁶ Northern Ireland Statistics and Research Agency (2017): Northern Ireland Multiple Deprivation Measure.

Figure 1 The four marginalised urban community archetypes in the UK



Source: Vivid Economics

2.4.1 Inner-city areas

The archetypal marginalised inner-city area experiences poor economic outcomes in terms of income and employment. Its physical environment has few green spaces and high air pollution levels. In addition to a lack of affordable housing and high crime rates, there are few public spaces for community activities and gatherings.

These needs could be met with more emphasis on skills development, provision of energy efficient homes and investment in sustainable public spaces and infrastructure. Given the mismatch between jobs and skills that contributes to poor economic outcomes, re-skilling and educational opportunities are necessary. There is high potential for these opportunities to be tied to emerging green jobs, such as solar panel installation per the example presented in Box 1. To improve housing affordability, there is opportunity to invest in new homes. If the new homes are energy efficient, they will contribute to decreasing the carbon emissions intensity of the housing stock. When creating new public spaces, an emphasis on green spaces can align provision with the values of the Net Zero transition. Similarly, initiatives aligned with Net Zero, such as low carbon public transportation, can help improve air quality.

Some examples of marginalised inner-city areas include: the London boroughs of Hackney and Haringey in England; the City of Glasgow and parts of Dundee in Scotland; and inner East Belfast, Cliftonville in Belfast and parts of Derry in Northern Ireland.

2.4.2 Peri-urban communities

The archetypal marginalised peri-urban community experiences poor economic outcomes exacerbated by a lack of formal qualifications and education among residents. It has a lack of public spaces as well as a lack of connectivity, both physical and digital.

To meet these needs, improved public transport and re-skilling the labour market could bring better access to economic opportunities. Improved public transport can increase connectivity and give community members better access to economic opportunities. If the method of public transport is environmentally friendly, such as electric buses, community needs can be met in a low carbon way. Peri-urban communities would also benefit from re-skilling opportunities. If these opportunities are found in emerging industries related to green innovation in nearby urban hubs, community members will have the opportunity to gain meaningful and sustainable employment that can contribute to the Net Zero transition.

Some examples of marginalised inner-city areas include: housing estates outlying Sunderland in England and parts of the South Wales valleys.

2.4.3 Post-industrial urban communities

The archetypal marginalised post-industrial urban community experiences a lack of economic opportunities as well as low levels of income. In addition to limited and low quality public spaces, including a lack of green space, there is poor air quality and a lack of funding and public resources.

Skills development and investment in sustainable public spaces and infrastructure could generate more economic opportunities required to meet community needs. In this type of community, job availability may contract further, and re-skilling and educational opportunities can mitigate the negative effects of this change. To meet job related needs in a forward-thinking way, an emphasis on emerging green jobs is appropriate. Furthermore, when creating public spaces and improving public services, there is high potential to invest in options that are sustainable. For example, low carbon public transportation helps contribute to achieving Net Zero and also helps improve air quality.

Some examples of marginalised post-industrial urban communities include: parts of Middlesbrough and Liverpool in England; Carntyne and Haghill in northeast Glasgow and parts of Govan in Scotland; areas located in South Wales, such as Cardiff, Newport and Swansea; and the docklands in Belfast in Northern Ireland.

2.4.4 Coastal towns

The archetypal marginalised coastal town experiences poor economic outcomes, with low average incomes and high rates of unemployment. These are exacerbated by poor connectivity to major employment centres. Residents also suffer from poor health outcomes.

In relation to job availability and the skills gap, a focus on emerging green economy jobs and skills would contribute positively to the transition to Net Zero. Investments in environmentally friendly public transportation can both improve connectivity and reduce emissions. Furthermore, there is an opportunity for residents to transition to work in new sectors aligned to Net Zero values, such as sustainable tourism.

Some examples of marginalised coastal towns include: Blackpool and Hastings in England and areas located in North Wales.

2.4.5 Changing archetypes looking forward

It is important to note that the transition to Net Zero presents challenges and opportunities to different communities that could become marginalised in the future as a result of the transition. Simply put, communities that are not marginalised today are not precluded from becoming marginalised in the future. It is thus prudent to consider non-marginalised communities that might disproportionately bear the costs of the Net Zero transition as it progresses. These include communities with high levels of employment in high emissions sectors, such as fossil fuel production (e.g. extraction of crude oil), electricity generation from fossil fuels and heavy industry (e.g. iron, steel, aluminium, cement production). Other communities that may be disproportionately affected include those where people are reliant on personal cars for their main mode of transport and those that rely on fossil fuels to heat their homes. For communities with low levels of education, re-skilling and training may prove to be more challenging, and this may affect residents' ability to find 'green collar' jobs aligned with Net Zero.

Box 1 Example of skills development and energy efficient homes in inner-city London

Brixton Energy Solar 1, led by Repowering London

Successful community action addresses a real need within the community and is most effective when it involves long-term wide community engagement. This example in London addresses the Net Zero transition in a number of direct and indirect ways.

This community action illustrates how the key drivers of success relate to the needs of the local community:

Matching initiative to community needs: This initiative was addressing community needs around fuel poverty and exposure to energy price shocks; people felt disempowered and unengaged with local Net Zero issues; limited training and employment opportunities for local people in environmental sectors; need for behavioural change.

Existing community infrastructure: By working with communities and local authorities, Repowering London organised for 37kW solar panels to be installed on the roof of a residential building in a housing estate in London.

Joint ownership: Brixton Energy Solar 1 was the UK's first inner-city community owned solar power station, *saving* "hundreds of tons of carbon directly through renewable energy generation and indirectly through behaviour change".

Together with a subsequent project Brixton Energy Solar 2 (45kW on the roofs of five housing blocks), the project raised £120,000 through community share offers and attracted 180 local investors. Community share offers were for as little as £1 making it inclusive of lower income earners. The project distributes 20% of all profits into a community fund which is used to deliver further energy saving initiatives, such as insulation and re-skilling local people relating to the environment.

Engagement to build support and trust: Community members are engaged through surveys and education schemes such as mentoring.

Accountability and governance: The project is led by community members.

Capacity building: Supports local employment opportunities with jobs, internships and re-skilling of local people, including an AQA accredited training programme.

Sufficient time and resources: Long-term engagement with subsequent projects and long-term positive impacts

Summary of drivers of success:

Long-term engagement with subsequent projects and long-term positive impacts; the project is led by community members; community members are engaged through surveys and education schemes such as mentoring. Supports local employment opportunities with jobs, internships and re-skilling of local people, including an AQA accredited training programme. Part of the investment was raised locally through co-investment offerings and profits are put back into the community.

2.5 Summary of archetypes

This section has defined the focus of this report around the different community needs of four archetypes for marginalised urban communities in the UK. Research on marginalised communities has revealed the different

types of marginalised urban communities that exist in each of the four nations, which has been used to synthesise these community types into archetypes that are applicable to the whole of the UK. Although the archetypal communities share many of the same needs and challenges, such as low income and low rates of employment, it is interesting to note that potential solutions vary based on specific community needs. There is an opportunity to meet community needs in a way that is aligned with both Net Zero values and the Just Transition, which is explored further in subsequent sections of this report.

3 Principles for community development

3.1 Introduction

Key to reducing marginalisation is community-based action. Academic thinking has been used to identify prerequisites for community action and empowerment, focusing on the realm of common resources. Based on this research, eight core principles for successful initiatives have been identified. In line with these principles, challenges for community action have been found to include economic and social pressures as well as low local engagement.

3.2 Community development principles literature review

Community development, or collective action, can be broadly defined as “how individuals, with at least a modest level of shared interests, coordinate their efforts to secure a common goal that none could obtain without the efforts of others”.¹⁷ The result of collective action is typically considered to include “some shared outcome, or ‘public good,’ which may consist of traditional, physical goods like parks, bridges, or libraries...or less tangible goods like databases of information or communication systems”.¹⁸

Nobel Prize winner Elinor Ostrom is often cited in reference to engaging community action to sustainably manage shared limited resources. Ostrom explores the relationships between people, official institutions and self-governed community organisations. The eight principals that Ostrom developed provide a useful framework for considering the necessary conditions for long-term successful community action. These principals are the following:¹⁹

- define clear group boundaries;
- match rules governing use of common goods to local needs and conditions;
- enable those affected by the rules to participate in modifying the rules;
- ensure the rule-making rights of community members are respected by outside authorities;
- develop a system for monitoring members’ behaviour, carried out by community members;
- use graduated sanctions for rule violators;
- provide accessible, low-cost means for dispute resolution; and,
- build responsibility for governing the common resource in nested tiers from the lowest level up to the entire interconnected system.

These eight principals can be grouped into three core conditions: locality; autonomy; and diversity.²⁰ Locality refers to the ability for communities to control and have a voice in matters that affect them to ensure the relevant organisation or system is adapted for their specific context. Autonomy encompasses the ability of groups to self-govern and foster collaboration to build social capital. Finally, diversity of ideas allows for different possible solutions to be considered, thus enabling communities to support innovation.

In a study testing the necessary characteristics required for successful, positive economic change to be achieved in deprived, left-behind areas, the Local Trust concluded there were three key factors contributing

¹⁷ Flanagan et al (2007): Modelling the structure of collective action.

¹⁸ Flanagan et al (2007): Modelling the structure of collective action.

¹⁹ Ostrom (2009): A General Framework for Analyzing Sustainability of Social-Ecological Systems; Ostrom (1990): Governing the Commons: The Evolution of Institutions for Collective Action. New York: Cambridge University Press.

²⁰ New Local (2020): Think Big, Act Small – Elinor Ostrom’s Radical Vision for Community Power.

to success.²¹ The study found that the best-performing initiatives had the largest number of resident members and agencies on their boards and a larger growing population. This suggests that such community development could be well suited to urban settings. Local Trust concluded that success factors include the following:²²

- the presence of existing community infrastructure;
- an approach that is bespoke to the specific context and covers more than worklessness; and,
- and a connection with economic opportunities outside the immediate neighbourhood.

Involvement of community members must be meaningful for the community to reap maximum benefits. A study from What Works Centre for Wellbeing found that involving communities in joint decision making can have positive effects on individual and community-level wellbeing.²³ However, to result in community empowerment, citizen participation must be of high quality, involving partnership, delegated power or citizen control.

A recent report by the Institute for Public Policy Research (IPPR) found that community initiatives were more likely to be successful if a number of barriers are overcome.²⁴ The authors found that local communities were more likely to be successful in a climate changing world where there is a strong vision for how the community's projects deliver direct benefits to the community rather than just focussing on addressing the climate crisis alone and where initiatives resonate with or help create common community identities and align with perceived shared interests. While funding is key, the report noted that it needs to be led by local needs and available over the long term. Finally, networks were highlighted as being important for effective community action where they facilitate relationships between people and different organisations within a community.

Public bodies have the potential to facilitate community action in its various forms. According to research by Audit Scotland, community action may involve existing community led and based organisations, community activism, participation in local decision-making structures or other actions. A public body can facilitate community empowerment by giving the community control over decisions and assets, providing public sector leadership that supports communities and sends the right message, fostering effective relationships between public bodies and local communities, evaluating outcomes to ensure that actions are having desirable effects and upholding accountability.²⁵

Research from the Joseph Rowntree Foundation also supports these findings, using data from Wales.²⁶ Government representatives should fully recognise communities' potential to contribute. Additionally, "different routes for community participation are required to recognise public preferences for different levels of engagement and different abilities to commit time and support to local decision-making". It is helpful also to recognise and leverage the role of existing organisations that can facilitate further community action and local engagement, such as community development trusts.

One of the positive effects of community action can be the increase of wealth within the community. To achieve this outcome, community members can use land, property and assets in socially productive ways, empower their communities financially (e.g. by creating a community loan fund for local residents in crisis), support plural ownership of the economy and demand secure employment opportunities.²⁷

Ultimately, if successful, community action results in empowerment. This relates to the development of power within (i.e. internal capabilities), power with (i.e. partnerships and collaboration), power to (i.e. agency and

²¹ Local Trust and University of Cambridge (2019): Achieving local economic change: what works?

²² Local Trust and University of Cambridge (2019): Achieving local economic change: what works?

²³ What Works Centre for Wellbeing (2018): A systematic review of evidence on the impacts of joint decision-making on community wellbeing.

²⁴ Institute for Public Policy Research (2021): The Climate Commons. How communities can thrive in a climate changing world.

²⁵ Audit Scotland and the Strategic Scrutiny Group (2019): Principles for community empowerment.

²⁶ Joseph Rowntree Foundation (2008): Community empowerment in practice.

²⁷ Local Trust (2020): Building community wealth in neighbourhoods.

the capacity to act) and in some cases, power over (e.g. when community action brings a stop to an undesirable initiative being imposed on the area).²⁸

3.3 Challenges for successful community action

Challenges for successful community action include economic and social pressures as well as low levels of local engagement. For the former, these may include economic pressures from high unemployment, low wages, insecure work or indebtedness in addition to social pressures from caring responsibilities or ill health, for example.²⁹ Other barriers to success are community characteristics, such as low levels of local engagement. This may be exacerbated by a lack of strong, supportive anchor institutions at the centre of a community; disconnection between neighbourhood policy and national policy; and pressures from austerity policies.³⁰

Apart from community characteristics, an initiative itself may be designed in a way that impedes its success. Insufficient resources and timescales or poorly designed engagement with residents can make it more difficult for an initiative to succeed. Similarly, the geographic area may not match the scale of the initiative, which would also present a barrier to success. For example, economic development initiatives may be unlikely to succeed if they involve fewer than 10,000 people.³¹

3.4 Framework for community development

Based on a synthesis of academic literature and findings from the Local Trust's community engagement work, we have defined eight common principles for successful community action and initiatives. An example of a successful community action employing these principals is presented in Box 2.

- **Sufficient time and resources:** Long-term engagement is more effective in achieving continued impact and will likely reach more people and generate more longer-term resources.
- **Matching initiative to community needs:** It is important that an initiative match the needs, priorities and conditions of the local community in order to obtain necessary support to sustain the initiative and succeed in meeting action objectives.
- **Engagement to build support and trust:** Actively seeking and encouraging participation in feedback from local communities will build support and reassure community members that the initiative is responding to the real needs of the community.
- **Accountability and governance:** This involves clear objectives to which leaders can be accountable as well as clearly defined rules with enforcement procedures for both leaders and participants.
- **Joint ownership:** where community members have shared ownership in the initiative and have a stake in the initiative, this can boost the long-term sustainability of an action and build strong support. For example, for formal regeneration initiatives, having a larger proportion of resident members on the board can increase success by ensuring a top-down approach is avoided.
- **Capacity building:** Engaging the local people so that they are involved and learning through the initiative can be beneficial because it brings knowledge for future initiatives, strengthens the knowledge of the social ecosystem and builds the long-term sustainability of the action.
- **Existing community infrastructure:** Existing community infrastructure, such as community associations or places for communities to gather can allow for an initiative to build on existing connections with the local community. Though useful, this is not a necessary pre-condition for the success of an initiative.

²⁸ Local Trust (2020): Power in our hands: an inquiry into resident-led decision making in the Big Local programme.

²⁹ Local Trust (2020): Building community wealth in neighbourhoods.

³⁰ Local Trust (2020): Building community wealth in neighbourhoods.

³¹ Local Trust and University of Cambridge (2019): Achieving local economic change: what works?

- **Other:** Policy and external actors may help facilitative collective action.

Box 2 Community action in Italy

Successful community action can also be seen internationally, such as the Arvaia Community Supported Agriculture cooperative in the city of Bologna, Italy.³² This community-led cooperative adopted the Community Support Agriculture economic model to minimise the carbon footprint of food and protect urban green-spaces while giving city residents the opportunity to learn about and benefit from sustainable organic farming methods.

Many of the key characteristics of this community action illustrate how the key drivers of its success can be linked back to the framework for successful community action:

Matching initiative to community needs: Arvaia was addressing key community needs to reduce the carbon footprint of the food chain; improve access to healthy and affordable food; protect public land in an urban setting for environmental purposes.

Joint ownership: Arvaia is a cooperative of “organic urban farmers” which adopted the Community Support Agriculture business model to minimise the distance from “farm to fork” in the food chain and reduce the use of food packaging.

Existing community infrastructure: Located in 3ha of public land in a park in the city of Bologna, the cooperative largely harvests vegetables using sustainable organic and biodynamic farming methods, serving to protect and enhance urban public land for environmental purposes.

Engagement to build support and trust: City residents farm the food for their own consumption, supporting local social participation. This serves to reduce the carbon footprint of the food via: sustainable farming practices; a shorter supply chain; efficient transport logistics; reduced food packaging; and by protecting the urban ecological corridor which is home to several species of insects and birds.

Sufficient time and resources: Long-term engagement with long-term lease of land.

Capacity building: The cooperative has created some local employment and Arvaia also provides education to schools and adults on sustainable farming techniques. Local participation has grown since inception and members are involved in all activities

Summary drivers of success

Long-term engagement with long-term lease of land; teaching environmentally-friendly skills that are useful for the future; community members make all decisions; supports local jobs.

3.5 Summary of principals for community development

Academic thinking has been used to identify prerequisites for community action and empowerment with a view to reducing marginalisation of communities. Nobel Prize winner Elinor Ostrom explores the relationships between people, official institutions and self-governed community organisations. These principals can be grouped into three core conditions: locality; autonomy; and diversity. Challenges for successful community action include economic and social pressures as well as low levels of local engagement. Based on this research, eight common principles for successful community action and initiatives have been identified as follows:

1. Sufficient time and resources
2. Matching initiative to community needs

³² Urban Green Train: Arvaia. https://www.urbangreentrain.mammutfilm.it/inventory/pdf/UGT_ARVAIA_IT_FULL_CASE.pdf (accessed 18 May 2021).

Net Zero business models for a Just Transition

3. Engagement to build support and trust
4. Accountability and governance
5. Joint ownership
6. Capacity building
7. Existing community infrastructure
8. Other (impact of policy and/or external actors)

4 Assessing Net Zero business models in the context of Just Transition

4.1 Introduction

This section presents an overview of how a selection of Net Zero business models across sectors is aligned with a Just Transition for marginalised communities. A selection of representative business models is used to identify to what extent they are supporting a Just Transition whilst also aligning with the Net Zero agenda. The Just Transition aligning assessment is specifically focused on community empowerment principles to assess how Net Zero business models can support marginalised communities.

4.2 Overview of Net Zero business models

Business models selected are representative of a wide cross section of businesses in the sector, including models from across the UK and representing different business sizes. Business models were selected to include a mix of small grassroots organisations whose chief purpose is to support the net zero transition as well as larger legacy organisations working to develop new approaches and models to deliver net zero. Similarly, the selection included charitable or non-profit organisations, small and medium sized enterprises, as well as large private sector corporations operating internationally. A list of business models that were evaluated is included in Appendix 1. The selection of examples for analysis brings a diverse set of business models which exemplify good practices as well as weaknesses in the models within the context of a Just Transition.

A business model can be described through a general structure which considers inputs, value creation and value distribution. This generalised model has been derived from the widely used Business Model Canvas.³³ The Business Model Canvas is a tool used by entrepreneurs to develop their business model, capturing all the different components that need to be defined to have a comprehensive model. These components can be simplified into the three main pillars of: inputs, value creation and value distribution (Figure 2 **Error! Reference source not found.**). Inputs are the components of the model required to produce the good or service. Value creation refers to the processes which the model uses to produce the good or service (including the quality of jobs), as well as the channels from which it gains revenue and generates value. Finally, value distribution encompasses the process which the model uses to deliver the goods and services, as well as any channels for customer and community engagement.

Figure 2 The framework for assessing business models can be mapped onto the structure of a business model

Business model structure		
Inputs	Value creation	Value distribution
<ul style="list-style-type: none"> • Key partners • Resources (physical and skills) • Governance 	<ul style="list-style-type: none"> • Activities • Value propositions • Cost structure • Revenue streams • Job creation quality 	<ul style="list-style-type: none"> • Customer segments and relationships • Job/skill distribution • Community investment

Source: Vivid Economics

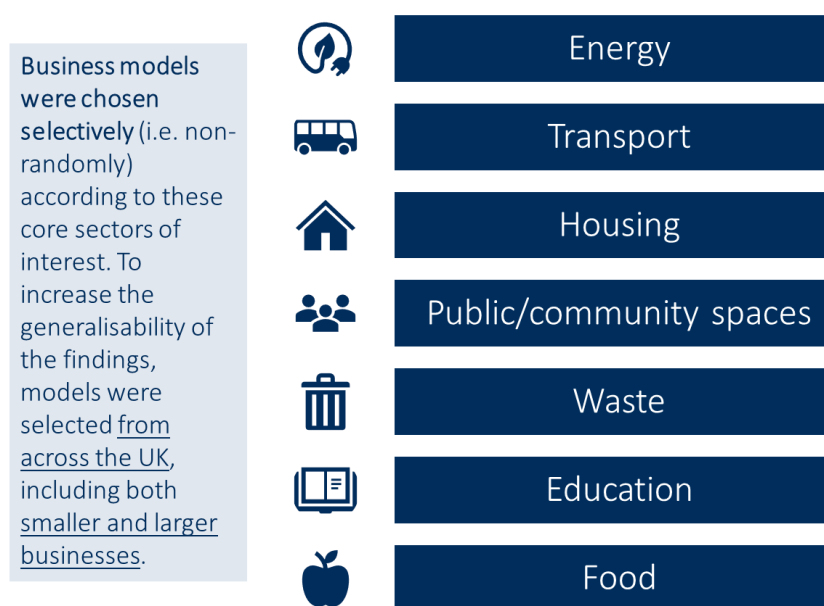
The following section presents a summary of findings by sector, assessing business models on each of the main components of a model: inputs, value creation components, value distributions components.

³³ Strategyzer (2020): The Business Model Canvas. <https://www.strategyzer.com/canvas/business-model-canvas> (accessed 18 May 2021).

4.2.1 Net Zero business model sectors

A cross section of business models was identified from within key sectors for a Just Net Zero urban transition (Figure 3). Key sectors for urban Net Zero include high-emission sectors where mitigation is key to meet national Net Zero objectives (Energy, Transport, Housing, Waste), as well as sectors which provide services to the community (Education, Public/community spaces, Food). Additionally, these sectors include areas relevant to the needs of marginalised communities.

Figure 3 Business models were identified from sectors which are key to the Just Net Zero urban transition



Source: Vivid Economics

Across seven sectors, 33 business models were examined and described based on their inputs, value creation and value distribution. In many cases, business models had components relevant to multiple sectors, and some business models were derived by synthesising information from multiple different businesses undertaking similar activities, as outlined in Appendix 1. More detailed descriptions of each sector’s business models can be found in tables included in Appendix 1.

Energy sector: Nine business models were examined in the energy sector. Many of the business models operate in marginalised urban areas or in cities that have highly deprived areas. Either directly or indirectly, energy sector business models seek to reduce CO₂ emissions, often by providing an alternative to energy derived from fossil fuels and usually with accompanying cost savings. Business models may help reduce fuel poverty, provide training in the form of internships and work placements and involve community-based ownership structures. A proportion of profits may be diverted into a fund that invests in additional local energy projects. Energy sector business models are described in Table 4, Table 5 and Table 6.

Transport: Nine business models were examined in the transport sector. Business models reduce CO₂ emissions by providing more sustainable forms of transport, innovate to reduce the cost of sustainable transport, devise digital platforms to connect people with transportation options and encourage customers to choose active transport options. Business models range from charities to large international companies. Employment opportunities may be targeted at marginalised community members, such as ex-offenders and asylum-seekers. Improvements in public transport may have positive effects on connectivity to employment opportunities as well as air quality. Business models often have an educational component that involves engagement with young people or the broader community. Transport sector business models are described in Table 7, Table 8 and Table 9.

Housing: Four business models were examined in the housing sector. Business models involve improving the quality and energy efficiency of new homes through sound design principles, making investment into the property market easier (specifically targeting investment into environmentally friendly property developments), supporting green living through the creation and construction of garden village communities and making home ownership more accessible through co-operative models of home owning (specifically targeting a sustainability focussed model of co-operative living). Energy efficient homes reduce the need for heating, which can help tackle issues of fuel poverty, while co-operative models of home owning facilitate home ownership for people who are ineligible for social housing but cannot afford traditional home ownership. Business models may also seek to become net zero carbon emitters in their own operations. Housing sector business models are described in Table 10, Table 11 and Table 12.

Public/community spaces: Two business models related to public/community spaces were examined. However, because models in other sectors may also result in the creation of community spaces, provision of community spaces is not confined to the models described in Table 13, Table 14 and Table 15. These models often involve making urban green spaces more prevalent and accessible, and they may involve a membership structure open to all members of the community.

Waste: Four business models were examined in the waste sector. One business model involves the production of food-safe plant-based catering disposables. Another business model involves hosting 'repair cafes' that reduce waste by fixing items that would otherwise have been discarded. A third business model reduces food waste by cooking meals using leftover food from grocery stores and local businesses, serving these meals at 'pay-as-you-can' prices. The fourth business model involves recycling plastic to create useful items, such as lumber planks, clothing or home décor. Some business models cater their offerings to disadvantaged members of the community. Business models may involve volunteers (who may also receive training) or full time workers paid a living wage. Waste sector business models are described in Table 16, Table 17 and Table 18.

Education: In the education sector, one business model was examined whose main purpose is to educate the public about energy efficiency. The purpose of this business model is to reduce both fuel poverty and carbon emissions. It involves a charity that also offers local community members the opportunity to volunteer on projects. The business model is described in Table 19, Table 20 and Table 21. However, education related components are found in other business models as well, as described in the appropriate sector-specific tables.

Food: Four business models were examined in the food sector. One business model involves restaurant operation, both in the UK and internationally, with a focus on healthy and sustainable eating. Two business models involve grocery shops, including a local high street grocery store and one of the UK's biggest food retailers. The last business model involves a charity related to community orchards. Business models may invest in the local community by donating surplus food, providing educational sessions about healthy eating and funding community groups and initiatives with a portion of their profits. Internship and volunteer opportunities may also be provided. Food sector business models are described in Table 22, Table 23 and Table 24.

4.3 Evaluation framework for assessing business models

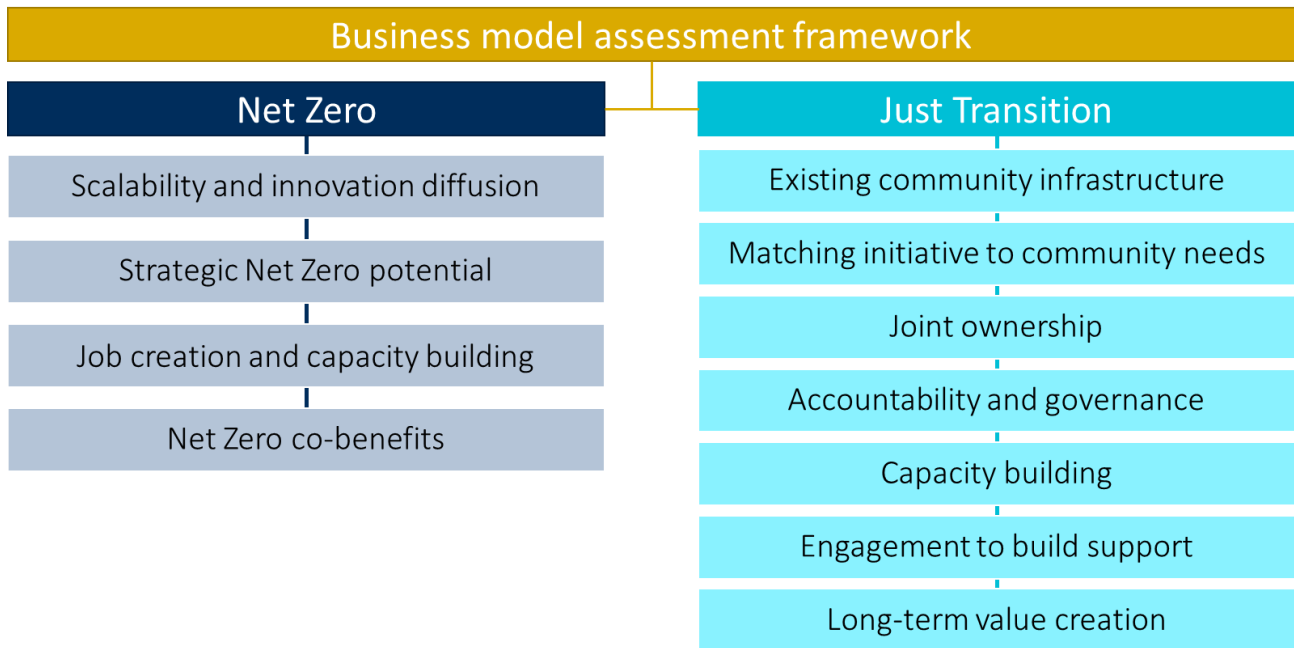
The objective of the business model evaluation framework is to deliver a systematic assessment of business models on their alignment with a Just Transition and the Net Zero agenda. Trends in good practice and areas for improvement emerge through consistently evaluating business models, identifying those which are important for achieving Net Zero objectives and which also support a Just Transition. These findings form the basis for identifying business model enhancement recommendations, outlined in Section 5.

The construction of the framework is based on two key elements:

- A framework for assessing Just Transition alignment capturing key elements for community empowerment and local community value creation.

- A framework for assessing Net Zero alignment encompassing features which highlight the potential for impact towards achieving the UK’s Net Zero objectives.

Figure 4 The business model assessment framework incorporates both Net Zero and Just Transition elements



Source: Vivid Economics

The remainder of this section presents a detailed overview of the framework and the literature and rationale behind its components.

4.3.1 Evaluation framework for assessing business models in the context of a Just Transition

The framework gathers key business model components to ensure the Net Zero transition supports the needs of marginalised community and leads to local community value creation and engagement. Value creation includes components related to ownership and strengthening of community infrastructure, as well as job creation and skilling in any sector. Engagement, a key component for generating community support and ensuring services are well targeted, includes components related to communication and interactions with community groups.

Specifically, the framework is split into seven sub-components which are aligned with the features discussed above (Figure 5):

- **The existing community infrastructure** assesses whether the business models make use and supports both community soft and social infrastructure, and physical infrastructure. Soft and social infrastructure identified whether the business model embeds the use of local community networks and local government. The use these networks ensures that services delivered are aligned with local priorities, and the local networks are in turn strengthened by being included in service delivery. The physical infrastructure component refers to the use of public spaces and the use of local supply chains for services delivery.
- **Matching the services delivered to community needs** captures to what extent the business model is addressing the specific needs of local communities. The needs considered include those which were identified through the literature review included in Section 3.

- **Joint ownership** identified whether the business model enables local communities to have a financial stake in the business, either partial or full ownership by the community. Enabling local communities to have a financial stake in local business and service delivery creates engagement and ensures that the business is run in line with community values and priorities.³⁴ Additionally, in the context of the Net Zero transition, this can lead to a more successful uptake of services which require behavioural change such as energy efficiency and fuel switching for energy and transport.
- **Including accountability and governance** ensures that the business model takes into account the priorities and values of local communities, increase the degree to which services delivered can support local community development and safeguarding against businesses having a negative impact on communities.³⁵
- **The creation of jobs and capacity building** from business models is a way of tangibly creating economic opportunities in any sector and providing local communities with the skills to partake in economic opportunities presented by the business models to support individual employment prospects generally. Specifically for communities, this is focused on locally supported jobs, and the provision of skills aligned with local jobs and community empowerment. Supporting local jobs is additionally important when considering that some marginalised communities are vulnerable to shrinking job opportunities.³⁶
- **Ongoing engagement to build support** is a key building block from Just Transition aligned business models as this ensures that communities are engaged with the Net Zero transition, aware of the potential benefits and opportunities which can arise.³⁷ Additionally, business models which invest in engagement strengthen their client base and increase demand.
- **Long-term value creation** components aim to assess the components of the business models which ensure that the service delivery has a long-term impact, including the capacity to adapt to changing community needs and priorities through on-going engagement and lasting strengthening of community networks.

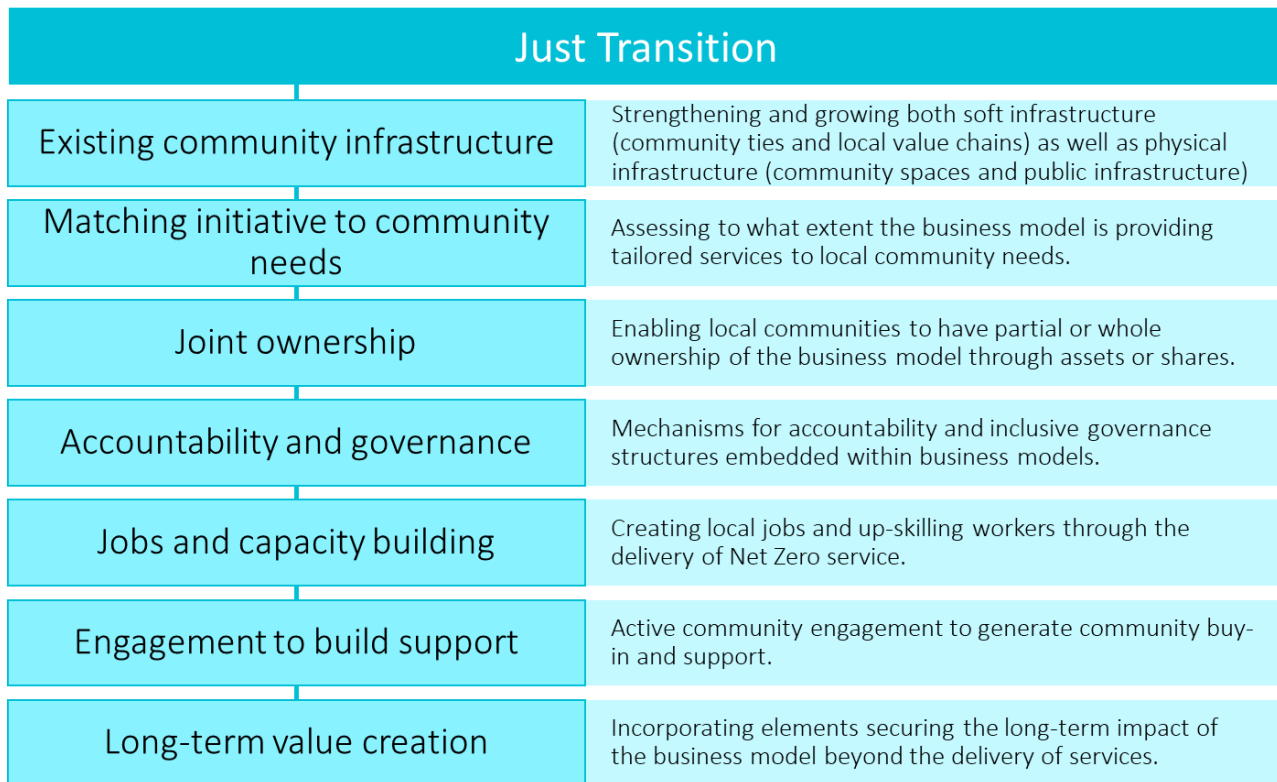
³⁴ Co-operatives UK (2020): Understanding a maturing community shares market.

³⁵ Power to Change and the Institute for Voluntary Action Research (2017): Community accountability in community businesses.

³⁶ Onward (2021): Getting to zero.

³⁷ Just Transition Commission (2020): Interim Report.

Figure 5 The Just Transition evaluation framework captures key criteria for community value creating in the context of Net Zero business models



Source: Vivid Economics

4.3.2 Evaluation framework for assessing business models in the context of a Net Zero

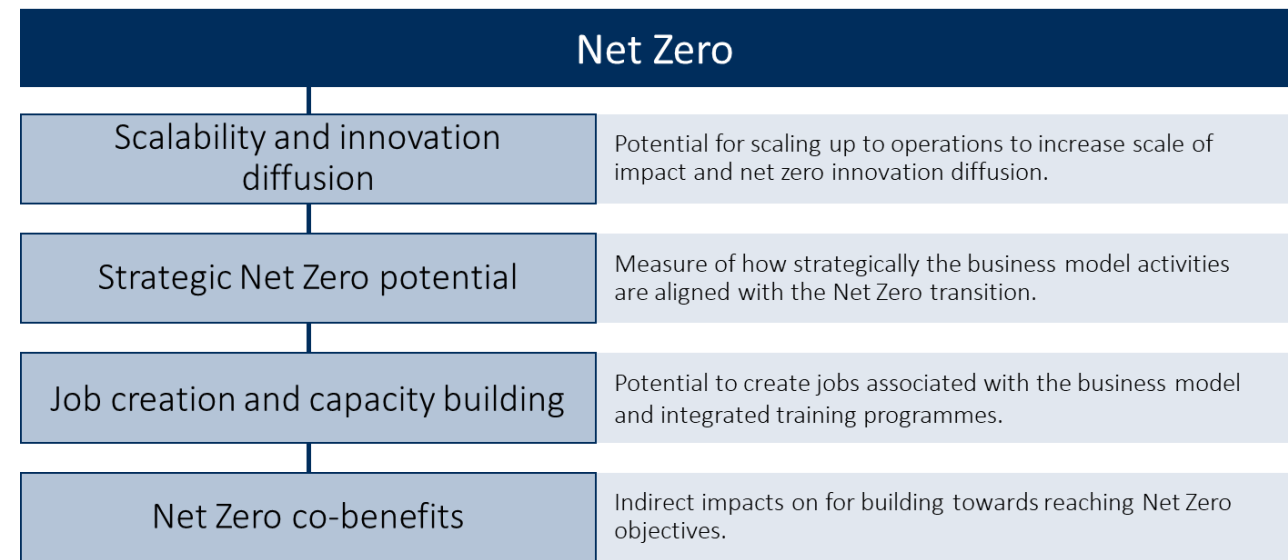
The framework for assessing Net Zero impact includes elements which highlight how strategic and impactful the business model is in the context of achieving Net Zero objectives. Components account for the strategic aligning of mitigation potential of activities, as well as additional consideration linked to the long-term impact and co-benefits of the business model.

The framework includes four main sub-components (Figure 6):

- **The scalability and innovation** component captures whether the services and technologies used by the business model are scalable and could be easily replicated to expand the reach of the business model. This aims to highlight business models that present solutions which could be leveraged to meet Net Zero objectives. Similarly, this component also captures the extent to which the solutions presented are an innovative way of delivering Net Zero aligned services which can be widely diffused.
- **Strategic Net Zero potential** determines to what extent the services delivered by the business are aligned with the Net Zero transition using the proxy of projected emissions by sector. Business models which provide a solution under a hard to abate sector (sectors which have relatively high projected emissions) are given a higher weight.
- **Job creation and capacity building** aims to capture whether the Net Zero business models represent the potential for local Net Zero job creation, and the inclusion of training for Net Zero aligned skills. This enables the identification of business models that will add to the stock of specifically Net Zero opportunities, and contributing to up-skilling the existing workforce in relation to skills relevant for the transition to Net Zero.

- **Net Zero co-benefits** this includes the assessment of whether the business model includes elements which aim change behaviour to align with a Net Zero agenda beyond the services it offers directly. This element will highlight business models which have a higher potential for impact beyond the core business model offering.

Figure 6 The Net Zero framework includes several elements which highlight how relevant and impactful business models are for the Net Zero transition

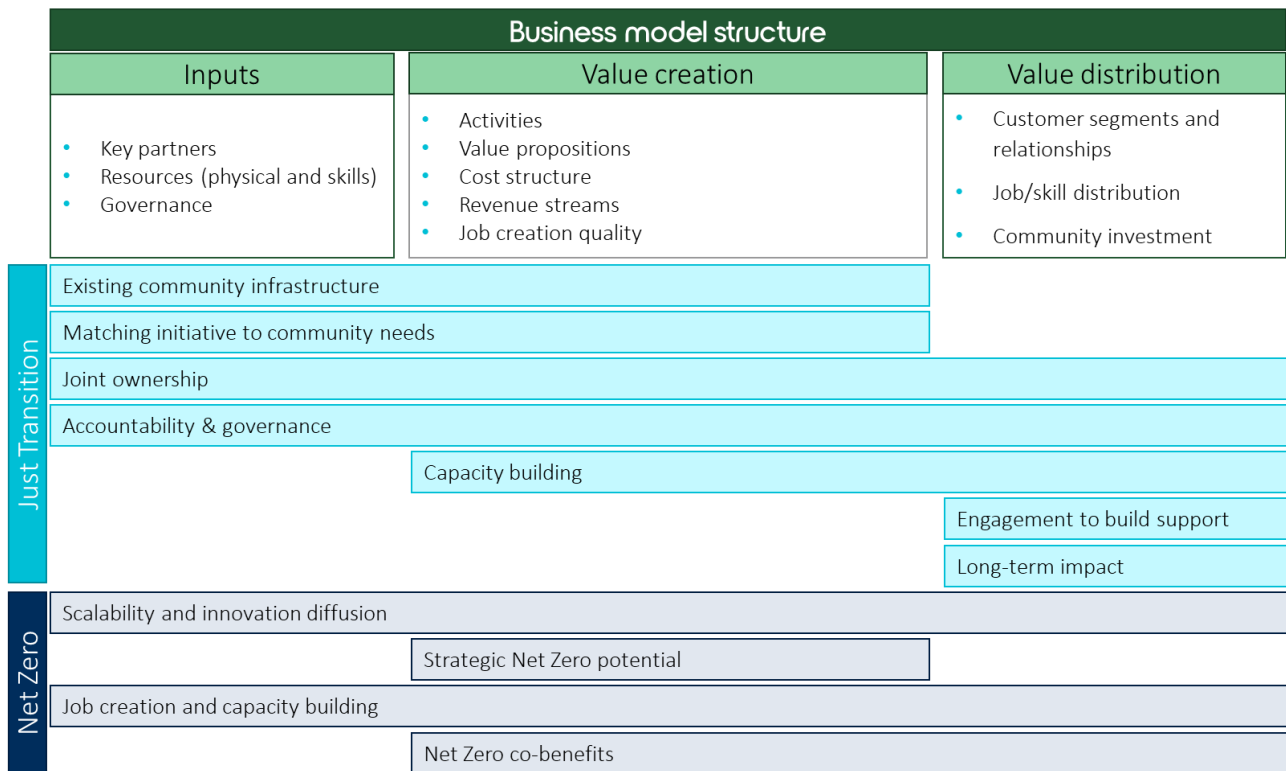


Source: Vivid Economics

4.4 Mapping framework components against business models

Conclusions on good practice and limitations from business models can be translated to concrete recommendations by mapping the assessment framework components to the business model components (Figure 7). Each of the evaluation framework components can be linked to parts of the business model structure, highlighting the overlaps between key elements for a Just Net Zero Transition and functionalities of a business model. This mapping in turn facilitates translating results from the evaluation of business models into tangible conclusions linked to specific components of business models. Section 5 leverages this mapping to structure and the findings from business model evaluation in Section 4.5 to recommended next steps.

Figure 7 The framework for assessing business models can be mapped onto the structure of a business model



Source: Vivid Economics

4.5 Current landscape of Net Zero alignment with a Just Transition

Using this evaluation framework, the 33 selected business models were mapped according to their alignment with Net Zero and the Just Transition, as shown in Figure 8. Although the selection of business models was non-random and therefore generalised sector-based conclusions can not be drawn, this mapping does allow for some key lessons to be learnt with regards to where and why business models are performing well and less well in terms of the Net Zero and/or Just Transition frameworks. These findings are then used to inform the enhancement measures which follow.

Figure 8 Business models mapped according to their alignment with the Net Zero agenda and their Just Transition impact



Source: Vivid Economics

Seven of the 33 business models assessed performed well on both Net Zero and Just Transition alignment – top right quadrant Figure 8. Models in top right quadrant represent those which demonstrate good practice on how a Net Zero aligned business model can support a Just Transition. Three of the business models within this quadrant are associated with green housing initiatives. These business models demonstrate an alignment with the Net Zero agenda with scalable and innovative solutions, as well as elements targeting wider behaviour change. Additionally, these models also have strong components related to community engagement and shared ownership, as well as local job creation and re-skilling.

A high number of the Net Zero business models selected for evaluation are not delivering for a Just Transition, highlighting the challenge that needs to be overcome and opportunities for improvement. Of the assessed business models, 20 of the 33 business models assessed are well aligned with the Net Zero agenda but could improve their alignment with a Just Transition – top left quadrant Figure 8. This quadrant captures business models which performed well against the criteria assessing their aligning and potential to contribute to Net Zero objectives. Most business models in this quadrant were in the transport and energy sectors since these sectors are high emitting and therefore important for the Net Zero agenda. In addition, these business models represented the potential for innovation diffusion and scalable solutions. There were also some housing and food business models presenting good Net Zero alignment by targeting wider behavioural changes such as energy efficiency and reducing food waste.

Despite their alignment with a Net Zero agenda, business models in the top left quadrant lacked Just Transition considerations in four core areas. These can be summarised as follows:

- **Community members with joint financial ownership:** Few of the business models assessed have community members with shared or total financial ownership. This means that the financial success of the business is not shared with the local community, resulting in community members who are less invested in engaging with and supporting the business, potentially limiting the likelihood of long-term sustainability of the venture.
- **Accountability to local community and governance structure:** Only a limited number of the business models assessed have:

- ◇ defined and measurable project objectives for community empowerment;
- ◇ standards that are enforceable by local community and/or consumers who are affected;
- ◇ a structure where community members hold power to make/influence decisions relating to the business model.

A lack of accountability to the local community who are affected by a business risks having a business model that does not serve those it is intended to benefit. This could both reduce long term stability and sustainability of the business and thus restrict opportunities for upscaling.

- **Community engagement to build support:** Only a small minority of business models were found to have engaged with the local community at the project outset. Lack of early engagement with communities could result in an initiative that does not match the needs, priorities and conditions of the local community, and thus fail to obtain support to sustain the initiative.
- **Long term impact:** Although around half of business models assessed have some form of ongoing engagement with their local communities, very few have a long-term engagement plan. Long-term engagement matters for a Just Transition as it is deemed to be more effective in achieving continued impact and will likely reach more people and generate more longer-term resources.

The final quadrant of business models (bottom right) highlights several business models that are delivering for communities have opportunities to better support Net Zero and deliver a more positive impact. These business models were chosen as representative of small-scale community focused initiatives which are aligned with a Net Zero transition, but which may have a small scale impact given limited scope as they have limited scalability and do not have elements which target behavioural change beyond the services offered. There are therefore two core areas in which Net Zero elements could be better addressed:

- **Capacity building for Net Zero:** Less than half of business models reviewed included an element capacity building that was focussed on Net Zero, such as training or education relating to green jobs. The Net Zero benefits of a business are therefore limited in impact and longer term sustainability is less certain where a business is not developing knowledge and engagement around the need to achieve Net Zero and skills needed to deliver Net Zero business models.
- **Mitigation co-benefits:** Although approximately half of business models reviewed directly invest in secondary Net Zero actions, only a third go further by indirectly supporting Net Zero actions. This limits the wider longer-term benefits of the Net Zero business model, so does not fully maximise the opportunity.

The following section provides further detail on the good practices and enhancement measures identified on how Net Zero business models can align with Just Transition. These conclusions are drawn by identifying how business models in the top left and bottom right quadrant can better support both a Net Zero and a Just Transition, as well as the lessons from business models identified in the top right quadrant.

5 Enhancement measures to align Net Zero business models with a Just Transition

5.1 Introduction

This section shows how enhancements to business model frameworks can support a more Just Transition to Net Zero. The findings of the evaluations, a workshop with sector experts and broad stakeholder consultation have informed the development of a list of 18 enhancement measures which businesses, learning providers, local authorities and community groups focussed on delivering Net Zero could action to support marginalised communities in a Just Transition.

These enhancement measures are focussed on supporting business models to move into the top right quadrant of Figure 8, where they are performing well on both Net Zero and Just Transition alignment. Many of the proposed measures target businesses themselves and provide ways in which they can implement a shift towards more focus on the Just Transition framework in their drive towards Net Zero. A number of the enhancement measures also focus on the enabling environment to allow for this to happen effectively. For example, some of the measures will need to be led by local authorities where authorities can pursue a ‘green growth’ or ‘green recovery’ agenda by creating and enabling the right incentives for Net Zero business models which also build community resilience.

The review of business models that perform well against Just Transition criteria have highlighted commonalities in how Net Zero initiatives can support a Just Transition. The actionable enhancement measures have been identified to address a cross-section of framework needs while also being related to at least one, and in many cases all, aspects of the business model framework. As illustrated in Figure 9, three main themes for enhancing the alignment of Net Zero models with a Just Transition have been identified.

These enhancement measures each have a strong business case for action in their positive outcomes for businesses, learning providers, local authorities and communities. The different benefits and case for change is explored further below.

Figure 9 Three themes for enhancing Net Zero business models with a Just Transition



Source: Vivid Economics

5.2 Employment and skills

5.2.1 Enhancement measures

In the theme focussing on employment and skills, we identified three core objectives and seven associated enhancement measures which are actionable for businesses, learning providers and local authorities. A recent report published by the London School of Economics found that around 10% of workers have skills for which demand could grow in the green economy and a further 10% of workers are likely to need reskilling.³⁸ These enhancement measures relate largely to capacity building elements of business models (value creation and value distribution) but are also important for enhancing engagement with key partners (inputs). These proposed measures are detailed in the table below.

Table 1 Enhancement measures for employment and skills.

Objective	Enhancement measure
1. Align vocational training programmes on offer with business needs	i. Businesses to engage with local colleges and universities to ensure the skills being taught align with the skills that will be demanded in labour market. Businesses to consider sponsoring programmes or scholarships for relevant programmes.
	ii. Businesses to engage with local schools to encourage interest in the skills that will be demanded for future job opportunities.
	iii. Public funding / support for learning providers to develop new training programmes that align with Net Zero business needs. Funding could take the form of match funding, matching what businesses invest.
2. Highlight employers' responsibility for retraining internally	iv. Larger businesses to provide internal training programmes focussed on re-skilling existing employees. Training to be offered to those in all stages of career.
	v. For smaller companies, local authorities could support internal training by connecting people/businesses to facilitate information sharing. Local authorities could also provide businesses with information to facilitate increased awareness of funding instruments available to small businesses.
3. Define the market opportunity for both labour market and businesses	vi. Clearly define what is a 'green' job vs. a low-carbon job to ensure appropriate support is allocated to high quality green jobs.
	vii. Provide analysis to demonstrate the future market size for 'green' goods and services to incentivise businesses to invest in Net Zero today and incentivise the labour market to invest in learning the skills that will be needed in near future for more green jobs.

Source: Vivid Economics

5.2.2 Business case for action

Commercial businesses could achieve significant financial returns from investing in enhancing their business models in these proposed ways. This is supported by evidence in examples across the UK and discussion with stakeholders, including the businesses themselves. Larger businesses are well placed to lead on many of these actions since they have the scale of labour demand to have an influence on the market, the foresight into skills that will be needed in the future, and finally the regional perspective to see where certain skills will be needed.

Such commercial gains to businesses from enhancing the appropriate skills in the labour force could include:

³⁸ Robins, Gouldson, Irwin, Sudmant (2021): Investing in a just transition in the UK: how investors can integrate social impact and place-based financing into climate strategies.

- **Cost savings:**

- ◇ A greater supply of labour with the appropriate skills would reduce the cost of hiring in future. Without such enhancements, those with relevant skills in the UK labour market could be scarce and so demand high salaries, may need re-locating from other parts of the UK due to geographic mis-matching of skills, or would need to be hired from overseas, all of which would be highly costly to a business. For example, despite increasing unemployment in 2020, the Open University's Business Barometer estimated that more than half of businesses were suffering skills shortages costing businesses a record £6.6 billion on filling skills gaps.³⁹ UK Parliament's Science and Technology Committee says that lack of digital skills will cost the UK economy £63 billion a year in lost GDP.⁴⁰ For example Repowering London has a youth training programme, targeting those aged 16-19, which is AQA accredited so that interns receive an AQA certificate upon completion of the programme.⁴¹
- ◇ Re-skilling internally and related employment enhancements to the business models could equip businesses to transition from being carbon-intensive to 'green' without the double expense of redundancies and hiring new employees. These enhancements would allow businesses to make the most of existing skills and knowledge by re-training employees with required skillsets. Therefore resulting in a potentially significant cost saving to businesses. A recent study estimated that hiring people with the required skillsets can cost six times more than building up the skills internally.⁴² This is particularly relevant where the skills are in innovative and emerging sectors. A recent paper by the London School of Economics found that construction, transport and manufacturing are the sectors that could require greatest reskilling.⁴³

- **Sustainable long-term commercial growth:**

- ◇ Businesses would gain from having access to a labour force with the required skills to support long term sustainability of business growth.
- ◇ With more sustainable growth in UK businesses, UK business could be supported to be market leaders for Net Zero innovations rather than market followers.

Learning providers, such as colleges and universities, would gain commercially and reputationally. A better alignment between the courses and programmes they offer with the jobs coming online in the labour market would serve to boost the demand for that college or university, improving its ability to charge fees and/or avail of government funding as appropriate. This could be achieved through two related routes:

- Where prospective students are aware of future job opportunities, better alignment would also ensure courses offer match those already being sought by students.
- Better alignment would help to increase the rates of students successfully finding employment after graduating.

Public sectors including local authorities benefit from engaging in these actions since the outcomes include increasing tax returns over the long run. A better alignment between the skills people have and the skills businesses will require in the near future, could serve to reduce unemployment levels in the future and boosting tax revenues accordingly. Coupled with this, through enhancements to their business models,

³⁹ The Open University (2020): The Business Barometer 2020.

⁴⁰ <https://gsfa.tve.org/portfolio/rolls-royce-inspiring-a-better-future-through-stem-education/> (accessed 18 May 2021).

⁴¹ <https://www.repowering.org.uk/education/> (accessed 18 May 2021).

⁴² Bershin (2019): Rethinking the build vs buy approach to talent.

⁴³ Robins, Gouldson, Irwin, Sudmant (2021): Investing in a just transition in the UK: how investors can integrate social impact and place-based financing into climate strategies.

businesses in the UK can be Net Zero market leaders and achieve sustainable longer term growth. Both of these outcomes could lead to higher business rates and greater tax revenues for the public sector.

Finally, individuals both in the labour market and entering the labour market would have the opportunity to increase their future employability, supporting job stability and earning potential.

Box 3 Best practice example for aligning vocational training programmes with business needs

Rolls-Royce is an international industrial technology company, headquartered in the UK, employing approximately 50,000 people globally, half of whom are in the UK. The company operations are comprised of three business units: civil aerospace, defence, and power systems. Rolls-Royce has committed to achieving Net Zero and has identified a list of sustainability targets to achieve this.⁴⁴ Rolls-Royce invests £1.3 billion annually in research and development, of which 66% goes into improving the environmental performance of their products.⁴⁵

Rolls-Royce's sustainability goals include a long-term commitment to reach 25 million young people through their STEM Education Outreach Programme by 2030.⁴⁶ Rolls-Royce's business model is structured to achieve this in a number of ways.

Inputs: Rolls-Royce partners with a large number of organisations that helps them to engage with young people in schools and colleges, such as Teach First. Partners in third sector education include 19 University Technology Centres (who work in collaboration with UK universities) and Advanced Manufacturing Research Centres.

Value creation: Jobs at Rolls-Royce are targeted at school leavers (through apprenticeships), graduates (including internships), as well as experienced professionals. Training is offered to employees, particularly through apprenticeship schemes.

Rolls-Royce employs people across the UK, so while it does not specifically target marginalised communities, offices and operations are located in many towns and cities where there are high levels of deprivation, thus providing key education, training and quality job opportunities across the country.

Value Distribution: Since 2018 Rolls-Royce has invested £7 million in STEM education and community activities and all graduates and apprentices employed by Rolls-Royce take part in year-long community or education projects. For example, engagement with school-age children includes sponsorship of Brownie and Cub Scouts badges, an Annual Science Prize, and Work Experience opportunities. Rolls-Royce also produces STEM and sustainability education resources that can be found on their website.

Benefits of adopting this business model

Rolls-Royce has cited the opportunity to “create growth and drive innovation”⁴⁷ as a key reason for their investment in the STEM Outreach Programme targeting young people. Rolls-Royce have said that:

“Through reaching young people we aim to reduce the skills gap, increase our pipeline of tomorrow's pioneers and increase the prosperity of economies around the world. In turn this will help to deliver a better more sustainable future both for society and Rolls-Royce.”⁴⁸

They have also noted that partnerships with third sector learning providers, such as the Advanced Manufacturing Research Centres, allows Rolls-Royce to stay at the forefront of production techniques.

In this way, investment in the STEM Outreach Programme targeting young people and work with third level education providers, is anticipated to enable Rolls-Royce to continue to innovate, hire future employees with the appropriate skills, ensure a growing market for future consumers with growing economic prosperity around the world.

⁴⁴ <https://www.gov.uk/government/news/third-of-uks-biggest-companies-commit-to-net-zero> (accessed 18 May 2021).

⁴⁵ https://www.rolls-roycemotorcars.com/en_GB/home.html (accessed 18 May 2021).

⁴⁶ <https://careers.rolls-royce.com/united-kingdom/what-we-offer/a-rewarding-purpose/our-approach-to-sustainability> (accessed 18 May 2021).

⁴⁷ <https://gsfa.tve.org/portfolio/rolls-royce-inspiring-a-better-future-through-stem-education/> (accessed 18 May 2021).

⁴⁸ <https://gsfa.tve.org/portfolio/rolls-royce-inspiring-a-better-future-through-stem-education/> (accessed 18 May 2021).

Box 4 Best practice example of the employer providing retraining internally

The Co-op is one of the world's largest consumer co-operatives, owned by 4.5 million individual members, and is the UK's fifth biggest food retailer. It is also the UK's number 1 funeral services provider, a major general insurer, and a growing legal services business.

The Co-op puts "the environment first" and is seeking to improve the sustainability of products through improvements to the model for "sourcing our ingredients, reducing waste and being more energy efficient".⁴⁹ The Co-op's business model also aims to "build stronger and more resilient communities", re-investing profits and fundraising among members to fund local grassroots community groups, through a Community Partnership Fund which targets marginalised communities, and its charitable organisation, the Co-op Foundation.⁵⁰

Value creation: The Co-op has a paid apprenticeship scheme which enrolls approximately 1,000 individuals per year in locations across the UK and targets people "leaving school, returning to work or looking for a change of direction" as well as "colleagues who already work in the business".⁵¹ The Co-op places emphasis on how its apprenticeships, while also being for school leavers, targets those who are already in the labour market or even in the company and may be looking to re-train. The business model for apprenticeships has been designed to reflect this:

- Apprenticeships are offered at various levels throughout the business rather than all being at entry level to reflect the fact that some apprentices will have previous experience.
- Apprenticeships are offered under a permanent contract to give more job security to employees.
- Lastly, apprenticeships are paid "the going rate for the job" and apprentices receive the same benefits as other employees, thus supporting those with more responsibilities / dependents as is often the case with more experience hires.⁵²

Benefits of adopting this business model

The Co-op has written about why business should be involved in and offering training to students, staff and others, with the main reasons including developing the right skills that the business needs now and in the future through "teaching the skills we need as a business" and "creating a pipeline of co-op minded talent that will operate at every level of the business".⁵³

The Co-op Group Deputy CEO Pippa Wicks wrote that the apprenticeship scheme also gives The Co-op a competitive advantage: "if you want to create a competitive advantage, if you want to offer your customers the best colleagues, and if you want those colleagues to be the greatest champions of your brand" then a business needs to offer and support training programmes.⁵⁴

5.3 Engagement and inclusion

5.3.1 Enhancement measures

In the theme focussing on engagement and inclusion, we identified two core objectives and five associated enhancement measures which are actionable for businesses, communities and local authorities. These enhancement measures relate to all aspects of business models, including for example engaging with key partners (inputs), accountability and value propositions (value creation), and improved customer relationships

⁴⁹ <https://www.coop.co.uk/environment> (accessed 18 May 2021).

⁵⁰ <https://www.coop.co.uk/communities> (accessed 18 May 2021).

⁵¹ <https://jobs.coop.co.uk/apprentice-hub-landing> (accessed 18 May 2021).

⁵² <https://blog.coop.co.uk/2018/03/04/apprenticeships-thecoopway/> (accessed 18 May 2021).

⁵³ <https://blog.coop.co.uk/2018/03/14/why-big-business-needs-to-be-in-the-classroom/> (accessed 18 May 2021).

⁵⁴ <https://blog.coop.co.uk/2018/03/14/why-big-business-needs-to-be-in-the-classroom/> (accessed 18 May 2021).

(value distribution). Both larger and smaller business could benefit from actioning these proposed enhancement measures. The proposed measures are detailed in the table below.

Table 2 Enhancement measures for engagement and inclusion

Objective	Enhancement measure
4. Businesses to have a clear understanding of what the Just Transition to Net Zero is and what is expected from them	viii. Provide analysis evidencing the benefits of Just Transition alignment within Net Zero business models and the critical role businesses play in this. Clearly communicate to businesses that engagement with communities is in their self-interest to increase their Just Transition activities, seek to quantify this benefit for businesses.
	ix. Businesses to target engagement with people who are not usually represented in target groups, such as marginalised communities. Could be achieved through long term partnerships with independent third parties, such as local authorities or community organisations who are closer to marginalised groups and may be more trusted locally.
5. Local authorities to be more proactive in their engagement to raise awareness and encourage uptake of Net Zero opportunities	x. Targeting underrepresented individuals in marginalised communities, raise awareness of the Net Zero opportunities for training and/or jobs and the associated long-term prospects of Net Zero employment opportunities for individuals (linked to Action vii).
	xi. Clear guidance to be provided on the actions that businesses can take to support the drive to Net Zero while incorporating Just Transition principals. Information could include the latest regulations and signposting to available funding support.
6. Joined-up approach to Net Zero strategy development	xii. Local authorities to ensure there is a joined-up approach across different internal departments in development of their Net Zero strategy, such as to ensure consistency with local regeneration priorities.
	xiii. Businesses to ensure there is a joined-up approach across different departments in strategy development when setting plans for delivering Net Zero targets. For example, a business’s Net Zero targets to be planned in partnership with training and human resources plans.

Source: Vivid Economics

5.3.2 Business case for action

Commercial businesses and other organisations driving the Net Zero business models can benefit from investing in these enhancement measures through cost savings, widening their customer base, improving staff retention and building business resilience. These outcomes from the enhancements could all serve to increase the impact that a business model can have in terms of the Just Transition to Net Zero. These are explained further below:

- **Cost and time savings:** Where businesses clearly understand their role in the Just Transition and collaborate with others in the local communities in which they operate, they could be able to take more efficient and cost-effective measures to increase their local engagement to meet the Net Zero and social value targets.
 - ◊ This could better enable them to meet conditions required to qualify for public funding and/or permissions they are seeking for example. Clarity in responsibilities will allow this to happen earlier and with less misallocation of resources, thus be less costly to businesses. For example, when businesses qualify for ISO accreditation, they are able to pitch for other funding opportunities, including from international sources.

- **Wider customer base:** By engaging with their communities, businesses could directly engage with current and prospective customers who are harder to reach with traditional methods of marketing such as more marginalised or minority groups. In this way, they could secure the interest and support from a wider more diverse set of customers, helping to secure a larger more sustainable market for their Net Zero product/service. This is particularly valuable where the business might be introducing something innovative or where the benefits are less well understood by existing consumers. For example, Octopus Energy's Powerloop model invested in educating consumers about vehicle-to-grid (V2G) charging to encourage uptake of the technology, expanding its customer base while improving efficiency of the national grid.⁵⁵
- **Customer loyalty:** As above, by engaging with their communities, businesses could directly engage with harder to reach current and prospective customers. This could enable them to secure the longer-term loyalty of their consumers as the business adapts for Net Zero targets. In a recent report, authors noted that by building a sense of community ownership and raising awareness locally, businesses were more likely to be able to rely on the support of community volunteers or customers.⁵⁶ Customer loyalty has proved extremely valuable for smaller businesses during the COVID-19 pandemic, where local communities have sought to give their custom to local businesses to ensure their survival, with some businesses gaining customer support through crowdfunding.
- **Staff retention:** Today more individuals are seeking employers who are investing in sustainable activities.⁵⁷ In consultations, stakeholders found that by teaching and engaging employees and local communities about the business's Net Zero activities, staff satisfaction and staff retention improved.

Community organisations and local authorities could be more proactive in engaging with individuals in their local communities, local learning providers and businesses to raise awareness and encourage uptake of Net Zero opportunities among both businesses and individuals. Greater engagement led by community organisations and local authorities could ensure a fully rounded approach to the Net Zero Just Transition that is not all business-led. This approach could offer cost effective means for local authorities of engaging with harder to reach marginalised or minority groups in communities, bringing people and businesses together, and also improve the effectiveness of Net Zero activities by private sector businesses.

This dual approach to engagement targeting marginalised groups, led by both businesses and community leaders, could help to breakdown the information barrier currently preventing individuals seeking relevant skills and businesses investing in Net Zero opportunities.

⁵⁵ <https://www.octopus-ev.com/powerloop> (accessed 18 May 2021).

⁵⁶ Power to Change (2020): The impact of community businesses on people.

⁵⁷ PWC (2017): The future of work, A journey to 2022.

Box 5 Best practice example for (a) community organisations engaging proactively with businesses and (b) a business targeting engagement with people who are not usually represented

Energy Projects Plus (EPP) is a not-for-profit organisation and a registered environmental charity, formed in 1995 with a business model focussed on educating the public about energy efficiency and helping reduce fuel poverty by promoting free schemes that increase energy efficiency, with a particular focus on marginalised communities.⁵⁸

Inputs: In 2020, EPP were engaged by the British Gas Energy Trust to deliver The Warm Homes Liverpool City Region Programme. This engagement is consistent with EPP’s business model of engaging “closely with clients and partners to access funding and develop solutions to environmental issues” for people in the communities in which they operate. EPP’s model is to act as an independent and trusted third party who are close to their local communities, providing information and advice to consumers and energy providers regarding efficiency gains.

Value Distribution: Through promoting this programme with British Gas Energy Trust, EPP provided support to vulnerable residents to deal with tariff issues and fuel and water debt and offer general advice on energy efficiency.⁵⁹ Overall, the EPP business model targets members of the community who are affected by fuel poverty.

Benefits of adopting this business model

By partnering with the British Gas Energy Trust, EPP obtained funding to deliver on its core objectives of breaking down the information barrier by educating people in the local community and alleviating fuel poverty in the Liverpool City Region. This could lead to behavioural change, where individuals demand a more cost effective energy service and maximise the efficiency of their fuel usage, reducing waste and potentially creating a more competitive and efficient market.

By partnering with EPP, British Gas Energy Trust, and by associated British Gas, is exhibiting an understanding of what the Just Transition to Net Zero is and is investing in supporting it by targeting marginalised individuals and communities. This helps to build trust in the brand name and strengthen consumer loyalty.

By working together on this programme, fewer people were falling into debt with fuel and water bills. This benefits both the communities affected by reducing the burden of debt as well as the commercial energy provider as more people are able to pay for the fuel they are using.

5.4 Community investment

5.4.1 Enhancement measures

In the theme focussing on community investment, we identified four core objectives and seven associated enhancement measures which are actionable for businesses and local authorities. These enhancement measures relate largely to the value distribution aspect of the business model through shared community investment, however, the proposed measures also include inputs and value creation through enhancements to community infrastructure and diffusion of innovation through their activities. Measures relating to enhancement community infrastructure are more actionable for larger businesses with access to capital to invest, whereas the measures related to co-investment are more appropriate for smaller businesses. The proposed measures are detailed in the table below.

⁵⁸ <https://www.eplusplus.org.uk/about/who-we-are/> (accessed 18 May 2021).

⁵⁹ <https://britishgasenergytrust.org.uk/fuel-and-money-advice/energy-project-plus/> (accessed 18 May 2021).

Table 3 Enhancement measures for community investment

Objective	Enhancement measure
7. Businesses to improve community infrastructure and/or social capital to increase demand for their goods & services	xiv. Enhance community social capital/ infrastructure to enable consumers to make effective use of the Net Zero product offering.
	xv. Highlight the co-benefits to businesses of locating business/services locally, such as investing in the high street by situating there.
8. Businesses to provide co-investment opportunities to consumers of the product/service	xvi. Small businesses to adopt the model of offering co-investment to the community that will be impacted by the business, likely to include potential consumers. This approach can be difficult to scale up, so is most appropriate for smaller businesses
9. Local authorities to enable co-investment opportunities for private investors	xvii. Councils/local authorities to adopt the community municipal investment model enabling co-investment from private investors. Investors may be members of the local community, wider public, or financial institutions.
	xviii. Design a long-term pipeline of Net Zero projects where local authorities are seeking financial investment to enable investors to develop a long-term strategy for Net Zero investment.
	xix. Make project proposals led by local authorities more attractive to financial institutions and private investors, such as through some enabling actions to reduce project risk or simplifying the administrative burdens for example.
10. Longer term approach to funding and planning to create more certainty, visibility, and support business models to have a long-term impact	xx. Increased number of longer-term (5+ years) funding mechanisms to be made available for businesses and/or community organisations to encourage longer term planning and a greater focus on project delivery.

Source: Vivid Economics

5.4.2 Business case for action

Organisations driving the Net Zero business models, including commercial businesses could use the proposed enhancement measures to generate financial returns over the long run. These measures and their impacts could support a business model in achieving a long-term positive impact. Outcomes include:

- **Larger customer base:** By providing the enabling infrastructure, businesses can make their product/service more accessible to a wider consumer group, thus create more demand for their offer. This approach could also work as marketing to raise awareness of product benefits, increasing demand further. Investing in community social capital can further improve demand by making an area more attractive for consumers, thus increasing local demand. This measure is more feasible for larger businesses with more access to capital funds for investment.
- **Marketing tool:** A shared ownership model of community municipal investment can serve as a powerful marketing tool for businesses, by building community interest and support for the initiative. However, as this may exclude low-income marginalised people, especially where investment gives the investor more voice, this works better on a smaller scale with low-cost ticket sizes.

- **Financial return on investment:** These measures could enable greater levels of private sector investment with longer term commitments from financial institutions. This would enable innovative Net Zero business models to be developed faster with less investment required from the public sector.
- **Fewer funding applications:** Where a business model relies on third party funding, much time is invested in funding applications. Several stakeholders cited funding applications as being a heavy burden on resources as the mechanisms were often for short term projects and provided little visibility in the pipeline of upcoming opportunities. Longer term funding mechanisms, from both public and private sector, would allow both the funders and the recipients a more efficient allocation of resources, better forward planning and increased productivity towards delivering more impactful long term Net Zero benefits for communities.

Local authorities could benefit from these measures by securing more private sector funding and giving communities a stronger voice. Proposed enhancement measures are designed to increase the ease with which the private sector can invest in Net Zero projects and community projects over the long run, while also reducing the administrative as well as financial burden on the public sector. Shared financial ownership gives communities the opportunity to have a voice in the business models that impact them directly.

Box 6 Best practice example for community co-investment opportunities

West Berkshire Council has adopted a business model that offers co-investment opportunities to fund its environmental schemes with a view to making West Berkshire carbon neutral by 2030. The council issued a Community Municipal Investment scheme in 2020 inviting residents, financial institutions and the wider public to invest in green energy projects.⁶⁰

Inputs: West Berkshire Council partnered with Abundance Investment, a UK-based public limited financial services company, to manage and deliver the scheme. The Community Municipal Investment attracted investment from over 600 investors, of which over a fifth were local people.⁶¹

Value creation: The investment raised £1m, based on a committed investment period of 5 years. The investment is focused on “tackling the climate emergency by building new solar”.⁶²

Value distribution: As investment is open to local residents, this gives the local community shared financial ownership in the scheme, ensuring they have a stronger local voice and are invested in its success. Investments options included smaller values, such as £5, meaning it is accessible to more people in the community. The money raised is funding new solar power rooftops at council-owned sites which include a school, leisure and care facilities, and council offices.

Benefits of adopting this business model

The primary objective and benefit to the Council is that it gives them access to another “cheaper” source of funding to promote their green agenda.⁶³ With the funding going towards solar power rooftop at council-owned sites, the council sites will also save money on energy bills while also delivering reductions in carbon emissions.

As this form of borrowing is reportedly 0.5% lower than traditional borrowing sources for the council, it is also “saving money for our council taxpayers across the district”.⁶⁴

⁶⁰ <https://www.abundanceinvestment.com/west-berkshire> (accessed 18 May 2021).

⁶¹ <https://www.abundanceinvestment.com/west-berkshire> (accessed 18 May 2021).

⁶² <https://www.abundanceinvestment.com/our-impact/investments/west-berkshire-2025> (accessed 18 May 2021).

⁶³ <https://medium.abundanceinvestment.com/how-the-cmi-has-energised-our-green-agenda-d7570f9dadd4> (accessed 18 May 2021).

⁶⁴ <https://medium.abundanceinvestment.com/how-the-cmi-has-energised-our-green-agenda-d7570f9dadd4> (accessed 18 May 2021).

5.5 Summary of enhancement measures

This analysis has identified ten core objectives across 20 proposed measures for enhancing the alignment of Net Zero business models with a Just Transition which are actionable for businesses, communities and local authorities. These enhancement measures relate to all aspects of business models, including for example engaging with key partners (inputs), training activities and value propositions (value creation), and quality job creation and c-investment opportunities (value distribution). Both larger and smaller business could benefit from actioning these proposed enhancement measures. The proposed ten objectives are summarised in the figure below.

Figure 10 Ten objectives of proposed measures across the three main themes for enhancing the alignment of Net Zero business models with a Just Transition



Source: Vivid Economics

A mis-matching of skills and employment opportunities poses the biggest threat to a Just Transition to Net Zero, both to the future prosperity of businesses and to individuals in or entering the labour market. This mismatch threatens businesses' ability to meet Net Zero targets as they would lack the skills to develop and deliver innovative solutions. Without action, individuals in or entering the labour market could face increasing redundancies or unemployment if their education and skills are not matched to those needed in the labour market. Adapting the business models of learning providers, private businesses, and local authorities, can ensure a better alignment between the skills and training on offer, the training and qualifications being sought, and the skills and qualifications being demanded through job opportunities. An alignment of these can help to deliver both the Net Zero agenda and ensure a Just Transition while doing so.

Closer more inclusive engagement between businesses, local authorities and the communities in which they operate could help to ensure that the Net Zero agenda is incorporating the real needs of local communities and that businesses and individuals are well supported in this transition. By providing quantified evidence of the benefits to businesses of Just Transition alignment within Net Zero business models and ensuring businesses have the information to put this into action, more businesses may be encouraged to adapt their business models. This joined-up approach to engagement targeting marginalised groups, led by businesses, local authorities, and community leaders, could help to breakdown the information barrier currently preventing individuals seeking relevant skills and businesses investing in Net Zero opportunities.

Community investment with long-term planning presents an opportunity to raise capital to support the Net Zero transition while also giving a stronger voice to community members and delivering improvements to social capital. Enhancing business models to support longer-term community investment could facilitate private sector investment in the Net Zero agenda. On a larger scale, this could provide a new source of financing for a given portfolio of projects, offering investors financial return on sustainable activities. On a local scale, this could act as a powerful marketing tool and be a means to gain community interest and support in an activity.

Businesses could achieve significant financial returns and long-term sustainable commercial growth from investing in enhancing their business models in these proposed ways. For example, businesses could benefit from: cost savings; a more sustainable talent base to hire from with improved staff retention enabling growth into a more competitive and innovative business; a larger and more loyal customer base with cost-efficient marketing tools; new sources of funding with longer-term visibility and therefore longer-term planning.

Appendix 1 Detailed descriptions of Net Zero business models

Organisations associated with business models assessed

Overall 33 different business models were evaluated. In some cases, these were based on a generalised example model comprised of two to five smaller businesses. However, most models were summaries based on specific companies or organisations. These are listed below:

- Aberdeen Heat and Power Co
- Barratt Developments plc
- Bike sharing schemes
- Birmingham District Energy Scheme
- Car-sharing clubs (generalised)
- Co-Op Food
- Crunchy Carrot
- CurveBlock
- District heating in Edinburgh
- E-bikes (generalised)
- Eco-friendly taxis (generalised)
- Edinburgh Community Garden
- Energy Projects Plus
- Garden Village
- Leon
- Lift-sharing platforms (generalised)
- Low carbon co-op housing (generalised)
- NICE
- Octopus Energy
- Octopus EV
- OpenLV
- Pay what you can café (generalised)
- Recycled plastic products
- Repair café (generalised)
- Repowering London
- Rolls-Royce
- Scania
- Sheffield Energy Recovery Facility
- Southampton district and geothermal heat
- Sustrans
- Trees for Cities
- Urban Orchards
- Vegware

Energy

Table 4 Energy: Inputs

Input area	Business model findings
Key partners	Partners include local councils and local authorities. In the case of business models that involve solar panel installation, partnership with the building owner/manager is necessary. For business models related to district heat provision, there may be a partnership with an energy provider to operate the scheme. One business model partners with fuel poverty charities and has a representative from a fuel poverty charity on its board. For one business model that provides energy consumption data, partnerships with local community groups who will use the data are key. Finally, partnerships may be with providers of certain services (e.g. design services).
Resources (physical and skills)	<p>Physical resources may include infrastructure for creating energy (e.g. solar panels or a combined heat and power (CHP) plant), infrastructure for delivering energy (e.g. a network of insulated pipes to deliver steam in a district heating system), land and planning permissions for buildings that will house electricity generation plants.</p> <p>Skills needed may include knowledge of energy system installation, operation and maintenance (e.g. how to install solar panels or how to install energy use monitoring devices), knowledge of government financial incentives for renewable energy projects, construction skills and customer service skills.</p> <p>Other resources needed may include energy provision licenses and permission to install infrastructure (e.g. on the roof of a building).</p>
Governance	Businesses may be cooperatively owned, with a board that includes community members. They may be not-for-profit organisations with representatives from the city council and fuel poverty charities sitting on their boards. A certain proportion of the business may be owned by the business’s staff (as shareholders). On the other hand, ownership of the business may be by members (i.e. not shareholders), with one model being a community-owned benefit society with membership open to local residents. Finally, business models may be driven by local government or they may be more traditional limited companies.

Source: Vivid Economics

Table 5 Energy: Value Creation

Value creation area	Business model findings
Activities	Business models in the energy sector undertake a diverse range of activities. These include (but are not limited to) the following: creation and provision of energy through a district heat energy system (which may also involve burning waste or the operation of a CHP plant); installation of solar panels on community buildings or housing estates; collection and provision of community-level energy consumption data; provision of renewable energy (which may include the provision of energy tariffs that are cheaper at night, to create favourable EV charging conditions)
Value propositions	Business models usually create value by reducing carbon emissions. For example, a district heat provision business model may involve a CHP that captures waste heat from electricity generation, thus maximising the plant’s

	energy efficiency. Often, these business models help decrease energy bills, which can help address issues of fuel poverty, especially for customers who live in council-owned flats. Additionally, they may raise awareness of energy efficiency issues and help shift communities away from the use of and dependence on fossil fuels for energy. One business model collects energy usage data, which can be used to inform wider energy efficiency strategies for a given community. Another business model encourages customers to generate their own renewable energy by paying them for this energy and exporting it to the national grid. In a third energy model, the provision of energy involves the burning of waste, and the waste that is burned does not end up in a landfill.
Cost structure	Cost structures are diverse. One business model that helps install solar panels raised capital through a community share offer; investors were mostly local people, and they derive an annual return of 3% on their investment. In certain district heat provision business models, a partnership with a large energy provider may result in this partner covering the capital costs of system development. Business models may also cover costs using private finance, bank loans, grants or government funding. Profits may be reinvested in the business for its expansion.
Revenue streams	For business models that provide energy, revenue is derived from selling energy (and/or heat and cooling) to consumers. In some business models, a portion of the energy produced by solar panels is sold to the local building owner at a discounted price, while the rest of the energy is sold back to the national grid. A district heat provision business model may involve a 25-year energy supply agreement with the local community. In another business model, provision of heat to public buildings generates sufficient revenue to keep costs low for hard-to-heat homes.
Job creation quality	One business model offers internship opportunities for local young people as well as work placements targeted at local people. (Participants are paid a living wage.) Full-time jobs required may include jobs for engineers, planners and technicians, as well as additional jobs in HR, finance, customer service, etc. The business model may provide a job for community engagement specialists to promote the aims of the project. Jobs on the board of the business may be filled by senior experts in the energy sector. In at least one business model, board members were volunteers.

Source: Vivid Economics

Table 6 Energy: Value Distribution

Value distribution area	Business model findings
Service delivery	In most business models, energy is delivered through distribution networks (e.g. the national grid or insulated pipes for district heating). For the business model that provides energy consumption data, this is delivered through apps.
Customer segments and relationships	In the case of district heating provision, customers include local residents and businesses. This may also include residents of council housing or sheltered accommodation. In some cases, the customer may be the local council. For electricity that is produced through these business models, much of it is sold to the national grid, with end users located throughout the country. Initiatives for energy efficiency education are usually targeted at local residents. Business models that involve solar panel installation have the building owner as the customer, who may benefit from cheaper electricity.

Job/skill distribution	Not many of the business models provided training to local community members, although one model did offer internship and work placement opportunities. In the case of local energy plants for district heat, construction and maintenance jobs can be local.
Education	Education may take through internship programs, energy advice sessions or community workshops. Usually, education is not the primary purpose of the business model, but it may be funded through the business model’s community investment fund. In one case, the business model provides funding for a research centre that can deliver further insights. In some cases, energy consumption data can be used to educate children (and people, more broadly) about energy use. Finally, the model may also leverage its employees’ expertise to provide advice to others about the development and operation of a district heat network. This process may involve working with policymakers, as well.
Community investment	Some business models divert a proportion of profits into a fund that provides investment for local community energy projects or supports additional community investment and engagement around energy related topics. Energy use data may help people take further action regarding energy efficiency or the business model may nurture small-scale renewable energy generation by buying energy from people with solar panels. Employees may raise money for local charities or volunteer some of their time in local community organisations. Alternatively, the business model may fund projects that bring green energy to fuel-poor communities outside of the UK.

Source: Vivid Economics

Transport

Table 7 Transport: Inputs

Input area	Business model findings
Key partners	Business models had a diverse range of partners, such as local councils and local authorities, businesses whose employees were encouraged to make use of the business model (e.g. a bike-share scheme), businesses providing maintenance for vehicles, specialist infrastructure providers (e.g. for biogas buses), local groups involved in implementing the business model’s projects (e.g. a local school that sets up a bicycle club), energy companies providing favourable EV charging electricity tariffs and universities conducting early stage research.
Resources (physical and skills)	Physical resources may include vehicles for transportation (e.g. e-cargo bikes, EVs), raw materials for manufacturing vehicles as well as manufacturing facilities and necessary infrastructure (e.g. bike docs or V2G chargers). Skills needed may include engineering skills, customer service skills, knowledge of the EV market, driving skills and app development skills (e.g. to create online platforms to connect users with bicycles/vehicles). Other resources needed may include infrastructure to support the activity (e.g. cycle lanes to support participation in a bike sharing scheme), sufficient population density to make the business model viable (e.g. populations of more than 50,000 for bike sharing schemes) or planning permission for the creation of new infrastructure (e.g. cycle lanes).
Governance	Some business models were start-ups while others were public limited companies or charities. Charities may be run by executive directors and trustees

(both from the private and public sectors). Sometimes, business models were large international companies with headquarters in the UK or outside of it. Sufficiently large companies may have sustainability committees and/or external environmental advisory committees. One business model involved local government organising the initiative.

Source: Vivid Economics

Table 8 Transport: Value Creation

Value creation area	Business model findings
Activities	Business models provide a low emissions delivery service, low emission vehicles for shared use, leasing of EVs (with a V2G charger included), the manufacture and sale of vehicles (e.g. engines, aircraft, buses, trucks), taxi services with environmentally-friendly vehicles, a digital platform to connect users with rides, encouragement and support for active travel, shared bicycles and docking infrastructure and public policy expertise related to active travel.
Value propositions	These business models reduce carbon emissions through the provision and use of low- and zero-emissions vehicles. This results in less air pollution and improved air quality. Business models that improve the quality of public transportation also reduce air pollution as well as traffic. Business models related to cycling may help relieve pressure on overcrowded public transportation while improving the health of cyclists. Some business models may help encourage the uptake of EVs or increase demand for EVs by purchasing them. Business model customers may benefit from improved margins (e.g. biogas fuel is cheaper than conventional fuel, e-cargo bikes do not need to pay ULEZ charges when delivering to inner city areas). Business models that involve vehicle manufacturing also invest in R&D, some of which relates to improving products' environmental performance. The business itself may have goals to become carbon neutral in its operations, reduce waste generation, use renewable energy and/or promote cycle to work schemes for its employees. The business may ensure that its products can be recycled or it may offset its carbon emissions. Bike share business models may help users access job opportunities, especially if there is a lack of public transport, and they reduce the need to create new parking spaces. Car sharing business models minimise the per-passenger carbon intensity of car trips and reduce the number of car trips to the same destination while allowing platform users to earn money when they provide rides.
Cost structure	Business models that are charities rely on donations, fundraising and grants. Particularly innovative models may be initially funded by the government (e.g. through the Department for Transport's Innovation Challenge Fund). Other models make use of other forms of funding, such as government funding through the Office for Zero Emission Vehicles. Councils may invest in certain business models, such as bike sharing schemes. More traditional business models may raise funding through share offerings or by securing business loans.
Revenue streams	Depending on the business model, revenue streams may include the following: pay-as-you-go £/kg/km pricing for e-cargo deliveries, a monthly fee for leasing an EV or a fee to unlock a bike in a bike sharing scheme along with per-minute usage prices and fines if the bikes are taken outside of a certain area. Customers may purchase the vehicles that the business manufactures, customers may pay to be driven in an environmentally-friendly taxi or customers may pay to use a digital platform that connects users with rides. A business model may derive

	revenue from advertising or sponsorships, or, if the services are free, the business model may not involve any revenue at all.
Job creation quality	Business models in the transport sector often support jobs in vehicle maintenance (as part of the business model or through subcontracting local repair providers) and may also support jobs (directly or indirectly) in manufacturing. Additionally, they may support jobs for drivers (in at least one business model, clearly stating that these jobs are paid a living wage). Office jobs, such as branding, strategy, HR, finance and customer service are also likely to be a part of the business model. Business models that involve apps support jobs in app development, IT support and web design. Other business models related to vehicle design and manufacture require engineers, data analysts and researchers. At least one business model also requires jobs in urban design and planning as well as providing analyst jobs related to policy briefing creation. Some business models offer work experience placements to students, apprenticeships or internships, which may be wage earning. Larger international businesses may have tens of thousands of employees (both in the UK and abroad). Charities may rely (at least in part) on volunteers. In the case of ride sharing business models, anyone who has a vehicle and participates in the platform can earn a small amount of money, which is below a certain HMRC threshold, so that drivers are not required to have a taxi license.

Source: Vivid Economics

Table 9 Transport: Value Distribution

Value distribution area	Business model findings
Service delivery	For example, users may enter a lease for an EV with the business, customers may purchase the business’s vehicles or products, taxis will arrive when ordered or an app will show users where there are available bikes.
Customer segments and relationships	The customer base for these business models is diverse. In the case of e-cargo bikes, the model targets businesses that need someone to perform deliveries for them. In one business model that manufactures engines and vehicles, customers are usually large companies or the defence departments of national governments. In another, customers may include bus operators or government transportation providers that purchase vehicles for public transportation networks. In the case of EV leasing, anyone can be a customer, and the business model offers incentives for new joiners (e.g. enough free electricity to drive a certain number of miles). Anyone can be a customer for the ethical taxi business model, although both this business model and the EV leasing model may be more likely to attract relatively affluent segments of the population. In contrast, bike share models may have more customers who are less affluent; their customers likely do not own a bicycle and they prefer not to use public transportation. The business model may have specific outreach initiatives to help under-represented groups access their product (e.g. bike share schemes). A car sharing business model may be more restrictive in its customer base, such that only particular people within an organisation that has signed up to the scheme are able to participate. Finally, ride sharing business models may be particularly relevant for people who do not own a car, commute to work every day, but live far away from public transportation. They are also relevant for people who own a car but would like to share the costs of transportation with a rider and/or meet new people.
Job/skill distribution	If the business model is not ingrained in a particular community, the jobs may not necessarily be local. For UK-wide organisations, jobs are likely to be

	geographically dispersed based on the location of the company’s head offices. Training can be provided through apprenticeships, and if the business model involves volunteers, they may also receive formal or informal training. At least one bike sharing business model created employment opportunities with a local social enterprise that trains adult ex-offenders to provide bicycle maintenance. Another business model mentioned helping refugees and asylum-seekers into employment, also supporting its employees by facilitating access to training.
Education	Education can be general (e.g. weekly online workshops about how to choose an EV) or specific (e.g. two days of technical training for customers who purchase a biogas bus to ensure that they use it in an energy efficient manner). One business model has a heavy emphasis on engagement with teenagers and children around STEM. Business models may run workshops in schools (e.g. about STEM or to encourage children to ride bicycles) or produce sustainability related educational resources that can be found online. Engagement with the broader community may involve raising awareness of the benefits of cycling and cycling proficiency as well as increasing awareness of environmental and social issues in general.
Community investment	One business model invests in STEM and the community, such that all graduates and apprentices take part in year-long community or education projects. If the business is very large and has the resources to do so, it may sponsor Brownie and Cub Scouts badges. The business model may support charities that its employees choose (e.g. matching donations) or contribute to planting trees in parks (in general or to offset emissions). If the business model subcontracts vehicle maintenance services to community groups and local people, this would also represent a degree of investment in the community. Finally, the business model may involve waiving fees for NHS workers (during the COVID-19 pandemic).

Source: Vivid Economics

Housing

Table 10 Housing: Inputs

Input area	Business model findings
Key partners	For business models that are start-ups, it is essential to partner with funders/investors and incubators as well as other companies that lend credibility (e.g. a major bank that has run due diligence on the model or an established real estate company). For business models that involve housing development, partners may include organisations that produce sustainability measures against which the company is assessed (e.g. NextGeneration, CDP Climate Survey). Partners may also include the UK Green Building Council as well as other businesses in the sector with whom the business engages regarding sustainability topics. Furthermore, the business model will likely have to engage with local communities and local authorities when obtaining planning and development permissions. Co-operative living business models may engage with community organisations (e.g. an organisation that works to bring empty homes into occupancy), other co-operative societies (who may provide advice and expertise about co-operative home owning) or organisations that provide training to those running the co-operative.
Resources (physical and skills)	Physical resources may include construction materials and land for development, sustainable building projects in which to invest and houses in which to live in co-operatively.

	<p>Skills needed may include engineering skills, architecture and design skills, construction skills, sales skills, app development skills and knowledge about co-operative living.</p> <p>Other resources needed may include planning permissions for building developments.</p>
Governance	<p>The governance of business models in this sector varies. One business model involves a public limited company with a CEO and multiple directors. The business also has a Waste Reduction Project team, which is relevant in achieving Net Zero. The business model that is a start-up allows its community of customers (who have invested in sustainable housing developments) to use blockchain voting rights to vote and choose future projects. Co-operative living business models may involve a Mutual Home Ownership Society where the residents are leaseholders, such that the project is owned by its members/residents. These are likely governed by democratic principles, with monthly general meetings and elections. The committee of residents will collect rent and draft policies.</p>

Source: Vivid Economics

Table 11 Housing: Value Creation

Value creation area	Business model findings
Activities	<p>Business models may build homes, including both private and affordable housing. The homes may be arranged in a garden village with homes offered for sale, shared ownership and social and intermediate rent. One business model provides a digital platform through which ordinary people can invest in real estate, regardless of the quantity of money they have available. This money is then used to fund the development of sustainable buildings. In a co-operative living business model, the main activity is the joint financing of a home or homes and the co-operative habitation of them thereafter.</p>
Value propositions	<p>Business models address the need for sustainable and energy efficient housing. In the case of construction or development business models, certain sustainable design standards may be used, building components may be manufactured within the UK to reduce the distance they have to travel to the build site, construction waste may be diverted from landfill and/or modern methods of construction (e.g. use of low embodied carbon timber frames) may be used. The business model may account for biodiversity by creating biodiversity action plans for developments, it may establish trials for all-electric homes or it may source timber from sustainable sources. The business itself may set goals related to achieving net zero emissions by a certain date, perhaps through the SBTi framework. The houses it constructs may qualify as zero carbon or they may feed renewable energy back into the national grid. One business model that allows ordinary people to invest in real estate gives customers a passive source of income and contributes to the building of technologically advanced green homes (e.g. ones that use 5G to monitor the home’s energy use and diagnose maintenance issues). In co-operative living business models, value is added in the form of increased efficiencies and decreased costs of running a group of homes. The model may involve retrofitting of existing (empty) properties (e.g. by increasing insulation for decreased energy use, which can help address issues of fuel poverty) or building new sustainable homes (e.g. homes that make use of</p>

	<p>solar energy for hot water heating or homes insulated with strawbale, which captured carbon as it grew). Co-operative living business models generally have affordability of housing as one of their main goals; rent payments may be linked to net incomes rather than inflation. Value for residents may include a rent-free month, social events, participation in a community that shares values around reducing carbon consumption. The model may work with a co-operative energy supplier to reduce bills or champion green space, which helps improve wellbeing and reduce pollution. In a garden village, footpaths and cycleways may encourage active transport while trees can serve as carbon sinks. The garden village may blend both market-value and affordable homes, so that affordable homes are not segregated.</p>
Cost structure	<p>For business models that are start-ups, financing likely comes from business incubators and investors. Co-operative living business models may get some money from the government, depending on which policies are in place to support this. In a Mutual Home Ownership Society (MHOS), households usually have to make a deposit and buy shares in the entire scheme based on what they can afford; in combination with this, the project is funded by a mortgage loan taken out by the MHOS (which may obtain a lower interest rate than is given to individual mortgage holders). Garden village business models may get some money from the government, to allow for the development of affordable homes. A public limited company will cover costs in part through the selling of shares.</p>
Revenue streams	<p>Business models that involve the construction and development of housing derive revenue from customers renting or purchasing homes. In the digital property investing platform business model, revenue is derived from real estate development (where half of the profits go to the business’s customer-investors and half of the profits go to the company, which uses them to invest in further scaling). In an MHOS, members’ monthly repayments are set at 35% of net household income, and the MHOS may keep a set percentage of any increase in equity.</p>
Job creation quality	<p>Business models may require employees with expertise in land, design, architecture, engineering, construction, sales and marketing. Business models may also support jobs for subcontractors and jobs throughout their supply chains, as well as management jobs on a board of directors, if applicable. One large business calculated that it has created more than 44,000 direct, indirect and induced jobs through itself, its contractors and its suppliers. Start-ups are likely to be much smaller. They may also have a role for advisors and brand ambassadors. Garden village business models will likely support jobs in landscaping and garden maintenance. They may also support apprenticeships and work placements as well as general training opportunities. A co-operative living business model that requires retrofitting of existing properties will support jobs in the housing retrofit sector. A similar model that involves new home construction may involve future residents assisting in this process on an unpaid basis. More generally, co-operative living business models require unpaid jobs/volunteering to help the co-op function smoothly.</p>

Source: Vivid Economics

Table 12 Housing: Value Distribution

Value distribution area	Business model findings
Service delivery	Users may rent or purchase homes, users may invest through the business model’s digital platform or users may apply to become members of an MHOS if they meet the minimum criteria.

<p>Customer segments and relationships</p>	<p>In housing development business models, customers are people who would like to purchase (or rent) a home. If the development includes affordable homes, customers likely include marginalised people. One housing development business model involves encouraging home ownership by non-traditional customer segments as well as providing free mortgage advice to customers. When designing housing developments, the business model may also incorporate consultations with pre-existing local residents who will be affected. For the business model that provides a digital property investment platform, the main customers are likely technologically savvy people who may be familiar with blockchain. This may not necessarily include marginalised people, although the business model does make it possible for anyone, including marginalised people, to invest in real estate where it otherwise may have been unaffordable. Co-operative and MHOS housing is usually targeted at the intermediate market (those ineligible for social housing but priced out of home ownership), and anyone who meets minimum net household income criteria and agrees with the principles for membership is eligible to fill out an application. Co-operative housing conceived as shared ownership housing is likely to be more affordable than owning a house outright.</p>
<p>Job/skill distribution</p>	<p>Especially if the business model is associated with a large company, there is opportunity to provide training for graduates, apprentices and trainees. One business model has an average of four training days per employee per year, and it also works with disadvantaged groups (e.g. ex-offenders, people with special needs, disabled people) to create employment opportunities. It also has an armed forces transitional programme to employ former members of the armed forces, and it ensures that a certain proportion of apprentices annually recruited represent disadvantaged backgrounds. Another one of its diversity initiatives involves committing to having a minimum proportion of women on its board. In the housing sector, jobs that deal with construction and maintenance are likely to be based in the local community. For example, for one garden village development, 90% of the project involved local labour. In the co-operative living business models, the work related to running the co-op is unpaid and confined to residents of the community. There may or may not be a formal element of training to teach residents best practice about running a co-op.</p>
<p>Education</p>	<p>Housing development business models can promote home ownership with non-traditional customer segments by educating them about it. They can also host site visits from local students for them to experience the construction sector. A business model may produce educational videos showing people how to build a house, in order to enable people to do real estate development themselves, while a co-operative living business model may host online learning days or skill share workshops (e.g. around food sourcing and preparation). It may also provide resources to would-be co-operatives about how to establish themselves.</p>
<p>Community investment</p>	<p>Housing development business models likely contribute money to the community through the Community Infrastructure Levy, which is required by the government. The business model may make charitable donations to support disadvantaged groups and it may spend money on physical works that benefit local communities, such as highway and environmental improvements or affordable homes. By building new homes, the business model indirectly contributes to the local economy through the spending conducted by new residents who occupy the new homes, which can support retail and service-related jobs in particular. A certain proportion of profits from each development project may go to the charity arm of the business, which could do work related to homelessness. In advertising their developments, businesses may print</p>

	<p>leaflets on wildflower seedpaper, which can be planted to help support bees. Another option is for the business to sponsor local events (e.g. a shop local weekend) that benefit the community. In co-operative living business models, residents may volunteer in the area, potentially working with other community groups to further improve the area. At least one co-operative living business model also hosted a delivery hub for other co-operatives and organic suppliers while the co-op’s common house was also used for gatherings of the wider community.</p>
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Source: Vivid Economics

Public/community spaces

Table 13 Public/community spaces: Inputs

Input area	Business model findings
Key partners	<p>The business model may partner with important government officials, like the Mayor of London, to bring visibility to its work. If the business model involves outreach and education for schoolchildren, it will need to partner with the relevant schools. In the case of a business model that runs a garden in a communal space, partners include larger organisations with an interest in agriculture, such as the Royal Horticultural Society, as well as local farmers with similar interests. In addition, the business model may be part of a larger umbrella organisation.</p>
Resources (physical and skills)	<p>Physical resources include land, and in the case of certain business models, they may also include seeds or seedlings for planting as well as planting equipment.</p> <p>Skills needed may include knowledge of how to plant trees, knowledge about food cultivation and knowledge about how to maintain a green space.</p> <p>Other resources needed may include permissions for planting.</p>
Governance	<p>One business model sampled in this sector is a charity, registered as a company limited by guarantee and governed by a board of trustees. The other business model is a Community Interest Committee, governed by a management committee who are also trustees. Membership is open to anyone, and an open annual general meeting is held.</p>

Source: Vivid Economics

Table 14 Public/community spaces: Value Creation

Value creation area	Business model findings
Activities	<p>One business model has planting trees as its primary activity. The other involves the creation and management of a community garden, with the potential to develop a community café and training kitchen as well.</p>
Value propositions	<p>One business model provides people with the resources and knowledge to plant trees, often in a communal setting (e.g. planting festivals/days). It contributes to an increase in the number of trees in a neighbourhood, thus sequestering carbon dioxide and improving air quality. When planting trees in school playgrounds through a specific initiative, it screens children from pollutants. A secondary benefit of the business model is that it gets people involved and enthusiastic about the natural world. The other business model in this sector grows food organically with no-till methods that maintain soil health and</p>

	sequester carbon. Food produced may be more nutritionally dense than supermarket food, which benefits marginalised community members who eat it. The business model also sometimes involves running cooking workshops using seasonal produce.
Cost structure	Business models that are charities rely on donations and fundraising. Business models may also rely on external funding (e.g. from the Climate Challenge Fund or other grants).
Revenue streams	One business model derives some revenue from the provision of corporate services, like marketing or the selling of carbon offsets. In the community garden business model, no revenue is involved.
Job creation quality	Upwards of 6,000 volunteers have been involved in one of the businesses, which includes people taking part in corporate volunteering days. Apart from trustees, the core team may be small, and it may include positions for community engagement officers and communications officers. The community garden business model also includes volunteers, but on a much smaller scale, and it provides for a part time gardener position, as well.

Source: Vivid Economics

Table 15 Public/community spaces: Value Distribution

Value distribution area	Business model findings
Service delivery	The tree planting business model organises planting days and other events in which people can participate. The community garden business model allows users to come to the garden to participate in food cultivation and other educational initiatives.
Customer segments and relationships	Customers include both the volunteers participating in initiatives and the people who enjoy the improved community spaces. In the community garden business model, local community members may benefit from receiving fresh produce. In the tree planting business model, customers also include the companies that advertise with the business as well as the companies that purchase the business’s carbon offsets.
Job/skill distribution	In one business model, the core team is based in London, but the volunteers are members of local communities. In the other business model, all jobs and volunteers are local.
Education	Education is a part of both business models examined in this sector. In addition to teaching children about trees and healthy eating, one business model has published a book highlighting the history of unique trees in London. The other business model teaches the community about food and food cultivation as well as hosting weekend and evening workshops on gardening and composting.
Community investment	One of the business models has helped set up a local and democratically run community trust that manages other community enterprises.

Source: Vivid Economics

Waste

Table 16 Waste: Inputs

Input area	Business model findings
Key partners	Partners may include other companies in the waste sector, to help grow waste collection routes, or local businesses (e.g. grocery stores) that donate leftover food. The business model may also work with other local charities and

	community groups. Finally, if the business model wants to get its products certified, it might work with external, independent certification organisations.
Resources (physical and skills)	Physical resources may include manufacturing facilities, feedstock to create the goods that are being produced, a venue in which to host repair events, leftover food, a kitchen to prepare food and a place to serve food. Skills needed may include knowledge about the waste industry and industrial composting, repair skills for various types of items (e.g. electronics, clothing), cooking skills, manufacturing skills and product design skills.
Governance	Business models in this sector may be private limited companies or not-for-profit companies. They may have an international reach. Alternatively, they may be more informal local groups run by volunteers, especially in the case of repair café business models.

Source: Vivid Economics

Table 17 Waste: Value Creation

Value creation area	Business model findings
Activities	Business models undertake a diverse set of activities. They create disposable packaging for catering and foodservice, offer composting services, offer consultant advice on composting, host pop up or monthly events where people can bring items to be repaired, prepare meals from food that was going to go to waste, provide a meal share service for senior citizens, collect plastic waste and create products made of recycled plastic.
Value propositions	By reducing waste, these business models reduce carbon emissions. For example, plant based packaging made from renewable, lower carbon, recycled or reclaimed materials eliminates the additional energy and emissions associated with using virgin materials or conventional plastic. By helping businesses find sustainable solutions for their waste and supporting them in composting endeavours, business models reduce the quantity of waste being exported or going to landfills. By manufacturing products close to the source of the raw materials, business models reduce emissions from transportation. Business models that produce compost provide an input for agriculture. Business models may also involve carbon reduction strategies for the relevant businesses’ own operations. Repair café business models may increase community spirit by connecting community members at repair events, and they may also reduce community members’ consumption of new items by repairing items that are broken. Ultimately, this leads to a reduction in waste. The social fabric is also strengthened and waste is also reduced in pay-as-you-can food surplus café business models. Finally, in recycled plastic product business models, there is a reduction in plastic waste through the creation of products that are alternatives to products made of raw materials. Plastic feedstock may be sourced domestically, and this also minimises the carbon footprint associated with exporting waste out of the UK.
Cost structure	If the business model involves a privately held company, it may rely on growth funding.
Revenue streams	In most business models, consumers pay for the product on offer, whether that is foodservice packaging, waste management consultancy services, products made from recycled plastic or other environmentally friendly products (e.g. a business model may involve selling t-shirts made of recycled plastic as well as t-shirts made of organic cotton). In some business models, the revenue structure

	<p>may be more flexible with prices based on a pay-as-you-can model. Alternatively, services may be free of charge, as in some organisations associated with the repair café business model.</p>
Job creation quality	<p>In the foodservice packaging business model, there are jobs in in supply chain, customer service, sales and communications. The business model also supports manufacturing and bio-feedstock cultivation jobs, although these are not necessarily located within the UK. It indirectly supports jobs in industrial composting facilities, and it directly supports jobs in waste management consulting. All jobs offered are paid a living wage. In contrast, the repair café business model, involves volunteers who are skilled in making repairs as well as volunteers with administration and communication skills who are able to organise the repair events. Pay-as-you-can food surplus cafes also rely on volunteers while businesses that create products from recycled plastic support traditional office jobs as well as manufacturing or handcrafting jobs in addition to plastic collection jobs and product design jobs.</p>

Source: Vivid Economics

Table 18 Waste: Value Distribution

Value distribution area	Business model findings
Service delivery	<p>Users may contact the business model’s sales team and place an order for its products or engage with the company in regards to its consulting services. The business model may organise events or gatherings that users can attend, bringing items that need repair. Users may visit the location where food is prepared in order to purchase it. Finally, customers may be able to order the business model’s products online or purchase them in physical locations.</p>
Customer segments and relationships	<p>Depending on the business model, customers may be other businesses in the foodservice industry or businesses that have a food service component. Customers may be local community members with items that need repair, and there is a chance that these community members may be environmentally oriented or cost constrained (i.e. unable to pay for new items). In the pay-as-you-can food surplus café business model, customers may include the homeless and people struggling to make ends meet, as well as people who can afford to pay for the food on offer. For business models that produce products from recycled plastic, anyone from the general population may be a customer. The business may offer discounts for customers buying multiple items (e.g. furniture), which may be of benefit to schools, who need many items. Customers may also include local authorities government departments, large businesses, and the construction sector, depending on the product being offered. The business may offer free samples of its recycled plastic materials to commercial materials libraries or university materials libraries.</p>
Job/skill distribution	<p>If the business model involves an international company, employees are likely to be distributed globally. In business models that use volunteers, they are likely to be local. In repair café business models, there is an opportunity for skilled repairpeople to help train local community members in repairing, so that they can become volunteer repairpeople as well. A pay-as-you-can food surplus café is likely to train volunteers in cooking. Recycled plastic product business models may create manufacturing jobs in the UK instead of offshoring them.</p>
Education	<p>The business model may involve giving people access to educational factsheets and point of sale material to help children learn the importance of recycling and how to identify what can be composted. The business model may produce an annual magazine with articles and case studies that can be educational to</p>

	readers, or the business model can support other businesses in teaching people to recycle and compost. Business models may support behavioural change (e.g. teach people how to repair broken items instead of discarding them or give tips on reducing food waste). Business models may host educational cooking workshops or maintain a blog that sometimes posts education articles. In the case of recycled plastic product business models, at least one business examined states that it cannot give talks to schools about recycling and neither are schoolchildren able to visit their factories.
Community investment	The business model may also include a community fund that offers grants or product donations. It may also assist other communities in setting up their own, similar enterprises.

Source: Vivid Economics

Education

Table 19 Education: Inputs

Input area	Business model findings
Key partners	Key partners include utility companies, local councils, other organisations.
Resources (physical and skills)	Physical resources needed include an office location and a phone line. Skills needed include knowledge of energy efficiency, effective communication skills, event management skills and knowledge of available funding sources.
Governance	The business model involves an independent not-for-profit organisation that has a board of trustees.

Source: Vivid Economics

Table 20 Education: Value Creation

Value creation area	Business model findings
Activities	The purpose of the business model is to deliver various projects that educate people in the community, especially regarding energy efficiency. The business model provides a telephone line for free advice on saving energy, management of a scheme to install solar water heating systems and management of events such as energy conferences.
Value propositions	The business model promotes and helps create free schemes that improve energy efficiency. It has also helped communities install renewable energy technologies, thus reducing dependence on fossil fuels. Finally, it has promoted schemes for vulnerable residents who need support to deal with tariff issues as well as fuel and water debt.
Cost structure	The business model is a charity, and funding comes from donations and external funding sources.
Revenue streams	Advice services are free, but project and event management services may bring in some revenue.
Job creation quality	The business model supports over 20 staff who perform tasks such as manning the business’s free helpline and managing project delivery. The business model also has positions within its Environmental Management Systems Steering Group, whose purpose is to manage and implement environmental policy within the business (including pursuing ISO accreditation). The business model also has positions on the board of trustees, and it offers local community members the opportunity to volunteer on projects.

Source: Vivid Economics

Table 21 Education: Value Distribution

Value distribution area	Business model findings
Service delivery	Users can call the helpline or participate in a project.
Customer segments and relationships	Although anyone could be a customer, the business model’s geographic focus involves nine local authorities. The business model targets people who are affected by fuel poverty, which means that many of its customers are marginalised.
Job/skill distribution	The jobs offered are in an office which is located within the geographic area served by the business model. Employees are trained to be able to give advice about energy efficiency.
Education	Educating community members about energy efficiency is the main purpose of the business model. In addition, the business participates in online conferences about fuel poverty, which may help educate people working in that field..
Community investment	Members of the community (including marginalised people) directly benefit from the business model by receiving advice that allows them to save money on fuel bills .

Source: Vivid Economics

Food

Table 22 Food: Inputs

Input area	Business model findings
Key partners	Partners may include charitable organisations (e.g. a charity that redistributes surplus food) or large businesses that purchase corporate sponsorships. Partners may also include community groups that are funded by the business model’s profits or charity arm. If there was a community share offering for the businesses, partners may include organisations that offered support and advice related to the share offering. If the business model involves offsetting emissions, one partner may be an organisation that helps companies select emissions offset projects.
Resources (physical and skills)	Physical resources may include food/groceries/ingredients, a physical restaurant or shop space, an office location and a kitchen. Skills needed may include food preparation skills, knowledge of nutrition, community outreach skills, grocery shop management skills, knowledge of the process of making a community share offering, permaculture and horticulture skill, and orchard management skills.
Governance	Ownership structures are diverse across the business models examined. One business model involves a Community Benefit Society where people become members by purchasing shares. Each member has the right to stand in elections for the board, and each member has one vote to help determine policy. Most shareholders are from the local area. Another business model also involves membership, but no shareholding. Eligible members can vote on motions, attend the Annual General Meeting and elect leadership. The business is run by a Member’s Council with 100 democratically elected councillors. The Council Senate is comprised of 15 members elected from the Council by the Council. There is also a Board of Directors, some of which are nominated by members and some of which are independent non-executive directors (who provide

	industry knowledge). Another business model is involves a charity with a Board of Trustees.
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Source: Vivid Economics

Table 23 Food: Value Creation

Value creation area	Business model findings
Activities	Business models in this sector sell meals in restaurants, frozen meals, groceries, eco-friendly cleaning products and homeware. Business models also host community-oriented activities, make cider, teach people how to set up urban orchards and restore orchards that are at risk of disappearing.
Value propositions	One business model offers vegan and vegetarian options on its menu (helping to normalise these low-carbon eating practices), uses compostable packaging and biodegradable alternatives to plastic straws and cutlery (with zero waste to landfill: leftovers are sent to anaerobic digestion or given to charity), focusses on seasonal and local produce (including only British meat and eggs, sustainable fish and pork with high welfare standards), buys only fair trade ingredients and serves carbon neutral hamburgers (by purchasing carbon credits to offset the hamburgers’ footprint). The business plans to become Net Zero, works with suppliers to reduce their carbon footprints and uses renewable energy. Another business model explicitly states that one of its goals is to provide employment opportunities within the local community. It purchases produce locally (including from allotments and garden growers), thus reducing emissions associated with food transport. It also provides nutritional advice, as well as free delivery to the elderly. Another business model addresses the need for green space within urban environments by focusing on community-run orchards. These orchards are also good for urban wildlife. The business model teaches people how to harvest apples, offers free fruit to local communities, plants trees that sequester carbon and helps address issues of social inequality and hardship. The last business model offers value by funding community initiatives through its profits. It offers fairer access to education and employment for young people, it has reduced plastic packaging on groceries, it uses only 100% renewable energy, it reduces food waste by giving food that is going out of date to local community groups and it supports British farmers by buying local.
Cost structure	One business model makes use of a grant from the Scottish Land Fund in combination with a community share offering that raised more than £60,000. Community members can still invest in shares, although no dividends are paid on shares and the value of shares cannot increase. Some other business models have funding through the Heritage Lottery Fund and other charitable trusts. One business model requires members to pay a £1 membership fee.
Revenue streams	In most cases, consumers purchase food products to produce revenue. In the urban orchards business model, revenue is derived from selling cider, with all profits going toward community orchard projects. The business model may also derive revenue from corporate sponsorships and from running employee wellbeing days for other companies.
Job creation quality	Restaurant related business models offer jobs in food service and preparation as well as office jobs such as customer service, finance and marketing. They also offer positions related to food and supply and operations. The business model may include nutritionist jobs to help in menu design. The business model may promote flexible working, including part time roles, and it may pay above the National Living Wage with lunch breaks paid as well. One grocery shop related business model offers grocery store management jobs, jobs for people working

to stock shelves and conduct food deliveries and a handful of jobs on the Board of Directors. The business model also coordinates a volunteer register, taking steps to avoid the displacement of paid labour. A larger grocery shop related business model employs more than 60,000 people, both full time and part time, with approximately 1,000 paid apprenticeships available for people leaving school, returning to work or looking for a change of direction. The business offers a two-year Young Business Leaders programme for paid work placement for young people in inner-city Manchester. Furthermore, part time positions (4 hours per week) are available for liaisons between the business and the community groups that the business supports. Finally, the urban orchard business model has a small core team with jobs such as project manager, head of operations and education and training manager. There is also a small band of orchard volunteer officers (who volunteer for six months) with the intention of becoming employed in urban horticulture. The business model has a Board of Trustees and two ambassadors. It offers internships, and participants in volunteer days may learn how to make cider.

Source: Vivid Economics

Table 24 Food: Value Distribution

Value distribution area	Business model findings
Service delivery	Depending on the business model, customers go to the restaurant or order food online, or they get groceries delivered or come into the shop to make purchases. For the urban orchards business model, customers participate in volunteer days or purchase cider.
Customer segments and relationships	Especially in the case of grocery shops, customers are people who live near to the shop, including local businesses (e.g. restaurants or hotels) and schools. In the case of a business model’s charity arm, marginalised people may benefit, even if they do not purchase the business’s goods. In the urban orchards business model, customers include anyone with an interest in urban orchards who would like to start their own orchard, participate in creating an orchard or become qualified in orchard management.
Job/skill distribution	One business model offers office jobs as well as jobs in a restaurant. All new members of the team get nutrition training. One business model explicitly states that jobs will be offered to members of the local community. Another business model involves a main office in London with project manager positions in various UK cities. Within those cities, community members can volunteer with the business and gain skills in orchard management. In the last business model, training is offered through apprenticeships and jobs are found across the UK. Community liaison positions require employees to be close to members of the local community with which they connect.
Education	The business model may produce films, podcasts and blogs, some of which are about living more sustainably. The business may also publish guides on its website (e.g. about recycling dos and don’ts or about eating sustainably on a budget). The business model may also sell cookbooks. Business models may organise education around healthy food, such as community cooking classes or nutrition advice. They may liaise with schools to engage with pupils about healthy eating, provide seasonal recipes as part of its food box deliveries or host monthly events with other community groups focused on food, sustainability and growing the local market. Education may be related to planning and designing an orchard. This particular business model has also developed an

	<p>accredited orchard management course. Finally, education may be a component of various community initiatives funded by the business model.</p>
<p>Community investment</p>	<p>Through purchasing carbon offsets, the business model may invest in communities globally (e.g. projects related to the Amazonian rainforest in Peru, bamboo planting in Nicaragua or projects related to UK native woodland). Similarly, proceeds from each bag of coffee sold may go to the World Land Trust. More locally, the business model may support a local foodbank and help keep the high street in a healthy state. Profits may be reinvested to support social projects, potentially through the business’s charity arm. In addition, in business models that involve a community share offering, investors may be able to set part of the cost of their shares against tax; if investors are primarily community members, this is then a local benefit. Finally, the business model may support other co-operatives (e.g. by jointly buying from suppliers to keep prices lower for customers).</p>

Source: Vivid Economics

Appendix 2 Stakeholders consulted

Table 25 Representatives were consulted from approximately 20 organisations

Stakeholders
Co-op (London)
Derby City Council
Dundee City Council
Edinburgh Community Garden
Energy Projects Plus
Innovate UK
Liverpool City Council
Lucy Stone (climate writer and strategist)
New Local
Octopus EV
Portsmouth City Council
Power to Change
Repowering London
Scania
Southampton City Council
Sustrans (Scotland)
Tees Valley Combined Authority
Thurrock Council
Transport Scotland

Source: Vivid Economics

Appendix 3 Review of community needs across the UK

England

Large peri-urban housing estates are agglomerations of housing on the outskirts of major cities. They often have relatively low ethnic diversity. They have poor economic outcomes, including low incomes and low rates of employment. Residents often lack formal qualifications and education, which contribute to low incomes, and high unemployment may be further exacerbated because of low job density and isolation from jobs in the wider economy. This isolation amounts to a lack of connectivity, both physical (e.g. lack of public transportation) and digital (e.g. a lack of digital infrastructure). Peri-urban housing estates have relatively low levels of local government service funding per capita, and they often lack public spaces for community activities and gatherings. Without public spaces, there are fewer opportunities to build the social fabric of the community. Some examples of marginalised peri-urban housing estates include housing estates outlying Sunderland, Middlesbrough, Manchester, Leeds, London and Nottingham.

Inner-city areas are areas of highly dense populations in central city locations. They often have a lack of affordable housing and high levels of crime, as well as a relatively poor physical environment, with poor air quality and little access to natural green spaces. There may be a mismatch between economic opportunities and skill-levels, coupled with high cost of living.⁶⁵ In addition to poor economic outcomes in terms of income and employment, marginalised inner-city areas often lack public spaces for community activities and gatherings. Some examples of marginalised inner-city areas are the London boroughs of Hackney, Haringey and Kensington and Chelsea.

Post-industrial urban communities are former heavy industry and manufacturing. They tend to rank the highest on income and employment deprivation. In addition to a lack of connectivity (e.g. lack of public transport, lack of digital infrastructure), marginalised post-industrial urban communities often have a lack of public spaces for community activities and gatherings. Furthermore, they have relatively low levels of local government funding per capita. Some examples of marginalised post-industrial urban communities include parts of Middlesbrough, Liverpool, Hartlepool as well as Nottingham.

Coastal towns are smaller urban environments located on the coast. They may have relatively low educational attainment⁶⁶ and relatively low GDP per capita.⁶⁷ They have poor economic outcomes, including low incomes and low rates of employment. They are also characterised by poor health outcomes. Often, they are poorly connected to major employment centres. Some examples of marginalised coastal towns include Blackpool and Hastings.

Scotland

Inner-city areas are areas of highly dense populations in central city locations. They often have a shortage of both affordable housing and public spaces for community activities and gatherings. Their relatively poor physical environment is characterised by poor air quality and lack of access to natural green spaces. In addition to limited social mobility,⁶⁸ they also tend to have high levels of crime, poor health outcomes and a mismatch between economic opportunities and skill levels. The latter can result in poor economic outcomes in terms of income and employment. Some examples of marginalised inner-city areas include the City of Glasgow and parts of Dundee.

Post-industrial urban communities are former heavy industry and manufacturing areas. They are characterised by eroding community capacity, exacerbated by a decreasing quantity of public resources at

⁶⁵ Institute for Global Prosperity (2019): Rethinking prosperity for London: When citizens lead transformation.

⁶⁶ UK Parliament (2020): COVID-19 and the disadvantage gap.

⁶⁷ The Guardian (2017): Seaside towns among most deprived communities in UK.

⁶⁸ Joseph Rowntree Foundation (2016): Overcoming deprivation and disconnection in UK cities.

the same time that expectations are growing. Relatedly, they may have a relative disconnect between policies, processes and resources. Residents of these areas experience a higher likelihood of premature death and poor health outcomes in general. In addition to relatively high levels of child poverty⁶⁹ and poor economic outcomes in general, they may have high crime rates (especially in the west)⁷⁰ and a lack of local spaces such as libraries, community halls, and pubs. These factors contribute to a lack of community spirit, pride and confidence in the community. Some examples of marginalised post-industrial urban communities include Carntyne and Haghill in northeast Glasgow, parts of Govan, Kirkcaldy and Dundee.

Wales

Peri-urban communities are towns located on the outskirts of larger cities. They are characterised by poor economic outcomes, including low incomes and high rates of unemployment. Some examples of marginalised peri-urban communities are located in the South Wales valleys.

Post-industrial urban communities are former heavy industry and manufacturing areas. They may still have some manufacturing industries, such as aerospace and automotive industries. They are characterised by poor economic outcomes as well as a relatively poor physical environment. This includes poor air quality and little access to natural green spaces. In addition, these marginalised areas often have high levels of housing deprivation, including overcrowding. Some examples of marginalised post-industrial communities are areas located in South Wales, such as Cardiff, Newport and Swansea.

Coastal towns are smaller urban environments located on the coast. They are located in areas that score below average in sustainability at the Local Authority level (e.g. Gwynedd, Ceredigion, Carmarthenshire, Pembrokeshire, Neath Port Talbot). Similarly, based on averages at the Local Authority level, they may have relatively higher levels of equality in income, health and employment. However, despite these equalities, outcomes in terms of income, employment, health, and education, are relatively poor. Poor outcomes are also seen for environmental factors, such as green infrastructure, energy use and waste generation and recycling. Some examples of marginalised coastal towns are areas located in North Wales.

Urban communities in border towns are smaller urban agglomerations located near the Welsh borders. They are characterised by poor economic outcomes, including low incomes and high rates of unemployment. Some examples of marginalised urban communities in border towns include those in North Wales, such as Wrexham.

Northern Ireland

Inner-city areas are areas of highly dense populations in central city locations. They are characterised by limited social mobility and a mismatch between employment opportunities and skill levels.⁷¹ These contribute to poor economic outcomes, including low incomes and high levels of unemployment. Residents tend to lack affordable housing, have poor health outcomes and experience high levels of crime and disorder. In addition, the relatively poor physical environment of these areas is characterised by low air quality and little access to natural green spaces. Some examples of marginalised inner-city areas are inner East Belfast, Cliftonville in Belfast and parts of Derry.

Post-industrial urban communities are former heavy industry and manufacturing areas. They tend to have low average incomes and high rates of unemployment with a high proportion of the working age population receiving welfare benefits. Residents may lack education, skills and training. In addition, these areas are characterised by relatively high rates of crime and disorder, as well as high rates of premature death and poor quality of life due to poor health or disability. An example of a marginalised post-industrial urban community is the docklands in Belfast.

⁶⁹ Scottish Government (2011): Child poverty strategy for Scotland.

⁷⁰ Scottish Government (2018): Community experiences of serious organised crime in Scotland.

⁷¹ Joseph Rowntree Foundation (2016): Overcoming deprivation and disconnection in UK cities.

