

SUPPORTING GREEN SKILLS, GREEN JOBS AND JUST TRANSITIONS IN THE NORTH OF TYNE

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ABOUT ENERGY DEMOCRACY PROJECT

Energy Democracy Project (EDP) was established as a company in 2003 to support educational and research activities around climate change. EDP has focused on building support for energy democracy and a just transition in the UK since 2014. EDP focuses on engaging and consulting trade unions, unionised and non-unionised workers and communities in building visions and pathways for a just and rapid climate transition.

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SECTION 1 – INTRODUCTION AND CONTEXT: SUPPORTING A JUST TRANSITION IN THE NORTH OF TYNE

1.0 INTRODUCTION

In 2019, the United Kingdom (UK) became the first major world economy to legislate for net zero emissions by 2050 (see Box 1.1). The low carbon transition will require far-reaching social, economic and environmental transformations that are sustainable and fair for people, place and planet. Crucially, effective and strategic national, regional and local policies and interventions are central to this process.

BOX 1.1: WHAT IS NET ZERO?

The UK government has a legally-binding target to become 'net zero' by 2050. This means that the amount of greenhouse gas emissions, such as carbon dioxide, being put into the atmosphere balances the amount being taken out.

A just, equitable, inclusive and sustainable transition must begin by supporting regions to identify and then act on new low carbon opportunities and manage the impacts of change in a way that is fair for workers, employers and communities.

In this context, the North of Tyne Combined Authority (NTCA) and the latest devolution deal to create an expanded North East Mayoral Combined Authority (NEMCA) in 2024 (see Box 1.2), can play a central role in providing a coherent regional policy framework to support a move towards an inclusive and sustainable low carbon economy.

This report outlines the opportunities and challenges presented by the transition to net zero in relation to green skills and green jobs, and indicates where and how the Combined Authority can support this transition.

BOX 1.2: A NOTE ON PROPOSED NORTH EAST DEVOLUTION

The new North East Devolution Deal announced in December 2022 covers the seven Local Authorities of Northumberland, Newcastle, North Tyneside, Gateshead, South Tyneside, Sunderland and County Durham (DLUHC, 2022). A mayoral election is expected to take place in May 2024 and a new combined authority would be created to replace the current NTCA and expand it, with new powers on transport, housing and skills. The proposed devolution agreement includes the control of a £48 million per year investment fund over 30 years (£34 million revenue and £14 million capital), to be invested by the North East to drive growth and take forward its priorities over the longer-term (DLUHC, 2022:8).

As broader devolution was announced while our project was taking place, this development informed our later discussions with stakeholders. Therefore, throughout the report we reference actions or issues that cover the broader North East of England region, where appropriate. For example, our Green Skills Audit data covers the North East of England¹ and the participatory workshops were open to participants across the North East region. We have also made recommendations that can be applied across the expanded devolution geography to support a fair and inclusive low-carbon transition so that our findings are relevant both to the current NTCA and the new expanded NEMCA to come.

¹ The North East 'Region' in broader terms consists of 12 local authorities. For the Green Skills Audit we focus on: Newcastle upon Tyne, North Tyneside, Northumberland, County Durham, Gateshead, South Tyneside and Sunderland – as this aligns with the proposed devolution deal boundary for the NEMCA planned for 2024. The remaining local authorities that make up the 'Tees Valley' are: Darlington, Hartlepool, Middlesbrough, Redcar and Cleveland and Stockton-on-Tees. These fall within the existing Tees Valley Combined Authority. It has a different political context, with a different Mayor and therefore these Local Authority areas are not the focus of our report.

1.1 THE NORTH OF TYNE COMBINED AUTHORITY

The NTCA is a partnership between three local authorities: Newcastle upon Tyne, North Tyneside and Northumberland – all of which declared climate emergencies in 2019. The NTCA encompasses a

distinct combination of urban, rural and coastal geographies (see Map 1) and has a population of 839,500 with 25,185 businesses.

Map 1: The North of Tyne Combined Authority Area



Mayoral combined authorities (MCAs) are a new subnational tier of governance in England (see Box 1.3) and each MCA has a unique devolution deal with specific devolved powers, areas of delegation and budgets (Sandford, 2022).

As important components of regional governance and local leadership, MCAs have an important role to play in helping the UK to reach net zero and plan effectively for the long-term based on the unique characteristics of different places, building the skills and capacity of residents, and delivering decarbonisation in a fair and inclusive way.

BOX 1.3: WHAT ARE MAYORAL COMBINED AUTHORITIES?

A 'combined authority' is a legal body set up using national legislation that enables a group of two or more councils to collaborate and take collective decisions across council boundaries. While combined authorities are established by Parliament, they are locally owned and have to be initiated and supported by the councils involved. Metro mayors were created to provide visible and accountable leadership for city-regions, and to date, most devolution deals have involved metropolitan areas. Devolution deals are contractual by nature and devolve tightly defined parts of wider policy areas. For example, adult education is devolved to all MCAs, but not 16-19 years provision (Johns, 2021).

Both local and combined authorities have significant convening power given their role as decision-makers, implementers of collective initiatives and as actors working for the public good of their citizens. In this report, we outline how they can use this governance position to organise and facilitate concerted dialogue, planning and cooperation to support a just and inclusive low carbon transition.

Within the original NTCA Devolution Deal, the area of ‘energy and low carbon’ was identified as a key priority (along with other areas such as inclusive growth, housing and land, and rural growth and stewardship) (HM Government, 2018: 16). The NTCA has three cross-cutting priorities (NTCA, 2022: 10):

- **Net Zero Transition** – Ensuring our whole programme supports carbon reduction, clean growth and a new generation of jobs;

- **Inclusive Economy** – Ensuring our work is underpinned by people, communities and inclusive economic growth;
- **Innovation in Recovery** – Ensuring our businesses, people and places can adapt, recover and thrive post-pandemic.

These three interconnected policy priorities have placed a post-pandemic economic recovery within the broader terrain of climate action and decarbonisation – and positioned the **creation of new, good quality, ‘green’ jobs within an inclusive economy** as central to this process.

As outlined in the Mayor’s Foreword to the Corporate Plan 2021-22 (NTCA, 2021), the underpinning mission of the NTCA is a ‘Zero Carbon, Zero Poverty’ economy to ensure that the transition to net zero is inclusive and fair (see Box 1.4).

BOX 1.4: NTCA ‘ZERO CARBON, ZERO POVERTY: FIVE POINT PLAN’ (NTCA, 2022)

Good Green Jobs

- A relentless focus on investment to create good green jobs
- Rolling out our Good Work Pledge – for better jobs and decent wages
- Turbo charging local firms to build a green economy

Future Green Skills

- Bring together education and industry to put green skills at the heart of our workforce
- Create green retraining opportunities for adults who need to change jobs
- Invest in STEM to give our young people a modern world-class education

Net Zero Economy

- Decarbonise the grid by investing in wind energy, battery technology and clean electricity
- Create low carbon jobs in digital, life sciences and culture
- Campaign for an affordable, safe, and integrated public transport system; connecting our region faster, unlocking growth and creating new jobs

Great Place to be

- Housing for everyone – more homes on unused derelict land
- Invest in digital for all so that everyone can easily get online reducing the need for travel
- Reimagining our High Streets, to support sustainability, culture and local produce

Citizen Power

- Implement recommendations from our Climate Change Citizens’ Assembly report
- Involve everyone in a just transition to a ‘Zero Carbon, Zero Poverty’ North of Tyne, including our Poverty Truth Commission
- Support local people to make change happen in their communities through the mayor’s ‘Zero carbon, Zero Poverty’ crowdfunding work

As of August 2020, the NTCA has control of a £23 million Adult Education Budget (AEB) from central government as part of the devolution deal (NTCA, 2021). The purpose of the AEB is to engage adults, aged 19 and over, in learning and equip them with the skills needed to progress to employment, apprenticeships or other learning.² In particular, emphasis is placed on reshaping the delivery of Adult Education provision to provide residents with the skills required to access decent jobs and good quality work.

In this respect, the NTCA has developed an employment charter, the Good Work Pledge (GWP)³, launched in 2021. It is backed by the CBI and the North East Chamber

of Commerce. Underpinning the GWP is recognition of the importance of access to 'good work' that provides, among many other things, security, skills, progression opportunities, a decent standard of living, and promotes health and wellbeing. As of May 2023, 110 employers, from both the public and private sectors, have committed to the GWP.

The NTCA has already undertaken important steps to place tackling the climate crisis at the centre of its programme of action and all three constituent local authorities have ambitious net zero targets for their local areas, and have approved climate emergency plans (see Table 1).

Table 1: Overview of Local Authority Net Zero Targets

Local Authority	Net Zero Target	Key Climate Policies/Plans
Newcastle City Council	"...Commitment to achieving city-wide net zero status by 2030".	<i>Net Zero Newcastle – 2030 Action Plan</i> . September 2020. <i>Net Zero Newcastle – 2030 Action Plan: Priority Actions Update</i> . September 2020 – March 2021.
North Tyneside Council	"...We will publish an action plan of the steps we will take and the national investment we will seek to make North Tyneside carbon net-zero by 2030" (Our North Tyneside Council Plan 2021-25).	<i>Carbon Net Zero – 2030 Action Plan</i> (August 2022). <i>North Tyneside Council's Annual Greenhouse Gas Report: 2021-22</i> (July 2022). <i>North Tyneside Climate Emergency Action Plan</i> (September 2020).
Northumberland County Council	"...Reducing its own emissions by 50% by 2025 and reducing the county of Northumberland's emissions to net-zero by 2030".	<i>Climate Change Action Plan 2021-23</i> (2021). <i>Northumberland Town and Parish Council Climate Change Toolkit</i> (2021). <i>Climate Commitment Action Plan 2020-21</i> (2019).

Everyone has an active role to play in decarbonisation and therefore the report brings together a range of voices from across the public, private and community sectors to share their ideas, visions, as well

as concerns related to the possibilities and challenges related to supporting a fair and inclusive low carbon transition across the region.

² What We Do: Adult Education Budget <https://www.northoflyne-ca.gov.uk/projects/adult-education-budget-devolution/> (Accessed: 3 May 2022).

³ See: <https://www.northoflyne-ca.gov.uk/projects/good-work-pledge/> (Accessed: 18 May 2022).

2.0 WHAT IS A JUST TRANSITION?

This report adopts the concept of a ‘just transition’ as it directly addresses the justice and equity dimensions of climate change. We understand ‘just transition’ as a comprehensive process and also an outcome that seeks to connect issues of labour (i.e., work, skills and training) and climate as integral to a democratic shift away from fossil fuels towards a low-carbon society (Box 1.5).

BOX 1.5: A JUST TRANSITION AS A PROCESS AND OUTCOME

As outlined by the Scottish Government (2021) in relation to its work on developing their National Just Transition Planning Framework, just transitions are:

- the **processes** and **practices** that are utilised to collectively engage and meaningfully consult with impacted workers, communities and organisations by the transition to a low carbon society.
- **outcomes** (short-, medium- and longer-term effects) that result in a fairer, more sustainable and inclusive present and future for places, regions and nations by tackling interconnected social, environmental and economic inequities.

Ensuring a just transition, both in terms of reskilling existing workers affected by the low carbon transition and safeguarding inclusive pathways for new entrants to move into the green, net zero workforce are fundamental.

The concept of a just transition also draws upon wider ideas of environmental, energy and climate justice (McCauley and Heffron, 2018). A just transition would prioritise a range of issues: ensuring workers’ rights and safety; creating and sustaining good quality, low-carbon jobs; protecting our ecosystems; tackling poverty and inequality.

Trade unions and the labour movement have played a key role in advocating for a just transition (TUC, 2019) that places workers most affected by the move to a low carbon economy at the centre of decision-making and as the source of the solutions to changing employment and workplaces in the context of climate change (Box 1.6).

BOX 1.6: THE EVOLUTION OF THE JUST TRANSITION CONCEPT

- The term ‘just transition’ is rooted in the labour movement in the United States in the 1970s. It was popularised by the American labour and environmental leader, Tony Mazzocchi (of the Oil, Chemical, and Atomic Workers’ Union, later merged with the United Steelworkers) in the 1990s. The idea of a just transition is premised upon combining the frequently conflicting objectives of economic transition and the pursuit of social justice (Stavis and Felli, 2015) by positively providing a way forward which challenges the ‘jobs versus environment’ discourse (Räthzel and Uzzell, 2011).
- The International Labour Organisation (ILO) adopted its just transition guidelines in 2015 and outlined that a just transition for all towards an environmentally sustainable economy “needs to be well managed and contribute to the goals of decent work for all, social inclusion and the eradication of poverty” (ILO, 2015: 4).
- A just transition is therefore primarily conceptualised as a process rooted in social dialogue, inclusive participation and gives agency to workers and communities over decisions that affect their lives.

The critical issue is ensuring that new 'green' jobs are equally as good in terms of pay, conditions, workplace skills training, pensions and trade union recognition as those that may be lost.

Within the UK, the Trades Union Congress⁴ (TUC) have adopted a Just Transition statement (TUC, 2019) – which outlined four key areas to make a just transition a reality:

- 1) a clear and funded path to a low-carbon economy,
- 2) workers must be at the heart of delivering these plans,
- 3) every worker should have access to funding to improve their skills, and
- 4) new jobs must be good jobs.

The TUC called on the government to implement these recommendations to make the transition to a greener economy a 'just' one.

Key Takeaway: Creating jobs in the low carbon economy does not guarantee 'just' working conditions or outcomes. 'Green' jobs must be secure, good-quality and have positive impacts on the local economy and community. It is vital that they are inclusive and accessible, and people are adequately trained and (re)skilled to do the jobs that emerge in the 'green' economy.

2.1 WHAT DOES A JUST TRANSITION LOOK LIKE?

For any transition to be just and fair, it is generally suggested that there must be consideration given to the diverse principles of justice – that is, distributive, procedural, recognitional and restorative justice (see Box 1.7).

BOX 1.7: THE PRINCIPLES OF JUSTICE

- **Distributive** justice: the allocation of burdens and benefits among individuals, nations and generations – this requires sharing of costs and benefits of the transition fairly and equitably;
- **Procedural** justice: who decides and participates in decision-making – this requires affected parties to be meaningfully and continually consulted;
- **Recognitional** justice: which entails basic respect and robust engagement with, and fair consideration of, diverse cultures and perspectives – this requires recognising that climate change and transitional policies threaten to exacerbate existing inequalities along, for example, geographic, class, gender and ethnicity/race dimensions;
- **Restorative** justice: which entails readdressing past harms – this requires for example, implementing transition frameworks for workers from polluting industries and supporting people who have previously lost their job, or not currently in employment to acquire the skills and experience to gain a good quality 'green' job.

⁴ A UK federation of trade unions in England and Wales, which represents the majority of unions across the two nations. There are 48 member unions, which brings together a total of approximately 5.5 million working people.

Managing structural change requires a coordinated sustainable transition framework that brings together climate protection, decent work and sustainable prosperity that is actively shaped by social partners including government, workers, trade unions, employers, communities and education providers. This is crucial to ensure that existing inequalities are not exacerbated.

For instance, two days before the United Nations (UN) Climate Talks COP24 in Katowice, Poland in 2018, ‘Yellow Vest’ (Gilets Jaunes) protestors hit the global headlines during a day of clashes with the police in the streets of central Paris. The movement was triggered by a tax increase on fuel, the proceeds of which were intended to fund the low carbon energy transition in France. The protest vividly highlighted how precariously employed and working people can be disproportionately affected by inappropriately conceived policies that fail to develop decarbonisation policies in an inclusive manner.

Key Takeaway: In order for policies to be socially just, they must not make existing inequalities worse. Just transition policies should be developed that seek to ensure co-benefits of climate action, placing workers and communities at the centre.

To date, there is no concerted campaign to comprehensively institutionalise just transitions in UK-wide government policy and to allocate the necessary resources and investment required to support this urgent process. However, across the different devolved nations of the UK, progress is being made (see Box 1.8).

BOX 1.8: SUPPORTING JUST TRANSITION IN SCOTLAND

- The **Scottish Government** has developed the Just Transition Commission (JTC) (JTC, 2021) and has actively worked to advocate for a fair and inclusive move to a lower carbon economy for Scotland which has the potential to generate multiple positive changes beyond the reduction of emissions.
- The first Scottish JTC was established in 2018 to provide practical and independent advice to Scottish Government Ministers to achieve a ‘just transition’ and ran from 2019-21. It submitted a report in March 2021, in which the Scottish Government responded by accepting all of the Commission’s recommendations. As a result, Scotland became the first country to commit to a Just Transition Planning Framework.
- A second JTC was announced in late 2021 with a remit to move towards the implementation stage and to help support the development of sectoral and national just transition action plans. For more information, please see: <https://www.justtransition.scot>

There is no ‘one-size-fits-all’ approach to a just transition, as it must be shaped according to specific social, environmental, economic, and spatial contexts, however, the examples we have highlighted throughout this report point towards common features. These include: the creation of a coordinated framework of action, ongoing social dialogue across sectors and stakeholders, long-term planning, capacity-building and funding to support implementation.

Key Takeaway: Planning for a low carbon transition now will be much easier and cost-effective than trying to address the difficulties that will face high carbon industries, and the workers and communities that rely on them, in the future in a reactionary mode.

2.2 LEARNING FROM THE PAST TO SHAPE A FAIRER, GREENER, MORE SUSTAINABLE NORTH EAST

In the North East of England, industrial heritage is a story spanning three centuries (and beyond) interlaced with entrepreneurial achievement and socio-technical innovations of deep coal mining, railways and coal-fired power stations. There is also a long history of labour movements and trade union organising that have been shaped through spatialised social and environmental relations.

This industrial trajectory is also shaped by and interspersed with a history of un/mis-managed and deeply unjust transitions. For many, the impacts of deindustrialisation and economic restructuring accompanied by sometimes sudden and traumatic loss of jobs in industries such as coal, steel and other manufacturing are seared into the collective consciousness of the region and are still felt today in some communities.

Key Takeaway: A just transition approach requires remaining mindful to the detrimental impact of past transitions, which can foster a sense of scepticism, distrust or fear that the term ‘transition’ implies job losses.

The coal industry is the archetypal example of a deeply unjust, top-down deindustrialisation process. The impacts continue to shape the complex experiences of many communities across the North East of England, particularly the coalfields of Durham and Northumberland⁵ (APPG on Coalfield Communities, 2023). This is demonstrated by the manner in which coal pits were closed across the region in the wake of the 1984-5 Miners’ Strike (which directly involved over 200,000 workers and their families).

Decades later, the State of the Coalfields 2019 report clearly concluded, the loss of coalmining jobs still casts a long shadow over former coalfields in England, Scotland and Wales that have a present-day population of 5.7 million (Beatty, Fothergill and Gore, 2019). The failure in many cases to provide alternative decent, good-quality employment opportunities and investment in communities previously reliant upon single, carbon-intensive industries, as witnessed with coal mining communities – provides the cautionary tale for contemporary low carbon transitions. Therefore, it is crucial that any low carbon policy, intervention or action does not create new or reinforce existing inequities.

Key Takeaway: A proactive strategy for a just transition in the North East of England is one that plans for changes to come before they happen so that they can be managed in the best interests of workers, employers and communities.

Overall, attentive, empathetic and sensitive consideration to how ‘living legacies’ of past transitions continue to shape local peoples’ current perspectives on current and future ‘transitions’ is paramount when developing inclusive plans and policies to address climate change and achieve net zero targets.

The collective industrial history of the North East must inform and empower an inclusive and fair Green Industrial Revolution process (see Figure 1). For this to be successful, the North East’s transition to net zero carbon emissions must deliver positive change for the people of the region, make people’s lives tangibly better in the here and now, and build a fairer future for all.

⁵ For example, Ashington, one of the largest towns in Northumberland, was once considered to be the largest pit village in the world, however, during the 1970s and 1980s witnessed the decline of the coal industry and job losses and large-scale unemployment had a significant impact on the local community. Woodhorn Colliery closed in 1981 (now home to Woodhorn Museum) and Ashington Colliery closed in 1986, with the Wansbeck Business Park occupying the site of the former colliery as part of a regeneration scheme.

Figure 1: Banner at the 2023 Durham Miners' Gala



Key Takeaway: The message is clear: Adopting an inclusive, place-based transition would open huge opportunities for well-paid jobs and fair work. We must ensure that local jobs are created and sustained via a low carbon transition that aligns with good work principles, and place a just transition framework at the centre for green skills development, to ensure that the needs of those that need to reskill, retrain or change roles in industries at risk are fully supported.

3.0 'LEVELLING UP' AND THE UK'S TRANSITION TO NET ZERO – AN OPPORTUNITY TO ALIGN AND COORDINATE POLICIES?

3.1 ADDRESSING SOCIAL AND SPATIAL INEQUALITIES

The problem of spatial inequality in the UK is complex, multifaceted and multi-scalar, and since the late-1970s geographical inequalities in economic performance and prosperity have widened (Martin et al., 2021).

Against the backdrop of the UK's exit from the European Union (Brexit) and the General Election of 2019, the political language utilised to describe the issue of spatial inequality shifted to 'levelling up' the places that had been economically 'left behind' (HM Government, 2022).

A vital point we want to emphasise is that given that spatial inequalities continue to exist and persist after a century of policy initiatives and experiments to 'level up' the economic geography of the country, it is clear that past policies have "had limited impact" (Martin et al., 2021: 19).

Levelling up will require transformative socio-economic change across long-term time frames if deep-seated geographic inequalities between regions, cities and localities are to be profoundly reversed and people's everyday lives are to be materially improved.

3.2 LEVELLING UP AND CLIMATE ACTION

Of specific interest to this report in the context of climate change is that other policy goals are intended to support the levelling up agenda, in particular, the legal commitment to achieve net zero by 2050, the related Ten Point Plan for a Green Industrial Revolution (HM Government, 2020) and the Net Zero Strategy, Build Back Greener (BEIS, 2021a).

For example, within the Ten Point Plan, the 'Green Revolution' is discussed as a process which can "level up our country and enable our proud industrial heartlands to forge the future once again" (HM Government, 2020: 5). This requires clear, inclusive routes into green work to ensure sustainable and secure pathways for people between education and employment in green industries.

The possibilities to 'level up' the UK as it seeks to transition towards a net zero carbon future link predominantly to employment and job creation within government discourse. The UK government has emphasised that the legally-binding transition to net zero greenhouse gas emissions by 2050 (BEIS, 2019) "could create huge opportunities for many of the UK's left-behind places, but also poses risks for them which, if unmanaged, could be damaging" (HM Government, 2022: 52).

For example, analysis commissioned by the Department for Business, Energy and Industrial Strategy (BEIS) in 2021 demonstrated that the North East of England (which the North of Tyne area is encompassed within) could gain an extra 27,000 direct jobs by 2050 compared to 2020 levels (BEIS, 2021b; see Table 2 for summary analysis by sector).

Table 2: Potential exposure impacts for the North East from the Net Zero Transition

Sector	Potential Impacts
Energy and electricity	A potential net increase of £830 million (opportunity: £1.4bn, risk of £580m) in GVA terms by 2050 compared to 2020 levels, and 13,500 direct jobs .
Transport	A potential net increase of £500 million (opportunity: £1.2bn, risk of £700m) to the GVA of the North East region by 2050 compared to 2020 levels, and 6,500 direct jobs .
Buildings	A potential net increase of £350 million (opportunity: £440m, risk of £90m) in GVA terms by 2050 compared to 2020 levels, with 5,200 direct jobs .
Industry and carbon capture	A potential net increase of £230 million (opportunity: £580m, risk of £350m) in GVA terms by 2050 compared to 2020 levels, with 2,000 direct jobs .

Source: BEIS, 2021b

History, however, demonstrates that the UK has witnessed an intergenerational process of regional inequality compounded by un/mis-managed deindustrialisation that has continued to ‘leave communities behind’ (particularly in the North East of England).

This suggests that policy for ‘levelling up’ needs to comprehensively align and coordinate with the core national policies of achieving net zero and post-pandemic recovery. We must work in a holistic and integrated manner and create good-quality, secure job opportunities for all citizens, while tackling the root causes of structural inequalities.

In this respect, some commentators have concluded that a strong place-making agenda should be advanced which focuses on quality of life, infrastructure and housing in the many ‘left behind’ places of the country to support post-industrial communities to ‘level up’ (Martin et al., 2021).

Key Takeaway: Climate action must address spatial inequalities and the relationships that structure the uneven economic geography of the country. Current and future green jobs and skills can help people find new secure, well-paid work in green industries in regions at risk of economic impacts of low-carbon transition.

In this sense, the process of decarbonisation to net zero has the potential to place society on a more socially and ecologically just pathway. This pathway would radically ‘level-up’ in a way that does not simply create a ‘low carbon’ version of the deeply unequal society we have now, but rather to fundamentally change the way we value people and nature, and create a more just, sustainable and caring society.

Key Takeaway: ‘Just transition’ is becoming an important part of current policy discussions and cuts across multiple sectors (such as health, energy and transport) and policy areas (from ‘Levelling Up’ to ‘Net Zero’). A holistic, whole-of-economy approach to just transition governance is required to ensure that short-, medium- and long-term policy interventions at all spatial scales (local to global) are enacted to address complex interconnected social, environmental and economic inequalities.

4.0 OUR APPROACH

4.1 MOVING BEYOND EXTRACTIVE ENERGY INDUSTRIES

As the term just transition has been increasingly mainstreamed in policy spaces in the past few years, there has been recent focus directed towards extractive and energy-intensive industries (such as coal, and oil and gas) and the politics of promoting an equitable ‘energy transition’ in these sectors, with clear worker demands articulated (see Prospect, Unison, Unite and GMB, 2019; Platform and Friends of the Earth Scotland, 2023).

Interestingly, despite this focus, one report found that 91% of oil and gas workers were unfamiliar with the term ‘just transition’ (Platform, Friends of the Earth and Greenpeace, 2020) – this reflects the amount of work required to communicate with diverse stakeholders about the importance of a just and equitable low carbon transition and its relevance to

workers, especially those whose livelihoods still depend directly on fossil fuels extraction and processing.

This attention placed on the energy transition, while vital, can lead to a **narrowing down of the scope of just transitions** and leave out other sectors, in addition to workers and communities that will be affected by climate change and efforts to address it in differential ways (Morena, Krause and Stevis, 2020).

Therefore, in order to move beyond a primary focus on energy transitions (i.e., on coal, oil and gas industries), this research adopted a broader, place-based approach to examine how a fairer, greener, more sustainable and inclusive regional socio-economic development framework can be nurtured across the North East to support a just transition.

4.2 NURTURING JUST REGIONAL TRANSITIONS

Various reports have begun to illustrate the potential threats and benefits of decarbonisation for employment across the North of England (Emden and Murphy, 2019; BEIS, 2021b). There has been notable focus placed on Yorkshire and the Humber in relation to decarbonisation and discussion of just transition, which is perhaps to be expected given there are numerous nationally-critical, high-emitting sites in this region, including steel works, oil refineries and glass making factories (see Cutter et al., 2021; Diski et al., 2021). In comparison, there are very few specific in-depth studies of decarbonisation or just transition processes underway in the North of Tyne region.

In order to support a just transition for the NTCA, we need a decentred and place-sensitive inclusive economy approach to respond to a variety of issues facing the rich diversity of places in our region – ranging from inner city areas of Newcastle, coastal areas such as Tynemouth and more geographically remote rural communities in North West Northumberland.

Key Takeaway: A transformative, place-based and just low carbon transition, underscores the urgent need for a more geographically sensitive, bottom-up approach to develop meaningful partnerships and alternative economic models to maximise opportunities and manage risks to deliver fair outcomes across the tripartite dimensions of sustainability (social, economic and environmental).

The NTCA has explicitly recognised the importance of a ‘just transition’ in the context of an acute climate emergency (NTCA, 2021). This provides a pertinent opening to cultivate a bold transformative shift in place-based policy at the regional scale: inspiring change, nurturing climate action where the benefits are realised for all residents, and amplifying a range of voices in the move to a low carbon society.

Regional partnership developments such as Net Zero North East England have committed to driving forward decarbonisation in a way that focuses on a just transition “leading to improvements in quality of life and growth that is inclusive for all in our region” (North East LEP, 2023). Therefore, there are significant opportunities to collaboratively support, facilitate and lead an inclusive and fair low carbon transition across the region.

4.3 OUR METHODOLOGICAL APPROACH

This report points towards some of the challenges and, more importantly, the possibilities to ensure that the transition to a 'green', net zero future in the North of Tyne region⁶ is socially and geographically fair and inclusive, and identify what skills development support workers and communities may need as we transition to a low carbon economy. The project examined three key areas:

- 1) **Developing green skills for a just transition:** examining the support citizens need, particularly those with links to carbon-intensive industries, to learn new 'green' skills and access training to help future-proof the workforce,
- 2) **Supporting secure, green, decent jobs to deliver a just transition:** exploring the potential and barriers to encourage the growth of decent green jobs that are inclusive and accessible to all,
- 3) **Unpacking what a just and inclusive low carbon transition entails:** examining what a 'just transition' means for workers in carbon-intensive industries in the region.

A range of data collection methods were utilised to address these key areas, primarily:

- A **literature review and policy analysis** to provide the foundation for the research.
- **80 semi-structured interviews** with a range of stakeholders (i.e., workers, employers and organisations) to understand the opportunities and challenges which face the region to plan for green skills and training development and the growth of green industries.
- A **Green Skills Audit** that examined what high carbon jobs are at risk from the low carbon transition in the NTCA area, how many workers are currently reliant on the region's high-carbon economy and their existing skills base, in addition to what and where the opportunities lie for green job creation, and the skills shortages that need to be addressed.
- **Participatory workshops** examining sector-specific issues facing two diverse case study industries in the region: construction and farming (see page 17).
- **Citizen engagement surveys** on the Commonplace platform examining the public's perceptions of climate change and a just transition, and sector-specific surveys for construction and farming.

The findings and recommendations that emerged from the analysis of the data point to a number of specific interventions that can be implemented by the Combined Authority. Clear policy direction and actions from regional government are required to ensure that sectors can confidently plan for the future and that a well-defined green skills pipeline is created. Effective implementation will require long-term collaborative partnerships between workers, trade unions, government, employers, and the education and skills systems for inclusive and fair transition planning and delivery.

⁶ We use the term 'North of Tyne' throughout this report as a shorthand to refer to the North of Tyne Combined Authority region (i.e., the local authority areas of Northumberland, North Tyneside and Newcastle).

A NOTE ON THE CASE STUDY SECTORS

The Just Transition Research Project has focussed on two 'high-carbon' sector case studies that span the diverse rural-urban spectrum across the region – construction and farming – to examine some of the sector-specific challenges and opportunities for industries that are essential for any low carbon future. Construction is a relatively large employer in the region and agriculture is widely considered to be culturally and socially significant in particular, often rural, communities. They have also received far less attention in just transition discourse, which has tended to focus on energy transitions.

Both industries were chosen in relation to how they correspond to the following factors identified as important following consultation with the NTCA; geographical spread across the NTCA, what powers the NTCA have to enact change within this industry, practicalities of decarbonisation; and the role of education or skills providers in the region in shaping 'green' skills provision for the sectors. These considerations were cross-referenced following a literature review and policy analysis that identified that both industries are energy-intensive, diverse, complex to transition and consist of a significant proportion of small or micro-businesses that individually may not have the capacity to plan for their own net zero transition and therefore need coordinated and strategic support at a Combined Authority level.

As revealed by the stakeholder interviews (Section 2) and Green Skills Audit (Section 3), many of the new jobs required to support a just transition will be in the built environment and construction sector, both for the new infrastructure needed to deliver low-carbon energy and transportation and in making our homes, workplaces and communities energy efficient. Therefore, the construction case study is presented in this report (Section 4) to illuminate and provide context to the key findings discussed in the previous sections.

Given the wider complexities that currently surround the broader post-Brexit agricultural policy transition, farming is considered in a separate research report. Our research on agricultural transitions is set out in the separate, extended case study: *Supporting a Just and Sustainable Transition for Farming in the North East of England (2023)*.

To successfully plan for their longevity, resilience and sustainability, a proactive approach is required to address the issues raised by this research.

5.0 CONTRIBUTION OF REPORT

The report complements and adds value to the important existing work of the constituent local authorities and the NTCA by integrating a focus on an inclusive economy with climate change action to support just low carbon transitions. Given that a just net zero transition is a central priority for the combined authority (NTCA, 2022), this report provides further evidence to support strategic and collaborative just and inclusive transition planning in the region.

Harnessing the full potential of Just Transitions is only possible when citizens are fully informed and empowered to actively shape conversations, decisions and plans for addressing climate change in a way that is meaningful to themselves, their communities and the region (Morena, Krause and Stevis, 2020).

It is hoped that this report acts as a catalyst to develop a coherent and comprehensive regional approach to Just Transition and demonstrates that with the right support and investment, MCAs and local authorities can go further and faster to achieve inclusive decarbonisation.

The research that informs the report specifically examines the opportunities and challenges related to green skills development and green job creation across the region. By highlighting positive pathways to a low carbon future and drawing upon the wealth of knowledge, passion and enthusiasm of the citizens and workers of the North of Tyne region, we emphasise the possibilities to work together and collaborate to ensure that no one is left behind while tackling the climate crisis. In short, this is an opportune moment to foster a more inclusive, sustainable and resilient economy as we plan for a just and fair transition to a low carbon future for all.

Finally, we hope that this report acts as a springboard to foster further dialogue and ambitious climate action to support just transitions in the region in multiple contexts and forums covering a diverse landscape of stakeholders – that is, for example, within the Combined Authority itself but also our communities that comprise of the social fabric of society, the unions that seek to improve the working lives of people and businesses that make up our flourishing regional economy.



5.1 STRUCTURE OF THE REPORT

The remainder of the report is structured as follows:

2

SECTION 2 outlines the main findings and analysis from over 80 stakeholder interviews across the public, private and voluntary, community and social enterprise (VCSE) sectors that examined the challenges and opportunities to support inclusive **green skills development, create sustainable green jobs and nurture just transitions** across the region. The key issues that emerged from the data analysis are presented under Priority Action Areas.

3

SECTION 3 presents the findings from the **Green Skills Audit** undertaken by Autonomy. In order to deliver a fair transition, workers will need the right skills to support a low carbon economy over the years to come. Skills shortages and gaps could slow down the transition and limit its social and economic benefits. Therefore, effective skills forecasting and workforce planning are required. The Green Skills Audit provides quantitative analysis to help ground future decisions.

4

SECTION 4 presents a detailed case study of the **built environment and construction industry** to illuminate several of the key themes discussed in Sections 2 and 3. It explores the challenges and opportunities related to supporting a low carbon transition, in the context of an acute skills shortage and various interconnected structural issues facing the sector. Drawing upon the experience and expertise of a range of actors (i.e., students, workers, employers and skills providers) this section outlines what a just and inclusive low-carbon transition could look like, involve and require across the region.

SECTION 2 – STAKEHOLDER INTERVIEW ANALYSIS: GREEN SKILLS, GREEN JOBS AND JUST TRANSITIONS

1.0 INTRODUCTION

In this section, we present findings from **over 80 stakeholder interviews** across the public, private, voluntary and community sectors that examined:

- 1) the opportunities and challenges of supporting green, sustainable skills development opportunities, and
- 2) the potential and barriers to the creation of inclusive, high quality green jobs to ensure that everyone realises their potential and nobody is left behind as we decarbonise society and the economy.

Understanding green skills and green jobs at a local level is essential for promoting social inclusion and equity in education, training and skills development for a fair

shift towards a greener economy. Therefore, we unpacked the various challenges and opportunities related to supporting a sustainable inclusive economy across the North East region, drawing upon the expertise, knowledge and insights of participants.

For an effective, socially just and inclusive low carbon transition to take place across the region, young people and the existing local workforce must be equipped with the right skills, knowledge and expertise to adapt to the evolving nature of jobs and changing economic structures towards a lower carbon economy.

THEME 1. SUPPORT GREEN SKILLS DEVELOPMENT AND A HOLISTIC GREEN SKILLS ECOSYSTEM

SUMMARY:

- There is no agreed definition of 'green skills'. Broadly understood, green skills are the knowledge, abilities, values and attitudes needed to live in, develop and support a sustainable and resource-efficient society.
- In order to maximise the potential of green inclusive growth at the local level, it is vital that citizens have access to foundational skills and entry level qualifications that are linked to specialist green skills development programmes.
- While there is contestation over what counts as a 'green skill', the skills ecosystem must prepare all workers with the attributes, values and capabilities needed to shape a socially and environmentally sustainable society that requires highly skilled and empowered workers.
- There currently exists a disconnect between education policy and climate policy, which hinders the advancement of green skills development.
- It is essential for teachers to receive training on climate change, and the curriculum should encompass diverse pathways to green job opportunities.
- High-quality apprenticeships are crucial for a skilled workforce and supporting a sustainable, green economy. However, substantial investment is needed for training infrastructure, work-based learning and engaging with employers. Apprenticeships need to be dramatically increased across the region, particularly entry-level programmes targeted to young people or new entrants to support an inclusive green economy.
- SMEs need to be comprehensively supported to take on apprentices. Aligning with local business needs, targeting skills gaps, and fostering flexibility are key.
- Stakeholders can work collaboratively to change perceptions and support women in STEM education, training and employment.
- Collective responsibility and cross-sector collaboration is vital to ensure that skills provision is relevant and successfully delivered through coordinated action for the green transition.

PRIORITY ACTION
AREA 1.1: DEVELOP CLARITY OVER 'GREEN SKILLS' AND COMMUNICATE GREEN SKILLS DEVELOPMENT PATHWAYS WITH DIVERSE STAKEHOLDERS.

Key Issue 1: There is no universal understanding or definition of 'green skills' – and it was widely considered by interviewees that it was relatively novel to label various skills as 'green' in everyday life in relation to their particular sector. This somewhat reflects the fact that 'green' is notoriously a vague term.

"I suppose – and I would include myself in this – I don't think people fully understand what the breadth of green jobs actually entails, and therefore within that, **what are the various skills sets? Are there commonalities? Are there core skills, or awarenesses' you could start to work with?** But not understanding the full scale of it, then it is very difficult to gear up. And unless we have conversations about green jobs and people like me are educated, and develop an understanding of what it is and entails, then it is very difficult for organisations to position themselves to respond. And that is a danger." **(community-based skills provider stakeholder)**

Discussions of green skills with participants tended to fall within two distinct framings that shape understandings of the green economy and just transitions, more broadly:

- 1) The first frequently associates green skills with **highly skilled or sector-specific technical training** and is often conflated with science, technology, engineering, and maths (STEM) skills. For example, some participants discussed green skills exclusively through a technical lens reflecting on technology-driven green innovations and digital skills as important to supporting a low-carbon economy.
- 2) The second focuses on **cross-cutting and transferable generic capacities and competencies** that relate to critical thinking, problem solving, leadership and communication abilities that were discussed as crucial for a sustainable, inclusive, green economic transition.

Within this broader framing of the skills needed for an inclusive green economy, emphasis was placed on three key areas:

- a) Interventions targeted towards people with low confidence and low-level skills to **build capacity, awareness and provide entry level routes into learning**, with particular focus on foundational skills (such as Maths, English and ICT), so people can begin to consider and apply for 'green' jobs.

As a community-based local skills provider stated, "it is all about building the capacity of people to get to that point, the skills option, or even the ability to think about the skills option as actually achievable, viable for them, accessible for them".

- b) The **importance of ESOL** (English for Speakers of Other Languages) courses to improve reading, writing, speaking and listening language skills for those from other countries or for whom English is not their first language to become more confident to apply for (green) jobs.

As a community worker explained, "there is desperate need for ESOL in this area [West Newcastle], and all the courses ran by the local authority are completely oversubscribed and so if you want to get women, especially women of colour into jobs, into green jobs, then you need ESOL classes."

- c) Learning opportunities to provide a foundational understanding of sustainability and climate change to support behavioural change and **climate and energy literacy within professions**. In this context, participants highlighted the possibilities of integrating 'green issues' and sustainability into existing qualifications with content tailored to the specific sector or occupation.

As a further education lecturer indicated, "there needs to be early engagement with sustainability and how this relates to the particular course content, so not just added on, but integrated... that can then act as a footing for more 'green'-specific courses or apprenticeships down the line."

Key Issue 2: Discussions with participants revealed a significant area of contestation related to what actually counted as a 'green' skill, which often varied by sector and role. It was clear that placing the term 'green' with 'skills' had little meaning for the majority of people interviewed.

It was discussed that in the future, the **nature of the work** of various occupations may change in the green economy. Therefore, the focus and content of skills provision for these jobs will be different, but not necessarily require 'green' skills, and the level of training and qualifications required may not change:

"If you think about battery manufacture, so that's specific to electric vehicles, but you look at the actual skills that they need, they're the same as the rest of the manufacturing sector. And, yes, the sector's changing, because of the impact of digital and the need to do data analytics and increased automation, but fundamentally... is it a green skill? Is it a green job? Not really. It's the same as what I'd see in a manufacturing company down the road. The **context's different.**"
(further education stakeholder)

As this participant discussed, for some roles in sectors such as automotive manufacturing, it is the content and context of the training that may change, rather than the overall skills-set and level of qualifications. Indeed, multiple stakeholders identified that **there are blurred lines between what counts as an overt 'green job' and a job that requires established skill-sets that are applied to 'lower-carbon' products and services** in the move to an environmentally sustainable economy in the context of complex, global supply chains.

Our research highlights that the green skills ecosystem requires **clear communication** that there is complexity and uncertainty over the future world of low-carbon work. It was argued that in order to **maximise the potential of green inclusive growth at the local level**, it is vital that citizens have access to foundational skills and entry level qualifications that are linked to specialist green skills development programmes. This requires a joined-up **holistic green skills action plan**.

In short, coordinated action is required between multiple actors (i.e., skills providers, employers and local government), whereby the skills ecosystem is responsive to the emerging green economy and delivers the kinds of transformative skills that are needed to ensure we achieve a socially and environmentally sustainable and equitable society.

PRIORITY ACTION
AREA 1.2: SUPPORT A NEW HOLISTIC GREEN LEARNING AGENDA IN SCHOOLS (AND BEYOND) AND AMPLIFY AND NURTURE YOUTH VOICE.

Key Issue 1: Several participants stated that there was a fundamental disconnect between current education policy and climate (or ‘net zero’) policy, and greater integration is needed. Without addressing the content of education and skills policy at all levels of learning (from early years through to adult education), stakeholders considered that the green skills agenda will fail to produce the skilled workforce needed over the long-term to help drive the green economy.

The lack of joined-up thinking and understanding of the connections between climate change, green skills and green job opportunities in multiple settings (households, schools and colleges) was discussed by stakeholders as a significant issue impeding a just transition. As a representative from one skills provider stated:

“We need to ensure that young people are prepared for the future and education is incredibly powerful. You need to start engaging people early on with these topics, and show them how their understanding links with the real world, with real career pathways, so that they can make a difference, feel empowered. If that message is not there right at the beginning, you are swimming upstream later on. [...] **You cannot talk about green jobs, without talking about green skills and you cannot talk about green skills without talking about a solid education in sustainability, climate change and innovation.** That has to be central, not on the periphery.”

Recent research (SOS-UK, 2021) found that 70% of UK teachers have not received adequate training to educate students on climate change and the topic is currently taught in a limited way – this is despite the fact that 92% of teachers reported they are concerned about climate change. It was also revealed that the majority (65%) of teachers felt they could frame climate change to interest their pupils in terms of ‘animals, nature and wildlife’, but worryingly **just 25% said they think they could discuss the issue through ‘careers and green jobs’**.

This highlights the importance of working directly with schools and teachers to support them to recognise the diverse pathways to local green job opportunities and learn about the range of green careers available in the North East region. As a training centre business manager discussed:

“How do we also educate teachers because they’ve got more of a touchpoint with students than we do. They can reinforce, ‘Do you remember you visited the Port of Blyth? Do you remember that robot? Do you remember that engineer?’, so just to keep the focus and keep it ticking over, and by the time they’re sixteen, hopefully we’ve convinced them enough to then have a pathway ready for them in terms of, ‘There’s a qualification, which will lead you to your next phase’, which will hopefully be your apprenticeship, your standard degree, or direct employment.”

Key Issue 2: Ensuring that students have awareness, meaningful engagement and work experience with local employers and industry across the learning journey was discussed by participants as crucial for supporting an inclusive low-carbon transition.

“Those, sort of, school work placements, workplace experience... so allow the students to go into workplaces, get the experience they need, and it gives the businesses what they need.”

As an education stakeholder commented:

“Employers are still not part of that learner journey and I think until we get that message embedded right from Year 3 onwards, we’re not going to get that talent pipeline where we want it to be. It’s not enough just to have ‘touch points’ for careers. [...] It’s about embedding that message so that you come back across the same companies two or three or more times in your learner journey, that it’s just not a one-off ‘wow’ and then you forget about it. [...] and it’s trying to find the funding to do that because people are industry-stretched, education-stretched. How do you find those people to fill those moments for the students?”

Key Issue 3: There is a lack of understanding amongst young people about green skills and jobs. It was frequently mentioned by participants that there needs to be a wholesale reform of careers advice and guidance services that are dynamic, inclusive, up-to-date and inspiring, and provide tailored information, advice and guidance on further education and employment pathways for the green economy.

An issue raised by several people we interviewed stressed that young people, particularly from low-income backgrounds, “may not be connected to the ‘green agenda’ as much as policymakers and practitioners think they are” (community organisation practitioner). Moreover, participants discussed how past negative experiences of formalised education may deter engagement with the idea of green skills development, as a teacher discussed:

Moreover, several participants discussed that there needs to be more emphasis placed on vocational learning and experience in schools, accompanied by an extensive (re-) valuing of craft and trade-based skills and careers, as an electrical engineer discussed:

“I don’t think they [young people] even know what is outside of their area, never mind of what they can earn, potentially [...] if there was a vocational class where you were actually given some **hands-on experience that looks like an industry**, but the curriculum is nowhere near that.”

“These youngsters genuinely believe still that nobody wants them because they haven’t got maths, English or whatever, and weren’t very good in their opinion at school. And it’s trying to debunk those sort of ingrained myths now because they’re absolutely valued and needed. [...] So, there’s quite a lot of work still to be done around that aspirational and inspirational piece right back to primary school, that message has got to start then.”

Opportunities for meaningful work-based learning with mentorship support at an early age for all students was also discussed as crucial, as a manager of a business network considered:

As a participant from a grassroots community organisation suggested, broader effort needs to be done to raise the hope for the future, particularly among young people, for an inclusive green society:

“A part of that is grabbing the attention of our young people, this is something to aspire to here, this is an opportunity for you to have guaranteed, sustainable employment, in a very respectable and responsible area of development, from the employment perspective [...]. And to be enthused you need to understand... and their mams and dads, because they need to be reiterating that as well.”

A key issue discussed was the need to ensure that all children and young people have awareness about the local opportunities available in the low carbon economy:

“It’s about sowing that seed of excitement and curiosity for the future. I mean, how many do you reckon of children in the North East know at the moment about the sort of battery plants, the hydrogen that’s coming, the wind farms? The opportunities in the North East at the moment... let alone semiconductors, space industry; so, when we say ‘space’, I’m talking about satellites. How many of them know what is probably, for most of them, a bus ride, hopefully no more than that. But it is here in the North East.” **(further education stakeholder)**

Several participants pointed towards the Gatsby Benchmarks⁷ as a positive development in shaping a modern career education and guidance service in the UK (see Box 2.1).

BOX 2.1: TRANSFORMING CAREERS EDUCATION – THE GATSBY BENCHMARKS

An evaluation of the Gatsby Benchmarks two-year pilot in 16 schools and colleges in the North East of England found that learners who engaged with a wider range and greater number of career guidance activities reported improved career readiness and improved employability skills, while teachers conveyed an increase in their students’ aspirations (Hanson and Nearly, 2020). Place-based partnership Career Hubs that are centred on regions and local communities are vital elements of a renewed platform for targeted careers education that seeks to build social capital to facilitate social mobility and achieve all eight Gatsby Benchmarks (Careers and Enterprise Company, 2020). While the Gatsby Benchmarks are currently voluntary, given their ability to drive positive outcomes, all organisations that provide careers advice should be mandated to meet these minimum standards to ensure continuity of services and embedded best practice.

These key issues point towards the importance of a “whole system”, holistic green learning agenda based on a coherent joined-up programme of learning and real-world workplace understanding, where young people are able to develop an awareness of environmental and sustainability issues across the different levels of the educational journey.

At a governance level, there is an urgent need for coordinated education, skills and climate policy that adopts a long-term strategic perspective – and embeds green skills and meaningful work experience across the educational landscape.

⁷ The independent charity the Gatsby Foundation published Good Career Guidance (2014) and presented 8 ‘benchmarks’ that support young people to make informed career decisions. They are: 1) A stable careers programme; 2) Learning from career and labour market information; 3) Addressing the needs of each pupil; 4) Linking curriculum learning to careers; 5) Encounters with employers; 6) Experiences of the workplace; 7) Encounters with further and higher education; 8) Personal guidance.

Key Issue 4: There is a need to prioritise and empower youth voices in shaping green skills and green jobs policy, initiatives and programmes to ensure that the low-carbon transition is inclusive and reflects the diverse priorities, aspirations and experiences of young people across the region. It is crucial that youth voice is embedded in just transition.

Stakeholders discussed that the Combined Authority can play a leading role in promoting a holistic green skills agenda across all levels of government and also facilitating pathways for young people's voices to be genuinely included and given weight in regional policy-making across various sectors such as employment, skills and climate change.

Participants stated that mechanisms are needed to actively support young people to shape decision-making and policy that affects them and their communities, as a youth work stakeholder discussed:

"It's opening up and having a range of opportunities for young people to have a voice, so one way is to put out a survey and do some consultation work, right through to setting up a Youth Advisory Board for young people to drive and advise the work the NTCA are doing. Young people as advocates, speaking on your behalf to other young people... peer-to-peer, so young champions, young advisors [...] getting a more formalised structure and methodology around young people's voice and influence within the Combined Authority."

There are already clear examples of how this can be delivered, such as setting up a **Youth Assembly** or **Youth Board** (designed by young people, for young people, that reflects the breadth of diversity across the region in terms of gender, class, ethnicity, disability, LGBTQIA+ and geographic location across the rural-urban spectrum) (see Box 2.2) to guide the Combined Authority in building a "Zero Poverty, Zero Carbon" society for current and future generations through a recognised and long-term framework in comparison to intermittent activities such as surveys.

BOX 2.2: BEST PRACTICE – EMBEDDING YOUTH VOICE INTO COMBINED AUTHORITY DECISION-MAKING

The West Midlands Young Combined Authority (WMYCA) brings together a diverse board of young people who all live, learn and work across the West Midlands. As a collective, the group works to ensure that the voices of young people are represented in the region's leadership and identified seven priority areas that are particularly important for helping younger people thrive after the coronavirus pandemic (culture and major events, skills, digital, environment, transport, housing and regeneration, inclusive communities and wellbeing) (**West Midlands Young Combined Authority, 2021**).

It is essential that the Combined Authority actively works to nurture the talents and potential of those from disadvantaged backgrounds by removing the 'barriers' (the policies, practices and cultures) that prevent some young people participating in democratic policymaking.

For example, there are significant inequalities facing children across the region – 38% of children in the North East are living in poverty. This equates to just over 11 children in a classroom of 30. This rises to almost half (47%) of North East children in a household with an under 5. Both are now the highest rates of any UK nation or region (North East Child Poverty Commission, 2022). Therefore, as a participant commented:

"The point about inclusion and diversity, and ensuring that if we are going to get the voice of young people, it genuinely is representative, it's not just the ones who are really motivated to have a voice and it is absolutely right that they have those opportunities, but how do we get beyond that, how do we get the diverse voice?"

**PRIORITY ACTION
AREA 1.3: INVEST
IN HIGH-QUALITY
APPRENTICESHIPS TO
BUILD A TALENTED,
SKILLED, GREEN
WORKFORCE.**

Key Issue 1: Apprenticeships were discussed as one of the most important routes for young people to enter the labour market with on-the-job training and off-the-job learning leading to a qualification for workers and providing employers with an effective way to grow their skills base for the low-carbon transition. However, it was stated that at the moment, demand for apprenticeship places, exceeds the placements available with local employers.

Multiple stakeholders outlined that apprenticeships have traditionally been, and continue to be, highly valued pathways in the North East of England into skilled trades such as electrical engineering and plumbing – and will play a central role in developing a highly-skilled green workforce.

Several stakeholders pointed out that more needs to be done to engage with individual employers, particularly SMEs, to demonstrate the multiple benefits of taking on apprentices within their business and support smaller employers to make this process easier. It was also stressed that (micro) SMEs need a system that is highly flexible and responsive to their particular needs. As a participant from the North East Institute of Technology explained:

“The best thing we could do is to have employers have a better understanding that they need to recruit more apprentices than they can retain, so that we get a pool back in the North East. Like they used to do [...] we have got some little SMEs trying to do that, so they only might be taking on one or two extra apprentices, but they know they’re not going to keep them, and they understand that it’s for the bigger picture. [...] ...to show that it’s not as onerous as you think **because I do think the SMEs are frightened – the legal aspect, the time, the mentoring commitments.**”

Previous negative experiences can also put businesses off taking on new apprentices and therefore, companies must begin to take a proactive, open approach to support on-the-job training. As an engineer discussed, there is a cultural dynamic that must be overcome:

“I went in to grow the business and I saw that it was really, really difficult to get hydraulic technicians. I said, “What about apprenticeships?”... “Oh, we got our fingers burned on the last one.”... “When was that?”, I asked... “16 years ago”, they replied.”

Multiple participants discussed that there are distinct barriers to taking on apprentices, depending on the size of the company, with the experiences of SMEs being different from large businesses. For SMEs, under multiple business pressures, it was stated that it is crucial any apprentice taken on has the right skills-set and the potential to contribute to a small team from the start, however, several interviewees reported finding it difficult to find the ‘right’ candidate. As an electrician employed in a SME discussed:

“With a small firm you are what you are, and your ability is shown every day, because there is nowhere to hide, same with apprentices. There is a need for high-quality apprentices and that starts at school. The **education system isn’t geared to give young people the vocational, practical skills that they need** and that then knocks on to the workforce. We have been on years looking for the right apprentice.”

It was repeatedly stated that micro businesses and smaller SMEs can face multiple barriers to engaging with the apprenticeship system. Particular challenges include limited time, knowledge, or awareness of recruitment solutions. Therefore, stakeholders outlined the importance of increasing awareness, outlining the benefits of taking on apprentices and answering any specific questions SMEs may have (see also, North East LEP, 2022). The Combined Authority can work with businesses to increase the supply of green apprenticeships across the region (Box 2.3).

BOX 2.3: BEST PRACTICE – INCREASING THE SUPPLY OF APPRENTICESHIPS

Improving the supply of apprenticeships in small business has been done successfully – both the West Midlands Combined Authority (WMCA) and Greater Manchester Combined Authority (GMCA) undertook a pilot programme for the Apprenticeship Levy transfer model. This model allows levy-paying companies to allocate a portion, up to 25%, of their levy funds to support smaller firms within their locality instead of the unspent funds returning to the Treasury. The Combined Authorities acted as intermediaries, providing a brokering service to facilitate these transfers. They aided larger enterprises in understanding their options and identified smaller businesses that could benefit from additional financial support. To date, the WMCA has successfully directed £32.7 million to 725 SMEs, leveraging contributions from major companies operating in the region, including Lloyds Banking Group and Amazon (Fraser and Hawksbee, 2022).

It was stated by several stakeholders, that at the national level, there must be a fundamental overhaul of the Apprenticeship Levy so that it is more flexible and better serves the needs of (smaller) businesses and workers, and can respond to local and regional needs. This is crucial because since 2017, over £2 billion in unspent Apprenticeship Levy funds has been returned to the Treasury.

Key Issue 2: It was emphasised that the number of high-quality, green apprenticeships needs to be dramatically increased across the region, particularly those targeted to young people or new entrants to support people gain the skills they need for secure, decent, long-term employment in the green economy.

In terms of creating quality ‘green’ apprenticeships, some participants identified existing traineeships that support career pathways into the environmental sector (with roles such as, ecologist, arborist, forest operative, and horticulturalist), however, it was discussed that the apprenticeship system should be expanded to create multiple pathways into diverse green employment across the economy, where there are identifiable green skills gaps and shortages (such as building retrofit).

Recent research (Fraser and Hawksbee, 2022) has revealed that the decline of intermediate apprenticeships is impacting individuals from economically deprived parts of the country most. This is closely tied to the fall in SMEs hiring apprentices, as they traditionally take on a greater share of apprentices from deprived backgrounds.

SMEs overwhelmingly use the apprenticeship system to train up new staff – and in the context of the NTCA region, this is important because 98% of businesses are SMEs. However, small businesses find the system confusing and bureaucratic, which has reduced their engagement in the system. Therefore, it was stressed that the Combined Authority can play a leading role in publicising to employers and workers the benefits of investing in green skills to grow the regional green economy.

It was also discussed by participants that private training courses can provide an alternative to apprenticeships, however, these can often be prohibitively expensive for school leavers and early career workers. Therefore, several stakeholders highlighted the importance of expanding fully-funded apprenticeships to ensure that we nurture a highly-skilled green workforce.

Key Issue 3: Further education stakeholders discussed how there has been a lack of funding and valuing of colleges that deliver technical and vocational education and training (compared to universities, for example) in the broader educational ecosystem and this must be addressed. An additional issue raised was the difficulty of recruiting experienced teachers and trainers into the further education sector.

It was highlighted that there needs to be a **substantial increase in the quality of, and investment in, vocational and training infrastructure** more broadly to support apprentices gain the hands-on experience that is needed, so tutors and instructors can deliver world-class technical teaching that simulates real-world working environments as much as possible. As an electrician (and former apprentice) discussed of his experience:

“With a trade-based programme, especially the practical side of things, things wear out. [...] So, with electrical bays, its wood, its screwing things to walls on and off, it is the accessories, the accessories are expensive, [...] so it is maybe, the teacher will do it – and you’ll watch. The hands-on experience is not there, because the money is not there for it to be practised by the actual student. [...] so, you have to have the capital, to keep putting into that, to keep the students going.”

Participants were clear that investment in vocational and technical education infrastructure, teaching and outreach engagement activities is required to ensure that the further education system has the capacity to deliver the skills needed for a just low-carbon transition. It was highlighted that students respond well to practical activities, however, further education ‘simulated environments’ are often far removed from real conditions to effectively provide ‘a whole-building approach’ to low-carbon construction skills.

The Institute for Fiscal Studies (Drayton et al., 2022) has highlighted that between 2010–11 and 2019–20, spending per student aged 16–18 fell by 14% in real terms in colleges and by 28% in school sixth forms. For colleges, this left spending per student at around the level it was in 2004–05, while spending per student in sixth forms was lower than at any point since at least 2002.

For many participants, there has been a devaluation of technical knowledge and an overemphasis placed on university, which has shaped secondary education with a strong ‘academic’/‘vocational’ divide. As an educational stakeholder discussed:

“Over the past few decades really is a system that has created a poor image of vocational learning and the trades. I think a lot of parents want their kids to go to university because they don’t see apprenticeships as being as that impressive, so there’s pressure to go down the university path.”

It was also emphasised by several participants that without broader societal cultural change removing the negative perceptions associated with vocational education, and a collective (re-)valuing of tradespeople and the work they do, then the chronic skills shortages experienced in labour-intensive sectors such as construction will not be overcome. This sentiment was articulated by participants across the professional services and trade roles within construction, as exemplified by the following comment:

“One of the biggest problems we have in the UK, compared to other countries, is that we don’t respect the skills of the tradespeople, for example: “If you’re not good enough at school, you can always work on a building site”. So, **we inherently undermine the credibility, the skills, the knowledge, the respect, of people who work on building sites.**”
(architect)

It was explained by industry stakeholders that given the high demand for skilled tradespeople across the construction industry, those with the relevant knowledge and skills to teach the next generation within the further education sector can earn higher salaries in industry, meaning it can be hard to retain or hire experienced staff, which exacerbates an already challenging recruitment context within the education sector. Therefore, a participant stressed the need for decent pay and conditions for the further education sector to attract a skilled workforce to teach future green skills:

“It’s very hard to recruit the right people for some of these areas, subjects... when you can get a hell of a lot more working in industry than in teaching the next generation those skills, so that has to do with wages, but also the image of FE [further education], I suppose, and there needs some creative thinking here of how we can attract the right talent, and skilled staff”.

Key Issue 4: It was highlighted multiple times by participants that local authorities could lead the way in creating directly-employed green apprenticeships within local government, for example, via a public sector retrofit programme and social housing new build.

Several participants stated that local authorities can develop high-quality apprenticeship opportunities for new entrants through entry-level pathways to increase their workforce to address various ‘skills gaps’ in key areas such as construction and engineering to deliver low-carbon infrastructure. However, with any local authority-led programme, transparency is needed on how these apprenticeship positions are formulated, advertised and recruited to ensure that they reach a diverse audience.

It was also highlighted that **procurement is a unique leverage opportunity for both national and local government to mandate the inclusion of good-quality apprenticeships** as part of their requirements. Currently, there are existing provisions for apprenticeships in framework agreements such as those for HS2 and the Offshore Wind Sector Deal (FOE and Transition Economics, 2021). There is no reason, given the underused Apprenticeship Levy, that these conditionalities should not be used much more widely when combined and local authorities are awarding procurement contracts.

**PRIORITY ACTION
AREA 1.4: ADDRESS
THE ROOT CAUSES OF
GENDER IMBALANCES
ACROSS EDUCATION
AND TRAINING, AND
SUPPORT INCLUSIVE
ACCESS TO QUALITY
GREEN JOBS.**

Key Issue 1: Gender imbalance persists in STEM and trade courses, including green skills. Therefore, it is vital to place substantive gender equality at the centre of a just and inclusive transition, and ensure that green skills development opportunities and green jobs are accessible to everyone. Skills providers and employers discussed the under-representation of women in particular sectors such as engineering. For example, only 16.5% of engineers in the workforce are women, compared to 10.5% reported in 2010 (WES, 2022).

It was highlighted that individual initiatives have sought to increase enrolment or raise awareness about particular occupations through targeted campaigns (such as, 'Women in... Construction') or mentoring programmes delivered with industry partners, however, it was stated that the impacts of these initiatives have not translated into significantly increased numbers of women in particular occupations:

"My first involvement in recruiting and training apprentices and graduate recruitment was at the beginning of the 1990s. And we're still fighting the same battles 30 years on... [...] We do know that the education system is stereotyping, so it pushes a lot of people out of STEM." **(technology and innovation centre representative)**

Several participants outlined the importance of existing workers in various green careers acting as 'Green Job Champions' to inspire new entrants, particularly students from a diversity of backgrounds (in terms of gender, age, class, ethnicity, disability, and also geographic location etc.). As a female architect discussed:

"It is incredibly important that the person standing in front of them [students] looks like them and what I mean by that is that we have a diversity of people, so women and people from minority ethnic backgrounds etc., so we change perceptions of what it is to be an engineer, an architect or whatever occupation you are talking about [...] so it's incredibly important that we address those barriers and it's important that people see that you can do any job."

This sentiment was also emphasised by a participant in the renewable energy sector:

"We've got a number of initiatives we're trying to progress because the statistics are quite damning in terms of one in ten engineers is a woman. So, the government target is 50/50 by 2030, a very aspirational target, other industries haven't achieved it but there's going to be a big push for this in the renewables sector. So, via our STEM hub, we engage the local schools [...] we try and bring female engineers to the front to say, 'Look, this is female engineer, she's gone to university, she has the qualification, she leads a team, a mainly male team', so it shows them it's not the dirty industry they might perceive." **(training centre business manager)**

As discussed by one participant, the tendency is to have short-term, or sector-specific targeted campaigns that often follow "an 'add women and stir' approach", which does not tackle the systemic inequities in society that reproduce gender inequalities. Therefore, it is clear that much more needs to be done across stakeholder organisations (i.e., schools, colleges, skills providers, employers and government) to change perceptions of science-based subjects and to ensure that women are holistically supported through the skills pipeline and into green job roles. This can be through targeted interventions such as mentoring, work experience opportunities, flexible internships and progression pathways that account for diverse experiences and needs.

However, there is also deeper transformative change required that is rooted in gender equality, collective wellbeing and sustainability to ensure that the low-carbon transition is just, fair and inclusive (see Cohen and MacGregor, 2020). Coordination of this would be well suited to the Combined Authority. For instance, work can be undertaken to better understand the intersectionality of multiple barriers preventing underrepresented groups engaging in particular education and training activities, identifying their support needs, and addressing challenges through an integrated green inclusive economy approach.

According to research by Onward (Christie-Miller and Luke, 2021), STEM skills are necessary for over half (56%) of the existing occupational categories associated with net zero initiatives. However, there are significant and long-standing issues in relation to the gender imbalance of STEM subjects and trade-based courses, where women remain under-represented in construction, engineering and STEM subjects, as well as the majority of current 'green' skills provision.

For example, there is a clear gender disparity in STEM education and training; in 2018, women comprised only 22.2% of 37,000 A Level physics students and only 7.4% of all STEM apprentices (WES, 2022). Moreover, in 2019, women made up a small minority of apprentices in the subjects: Construction, Planning and the Built Environment (4%); Engineering and Manufacturing Technologies (7%); Information and Communication Technology (20%); and Agriculture, Horticulture and Animal Care (37%) (DfE, 2020: 32).

There is also a significant gender divide in net zero industries, with workers much more likely to be men; approximately 82% of employees are male and just 18% are female (the workforce across all industries is around 53% male and 47% female). To increase the gender balance in the net zero workforce, targeted intervention in the skills pipeline is crucial (Christie-Miller and Luke, 2021).

At present, there is a lack of evidence to support the claim that green jobs will address gender inequalities and they could even reinforce them unless policies for a **just transition place substantive gender equality at the centre** (Cohen and MacGregor, 2020). Therefore, the Combined Authority could play a significant role in supporting a fair and inclusive transition that places gender equity throughout its work programme and targeted skills initiatives.

Net zero industries in the UK exhibit a slightly reduced gender pay gap in comparison to the national average – in terms of median earnings, male salaries are 17% higher than female salaries within these industries, while the nationwide gap stands at 21% (Christie-Miller and Luke, 2021). Therefore, given there is clear gender inequality between earnings in net zero industries – concerted, strategic interventions are needed to ensure that 'green jobs' are fair and inclusive jobs that provide clear progression opportunities for underrepresented groups.

**PRIORITY ACTION AREA
1.5: ENSURE THERE IS
LOCALLY ACCESSIBLE,
COMMUNITY-BASED
'GREEN SKILLS'
PROVISION.**

Key Issue 1: A important issue stressed by several participants was a perception that efforts currently undertaken in working class communities are often overlooked by formalised skills governance structures across the region.

It was highlighted by several participants that rather than working with local community organisations to deliver green skills courses themselves in spaces that people are comfortable and familiar with, there was a perception that they were routinely contacted to “provide people to tick boxes” (community organisation) for further education colleges or other large skills providers. This term – “ticked boxes” – was used to signify that people felt that there was no real, meaningful engagement or collaboration with community-based organisations on green skills delivery.

Rather, it was stated by some participants that particular community-based organisations that work with community members deemed to be “harder to reach” – such as minoritized women or people with complex needs – were periodically used to supply a “targeted audience” for various “skills initiatives” in a transactional manner. Instead, what various interviewees wanted to see was **grassroots, place-based, collaborative green skills delivery**. As a stakeholder from a community organisation discussed:

“I think it has to come down to the communities, because if the North of Tyne and all of this about getting anybody into greener jobs, then it has got to come from the community upwards.”

A community-based skills provider outlined that sufficient focus must be placed on the foundational and vocational skills development of residents, particularly those who have had past negative experiences of formal education. Moreover, building people’s confidence and skills is crucial for people to be able to progress into work in the ‘green’ economy, as a participant cautioned:

“It is also understanding the various components of place [...], say it was the low-carbon economy, it is also understanding to get some people to that point in terms of green skills, it actually is the kind of things that we are doing around confidence building, functional skills, and capacity building in a continuum, then that takes them up to whatever it is in terms of offshore wind technology, wave technology, whatever it might be”.

Focus was placed on the importance of working collaboratively, particularly in economically deprived areas of the region, where community-based skills providers can develop partnerships with employers to deliver industry-related skills courses. For example, the “World Class Skills in Walker” initiative provides a good indication of how creative partnerships that bring together global manufacturers with community organisations and private training providers can deliver significant local impact and deliver business objectives at scale (Box 2.4).

**BOX 2.4: CASE STUDY – GREEN
COLLAR TRAINING CENTRE,
NEWCASTLE**

The “World Class Skills in Walker” initiative was developed to provide training and employability support to the banks of the Tyne to **up-skill long-term unemployed residents** to the entry requirements of Nissan UK, feeding into the (then) expansion of production at Nissan’s Sunderland plant. The collaboration between Nissan UK, NAC (a private sector training company) and Building Futures East (a charitable organisation specialising in the delivery of community-based vocational training in the East End of Newcastle) led to the development of a Green Collar Training Centre, which acted as a base for training provision using a simulated manufacturing cell that replicated the skills and experiences of working on Nissan’s production line (CLES, 2011).

As a participant from Building Futures East explained:

“We had the only global training centre on Walker Riverside outside of a Nissan factory in the world. [...] people did travel huge distances to get to us. We trained in four of the six Nissan Production Line areas of expertise or skills... so manual assembly, the overhead arc welding, spray painting etc. [...] In four years, I mean I forget the number of people we actually trained but we got 740 people into either Nissan or the Nissan Supply Chain, in terms of employment. [...] it perfectly fit with our agenda for those kinds of relationships being different from the traditional, because usually, it would have been ‘we go to Newcastle College, we go to Gateshead College’ but then the **raft of people that we supported would have never of gained that opportunity and those jobs.**”

The success of the initiative was based on the partnership between the three organisations, which had positive outcomes in terms of a significant number of local and quality job opportunities created; high-quality, entry-level training delivered; and, training provision from a trusted local organisation within a community setting – with a focus on building social and economic resilience (CLES, 2011).

The potential to use this framework of community skills providers working in collaboration with large-scale local employers to deliver entry-level skills linked to particular industries such as advanced manufacturing and apply it to low-carbon areas such as Electric Vehicles is substantial, but currently this collaborative, community-focused foundational and technical training pathway is untapped at scale.

To support an **inclusive, place-based just transition**, stakeholders pointed toward the need to harness communities as crucial regional assets as they hold valuable knowledge, expertise and ideas for supporting effective bottom-up, community-based green skills provision, however, currently are largely missing from just transition policy conversations – and

therefore, remain an untapped asset to drive a meaningful, inclusive sustainable transition forward.

Key Issue 2: Several stakeholders pointed towards the need for an integrated, collaborative approach to support those that are currently “economically inactive” in the North of Tyne area (26.1% of people aged 16-64) to ‘level up’ prosperity and green opportunities.

For instance, it was suggested that this could be through ‘one-stop-shop’ place-based services and community learning centres that incorporate foundational skills development (such as digital), tailored livelihoods and employment advice and opportunities (for example, mentoring, volunteering, and tailored support for accessing specific ‘green’ workplaces), and holistic wellbeing support, with remunerated public transport and childcare costs to remove access barriers.

As a participant discussed, given the current education and skills system continues to produce a situation whereby a significant proportion of people have no or low qualifications, there is a need to rethink the skills ecosystem and its funding in order to support a truly inclusive economy and collective social and economic well-being:

“Fundamentally you need to move to something that is closer to our more fragile disadvantaged communities than we have currently. [...] we just need to look at the statistics we have in terms of poverty, what level of change we have had over the past 20 or 30 years that we know it isn't working, and parts of it do work, but they work for the people who are fitted to that particular scenario, but unfortunately that is not everyone. [...] And **if we are determined to move forward, particularly with the low-carbon economy and get these people a part of our community, economically active then we have to think differently about how we construct the offer and the response.** We have a devolved Adult Education Budget of £23 million a year and I think we need to think about where some of that ends up.”
(community-based training provider)

Participants emphasised the need to promote a broader, place-based skills ecosystem in which the Combined Authority collaborate with a range of actors such as community skills providers, industry, further education colleges, local authorities, and unions (see Box 2.5) to deliver skills training for decent jobs and inclusive growth, and meaningful lifelong learning for sustainable development.

BOX 2.5: NTCA SUPPORTED UNION LEARN PROJECT

As of 31 March 2021, the national Union Learn Fund supported by Central Government ended, resulting in lost infrastructure and learning for approximately 200,000 employees a year. The NTCA therefore developed a Business Case to invest (£430,000) in a two-year project piloting new approaches to supporting workers with low skills, delivered through recognised union representatives in each of the three constituent NTCA local authority areas. This project supports the delivery of the Adult Education Budget and NTCA Skills for Growth ambitions by facilitating access for low-skilled employees into skills provision. This also presented an opportunity for a locally-tailored approach aligned to the needs of employers and residents, which recognised the unique role trade unions play in driving and facilitating opportunities for workplace learning. The project includes a coordinating and outreach role delivered by the Northern Trades Union Congress (NTUC) with the purpose of championing Good Work with wider employers across the region and promoting best practice in relation to training and workforce development.

As highlighted by several union stakeholders, while the established union learning infrastructure has focused traditionally on foundational skills (i.e., Maths, English, Digital) and provided specific skills development opportunities of workers (such as British Sign Language courses), there is significant scope to utilise and **expand the union learning network infrastructure across the region to develop people's green skills** to help advance possibilities for residents to develop carbon literacy and progress into higher paid roles which embed sustainability within them.

PRIORITY ACTION
AREA 1.6: TACKLE THE
SOURCE OF 'SKILLS-
LEAKAGE'.

Key Issue 1: While it was highlighted by education stakeholders that those who attend further education colleges in the region tend to stay and work in the North East, it was also stated this is not the case with higher education institutions.

While the North East of England is home to several world-leading academic and research institutions, there continues to be “significant skills-leakage, so people come and study, graduate and then leave” (industry body stakeholder). As an engineer stated:

“Getting skilled people in the region through the universities, so they stay in the region is a challenge. [...] you tend to see people will study in the North East, then go back home further south, so ways to keep skilled people in the region, almost like a North East Transformation Initiative or something as bold as that would be fantastic. I’ve spoken with the directors about whether this is something we could push, but we’re only a small company, so for us to take on that burden [...] you need a body of people to come together to have the shared responsibility, and I’m not saying there needs to be a lot of funding for it [...] just a bit of support to allow it to happen.”

(engineering stakeholder)

Indeed, many participants discussed the “brain drain” from the North East of England and its multiple impacts on the local economy and broader society. For instance, only 25% of graduates from Newcastle University remained in the city to work, compared to 40% of graduates who studied at Northumbria University in 2013/14 – 2014/15 (Centre for Cities, 2017). It was stated that retention rates are likely to be driven by the regional focus of a city’s institutions.

Moreover, this ‘skills-leakage’ increases **the exposure of the region to skills gaps as the transition to net zero progresses.**

In particular, while the region’s higher education institutions award a significant number of research degrees related to the low carbon energy sector, graduate retention has been identified as a particular issue (Emden and Murphy, 2019). It was suggested that the NTCA should continue to directly work with local universities to help meaningfully develop pathways for those studying in the region into local green jobs to retain skilled workers to support a thriving regional low-carbon economy, as a further education stakeholder stated:

“There also needs to be more focus placed on how the research aspect of universities can support good quality green jobs across the North East... so using that insight, the knowledge generated from our universities and feed that into the local economy, into good job creation”.

To accelerate regional decarbonisation, **talent and expertise must be retained in the area** to ensure that the region is at the forefront of the low carbon transition.

PRIORITY ACTION
AREA 1.7: UPSKILL AND
RETRAIN WORKERS
IN HIGH-CARBON
INDUSTRIES.

Key Issue 1: Participants highlighted that as there is a move towards a greener economy there will be an increased need for workers to be reskilled or upskilled to create and deliver low carbon products and services. For this process to be effective, inclusive and just, collaboration and worker engagement is crucial to co-design transition strategies and green skills frameworks.

Participants stated that the upskilling of existing workers in high-carbon industries (such as energy, automotive manufacturing and construction) requires collaborative actions between employers, government, education institutions and unions in order to develop a more resilient and flexible workforce.

It was suggested that just transition planning for different sectors would provide strategic focus to ensure that disruption is minimised for workers in declining sectors through active labour policies. While the majority of attention was placed on national government by stakeholders in this respect, it was emphasised that local and regional government can and should take a proactive approach by developing upskilling and reskilling schemes as part of an inclusive economy framework to create sustainable, local highly-skilled jobs.

It was highlighted that different sectors face particular challenges. For instance, it was suggested that a culture of 'upskilling' workers needs to be embedded across the building sector if people are to have the relevant skills, knowledge and capacities to deliver good quality green construction. It was highlighted that unlike electricians and plumbers; builders are not currently required to upskill when building regulations change. This would require more investment in skills and educational courses.

Investment in green skills was one of the main issues discussed. Participants outlined that the move to net zero will require significant financial investment from multiple actors, often working in collaboration, such as:

- Government developing proactive labour market policies focusing on green skills development and reskilling the workforce in declining industries.

- Businesses investing in their existing employees through upskilling and reskilling initiatives to equip them with skills for the future.
- Unions developing worker-led just transition strategies and programmes.
- Education institutions and training providers supporting a reflexive green skills ecosystem, whereby the curriculum is changed to meet evolving demand.
- Communities developing place-based, grassroots projects and participatory neighbourhood planning to support collective approaches to community-led transitions based on local participatory governance.

Key Issue 2: It was highlighted that in order to upskill workers, particularly those in high-carbon roles, the specific circumstances of individuals need to be considered (such as a gender, age, disability etc) and tailored support provided to ensure that everyone has access to skills development opportunities.

As this report has highlighted so far, the green economy often requires new specialised skills and knowledge. Several participants raised the issue that parents who wish to enter green jobs may need to undergo training or education programmes to acquire the necessary qualifications.

However, the high cost of childcare can pose a financial barrier to accessing these training opportunities, as parents may struggle to afford both childcare expenses and the costs associated with their training or education at the same time. Parents in the UK pay the highest childcare costs in Europe (De Henau and Himmelweit, 2020).

According to the Confederation of British Industry (CBI), high childcare costs in the UK pose a significant obstacle for parents who wish to return to or enter the workforce. This financial burden directly hampers parents' ability to pursue employment opportunities, which is preventing economic growth (CBI, 2023a).

Furthermore, a recent CBI report (CBI, 2023b) revealed that one in five economically inactive people who want to work are held back by caring responsibilities, therefore argue that there is need for a coordinated labour market strategy for both skills and labour market activation. This is in a context where 75% of businesses have experienced labour shortages in the past 12 months.

The CBI also outline that we need an education system that allows people and businesses to upskill and retrain throughout

their careers. However, the high cost of childcare could affect the necessary upskilling required for the transition to a low-carbon economy. Addressing the affordability and accessibility of childcare is crucial not only for parents' employment prospects, but also for fostering a skilled workforce capable of driving the transition to a sustainable and low-carbon future.

**THEME 1 –
GREEN SKILLS
RECOMMENDATIONS**

Recommendation 1:

Develop collaborative approaches to skills provision for the current and future 'green' workforce. Coordinate a comprehensive regional **North East Low Carbon Skills Assessment and Strategy** of the skills needed across sectors to deliver on net zero, adapt to climate change and support other environmental goals, along with current and projected future green job opportunities.

- Collaborative approaches to green and low carbon skills mapping, planning and forecasting are required, which brings together industry, the skills sector and other stakeholders to develop integrated, coordinated place-based action to support the delivery of plans for green skills provision.

Potential Delivery Partners: NTCA, NEMCA, local authorities, North East LEP, Northern TUC, VCSE sector, industry bodies, higher and further education institutions, training providers, employers and industry bodies.

Indicator: We appreciate that some of the specific suggested recommendations may go beyond the direct remit of the Combined Authority. Therefore, in the report we indicate where particular recommended actions can be: directly implemented (IMPLEMENT), require collaboration (COLLABORATE) or involve influencing government at the broader level (INFLUENCE).

Recommendation 2:

Support a new **holistic green learning agenda in schools** that equips young people with the knowledge, skills and understanding of climate change, sustainability and green job opportunities that is linked with the place-based characteristics of the region and meaningful work experiences with local employers in green industries.

- Teachers must be encouraged and supported to link the curriculum with tangible green job opportunities in the region to ensure that children are aware of what prospects exist for them at a young age.
- Sustainability must be embedded across a holistic, 'whole school approach'. A key first step could be to incorporate all schools across the region within the UK Schools Sustainability Network (SSN) to strengthen the focus on sustainability and climate change within educational settings and share best practice.

Potential Delivery Partners: National Government, NTCA, NEMCA, local authorities, teaching unions, primary and secondary schools.

Indicator: Collaborate.

Recommendation 3:

Encourage and support the growth of high-quality **green apprenticeships** across all sectors as training pathways that combine on-the-job learning and studying embedded in the complexities of real-world work. Ensure the vocational, education and training system is valued, funded and grounded in a conceptualisation of work that is decent, sustainable, and supportive to learners' agency. Key areas to focus on include:

- **Grow awareness and promote green apprenticeship with young people** to increase understanding. It is vital that young people fully understand what apprenticeships actually entail, their benefits and career pathways.
- **Increase help to SMEs** for the climate transition through a comprehensive series of measures to support small businesses engage with and deliver quality green apprenticeships. This can incorporate: further awareness campaigns and guidance on the Apprenticeship Levy; conducting Training Needs Assessments to help identify skills gaps and determine areas where apprenticeships can be utilised to upskill the workforce in green technologies, sustainability practices, or renewable energy; exploring funding options and provide financial incentives (such as grants or subsidies) to make green apprenticeships more accessible and affordable for SMEs; and facilitating networking events and information sharing platforms allows SMEs to connect with businesses that have successfully utilised the Apprenticeship Levy for the green transition, encouraging knowledge exchange and the adoption of best practices.
- **Utilise the leverage position of procurement to require green apprenticeships.** The Combined Authority and other supportive 'anchor institutions' can use apprenticeship requirements in procurement contracts to support green jobs training and growth. This can be done directly when developing

infrastructure projects, but also as a requirement in supply chain contracts, helping to grow the pipeline of people with the skills needed for green jobs.

Potential Delivery Partners: NTCA, NEMCA, local authorities, local trades councils, NE Chamber of Commerce, NE Federation of Small Businesses.

Indicator: Collaborate.

Recommendation 4:

Support the development of a renewed and reformed **careers service** that helps people to pursue opportunities in the growing green economy.

- The Green Jobs Taskforce (2021) called for good quality green careers advice and pathways across all levels of education. There is need for investment in a comprehensive, fit-for-purpose careers service that supports pathways into the (local and regional) green economy by working with employers, teachers, professional bodies and local authorities to identify career pathways, raise awareness of green careers among parents and carers, and provide comprehensive, placed-based green skills and careers advice.

Potential Delivery Partners: NTCA, NEMCA, local authorities, North East LEP, schools, colleges, higher education institutions, employers, business networks and organisations.

Indicator: Collaborate.

Recommendation 5:

Play a leading role in amplifying and nurturing **youth voice** to shape current and future regional policy.

- This could include examining appropriate youth engagement mechanisms (such as setting up a Youth Assembly or Youth Board, engaging with schools through participatory listening campaigns, or youth surveys etc.).

Potential Delivery Partners: NTCA, NEMCA, local authorities, youth-based organisations, schools, further education colleges, higher education institutions.

Indicator: Implement.

Recommendation 6:

Support workers to **upskill and retrain through skills development programmes**, which is crucial in the transition to a green economy.

- Every worker should have access to **funded workplace training** to improve their functional skills (i.e., Maths, English and Information and Communication Technology) and green skills (i.e., related to the low carbon transition, sustainability, climate change education and the restoration of biodiversity). Long-term investment in skills funding and developing partnership approaches are crucial to ensure there is an effective contribution to workforce development as well as addressing individual learning needs, helping to fill the skills gap and boost the green economy.

Potential Delivery Partners: NTCA, NEMCA, local authorities, skills and training providers, TUC Northern, trade unions, industry bodies and employers.

Indicator: Implement.

THEME 2 – GOOD QUALITY, ACCESSIBLE GREEN JOBS AND WORKPLACES IN AN INCLUSIVE SOCIETY

SUMMARY:

- There are significant green job opportunities in relation to renewable energy, retrofitting and building energy-efficient homes, and progressive, sustainable land management and nature-friendly farming in rural areas.
- Past negative experiences of deindustrialisation and economic restructuring can fuel cynicism and scepticism among workers and unions.
- Clear communication, supportive policies, and inclusive strategies maximise green job potential and ensure a socially just and inclusive transition.
- The Combined Authority could raise awareness, engage communities, and promote understanding about green jobs through comprehensive advertisement campaigns and work with community hubs to disseminate information.
- A 'low carbon job' is a role that supports society to reduce greenhouse gas emissions like carbon dioxide and is based on low energy consumption and low pollution. It also encompasses a range of 'socially useful' work that helps to sustain and maintain the inseparable social and environmental infrastructure of society with limited negative impacts on nature and society, for example, education and care work.
- A lack of affordable and accessible, fully integrated transport systems across the region is a major obstacle to growing the green economy and facilitating the accessibility of low-carbon employment.

PRIORITY ACTION
AREA 2.1: SUPPORT
GREEN JOB CREATION
TO DECARBONISE
THE ECONOMY AND
DELIVER A SUSTAINABLE
FUTURE DRAWING ON
THE NATURAL ASSETS
AND EXPERTISE OF THE
REGION.

Key Issue 1: The majority of stakeholders viewed potential ‘green job’ creation in relation to ‘low-carbon’ industries as a significant opportunity to generate new forms of sustainable employment that were perceived to provide meaningful and well-paid career pathways in growth industries such as energy, offshore and advanced manufacturing, particularly renewable energy and electric battery production.

There is no universal understanding of a ‘green job’ and various definitions have been put forward by organisations, groups and government (see Box 2.6).

BOX 2.6: WHAT IS A GREEN JOB?

Despite its pervasive circulation in policy, there is no agreed definition of a ‘green job’.

- The International Labor Organization (ILO) (2016: no page) defines ‘green jobs’ as “decent jobs that contribute to preserve or restore the environment, be they in traditional sectors such as manufacturing and construction, or in new, emerging green sectors such as renewable energy and energy efficiency”.
- The Green Jobs Taskforce (2021: 15) defines the term ‘green job’ as “employment in activity that directly contributes to – or indirectly supports – the achievement of the UK’s net zero emissions target and other environmental goals, such as nature restoration and mitigation against climate risks”.
- The Office for National Statistics (ONS) (2023: 3) defines a green job as: “Employment in an activity that contributes to protecting or restoring the environment, including those that mitigate or adapt to climate change”. (This is the definition that the NTCA use).

It was highlighted by stakeholders that there are several key ‘green’ growth areas in the region that have the potential to create good quality green jobs:

- 1) Numerous participants discussed the **favourable natural environment and geography that lends itself towards low carbon energy production** such as offshore wind, and possibilities for geothermal energy from abandoned coal mines across the North East region (North East LEP, 2021). It was stated that there is significant potential to position the region as one of the globally leading locations for the development of clean, low-carbon, green energy.
- 2) Greening the **construction sector, especially, retrofit and building new energy-efficient homes** was identified by participants as a significant regional and national growth area with potential to create a significant number of good-quality green jobs, particularly in existing skilled trades such as electricians and new roles such as retrofit assessors and coordinators (EST, 2022).
- 3) Several stakeholders highlighted that workers across agriculture, forestry and broader land management sectors are expected to be in demand in the future as a result of recent UK government focus on **“nature’s recovery”** and **“public money for public goods”** within new agri-environmental policy (Defra, 2020, 2023). There are significant opportunities to create good-quality, sustainable green jobs such as those related to **progressive, sustainable land management, carbon sequestration (i.e., restoring peatlands and enhancing natural woodland) and nature-friendly farming in rural areas** that are in urgent need of decent, well-paid employment opportunities.

**PRIORITY ACTION
AREA 2.2: ENSURE
GREEN JOBS ARE
ACCESSIBLE AND
INCLUSIVE TO ALL.**

Key Issue 1: There were concerns over the accessibility – both socially and geographically – of green jobs and the impacts that they may have in exacerbating existing social and spatial inequalities.

There was concern articulated over the accessibility of green job opportunities for people with no or low-level qualifications, with a perception that there are limited prospects for people from low-income backgrounds and women (especially in traditionally male-dominated sectors such as construction and engineering) to benefit from the ‘greening’ of the economy.

This is important because several stakeholders discussed that low carbon employment is often associated with job-specific and technical skills, whereby people need relevant experience and/or qualifications. Therefore, while the drive to ensure there is a multitude of highly-skilled green roles available across the region in the Low Carbon and Renewable Energy Economy, this must be accompanied by:

- An improved understanding of career pathways into green jobs;
- Equalising awareness and opportunity on green skills training programmes;
- Removing barriers residents face to achieving skills, qualifications and experience; and,
- A firm grasp on progression trajectories within the workplace.

Participants also discussed the importance of spatial equity in relation to green jobs – that is, the hope that jobs will be located where people live, reflecting the diverse geography of the region. However, while people were hopeful that decent green jobs would be (geographically) accessible to residents in the North East, this was pragmatically discussed, with many reflecting upon who will actually gain from green investment and the creation of highly-skilled green jobs in particular locations.

For example, it was stressed that just because a factory or manufacturing facility is located in a nearby town, does not mean that local people will have the (current) skills, knowledge or capacities to attain employment. This challenged the assumption that green jobs automatically equal local jobs – and drew attention to the need to tailor training programmes to the specific needs of communities and provide a clear entry-level pathway with associated and supported progression processes into green employment opportunities in the region.

Key Issue 2: It was emphasised by multiple participants that green jobs must be inclusive and accessible to everyone to support a fair and just transition to a lower carbon economy.

Several interviewees discussed the importance of ensuring the accessibility of the job application process and increasing opportunities for meaningful work experience. A participant from a non-governmental organisation stated, Supported Internships for learners with Special Educational Needs and Disabilities (SEND) are crucial to provide trainees with the relevant support and must lead to decent, high-quality work:

“So even writing the adverts and doing the interviews, it starts from then, it doesn’t start from the day the person comes through your door, it starts from when you write that advert. [...] Yeah, more [supported] internships, but I think it’s important they lead to something meaningful, so it’s not just a ‘tick box’ and some free hands. I think everything has to be meaningful. It’s awareness and getting rid of... I think we’ve still got some prejudice around disabled people.”

In the NTCA area, certain groups of residents are more likely to be economically inactive than their peers, including people with disabilities (for example, 27.7% of working age residents are disabled, and 48.8% of disabled residents are in employment⁸). In particular, several stakeholders identified that to support an inclusive, just transition, whereby nobody gets left behind, requires providing the right targeted support, training and work experience to ensure that all citizens are equipped with the necessary knowledge and support to fully realise their potential in a green economy.

As a representative from a charity outlined, there has been **very little consideration in traditional just transition discussions about how the voices and experiences of people with disabilities and neurodiversity** are placed at the centre of the low-carbon agenda to support an inclusive economy:

“I think first of all you’ve got to take a step back and look at education. How are we empowering our young people? What are they seeing? What can they aspire to really? So, it’s making sure they’ve got good career guidance in some of the specialist provision, as well as teachers working with young people with SEND [Special Educational Needs and Disability], saying, ‘Well, you can do this, you can do that’ and working with the employers.”

Key Issue 3: Our research revealed that labelling jobs and skills as ‘green’ could be potentially exclusionary or alienate existing (‘non-green’) workers, particularly if the connection between the environment and social equity is not automatically made clear.

As a participant discussed, “I think it’s more about saying this is a good, secure, well-paid job... and it also happens to be green”. And as another stakeholder put it, “it is not clear to a lot of people how jobs are related to ‘climate change’, so that point has to be made stronger... and relatable for people” (environmental campaigner).

In terms of the **accessibility** of ‘green’ employment, a community organiser from a working-class background spoke at length about their past negative experiences of working in a ‘green’ role in an environmental organisation:

“So, when we say green jobs, well alright, but my experience of ‘green’ anything... is not that great. I think some people will still feel, ‘well, I’m not going to apply cos that’s not for me’, you know, labelling something as ‘green’ is not always helpful.”

The above extract highlights the inclusivity of jobs (in terms of class, gender, ethnicity/ race, and disability, for example) in the environmental sector and green economy more broadly must be urgently addressed. As analysis of the 2015 Labour Force Survey shows, environmental professions are the least diverse occupations in the UK (Norrie, 2017) and there is considerable action needed to address the structural root causes of why this is the case.

⁸ ONS Annual Population Survey, see: <https://www.nomisweb.co.uk/query/asv2htm>

Key Issue 4: The lack of affordable and accessible, fully integrated transport systems across the North East of England is a major obstacle to growing the green economy and facilitating the accessibility of employment.

There were numerous examples discussed by participants that highlighted how poor quality, inconvenient or intermittent bus services affected everyday mobility across the region. People outlined how the lack of connectivity is particularly heightened in rural areas of the region, which affects the social sustainability of rural communities and negatively impacts people undertaking or considering undergoing training. As a chief executive of a rural-based charity discussed:

“Out-migration is not a new thing. I’ve got a survey of five rural villages in Northumberland from 1964, all the issues haven’t changed, the nuances have [...] the thing with training as well is, you’ll get people who look at their choices, enrol on a course, start, **but the grind of the travelling gets them down and they quit, so you get unfulfilled people.** Or they move, because they have to.”

In general, participants were in favour of more ‘creative’, innovative and long-term schemes in delivering accessible, affordable, safe and integrated modes of local public transportation, whereby citizens can shape the overall vision of public transport systems, as a participant commented:

“Some of the creativity you’d like to see never happens, so, joint ticketing, but nobody’s persuaded the bus companies to do that. I know that’s part of the big transport grant they got recently across the North East that they’re trying to do. But there needs to be more thought about how you enable transport to these isolated places. Schemes come and go, they’re expensive, so you get them for a few years and then nobody can fund them anymore.”

Moreover, interviewees discussed that simpler fare systems across modes of transport in general could help to improve passenger experiences and movement around the region. Several participants suggested that lowering fares (through price-capping) or abolishing fares in public transport networks (particularly for young people) is an effective way to increase the mobility of citizens, which can work to expand accessibility opportunities and social inclusion, as described by a union representative:

“...providing free public transport, so all public transport is free, that would have created so much opportunity to ‘level up’, it would mean that people can get from one side of the community to the other, instead of being stuck where they are because they can’t afford to get on the buses, or the buses aren’t frequent enough.”

In particular, several interviewees commented that public transport should be free for young people, as discussed by a community worker: “free public transport for young people in the region – like London and Manchester – it would be great to get that on the table with the potential changes of power over public transport and having actual control”.

It was highlighted by numerous participants that devolving transport powers to the (expanded North East) Combined Authority scale would mean, for example, that a strategy to reform the bus system could be put in place that seeks to tackle some of the significant issues that have resulted from a historical lack of investment and vision for buses in the region. It was suggested that a ‘franchised model’ could be examined for the region following the lead of London and Greater Manchester Combined Authority, which has recently adopted a bus franchising system after public consultation.

Overall, expanding and strengthening public transport infrastructure is crucial to transitioning to a low-carbon economy and could yield large benefits in the form of jobs and increased economic activity. In this context, a recent report found that every £2 spent on improving public and green transport in the North East would lead to an increase of GDP by an additional 80p (TUC, 2023: 7).

PRIORITY ACTION
AREA 2.3: SUPPORT A
PROACTIVE APPROACH,
SOCIAL DIALOGUE
AND IMPROVE
COMMUNICATION ABOUT
A JUST TRANSITION.

Key Issue 1: It was highlighted by several participants that there is no comprehensive or coherent and actionable ‘green economy’ policy or ‘green’ industrial strategy at the regional or national scale in place which outlines how local people will be actively supported to offset any losses that may occur as particular industries and occupations contract or decline in the forthcoming green transition.

Several stakeholders discussed that there was a real fear that people would lose their well-paid jobs in high-carbon (or emission-intensive) industries, if there was no commensurate creation of good-quality low-carbon, sustainable jobs in the region.

This concern was exacerbated by the fact that the majority of people interviewed also struggled to think of any good, concrete examples of workers being supported by employers, unions or government to transition to ‘green’ jobs in this region. Indeed, **a lack of green job support was a crucial issue identified by participants which they believed hindered understanding of the green economy more broadly and people moving to low carbon employment in particular.**

Moreover, the perceived quality of ‘green jobs’ was also questioned by some stakeholders. As a trade union representative stated in relation to renewable energy employment, a low carbon green job does not necessarily mean it is a ‘good’ job in terms of pay and conditions (i.e., high-quality, well-paid, unionised and secure, see Box 2.7):

“If you are going to put someone climbing up a wind turbine... that is not a good job. You are only looking at £24,000 and you certainly are not building a nice family life. So, it is also about the quality of the jobs comparatively, because we won’t get buy-in from the old energy [fossil-based] sector workers if all they are doing is looking and saying ‘well all you are doing is making really bad jobs’. So, there is something to be said about the better the transition, however small it may be, the greater the buy-in.”

BOX 2.7: UNIONISATION IN
‘GREEN’ SECTORS

‘Green’ jobs are less unionised because the sectors they are a part of are frequently comprised of SMEs and therefore, workers may not benefit from the same level of protection compared to more developed ‘traditional’ industries where trade union presence is more widespread (ETUC, 2018). For example, while trade union membership in the UK renewable sector is low, the experience of the renewable energy sector in Germany highlights that this does not need to be the case. For example, the German trade union IG Metall undertook an extensive mobilisation campaign from 2009-14 focusing on the most relevant companies in the sector, particularly, the wind and solar industries to increase union activity and membership. This resulted in the creation of 20 new Works Councils, the election of 150 Shop Stewards for the first time in the industry, and the signature of several collective bargaining agreements. Moreover, 1500 new members were recruited (ETUC, 2018: 47).

By focusing attention towards the growing green economy, trade unions in the UK can collectively work to ensure decent work and conditions within these sectors – and there are also significant opportunities for unions to increase their membership.

Moreover, all sectors will be affected in some way by the green transition and therefore **trade unions have a key role to play** in raising awareness about the risks connected to the climate crisis, potential impacts for their sector in a regional context and facilitating collective dialogue to ensure workers’ voices are heard and actioned within governance forums. For instance, actions to be taken include, but are not limited to:

- just transition/climate change/ environmental sustainability should be placed as a permanent item on the agenda of all unions;
- raise awareness among members through a series of training programmes, workshops and events to discuss the impacts transition will have on jobs and working conditions;
- share best practices (historical and contemporary) and learn from other sectors affected by the low-carbon transition;
- convene a regional event to develop a shared vision of ‘just transition’ and discuss collective actions that can be taken with specific ‘demands’ to focus future organising;
- TUC Northern to continue to actively build a Green Rep’s Network of members who are equipped with the confidence, knowledge and skills to engage with discussion regarding a just transition and what it means for them, their workplace and community;
- within the trade union movement, there needs to be a team of dedicated full-time Worker-led Transition Project Officers to cover all regions across the country that are hosted within each TUC regional team. One region should not be prioritised over another in terms of the resources available to support industrial decarbonisation plans as this will exacerbate existing inequalities.
- strengthen connections with other environmental and social movements, community groups and non-governmental organisations to share ideas and develop broader coalitions to tackle interconnected social and environmental concerns.

It was stressed by some participants that without workers placed at the centre of the process, it is more likely that changes will be carried out ignoring social considerations (i.e., job security, working conditions, health and safety etc.).

Furthermore, it was highlighted that if workers, both unionised and non-unionised, are not consulted from a purely business sense, employers are likely to miss out on invaluable knowledge and ideas about how best to transition their industries for future longevity.

Key Issue 2: Numerous participants discussed that there are multiple barriers and there can be a reluctance amongst workers and unions to engage in just transition conversations.

For many workers, discussions around ‘Just Transition’ can appear or feel too broad, as a trade union regional secretary stated: “It is impossible to have these conversations in any meaningful way, and I think that is because it is such a broad-ranging conversation”. Moreover, as a trade union representative described “with trade unions in the region, we are not even managing to get them together to have a conversation [about just transition]”.

In this context, it was stated that there needs to be a “cultural mind-shift” that starts from a deep appreciation of how workers’ and communities’ place-based social identities can become entwined with particular (high-carbon) industrial work, which can create initial barriers to engaging with low-carbon transitions dialogue.

Some trade associations and unions also pointed out that there are already significant labour concerns on the ‘shop floor’ over various factors such as the cost-of-living crisis, changes in the world of work because of automation, increasing precarity at workplaces and reduced job security, which means a ‘just transition’ can be seen as a lower-priority or not as urgent. As a regional secretary from a large trade union stated:

“I don’t think, if I am honest, that people majorly buy into the [green] agenda, [...] I think everybody wants to do their bit, however it’s that personal impact of what their jobs are. But the more positive jobs and the more positive opportunities that they see, the more positive that people talk about it [the low carbon transition].”

Therefore, workers must be empowered and supported as agents of change in the low-carbon transition – and participatory deliberative forums such as **Workers’ Assemblies** (see Box 2.8) could provide a more targeted space for sectoral dialogue, which focuses on the actual content and process of place-based low-carbon ‘transition’, rather than rhetoric.

BOX 2.8: BEST PRACTICE – WORKERS’ ASSEMBLIES FOR COLLECTIVE ACTION

The aviation campaigning group ‘Safe Landing’ are advocating for a sector-wide Workers’ Assembly to empower aviation employees to develop sustainable plans for the future of the industry. Indeed, Workers’ Assemblies can provide the basis to begin to have respectful, informed discussions where workers and unions can explore the particular challenges facing their industries, examine a range of potential solutions, and produce well-considered recommendations for the future of their workplace and sector. For more information, please see here: <https://safe-landing.org/assembly/>

Key Issue 3: Tentative scepticism was articulated by some participants about the creation and accessibility of ‘green jobs’ for local people in the region given the historical context of deindustrialisation. This was at times expressed by some participants as being informed by past experiences of top-down promises of employment opportunities and investment which never materialised.

In particular, past unjust industrial transitions that resulted in major job losses and broader deindustrialisation processes across the region, shapes many people’s perceptions of what a ‘transition’ will mean for them and their community, as reflected in this comment from a trade union representative:

“I mean the main barrier from my union’s perspective is those people who are more involved in what just transition negotiating looks like, have normally seen it coupled with massive job losses. So just transition equals less jobs.”

This cynicism also increased in the context of the media coverage of the uncertain future that surrounded particular flagship ‘green’ business developments such as the Britishvolt electric car battery ‘gigaplant’⁹ in Blyth, Northumberland.

Over the summer months of 2022, the majority of stakeholders positively referenced the potential ‘green’ employment opportunities associated with the proposed Britishvolt gigafactory as a – if not the – source of new local job creation in the North East (around 3,000 jobs were promised). Frequent comparison was made to the economic benefits associated with the arrival of Nissan in 1984 in Washington, Tyne and Wear.

⁹ A ‘gigaplant’ is a battery production factory manufacturing batteries with gigawatt-hours of storage (gigawatt-hour is a unit of energy).

In response to the announcement that Britishvolt had entered administration in January 2023, an industry stakeholder stated, “it’s a huge blow, because it sets the tone or the precedent, I suppose, to be disappointed with what was offered... and then not delivered, even in the short-term, that does have impacts”.

Despite concerns, several participants stated that regardless of the particular issues with

Britishvolt, they believed that gigafactories would be key components of the new green industrial landscape of the North East of England, however, cautioned that this needs urgent national strategic planning and investment to deliver the scale of infrastructure required.

PRIORITY ACTION
AREA 2.4: DELIVER
DECARBONISATION
ACROSS THE ECONOMY
TO SUPPORT CARE-FULL
LOW CARBON FUTURES.

Key Issue 1: It was recognised by some participants that for a just transition to be inclusive and progressive, it must link concerns of the environment with the interests and aspirations of sectors of the economy that may be overlooked in traditional just transition or climate change debates (such as care work).

This broader focus across the economy also reflects the actual composition of the current regional workforce, with care work forming part of the largest industry sector in the region. In the North of Tyne area, 16.2% of the workforce is employed in Human Health and Social Work Activities (62,000 people), compared to the national average of 13.7%.

In planning, designing and implementing a more just and sustainable decarbonised economy of the future, care must therefore be recognised as a service that needs to be better valued and funded as ‘green work’ (Stanley, Buller and Lawrence, 2021; see Box 2.9). This also has the potential to have a direct positive impact on a significant number of workers, particularly women and BAME communities, given the existing gendered and racialised composition of care work.

BOX 2.9: A HOLISTIC
UNDERSTANDING OF A ‘LOW-
CARBON JOB’ WITHIN A CARING
ECONOMY

A caring economy simultaneously encompasses gender equality, wellbeing and sustainability. A group of economists in the UK have talked about putting care at the heart of the green economy. They argue that care jobs are green jobs. Research conducted for the Women’s Budget Group (WBG) found that any investment in care in the UK would produce 2.7 times as many jobs as an equivalent in construction (6.3 times as many jobs for women and 10% more for men). They also found that investment in care is greener than in construction, producing 30 percent less GHG emissions. It is concluded that a care-led recovery from the coronavirus pandemic is a green-led recovery – and we need to redesign our economies around care (De Henau and Himmelweit, 2020). Therefore, a key factor in helping to meet our climate change targets is boosting employment in sectors that are already ‘low-carbon’, such as care services. It is argued that rebalancing the economy towards more caring activities makes it both more socially and environmentally sustainable.

Promoting a transformative ‘just transition’ that integrates social and environmental sustainability requires changes in dominant policies, practices and thinking. A singular, narrow focus on particular heavy industries must be avoided, and holistic impact mapping and planning when assessing the consequences of transition on high-carbon industries must ensure that all workers in supply chains and indirect services are supported with skills development and learning opportunities (see Box 2.10). A just transition must place substantive **gender equality at the centre** and ensure that green jobs and green skills support are available and accessible to everyone.

BOX 2.10: GENDER INEQUALITY IN JUST TRANSITIONS

In Canada, the development of Just Transition programmes has narrowly targeted specific workers in particularly vulnerable regions. For example, the move away from coal, directed support packages to miners (such as the ‘Coal Community Transition Program’). However, those working in sectors indirectly connected to the coal industry such as workers in accommodation and food services (primarily women and often migrant workers), who are also at risk of losing their jobs when a coal mine or coal-powered power plant closes, are denied the same support given to fossil fuel workers, therefore exacerbating existing inequalities and vulnerabilities (JTRC, 2018). A truly just transition therefore must be green, socially just and equitable across genders (and other intersectional axes of difference) and take account of jobs and livelihoods across the supply chain and supporting services.

Key Issue 2: There needs to be a revaluation of care work. Jobs in the care economy require better conditions, fair pay, dignity and fulfilment in work for care workers to support a sustainable economy.

The experience of the coronavirus pandemic led to the role of key workers across what has been called the ‘caring economy’ – that is, for example, teachers, nurses, carers and service workers – to be highlighted as essential to human flourishing and survival. However, some stakeholders outlined that it also shone a light on the undervalued nature and underinvestment of this foundational work. As a representative from a charity stated: “The way the care sector was treated wasn’t good in Covid and was well publicised. And the wages... generally, you can go and work in Lidl or Aldi and get the same or more, so I think that really hasn’t helped.”

As one community worker bluntly remarked in relation to employment support, care jobs and the erosion of decent work:

“Job-seeker centre people, so people who are all... ‘we can get people into employment, we can get people into green jobs’... no they can’t, all they can do is write CVs for people and get them into care jobs and stuff like that, but zero hour contracts, and it might tick a box that yeah we got a woman into a job, but what you have got her into is a terrible job, a zero hour contract, she doesn’t get paid for moving between caring jobs, she doesn’t get paid for that time, in fact she is worse off, more stressed and gets to spend less time with her kids and it may be a ‘tick’ because somebody got a job, but it is an absolutely terrible job, so none of that works, all of that employment agency type-stuff that is funded.”

To address these issues – that is, the undervaluation of care work which manifests in poor working conditions, poor pay and low training standards in the sector – requires a radical, green, people-centred industrial strategy designed to nurture a more just and sustainable future economy that values care work in all its forms (paid and unpaid). This can lead to improvements in material conditions and the wellbeing of care workers and care receivers in the long-term.

For instance, this would “ensure as a basic minimum a Real Living Wage, as well as dignity, fulfilment and opportunities for creativity in work for care workers, through new models of care provision as well as through more funding” (Stanley, Buller and Lawrence, 2021: 29).

Key Issue 3: Practical, funded support, including low-carbon transportation options and broader help to decarbonise the supportive infrastructure of the care system is needed as an important part of a sustainable future economy.

The daily realities of care work embedded in our local communities must be the focus of an inclusive green agenda. As a participant outlined, care workers (such as personal assistants for care) who rely on private cars to reach their clients and undertake vital in-home care work must be supported with low carbon transportation options such as electric vehicles, which are currently prohibitively expensive for many people.

Moreover, care infrastructure requires targeted support to decarbonise buildings and improve energy efficiency, as a business manager discussed:

“So, for example, the adult social care sector, I’ve worked in a care home. They had the heating on when it was 26 degrees outside and what choice do they have because their vulnerable clientele requires it? So, **these are the sectors that aren’t currently covered by the definition of ‘energy intensive’ but they are energy intensive in particular ways**, because they need it. So, yes, there is that want to be efficient and need for support.”

Of course, while foundational care economy work itself may be ‘lower-carbon’ than traditional manufacturing sectors, that does not mean that the industries or supply chains that rely on that labour are. For instance, the NHS Sustainable Development Unit reports that despite cutting emissions by 18.5%, social care still generates 5.4% of the UK’s total carbon emissions (Stanley, Buller and Lawrence, 2021).

This points to the urgency to **decarbonise all workplaces and sectors, so that no industry or individual is left behind in the green transition**. For the care sector, this requires measurable plans for upgrading their building stock, electrifying mobility, and decarbonising supply chains to reach net zero (Stanley, Buller and Lawrence, 2021).

Overall, our research revealed that a broad, holistic and nuanced conceptualisation of the term ‘low carbon job’ (see Box 2.11) opens up, rather than closes down, avenues towards more inclusive visions of what a net zero, just, caring and circular economy – and ‘green’ employment – may look like.

BOX 2.11: A HOLISTIC ‘LOW-CARBON’ JOB DEFINITION

Our research defines a ‘low carbon job’ as a role that supports society to reduce GHG emissions like carbon dioxide and is based on low energy consumption and low pollution. It also encompasses a range of ‘socially useful’ foundational work that helps to sustain and maintain the inseparable social and environmental infrastructure of society with limited negative impacts on nature and society, for example, education and care work.

Moreover, focusing on building a just, green and caring economy points towards the importance of emphasising notions of individual and collective well-being to economic security, rather than ‘economic growth’. Refocusing the economy around care and our interdependence reminds us that while a just transition will involve decent ‘green’ job creation of various kinds, it involves a broader transformation of society that values the diverse work that sustains and maintains us – this prioritises well-being over ‘productivity’ and ‘growth’.

THEME 2 – GREEN JOBS RECOMMENDATIONS

Recommendation 1:

Create and train a network of **Green Jobs Champions** from across sectors to engage with schools, colleges and community centres to inspire new entrants into green jobs. Green Jobs Champions should reflect the diversity of society (in terms of geography, gender, age, class, ethnicity, disability etc.) to ensure that young people can directly relate to those currently employed in the ‘green’ economy.

- There is a need for targeted action to build long-term connections between existing workers and local schools and colleges to make sure that young people (particularly those from underrepresented backgrounds) have links with those who work in green industries locally and have the opportunity to build industry contacts – Green Jobs Champions can help address this. In particular, these Champions will act as ambassadors and will seek to inspire young people to choose career paths that support the transition to net zero, restoration of biodiversity, and a sustainable future.

Potential Delivery Partners: NTCA, NEMCA, local authorities, schools and colleges, higher education institutions, professional industry bodies, NE Chamber of Commerce.

Indicator: Implement.

Recommendation 2:

Undertake a **public campaign on green jobs** to build awareness and clearly communicate with the citizens what ‘green jobs’ are available to people with multiple interests, qualifications and skills across the region to support an inclusive just and sustainable transition.

- This campaign could focus on showcasing the diversity of sustainable, meaningful, and potentially well-paid good green jobs that are available now or will be soon, with clear pathways outlined of how people can gain the skills, experience and knowledge needed to flourish in these jobs. It can also highlight the experiences of current workers in the green economy in the North East from a diversity of backgrounds. This would include in-person and

online events to ensure that the widest possible audience is reached.

Potential Delivery Partners: NTCA, NEMCA, local authorities, Net Zero North East Partnership, Northern TUC, VCSE sector, industry bodies, higher and further education institutions, business networks.

Indicator: Implement.

Recommendation 3:

Support the creation of **good-quality, sustainable green jobs**, that are accessible and inclusive, focusing on low-income and diverse communities. There was some scepticism regarding the quality of ‘green jobs’ and also their accessibility for people with lower-level qualifications therefore, several actions could be taken to support inclusivity:

- Particular focus needs to be placed on developing the **foundational skills of people with low or no qualifications** and exploring ways to deliver that training with community-based skills providers.
- Local authorities should lead the way in **creating and coordinating demand** for green jobs, through for example, developing a public sector retrofit programme and social housing new build. This would involve creating high-quality apprenticeship opportunities for new entrants to increase their workforce in key areas such as construction and engineering.
- The Combined Authority should continue to **encourage employers to sign-up to the NTCA Good Work Pledge** and work with community hubs, TUC Northern and affiliated unions to examine ways to increase union membership in ‘green’ sectors (such as the renewable energy sector) to ensure that workers benefit from the same level of protection as other, more established industries where trade union presence is more widespread.

Potential Delivery Partners: NTCA, NEMCA, local authorities, TUC, VCSE sector, community hubs, industry bodies, business networks.

Indicator: Implement.

Recommendation 4:

Improve public transport systems

across the region. Better, interconnected and inexpensive transport options have multiple benefits and can improve students’ access to training and education, workers’ access to (green) jobs and also remove barriers for businesses to locate across the North East.

- An example of how this could be done is bus service transformation. With further devolution, the Combined Authority can take greater control of the bus network as one way to ensure the provision of efficient and reliable bus services across the region. This process could begin with undertaking an independent Feasibility Study Assessment that comprehensively examines how and which franchising model would work best across the North East region, taking into account the diverse rural, urban and coastal geographies. A comprehensive public consultation would then be carried out on a Proposed Franchising Scheme with the outcomes of consultations undertaken and recommendations presented to the Mayor.

Potential Delivery Partners: NTCA, NEMCA, local authorities, Transport for the North, Department for Transport.

Indicator: Implement.

Recommendation 5:

Place workers at the centre of just transition dialogue and plans. Focus can be positioned on supporting the development of sector-wide **Workers’ Assemblies** to empower workers to develop sustainable plans for the future of different industries and support workplace democracy.

- Drawing upon the concept of Citizens’ Assemblies, which are a form of deliberative democracy, Workers’ Assemblies can help empower employees to develop an independent and participatory vision for the future of their sector or industry. At the moment, while ‘social dialogue’ and a worker-led transition are advocated for, particularly at (trade union) policy levels, there are

very few concrete examples of how this has been done at scale in the UK or in our region.

Potential Delivery Partners:

TUC Northern, trade unions, trade union councils, trade associations, professional bodies, NTCA, NEMCA, local authorities.

Indicator: Influence.

Recommendation 6:

Adopt a **holistic, integrated and comprehensive approach to**

‘just transition’, which reflects the composition of the regional economy. It is vital that just transition planning focuses on all sectors of the economy, so no one is left behind in the low carbon transition. As part of a comprehensive just transition approach, the Combined Authority could work with social partners to explore how **care work can be decarbonised** and fully valued as part of a green recovery, ensuring that care work is green work.

- Care work forms part of the largest industry sector in the region. In the North of Tyne area, 16.2% of the workforce is employed in Human Health and Social Work Activities (62,000 people), compared to the national average of 13.7%. In planning, designing and implementing a more just and sustainable decarbonised economy of the future, care must therefore be recognised as a service that needs to be better valued and funded as ‘green work’, supporting it to further decarbonise (Stanley, Buller and Lawrence, 2021). Currently, this area of employment is under-discussed in low carbon transition policy discourse and consultations, however, action is needed to ensure that no sector or workers are left behind in just transition actions.

Potential Delivery Partners: NTCA, NEMCA, local authorities, NHS, health and social care voluntary and private sector organisations.

Indicator: Collaborate.

THEME 3 – NURTURE A JUST AND INCLUSIVE LOW CARBON TRANSITION IN THE NORTH EAST

SUMMARY:

- Fragmented governance and lack of capacity hinder progress on progressing a just and inclusive transition.
- Scaling up meaningful deliberative democracy forums such as Citizens' Assemblies are crucial to support a community and worker-led transition and will help address the 'democratic deficit' and build trust between citizens and policymakers.
- A Regional Just Transition Strategy and Action Plan can guide collaboration and determine responsibilities for different actors and groups to support a sustainable transition for people, place and planet.
- Strengthening democratic devolution in the North East is essential to support green, inclusive and just transitions to deliver inclusive prosperity.
- Collaborative governance, transparency, and accountability are necessary for integrated, coordinated action across the region.

PRIORITY ACTION AREA 3.1: ENSURING THE BENEFITS OF GREEN GROWTH ARE FELT ACROSS THE DIVERSE GEOGRAPHY OF THE REGION.

Key Issue 1: Participants outlined that 'net zero' provides the region with a significant opportunity to harness the significant natural assets across the distinctive North East geography, address spatial inequality, and demonstrate how businesses and communities can prosper while reducing emissions.

The process of supporting an inclusive and just transition for the region must address the asymmetrical nature of (governance) power and how it is used to foster particular outcomes for certain groups across the region. It was continually emphasised by stakeholders that 'net zero' can often feel like a threat to workers and businesses, therefore, as a participant discussed, ensuring that 'green' investment is spatially integrated across the region is crucial:

"The important thing is to show that the economic benefits are going to be felt across society and the whole region, this is particularly important for rural areas where there is a big gap in productivity, and skills opportunities and services are harder to access, along with poor digital connectivity, [...] so making sure that green growth helps to address those longstanding issues not only helps to drive growth but also we can use that to empower our rural communities and unlock the potential of net zero. [...] So, I think the carbon sequestration potential of rural areas is huge and if we get that right, could have huge benefits for rural communities." (**economic regeneration stakeholder**)

There was significant support for a place-based just transition that reflects the needs of communities and reflects the cultural, environmental and social characteristics of the region. This is linked to the necessity of resisting the "corporate capture" of net zero – namely that powerful actors (including some policymakers and industry stakeholders) are constructing a narrative about "net zero" and "the green transition" that is often very technical and top-down.

At the most pessimistic reading of this, there is significant concern that just transition policy is “taking the same economic and industrial policies and targets for growth but dressing it up in ‘net zero’ terminology” (academic stakeholder), where ‘net zero’ can be often reduced to a technocratic endeavour of industrial decarbonisation and ‘green’ infrastructure projects, where workers and community voices are largely absent and economic growth is prioritised.

At the national scale, this can result in significant money being earmarked or directed to developing large-scale ‘net zero’ infrastructure in particular parts of the country (such as carbon capture and storage, which normalises fossil fuel use). This often draws upon competitive logics of regional economic development that pits regions against each other for limited investment.

PRIORITY ACTION AREA
3.2: COORDINATED STRATEGIC JUST TRANSITIONS POLICY AND ACTION AT THE REGIONAL LEVEL ARE REQUIRED TO ADDRESS POWER IMBALANCES AND OUTLINE RESPONSIBILITIES OF DIFFERENT ACTORS.

Key Issue 1: Our research found a pervasive perception that “just transitions” is not a current significant priority for local or regional governance, which then translated into a lack of coordinated, integrated policy on inclusive economy and climate change dimensions.

Fragmented responsibilities across Local Authorities and various siloed ways of working in departments, in addition to a lack of current capacity in terms of staff, resources and funding after years of imposed austerity were all identified as issues that people believed have hampered coordinated work across Local Authorities to plan and deliver a Just Transition for the region with speed and precision.

As a trade union representative stated, placing a **collective approach to just transition at the centre of regional policy** is “a great opportunity to show other authorities what this work can look like when done collaboratively”. There was also significant support for a dedicated focus within the Combined Authority on supporting a Just Transition:

“At a more practical level, I do think there should be a team of people employed working on this [Just Transition] and there should be direct engagement with the trade unions as part of the team’s day-to-day work. And with the possibility of a joint oversight body, joint scrutiny body, because I know, for example, with the Good Work Pledge, ‘environment’ is built into the Good Work Pledge but there is no oversight of that, there is no scrutiny of that, so what does that actually mean?”

(trade union stakeholder)

In short, participants wanted to see coordinated regional policy that supports action on the ground, as a community worker emphasised:

“So just saying we want to be a ‘green economy’ or have ‘green jobs’... and at the moment, that is what it feels like to me, like if we say it, it will come true. I don’t think we are all coming together to say ‘what can we all do to make this actually happen here in the North East?’. Nobody seems to have a plan on how to actually get from A to B based on where we are, or who will do what. I appreciate this isn’t easy and will require big changes and huge amounts of resources, but we need detailed plans.”

A **Regional Just Transition Strategy and Action Plan** could outline the different roles and responsibilities of various actors from local government and trade unions to business alliances and grassroots activists, reflecting the fact that a just transition will only be delivered through purposeful collaboration.

This could help to address the fact that participants outlined that there has been a proliferation of ‘green forums’, networks and partnerships emerging across the region (focusing on climate change, climate action, net zero and just transition), but there is concern that they will achieve little unless a cohesive roadmap for collective action is formulated. As a local authority stakeholder stated:

“We have nice conversations but nothing actually happens, so I want to see how we can convert discussions and ideas into practice and action, and we need to identify who actually has the power to deliver change in different areas.”

PRIORITY ACTION AREA 3.3: NURTURE DEMOCRATIC AND PARTICIPATORY DEVOLUTION IN THE NORTH EAST.

Key Issue 1: The collective voice of the North East must be amplified and strengthened, with commensurate powers, resources and capacity to deliver a fair, inclusive and sustainable future for its citizens and meaningfully “level-up” the country in the context of growing regional inequalities.

The UK is the most centralised country of its size across advanced economies, which has created and exacerbated regional inequalities in England – the largest, but most centralised and unequal of the UK nations (Raikes et al., 2019). Expanded forms of devolution with the establishment the North East Mayoral Combined Authority (NEMCA) must be accompanied by fundamental changes in the processes and patterns of governance within regions. The “democratic deficit” within the region itself must be addressed by increasing accountability and transparency of the institutions that provide public services (Shaw and Robinson, 2018).

Overall, the Combined Authority have a great opportunity to place themselves at the forefront of creative and inclusive locally just transition policy in the UK and take the ambitious climate-forward work they have already undertaken to the next level.

While this cross-sectoral regional approach to just transition is ambitious and challenging, the benefits of being an early leader in just transition policy and decarbonisation action that shifts green transition strategies away from technological ‘solutions’ towards social, political and economic transformation, could have significant, meaningful impacts in achieving a socially fair low-carbon transition for the North East of England.

Participants discussed that greater regional devolution needs to address the “distance” or alienation that many people feel from political structures and establish new forms of inclusive, participatory governance, and develop relations of trust where people feel their views are heard and actioned. Participants were clear what they wanted to see under a broader devolution deal in terms of collaborative governance, as a voluntary sector stakeholder stated:

“Merging of the different local authority areas under a new devo-deal and an elected mayor has huge possibilities for the region. [...] we need to start working effectively, collaboratively, all pulling in the same direction and putting aside all the internal politics [...] ensuring our [North East] voice is heard and represented, what we don’t want is another layer of... well, you know...the same, we have to take the opportunity and make it work for everyone in the region.”

Moreover, participants wanted to see improved collaborative governance infrastructure across the local authorities to ensure “joined-up” action, synergetic interventions, the sharing of best practice and an overall more integrated and holistic focus to improve the lives of all residents and environments across the North East region. This is particularly important for supporting a low carbon transition as a representative from a trade union outlined:

“I think we need to take a much more holistic look at this rather than just one small part of the region. Because even if you took the Tyne Estuary into the North Sea as an area of potential transition and energy security development, we need that Combined Authority to talk both sides of the river. And I know they do talk, but a lot of the infrastructure is still in development around governance in this region.”

Participants noted challenges in proactively engaging with local governance in addition to a lack of awareness or understanding about the internal structure of the NTCA and its roles and responsibilities. As a participant discussed: “...not knowing where to go and who to speak to, I think there is a lot of grey area there on who you can go to and who to speak to within local government to forward things”.

Therefore, given that the development of the new Combined Authority at the regional governance level is still in its infancy and participants noted a lack of awareness or understanding about the internal structure of the NTCA, one practical, simple action that can be taken is to develop and publish a staff map with the different departments, portfolios and their remits on the Combined Authority website with a dedicated page entitled: “How to Engage with Your Combined Authority”.

This also would provide relevant information for residents on how to contact, participate and engage through multiple mediums as they evolve at the regional level. Any future expanded Combined Authority would need to create and publish a new staff and structure map.

**THEME 3 –
JUST TRANSITION
RECOMMENDATIONS**

Recommendation 1:

Establish a dedicated regional **Just Transition Taskforce** under the existing Net Zero North East Partnership that brings together civil society, employers, unions, community organisations, local authorities and other relevant stakeholder groups to create a shared vision and action plan for nurturing a just transition in the North East.

- This would ensure a joined-up approach that avoids duplication across the region and encourages collaboration and supports collective place-based policies, actions and interventions.

Potential Delivery Partners: Net Zero North East Partnership, NTCA, NEMCA, local authorities, North East LEP, Northern TUC, VCSE sector, industry bodies, higher and further education institutions.

Indicator: Collaborate.

Recommendation 2:

Create the permanent, full-time position of a **Just Transition Officer** within the Combined Authority to help to ensure that there is a rapid and effective transition to a sustainable, green, low-carbon future in the region.

- An inclusive green transition will only materialise if it has adequate resources to support a cultural shift to support a bottom-up, long-term participatory approach to just transition across the region to develop meaningful relationships, connections and partnerships based on trust and the priority nature of delivering a just and inclusive transition. A dedicated Just Transition Officer or Advisor would enable specific focus and expertise to be built from within the Combined Authority and build coalitions and collaborative work across the region.

Potential Delivery Partners: NTCA, NEMCA, Local Authorities.

Indicator: Implement.

Recommendation 3:

Develop a comprehensive **Just Transition Strategy (Framework and Action Plan)** for the Combined Authority which would offer a concrete way to connect key policy areas such as climate change, employment, biodiversity conservation, sustainable transport, affordable housing and food systems.

- A set of indicators and measurable objectives can be established for the Just Transition Strategy which can monitor the impact of actions taken, hold all partners to account on progress, and act as a public engagement tool. The Combined Authority has a significant opportunity to be a national leader at developing and implementing just transition strategic regional policy that integrates cross-sector concerns, and supports more polycentric and plurivocal systems of governance.

Potential Delivery Partners: NTCA, NEMCA, Local Authorities, Net Zero North East Partnership.

Indicator: Implement.

Recommendation 4:

Deliver **democratic and participatory devolution** for the North East of England and support transformative, inclusive governance within the region.

- Expanded forms of devolution must be accompanied by fundamental changes in the processes and patterns of governance within regions to address the “democratic deficit” (Shaw and Robinson, 2018) by increased accountability and transparency of the institutions that provide public services. Improved collaborative governance infrastructure across local authorities is needed to ensure “joined-up” action, and synergetic interventions to support a collective approach to just transition.
- As part of the planned expanded devolution deal for the region, the NEMCA needs to better communicate its vision, message and principles to the wider community. An active listening ‘roadshow’ (both in-person and online) across the region, which involves listening to the concerns and hopes of residents through small-scale Peoples’ Assemblies can inform the work and policy of the Combined Authority. As a form of participatory political engagement — the roadshow could create a broad platform for people across the region and its diverse geography (urban, rural, coastal) to learn more about the Combined Authority and also feed directly into plans for the local economy.

Potential Delivery Partners: NTCA, NEMCA, Local Authorities.

Indicator: Implement.

SECTION 3 – GREEN SKILLS AUDIT

INTRODUCTION

The NTCA has set out an ambition to achieve net zero¹⁰. Indeed, the North East has already begun work on this new economy. In 2022, 10.1 tonnes of CO₂ were produced per employee in the North East, a reduction of 12.9% over the previous year¹¹. However, this is still slightly more than the UK average of 8.9 tonnes per employee, indicating there is still lots of progress to be made.

If this is to be a just transition, a robust skills analysis plan is needed to train the North East’s residents to build this new green economy and benefit from the growth it brings.

The existing NTCA covers North Tyneside, Northumberland and Newcastle upon Tyne. Where possible, however, the following analysis looks at the area of the proposed North East Mayoral Combined Authority (planned for 2024), which includes Newcastle upon Tyne, North Tyneside, Northumberland, County Durham, Gateshead, South Tyneside and

Sunderland. This aligns with the area of the existing North East Local Enterprise Partnership, and is referred to as the North East in this document. All primary analysis has looked at this area, however some desk-based research has had to draw on literature which describes a larger region (also covering Darlington, Hartlepool, Middlesbrough, Redcar and Cleveland, and Stockton-on-Tees), referred to here as the wider North East.



Autonomy

This green jobs, skills and policy analysis was carried out by Autonomy.

SUMMARY OF FINDINGS

- Within the North East, **high carbon work is concentrated within a relatively small number of industries, with a relatively small number of workers**. The North East contains an estimated 7,625 employees from the UK’s five most carbon intensive industries, which make up over 50% of greenhouse gas emissions. This is just 0.9% of the region’s workforce. 142,135 people work in the top 15 most carbon intensive industries, totalling 17% of the region’s workforce.
- Of 275,830 jobs which were advertised in the North East in 2022, just 9,949 were for high carbon work and 10,209 for green jobs, reflecting this concentration. **Engineering was the industry which recruited the highest number of both green jobs and high carbon jobs**, suggesting some overlap in the tasks required for these kinds of work.
- When we compare the skills demanded for high carbon and green work, we find **in general somewhat higher skills levels are being required in high carbon work**, with the exception of a few areas – instructing, learning strategies, science orientation and social perceptiveness. While the skills required for green work will change as a just transition continues, these skill areas might form part of the basis for green reskilling of existing workers in high carbon industries.
- One area which will be vital for achieving net-zero is **housing retrofit**. In this area, we find 500,000 more dwellings in the region need to be upgraded to EPC C, which is estimated to require £9.5 billion of investment. If undertaken over a period of two years, this could potentially create 158,000 green jobs.

¹⁰ North of Tyne Combined Authority, “Working Together: Our Corporate Plan 2022-2023”, <https://www.northoftyne-ca.gov.uk/wp-content/uploads/2022/06/NTCA-CORPORATE-PLAN-2022-v6.pdf>

¹¹ PwC, “Green Jobs Barometer”, <https://www.pwc.co.uk/who-we-are/our-purpose/building-trust-in-the-climate-transition/supporting-a-fair-transition/green-jobs-barometer.html>

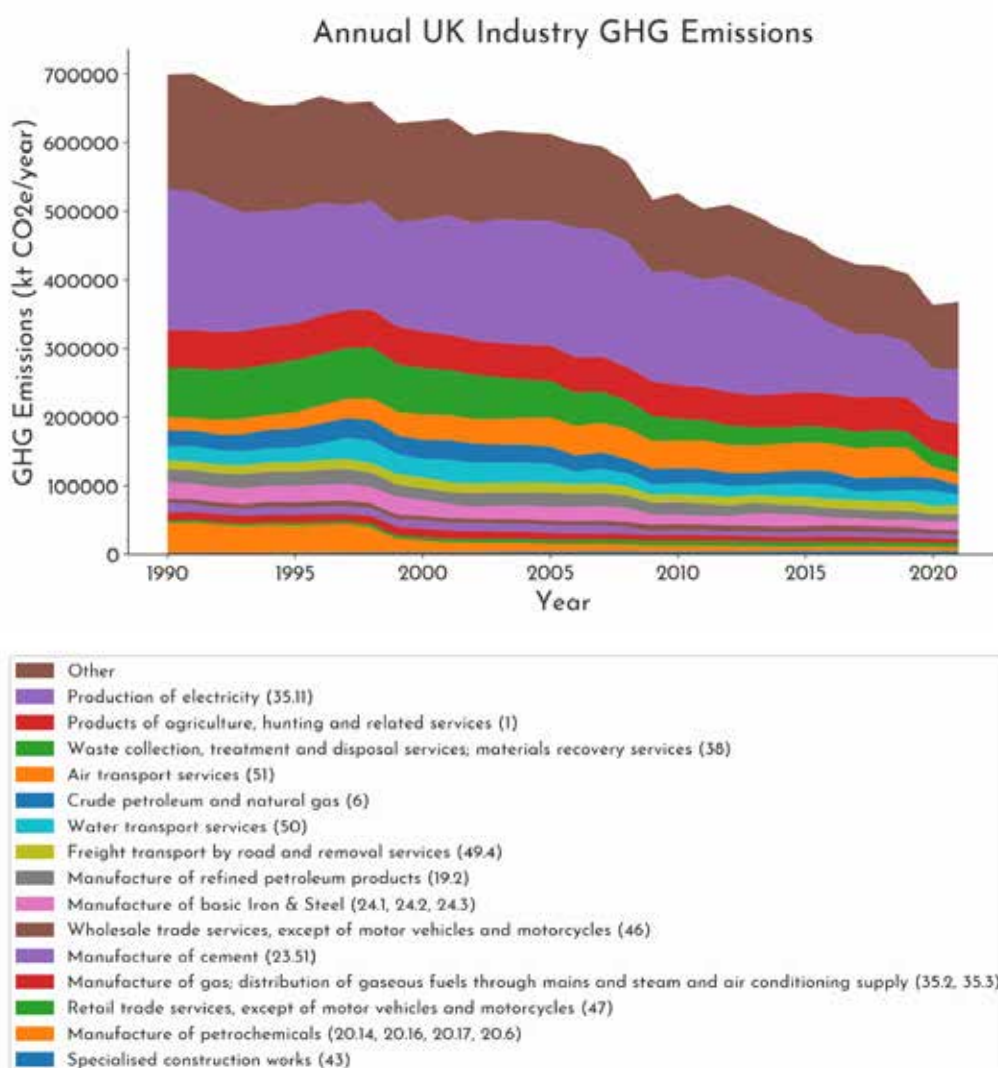
HIGH CARBON JOBS AT RISK

One requirement of a net zero transition is, as much as possible, the reduction of high carbon work. In some cases this can mean establishing new best practice, but it will also mean replacing high carbon activities (and jobs) with green alternatives. Many high carbon jobs can therefore be considered “at risk” in the move to a greener economy.

By plotting greenhouse gas emissions per industry in the UK, we determine which

industries are particularly ‘high carbon’ compared to the rest of the economy¹². This data describes emissions for the UK as a whole, but can be taken as a proxy for high carbon industries in the new North East Mayoral Combined Authority. Figure 1 shows greenhouse gas emissions by industry for the years 1990 to 2021, measured in kilotonnes of CO₂ equivalent released.

Figure 1: Greenhouse gas emissions per industry and year in the UK (1990 to 2021)

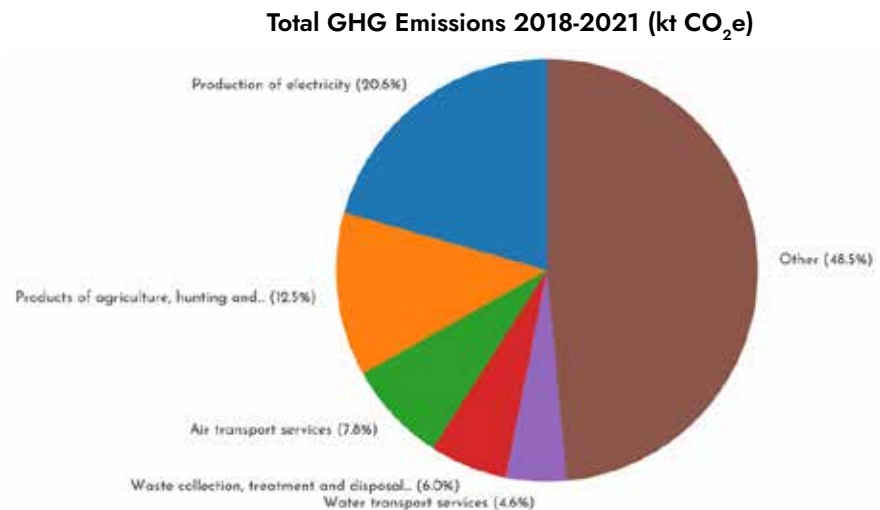


¹² Department for Energy Security and Net Zero and Department for Business, Energy and Industrial Strategy, “UK local authority and regional greenhouse gas emissions national statistics”, <https://www.gov.uk/government/collections/uk-local-authority-and-regional-greenhouse-gas-emissions-national-statistics>

We can see a relatively small number of industries are producing most of the emissions throughout this period. However, we also observe a general reduction over time, as well as some variance between industries. Focusing on the most recent three years of available data (2018 to 2021), gives us a good indication of what the most carbon intensive industries are today.

Figure 2 shows the share of greenhouse gas emissions by industry for the period from 2018 to 2021, highlighting the top five most carbon intensive industries. These made up over 50% of the UK's greenhouse gas emissions over the period.

Figure 2: Share of greenhouse gas emissions by industry (2018-2021) in the UK



The ONS Business Register and Employment Survey (2021) allows us to see how many people are employed in each of these high carbon industries across the new North East Mayoral Combined Authority¹³.

The following table breaks down the total greenhouse gas emissions of the top 5 carbon intensive industries in the UK, along with the number of employees in these industries in the region.

Total greenhouse emissions and employees within the North East for the top 5 polluting UK industries

Industry	Total greenhouse gas emissions 2018-2021 (ktCO ₂ e) in the UK	Employees in the North East
Production of electricity (SIC 35.11)	240250.55	325
Products of agriculture, hunting and related services (SIC 1)	146371.45	2750
Air transport services (SIC 51)	90716.70	1550
Waste collection, treatment and disposal services; materials recovery services (SIC 38)	69552.30	3000
Water transport services (SIC 50)	54023.15	0*

* This number is likely to be larger than zero, however due to the very small number of employers in this industry, a sampling issue in ONS data appears to round it to zero

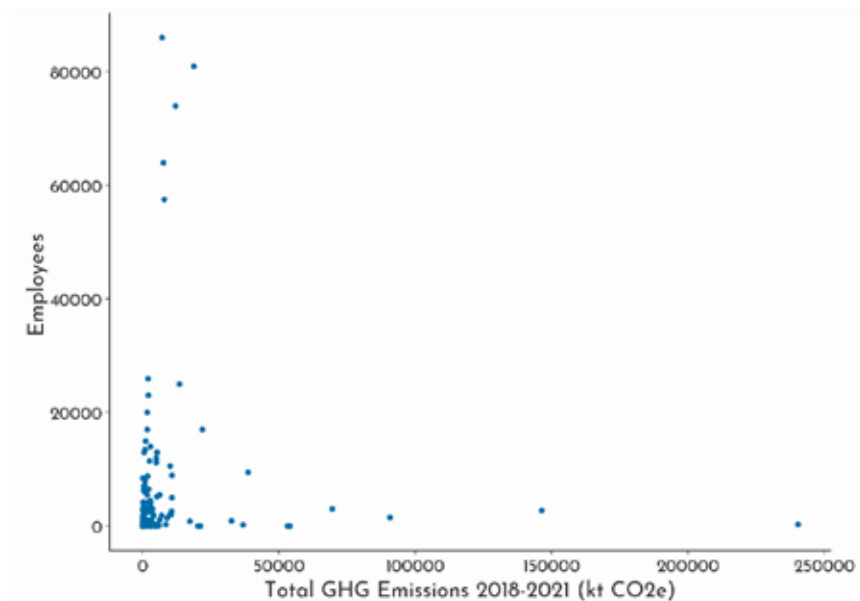
¹³ ONS, "Business Register and Employment Survey", <https://www.nomisweb.co.uk/datasets/newbres6pub>

As of 2021, approximately 7625 people are employed in these industries across the region, making up just 0.9% of the total workforce.

A much larger group of industries (15) make up 75% of the UK's greenhouse gas emissions. In the North East, approximately 142,135 people are employed in these industries, making up 17% of the total workforce.

In fact, when we plot the number of employees in each of the region's industries against the total greenhouse emissions produced by that industry in the UK (as in Figure 3), we see the highest emitting industries tend to employ very few people and, conversely, the industries which employ the most people tend to have relatively low emissions.

Figure 3: Industries by number of employees in the North East and total UK greenhouse gas emissions



When combined, the five largest industries in the region employ approximately 362,600 people, 44% of the North East workforce¹⁴. However these industries contribute just 4.6% of total UK greenhouse gas emissions. The highest carbon jobs are therefore congregated in a small section of economy and represent relatively few individual roles.

CONSTRUCTION

Construction is an area of particular concern to the North East. It is a significant employer, with an estimated 39600 employees (4.8% of the region's total workforce). Many of these workers also already hold skills needed for housing retrofit work, which is vital to reducing domestic energy consumption.

To date, however, it is clear more needs to be done to "green" this sector. Between 1990 and 2021, construction recorded the highest increase in annual emissions of all UK sectors, increasing by 76.2% in that time. It is one of only five sectors (categorised as SIC group section) which has increased its annual emissions quantity over that time.

¹⁴ These are: education services; retail trade services; human health services; food and beverage serving services; public administration and compulsory social security services

AGRICULTURE

Despite employing fewer people than construction, agriculture is also of particular strategic concern to the North East as one of the highest carbon emitters. An estimated 3640 people are currently employed in agriculture in the region, which is just 0.4% of the total workforce

Like construction, agriculture has lagged behind other sectors with regards to reducing emissions. Agriculture, forestry and fishing released the 5th largest mass of greenhouse gases of all industries in the period from 1990-2021 at 1617546.60 ktCO₂e.

Figure 4 shows greenhouse gas emissions from the current top 5 emitting industries since 1990. All these industries have seen some reduction in emissions over the past thirty years. Of this group, however, agriculture, forestry and fishing has reduced its emissions the least relative to 1990 levels, with a reduction of just 10.6%.

In this time, it has gone from being the fifth largest emitter to the fourth. If current trends continue it will become the third largest emitter within the next few years.

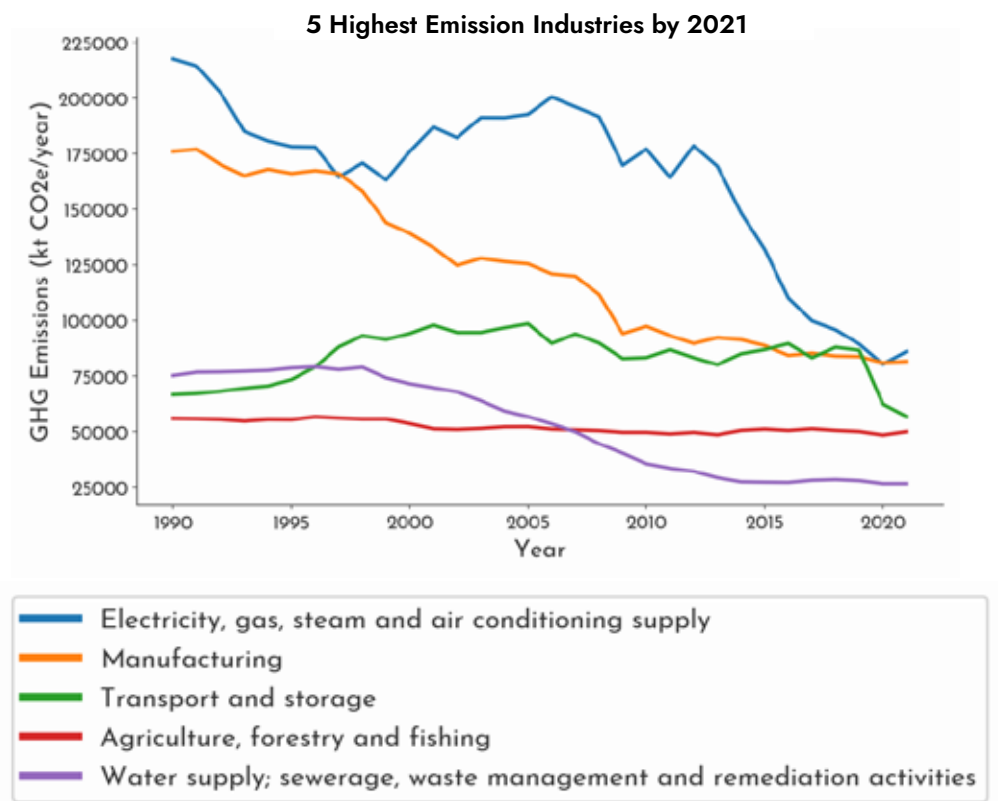


Figure 4: Greenhouse gas emissions for the top 5 emitting industries by 2021 (1990-2021) across the UK

Figure 5 further breaks down emissions in agriculture by local authority within the North East. The majority of agriculture emissions in the North East come from Northumberland, which produced 3048 kt

CO₂e of emissions in the period between 2018 and 2021. County Durham was the second highest emitter, with 1565 kt CO₂e in the same period.

Agriculture Territorial (kt CO₂e) for 2018-2021

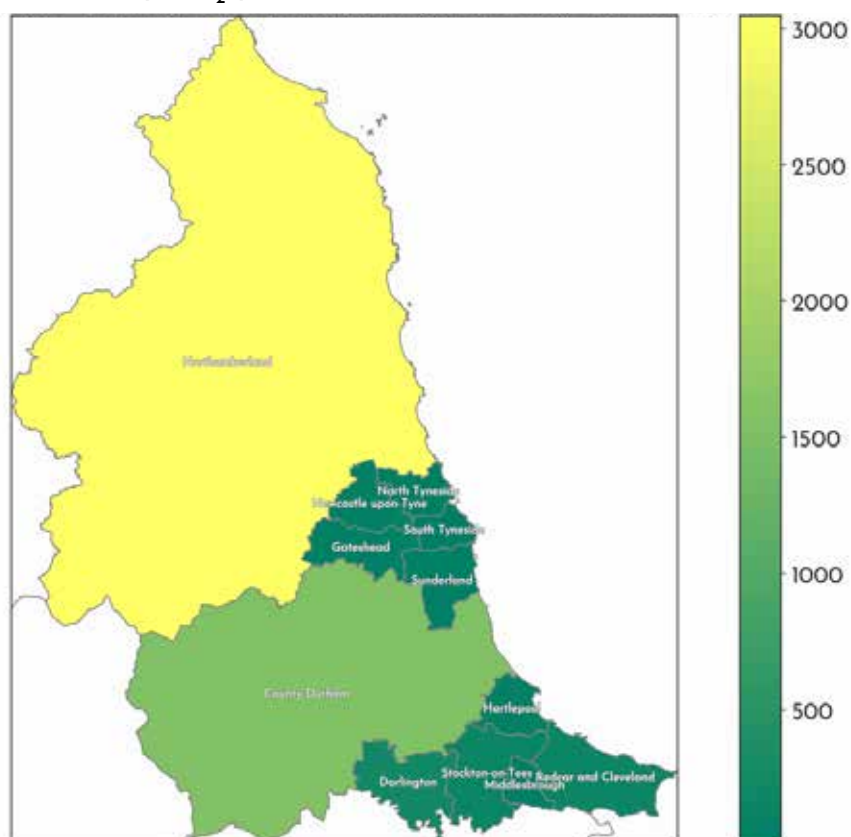


Figure 5: Agriculture emissions in the North East by local authority (2018-2021)

The remaining local authorities produced significantly less agricultural emissions, likely due to a lower density of agricultural activity in these areas, ranging between 240 kt

CO₂e in Darlington and 15 kt CO₂e in South Tyneside. Data for the 2018-2021 period and for 2021 is listed in full below.

Agriculture emissions in the North East by local authority (2018-2021)

Local Authority	Agricultural emissions 2018-2021 (kt CO ₂ e)	Agricultural emissions 2021 (kt CO ₂ e)
Hartlepool	69.89	17.00
Middlesborough	18.51	4.43
Redcar and Cleveland	171.91	41.52
Stockton-on-Tees	158.25	40.99
Darlington	239.52	57.88
County Durham	1565.28	393.93
Northumberland	3048.49	745.75
Newcastle upon Tyne	51.04	11.32
North Tyneside	18.14	4.26
South Tyneside	14.73	4.02
Sunderland	30.37	8.85
Gateshead	49.69	12.53

LOW AND HIGH CARBON JOB OPPORTUNITIES

The Office for National Statistics (ONS) offers data on the Low Carbon and Renewable Energy Economy (LCREE) in the UK – from this we can see that employment in the LCREE nationally is at its highest levels since records began in 2015. However, while this data captures sectors, it includes no taxonomy or data on specific occupations. It is also national in focus, not local or regional.

Currently the Standard Occupational Categories (SOC) used by the ONS also contain no information on the ecological impact of work. This means **there is no simple or standardised method to define which jobs constitute “green jobs” or “high carbon jobs” in the UK.** To decide what constitutes green or high carbon work, we used machine learning inference methods.

We used keywords to find a subset of the Adzuna job advertisement data, refined this subset down to just jobs we had a very high degree of confidence were either green jobs or high carbon jobs (and not, for instance, obvious greenwashing). Finally,

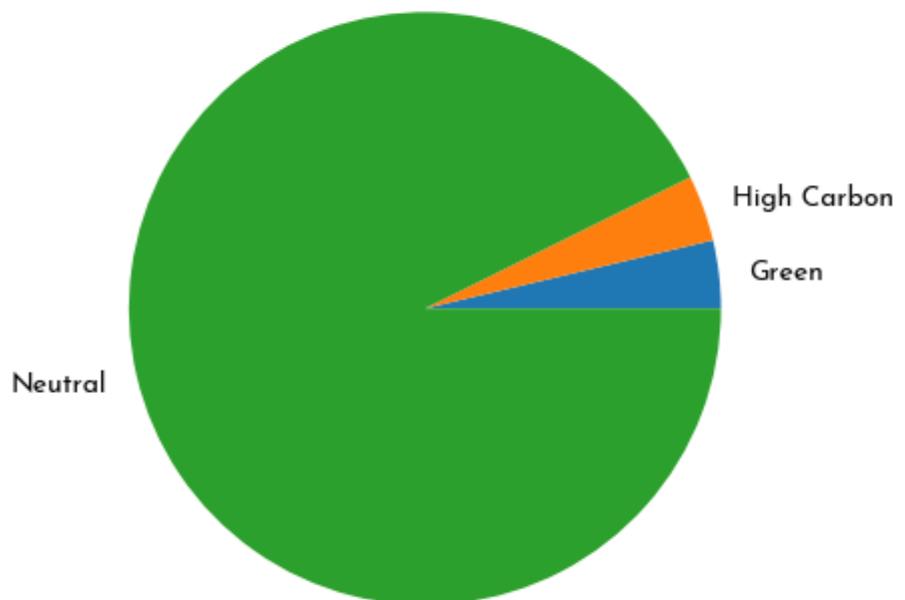
this second smaller subset was used as training data to determine which of the initial job listings were green jobs or high carbon jobs. “High carbon” jobs were inferred via keywords associated with particularly high emissions labour¹⁵. Similarly, “green” jobs were inferred via keywords which are particularly associated with green work.¹⁶

275,830 jobs were advertised via Adzuna in the North East in 2022. Of these we were able to identify a significant number (255,672) as neutral, meaning they are neither very carbon intensive, nor green jobs. Meanwhile, **10,209 jobs were determined to be green and a further 9,949 to be high carbon.** Figure 6 shows the split between green, neutral and high carbon jobs advertised in the North East.

Further breaking this down by sector shows a large number of sectors with fairly even shares of demand for neutral jobs, but relatively few sectors demanding labour for high carbon or green roles. Figure 7 shows the top 10 employers for green, high carbon and neutral jobs in 2022.

Figure 6: Distribution of High Carbon, Neutral and Green jobs within the North East

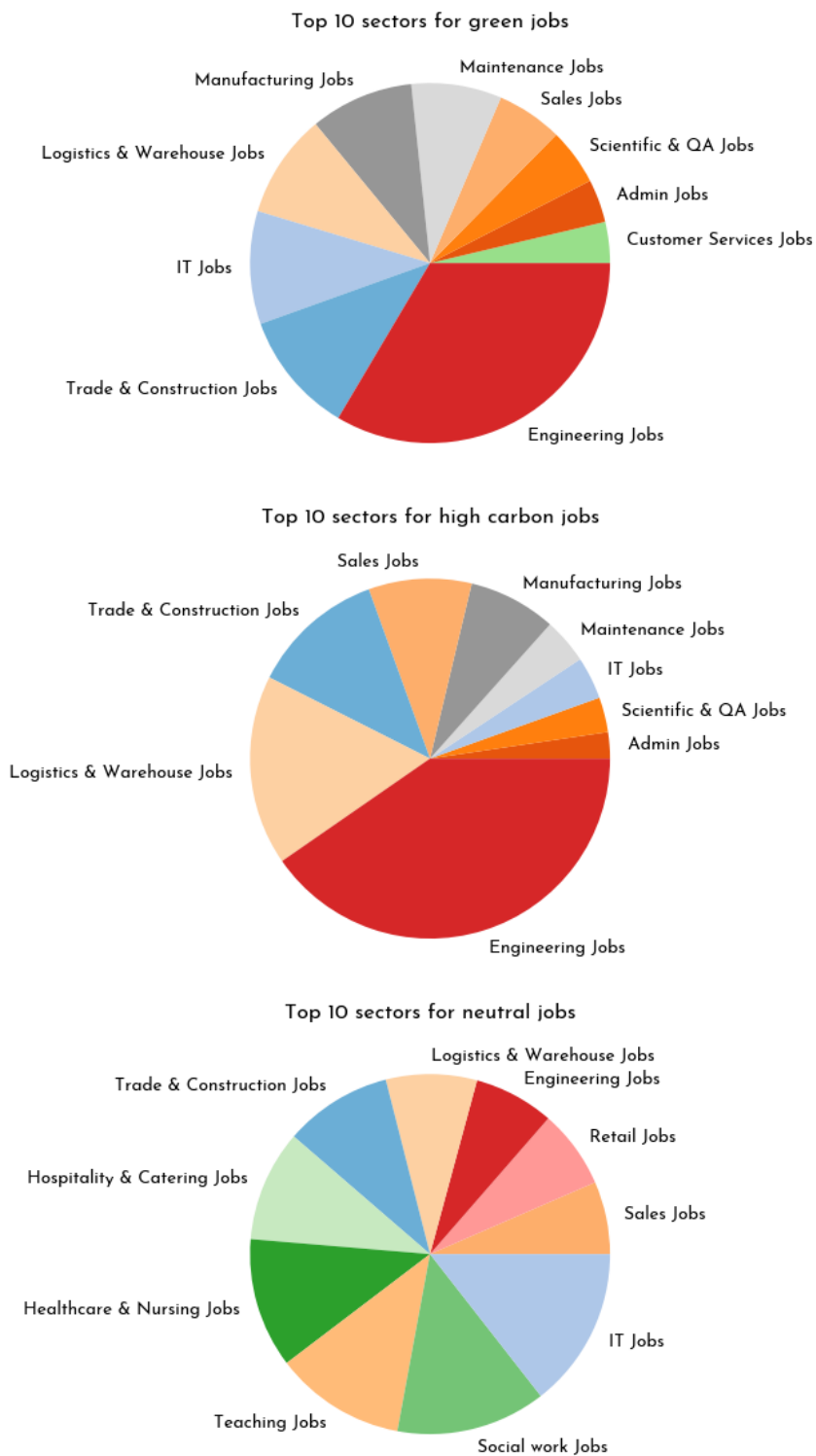
**Distribution of jobs by carbon impact in the North East
Adzuna 2022 total 275,830 unique jobs**



¹⁵ The keywords used to identify “high carbon” jobs were: ‘Coal’, ‘Coal mining’, ‘Coal-fired’, ‘Natural gas’, ‘Gas’, ‘Power plant’, ‘Powerplant’, ‘Power-plant’, ‘Gas network’, ‘Gas pipeline’, ‘Gas mains’, ‘Petroleum’, ‘Oil’, ‘Oil drilling’, ‘Offshore drilling’, ‘o&g’, ‘o & g’, ‘Oil and gas’, ‘Cement’, ‘Cement production’, ‘Steel’, ‘Steel manufacturing’, ‘Dairy farming’, ‘Livestock’, ‘Meat production’, ‘HGV’, ‘Heavy goods vehicle’, ‘Trucking’, ‘Airlines’, ‘Aviation’, ‘Boiler’, ‘Gas Engineer’, ‘Deforestation’, ‘Logging’, ‘Chemical manufacturing’, ‘Plastic production’.

¹⁶ The keywords used to identify “green” jobs were: ‘waste sorting’, ‘peatland restoration’, ‘heat pump’, ‘electric vehicle’, ‘ev charging’, ‘circular economy’, ‘green finance’, ‘energy efficiency’, ‘home retrofit’, ‘building retrofit’, ‘renewable energy’, ‘wind energy’, ‘solar energy’, ‘solar pv’, ‘tree planting’, ‘nature restoration’, ‘heat network’, ‘geothermal’, ‘photovoltaic’, ‘restoration’, ‘ret-rofit’, ‘biodiversity’, ‘hydrogen’, ‘recycling’, ‘insulation’, ‘solar’, ‘sustainability’, ‘wind’, ‘remanufacturing’, ‘renewable’, ‘peatland’, ‘planting’, ‘scrap’.

Figure 7: The top 10 sectors for green, high carbon and neutral jobs in 2022



GREEN SKILLS DEMAND IN THE NORTH EAST

Engineering is the sector which showed the most demand for both high carbon (3527) and green (2852) jobs.

Meanwhile logistics and warehouse jobs, and trade and construction jobs both appear

in the top four employers for both high carbon and green jobs. This suggests that quite similar roles might be required for both high and low carbon work.

While SOC codes are not annotated with information about green work, O*NET, an equivalent database which describes jobs in the US, is. We used machine learning to assign Adzuna job listings O*NET codes, which provides both a skills breakdown for each role and additional information about green work.

Within the O*NET skills breakdown, skill level describes the degree to which a particular descriptor (skill) is needed to perform the occupation. These are determined by an occupational analyst against an anchor scale which is unique for each skill, but always measured between 0 and 7, with 7 suggesting a very high skill level and 0 suggesting the skill is not needed at all to perform the work.

We can use this to generate a picture of the skills demanded, offered wages and prominent employers for specific kinds of work. In this case, we've unpacked agriculture, construction, high carbon and low carbon roles.

O*NET uses a specific taxonomy to describe green jobs, splitting them into three categories:

1. **Green increased demand** — which describes roles which may see increased demand from green work, albeit in new contexts¹⁷
2. **Green new and emerging** — which describes roles which are either new or radically changed for green work¹⁸
3. **Green enhanced skills** — which describes roles for which demand may remain similar, but where green work will shift tasks and skills¹⁹

¹⁷ O*NET, "Occupational Listings: Green Increased Demand Occupations", <https://www.onetcenter.org/green/demand.html>

¹⁸ O*NET, "Occupational Listings: Green New and Emerging", <https://www.onetcenter.org/green/demand.html>

¹⁹ O*NET, "Occupational Listings: Green Enhanced Skills", <https://www.onetcenter.org/green/demand.html>

AGRICULTURE

Using the machine learning inference methodology defined earlier, we identified 555 jobs advertised in agriculture during 2022. Of these 270 were neutral, 187 were high carbon and a further 98 were green jobs. The most consistently high emitting jobs within agriculture were engineering jobs.

Of the 98 “green” job listings we identified, the most common job title was “agricultural engineer”, followed by “agricultural solicitor” and then a number of other engineering roles. Many job titles, such as “mechanic” and “forest craftsman” appear only once. Figure 8 shows the distribution of job titles within the green jobs subset.

Agricultural green job titles in NTCA

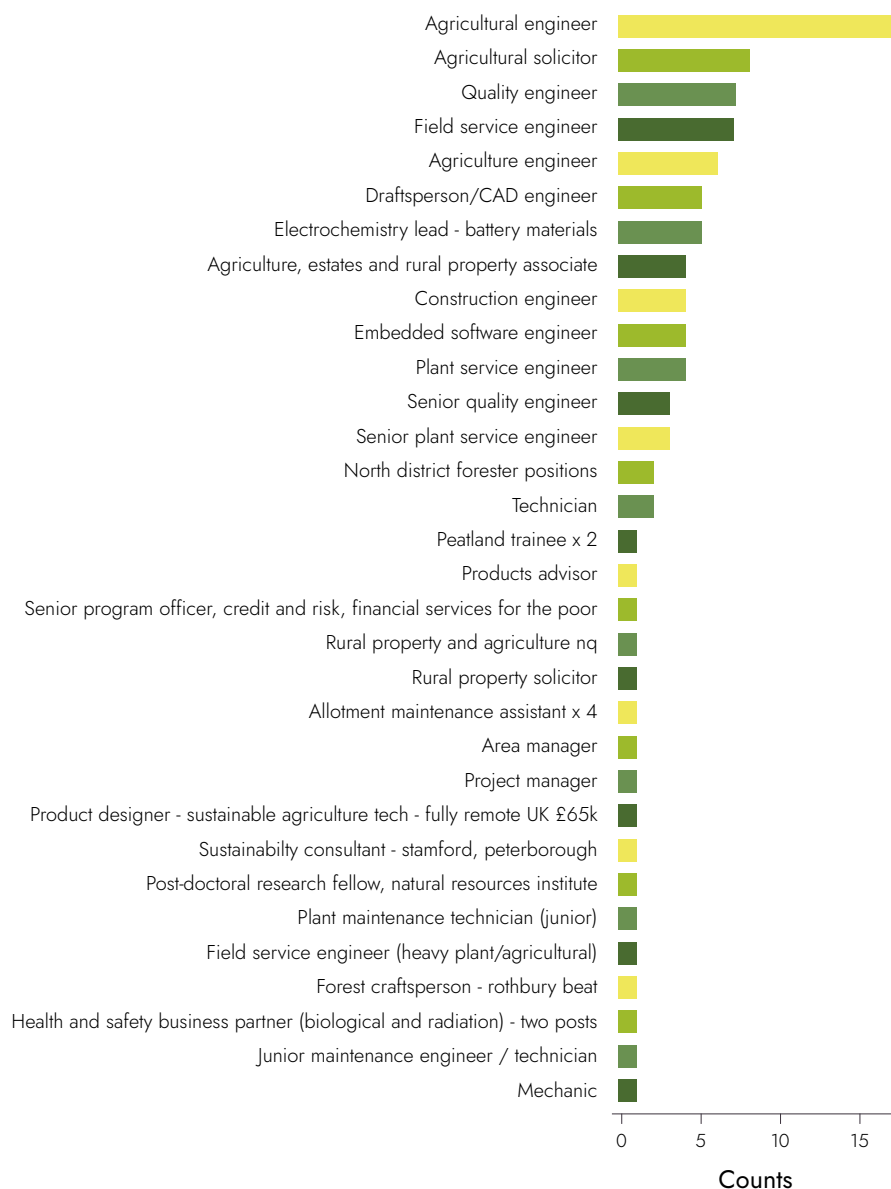


Figure 8: Agriculture green job titles in the North East

The green agricultural sector in NTCA encompasses a diverse range of sustainable agricultural practices, from innovative solutions to policy and legal consultancies. While some roles are centred around environmental advisories, others pivot towards advancements in eco-friendly technology and agricultural machinery

efficiency and repair. Certain positions underscore hands-on expertise and technical design, others are dedicated to facilitating the implementation of green practices.

Some examples of advertised jobs and associated responsibilities include:

Green agriculture job roles and requirements advertised in the North East

Position	Responsibilities
Agriculture, Estates and Rural Property Associate	“Dealing with estate management work, first registrations, sporting rights, rural property secured lending, and renewable energy schemes. Handling various rural property matters such as sales, purchases, letting, easements, rights of way, agricultural tenancies, and minerals ownership. Opportunity to collaborate with esteemed Lawyers and expand your professional network in the agricultural sector.”
Agriculture Solicitor	“Managing a diverse caseload across all agricultural matters. Overseeing acquisitions, disposals, restructuring, diversification projects, renewable energy matters, and environmental concerns.”
Electrochemistry Lead	“Engage with Li-ion cell suppliers, and help develop cell technology roadmaps tailored to various applications like agriculture and off-road vehicles. Troubleshoot and resolve issues with in-depth understanding of cell chemistry, technology, and manufacturing.”
Quality Engineer	“Constantly challenge processes, procedures to achieve optimum reducing energy output in the automotive, building and agriculture sectors. Actively participate in Safety, Health, Environment, and Fire protocols and follow relevant guidelines. Efficiently handle customer requests, including issues during pre-production, production, and post-production, to foster improved customer relations.”
Sustainability Consultant: Agriculture and Related Supply Chain	“Design, propose, and carry out sustainable solutions. Focus on mitigating methane and CO ₂ e emissions. Collaborate with partner companies to introduce sustainability-centred services to their clientele. Support in implementing and customising software to suit the specific needs of new clients, which includes adapting it for different agricultural and environmental contexts around the world.”
Estate Maintenance and Operational Role	“Undertake a spectrum of estate maintenance activities adhering to the highest standards and in alignment with health, safety, and environmental guidelines. Maintain, rejuvenate, and initiate habitats to propel ecological betterment and landscape enhancement. Activities encompass tree felling and planting, vegetation management, fencing, and adept use of chainsaws and clearing saws/trimmers.”
Product Design Role in Climate-Focused Startup	“Engage SaaS platform likened to Experian, targeting farmers with a sustainability score. Equip farmers with tools, insights, and incentives to transition to climate-friendly practices. SaaS Experience: Established background in SaaS environments. Adept with Figma and similar tools; bonus for Tailwind CSS.”

Position	Responsibilities
Agriculture Engineer	"Diagnose, service, repair, and maintain agricultural machinery. Technical and electrical diagnostics. Prepare new machinery for delivery. Monitor and replenish parts and supplies. Adhere to health and safety protocols. Maintain a clean work environment and vehicles. Relevant engineering qualifications (e.g., City and Guild, NVQ, SVQ). Advanced mastery in hydraulics, mechanics, and electrical diagnostics. Strong communication skills; ability to work independently and in teams."
CAD Engineer	"Generate drawings for recycled and repairing Pallets, Packing Cases, Crates, and Skids within set deadlines. Handle stencilling requirements and site drawings."
Rural Property Solicitor	"Provide advice on agricultural land and rural property matters such as farm renewable energy, farm sales/purchases or agricultural tenancies or sporting leases. Ensure top-tier client service and relationship maintenance."

When we isolate the 187 agriculture jobs we have identified as high carbon, the most common role is "field service engineer". A variety of engineering and technician

roles are well represented, along with some administrative and customer facing roles. Figure 9 shows the distribution of job titles in high carbon agricultural job advertisements.

Figure 9: Agricultural high carbon jobs in the North East

Agricultural high carbon job titles in NTCA

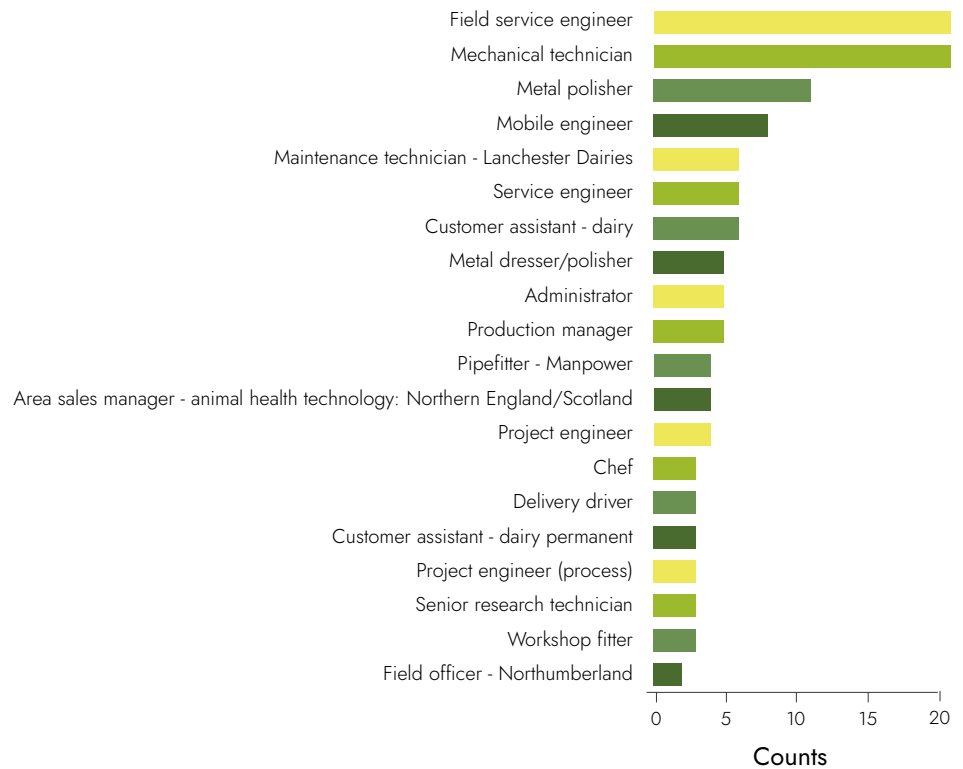


Figure 10 shows the average skill levels demanded for jobs across all agriculture job listings, on a scale between 0 and 7. Some skills approach scores close to 4, placing them slightly above the intermediate level. Skills with the highest scores are Active Listening, Critical Thinking,

Monitoring, Reading Comprehension, Social Perceptiveness, and Writing.

Examining the skill levels demanded for agriculture jobs identified as green, we see a very similar distribution to that in agriculture as a whole.

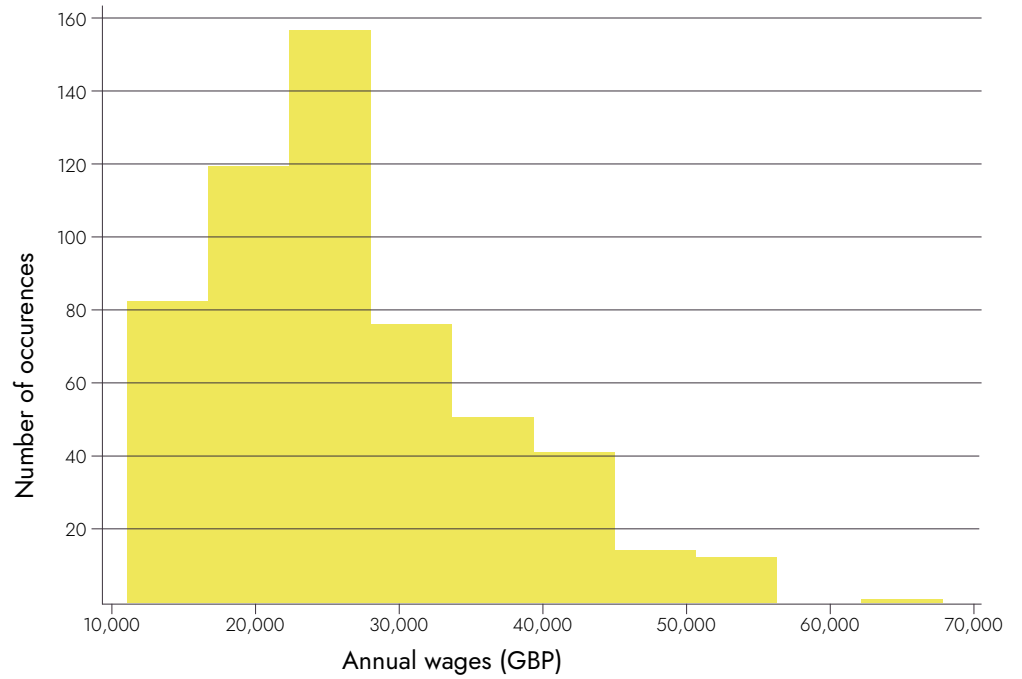
Figure 10: Demanded skill levels in agriculture jobs**Demanded skill levels agriculture jobs**

In Figure 11, we have a histogram of wages in agriculture. Most agriculture roles provide salaries under £30,000 annually. Nearly 160 positions in this sector offer wages ranging

from £23,000 to £28,000 per annum. While there are roles that pay over £40,000, they are relatively rare and constitute only a small portion of the overall distribution.

Figure 11: Histogram of annual wages advertised for agriculture jobs

Histogram of annual wages advertised for agriculture jobs



When we compare this to green jobs in agriculture, however, we see a significant difference. Here, there are fewer low paid roles and a much higher number of high

paying roles, suggesting green work in agriculture is generally paid better. Figure 12 shows a histogram of wages in advertised green agriculture jobs.

Figure 12: Histogram of annual wages advertised for agriculture jobs

Histogram of annual wages advertised for agriculture green jobs

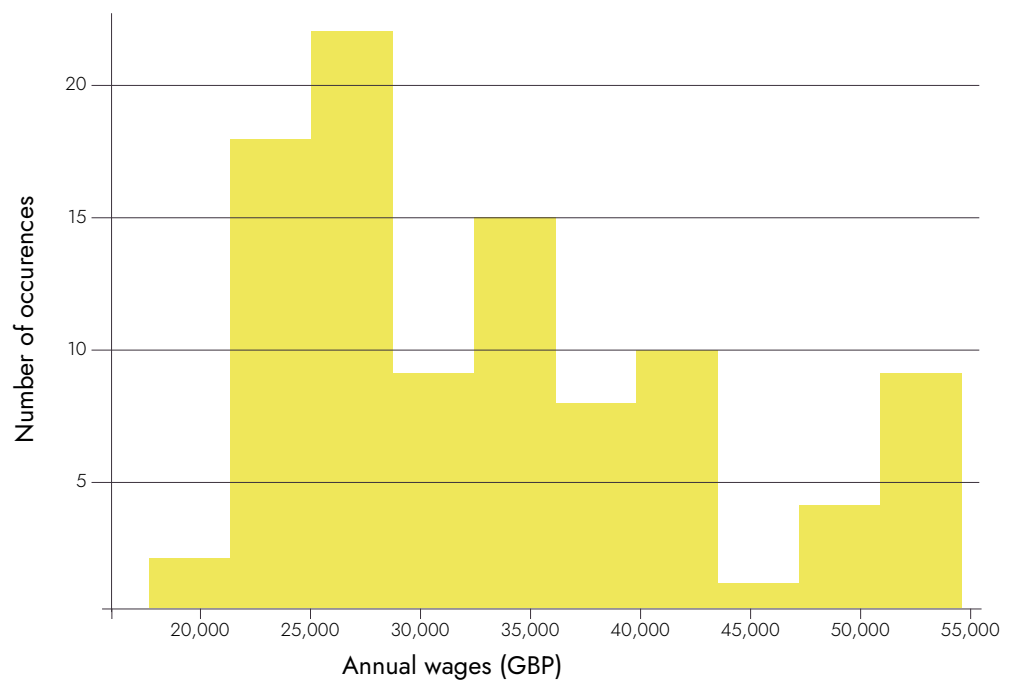


Figure 13 shows the companies which advertise for the most jobs in agriculture in the North East. Notably, recruitment agencies emerge as the top hirers. Major supermarkets also feature prominently.

Largest employers in agriculture jobs in the north east

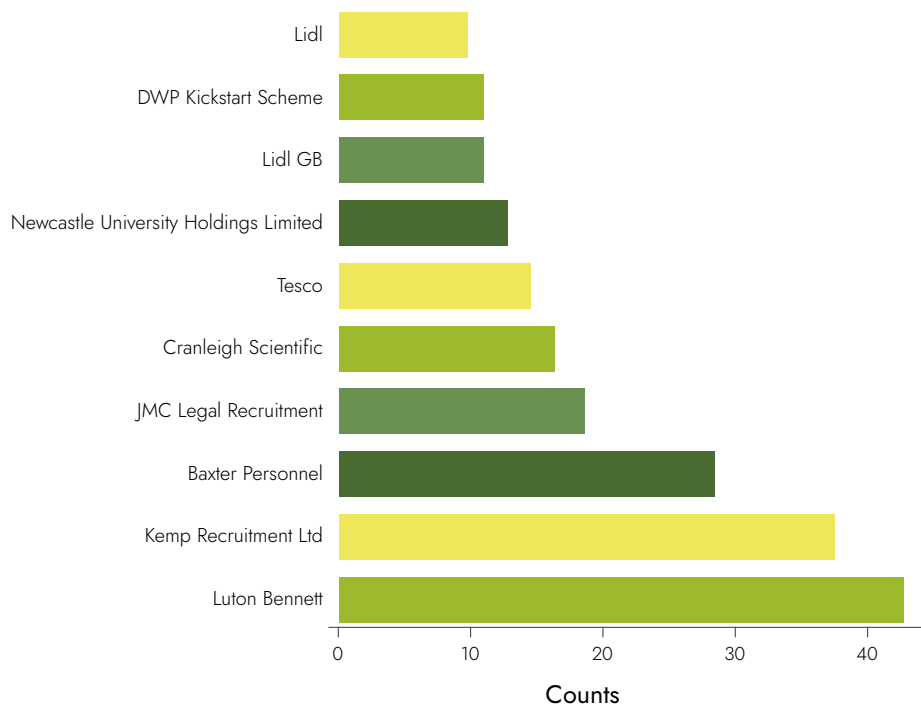


Figure 13: Largest employers in agriculture in the North East

Figure 14 shows the O*NET classification of green occupations within agriculture in the North East. Of those roles O*NET classifies as being “green”, most here are classified as “green enhanced skills”, indicating that demand for these roles is unlikely to be affected, but tasks will shift in a green transition.

O*NET green job types in agriculture jobs

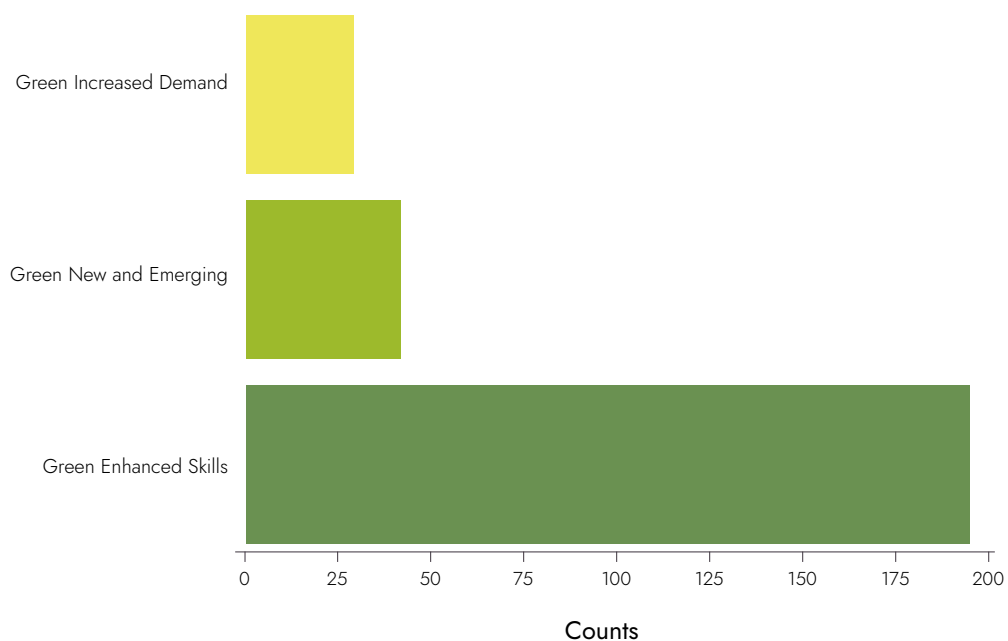


Figure 14: O*NET green job types in agriculture

CONSTRUCTION

19,858 jobs were advertised for construction in 2022. Of these the vast majority, 17,879, were neutral, 1050 were high carbon and 929 were green. Large numbers of green jobs were found among carpenters and joiners, electricians and electrical fitters and production managers and directors. Meanwhile, the overwhelming majority of high carbon jobs were carpenters and joiners.

Figure 15 shows a breakdown of demanded skill levels in construction. The skill level set range for construction jobs is narrow, with top scores scarcely exceeding 3, indicating intermediate training needs. Notably, Communication, Monitoring, and Quality Control stand out as pivotal skills in this sector.

Figure 15: Demanded skill levels in construction jobs

Demanded skill levels construction jobs

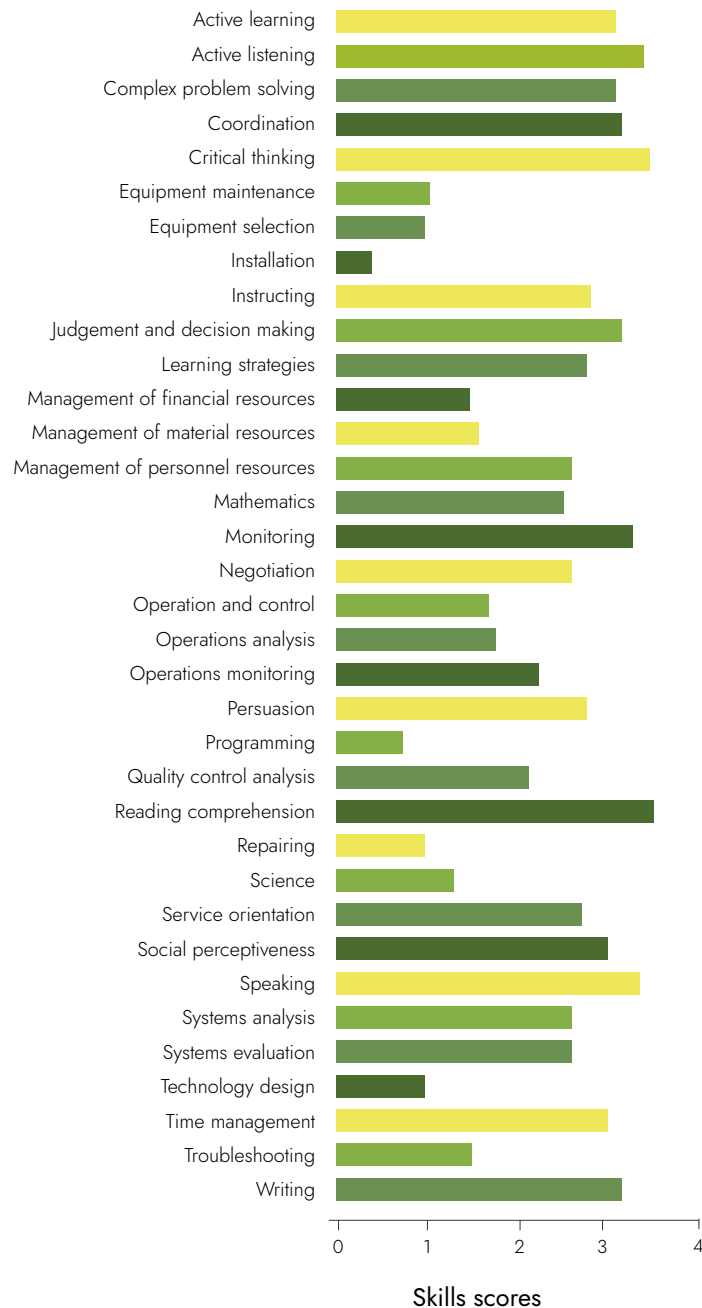


Figure 16 shows a histogram of wages in advertised construction jobs in the North East. The majority of roles offer under £30,000 annually, with about 8,000 positions paying £24,000 to £29,500. Roles exceeding £43,000 are rare.

Figure 16: Histogram of annual wages advertised for construction jobs

Histogram of annual wages advertised for construction jobs

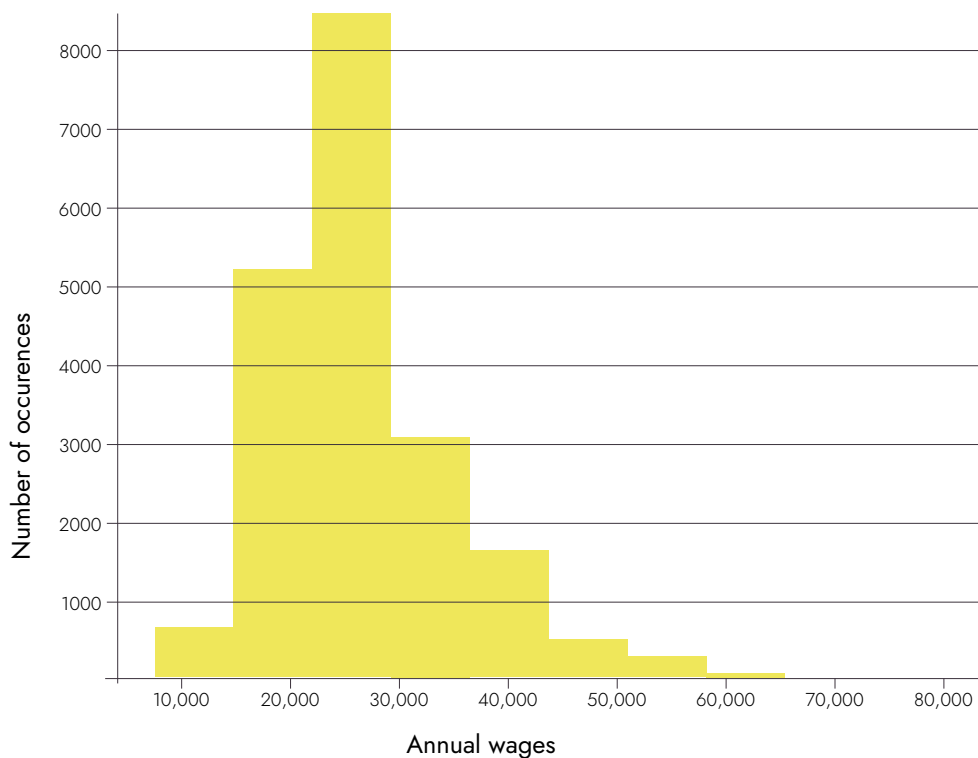


Figure 17 shows the top hirers for construction roles in the North East. Among the largest employers are recruiters. Checktrade, by a margin the largest, facilitates relationships between homeowners and trades.

Figure 17: Largest employers in construction in the North East

Largest employers in construction jobs in the North East

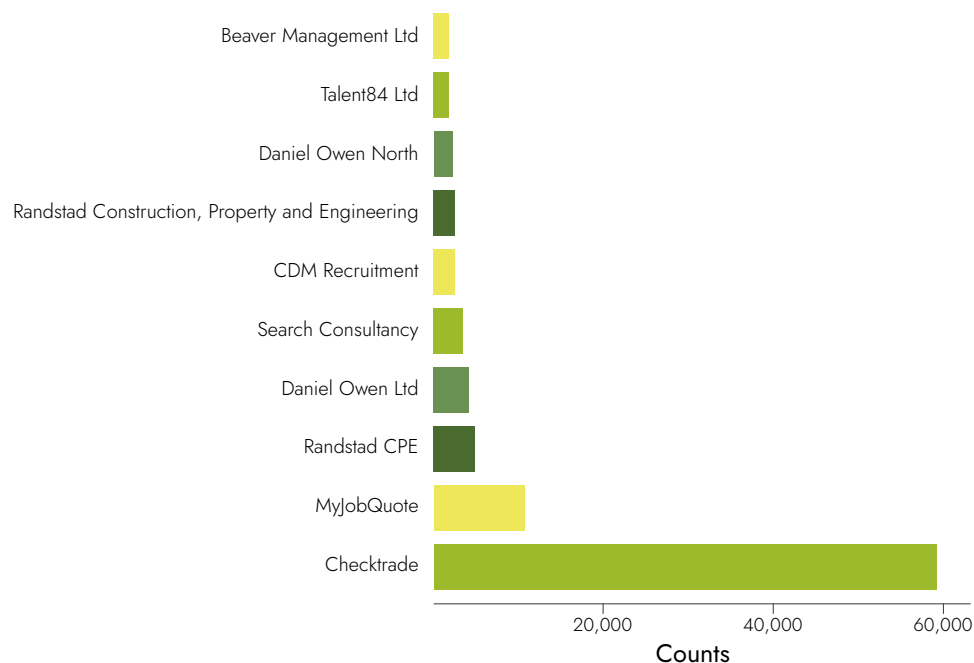
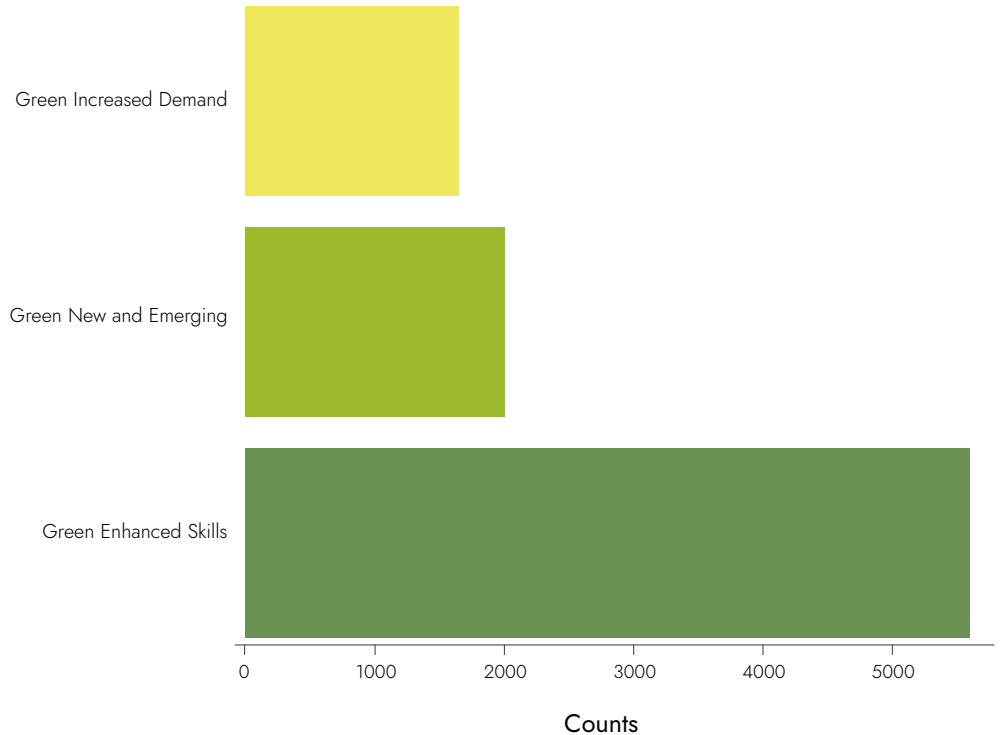


Figure 18 shows the most frequent O*NET green classifications for jobs advertised in construction. Again, green enhanced skills are the most common.

Figure 18: O*NET green job types in construction

O*NET green job types in construction



GREEN JOBS

We can generate a similar analysis for the set of all jobs which we identified as “green” above.

Figure 19 shows a breakdown of skills demanded for all jobs classified as green. Among these, several essential skills score above 3.5. These are: Active Listening, Critical Thinking, Monitoring, Reading Comprehension, Social Perceptiveness, and Writing.

While this offers a general overview, it’s essential to recognise that some skills, though scoring low, are vital for specific green transition tasks. For instance, Equipment Selection, Installation, and Repairing are crucial for retrofitting and activities related to the circular economy.

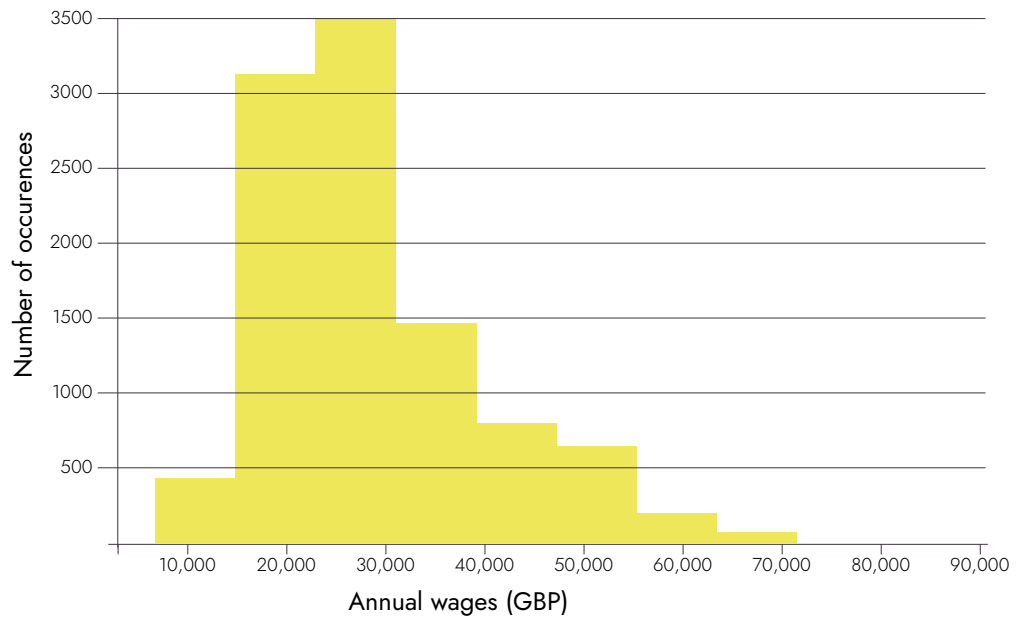
Considering the spectrum of skill set scores, those related to green transition jobs peak at 3.5. This suggests that these roles may not necessitate high specialisation. Furthermore, many transferable skills from other professions can be beneficial in green transition roles.

Figure 19: Demanded skill levels in green jobs**Demanded skill levels green jobs**

Figure 20 shows a histogram of annual wages offered for green jobs in the North East. Most green jobs offer salaries under £30,000, which is lower than high carbon roles. However, green job wage distribution is more balanced across a broader pay spectrum. This comparatively lower average may highlight challenges for green industries in competing with high carbon sectors.

Figure 20: Histogram of annual wages advertised for green jobs

Histogram of annual wages advertised for green jobs



In Figure 21, we see the largest employers of green jobs in the North East. In the green jobs sector, recruitment agencies are not as dominant as in specific industries (e.g. agriculture or construction) or as for high carbon roles. Non-recruitment agency leading hirers include Durham University, Amazon, and GlaxoSmithKline.

Figure 21: Largest employers of green jobs in the North East

Largest employers of green jobs in the north east

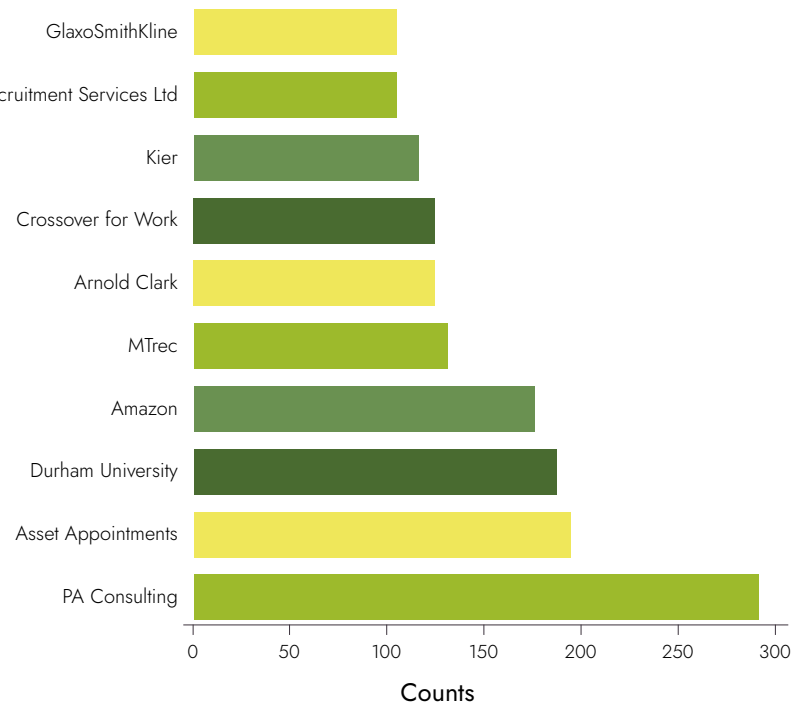
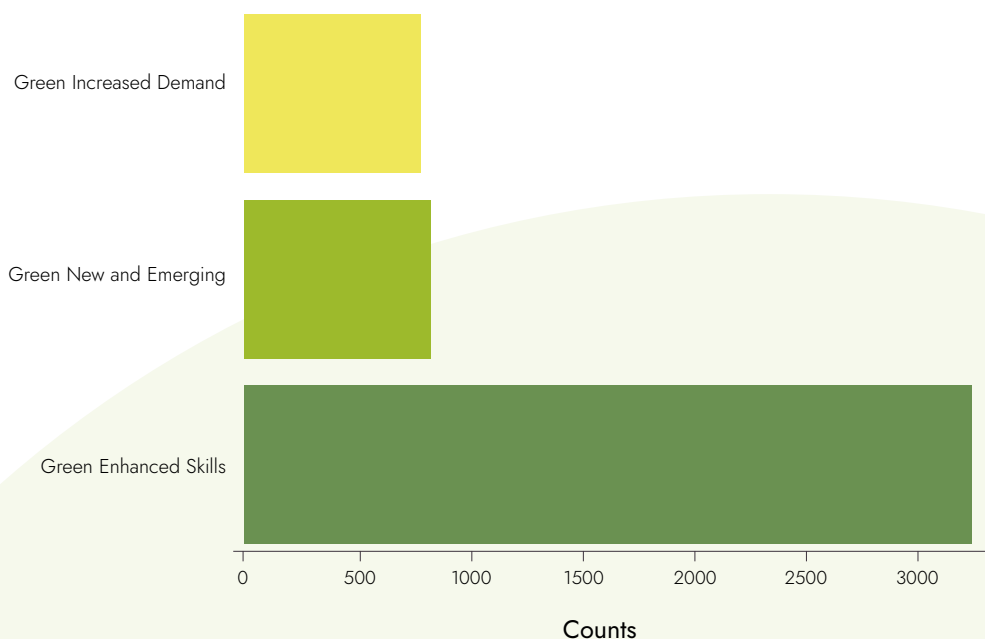


Figure 22 shows the O*NET green jobs classifications for jobs we have identified as green. As matching advertisements to O*NET codes and identifying jobs as green utilise different methodologies, these differ slightly, but there is a high degree of overlap: over two-thirds of green jobs identified using our keyword and machine learning approach align with the green job occupations listed by O*NET. Of these, most are classified as green enhanced skills.

Figure 22: O*NET classification of green occupations among green jobs

O*NET green occupation types in green jobs



HIGH CARBON JOBS

Similarly, jobs we have identified as “high carbon” can be broken down according to skills, annual wages, employers and O*NET’s green categorisation.

Figure 23 shows skill levels demand for jobs classified as high carbon. Typically, roles categorised as ‘high carbon’ exhibit higher

average scores compared to green jobs. Notably, the top-scoring skills mirror those found in green jobs. Overall, ‘high carbon’ skill levels tend to outpace those of green jobs.

Figure 23: Demanded skill levels in high carbon jobs

Demanded skill levels high carbon jobs

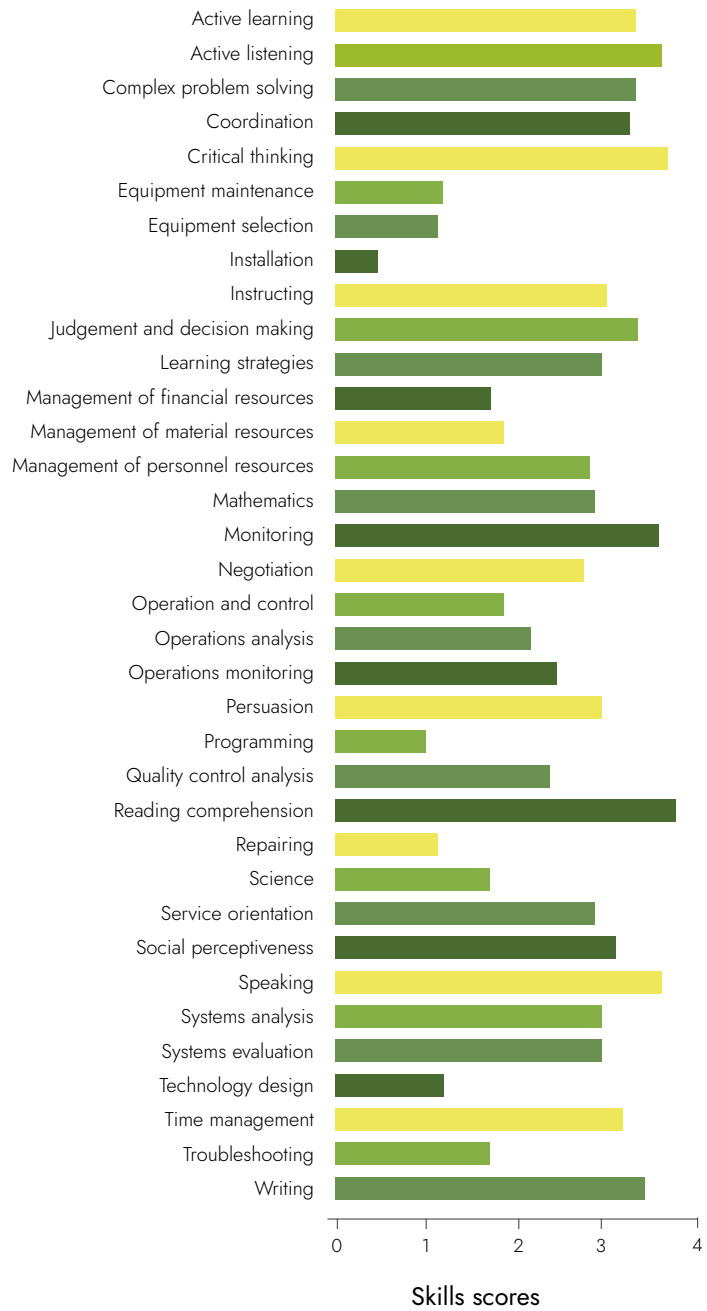


Figure 24 shows a histogram of wages offered for high carbon jobs. Most offer salaries below £40,000, a threshold higher than the average in the agriculture and construction sectors.

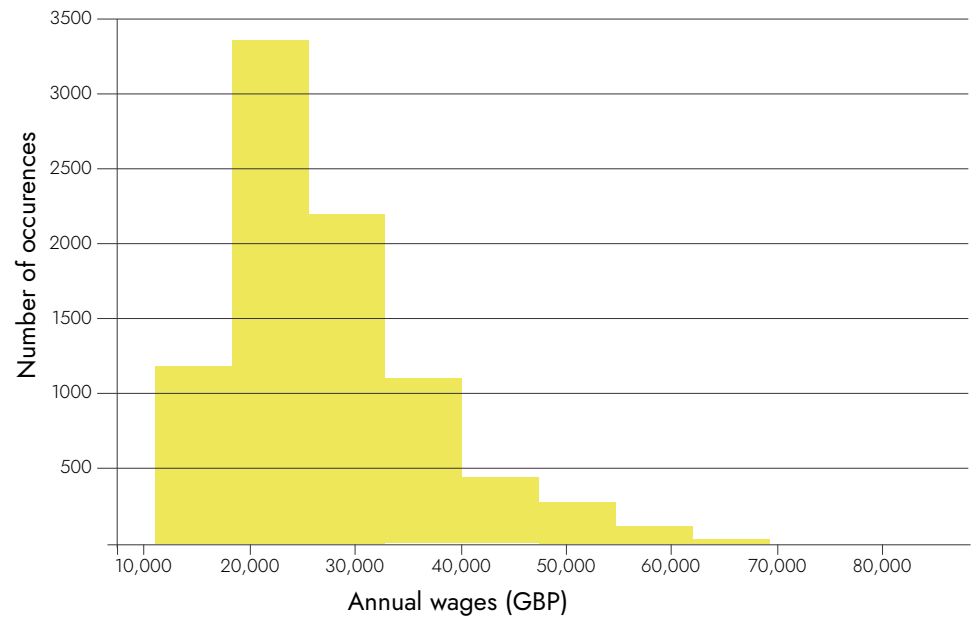
Figure 24: Histogram of annual wages advertised for high carbon jobs**Histogram of annual wages advertised for high carbon jobs**

Figure 25 shows the largest employers of high carbon jobs in the North East. All primary hirers in this sector are recruitment agencies.

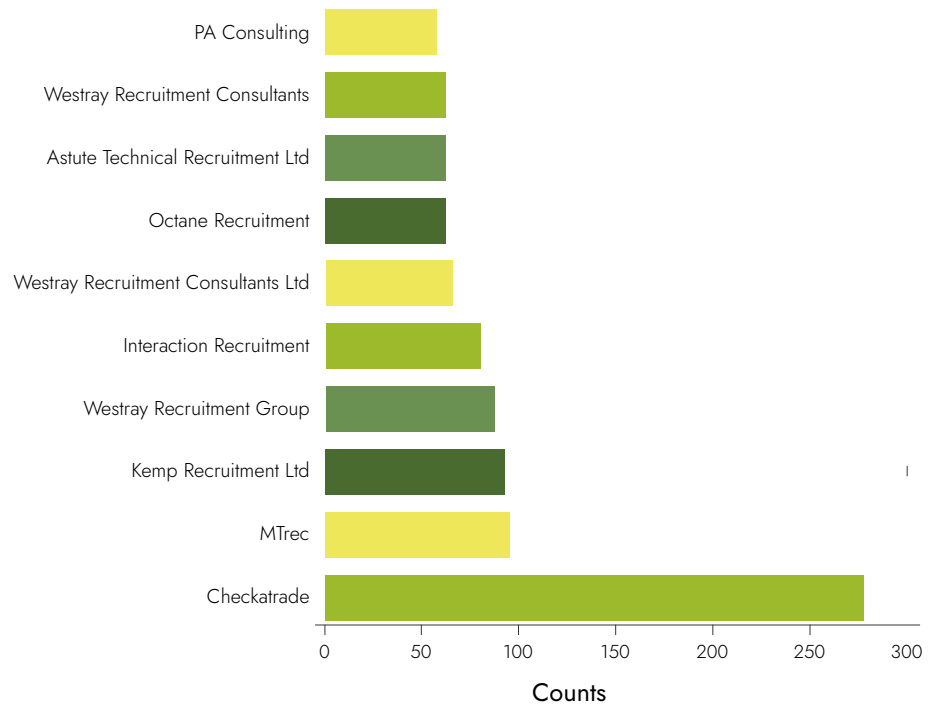
Figure 25: Largest employers of high carbon jobs**Largest employers of high carbon jobs**

Figure 26 shows O*NET green job classifications for high carbon jobs advertised in the North East. Counter-intuitively, many high carbon jobs are also designated as green in O*NET's taxonomy.

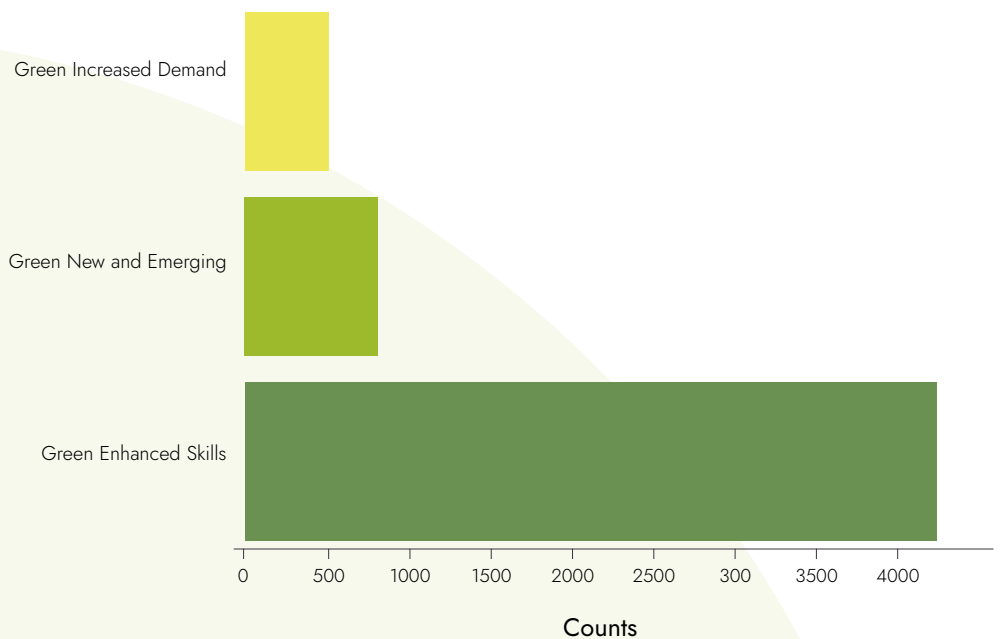
This is because, while we have designated specific job advertisements as high carbon, O*NET describes job roles. Many of these exist in both high carbon and green contexts. So, even though these are high carbon

jobs, many could provide the necessary skill set for green roles according to O*NET classification. Such work, currently high carbon, could contribute to a green transition under the correct circumstances.

Overwhelmingly, jobs classified this way by O*NET are "green enhanced skills", meaning there is little expected change in demand, but a green transition might require new skills and adaptation to new working contexts.

Figure 26: O*NET green job types of high carbon jobs

O*NET green job types of high carbon jobs



COMPARING GREEN AND HIGH CARBON SKILLS

This section compares the skill levels of green and high carbon jobs in the NTCA area.

In Figure 27, we have subtracted the skill levels demanded across high carbon jobs from those demanded for green jobs to find a skill differential. Lower scores indicate higher skill levels required for high carbon work and higher scores indicate higher skill levels required for green work.

We can see in the majority of skills higher levels are currently required for high carbon work, with four exceptions: Instructing, Learning Strategies, Science Orientation and Social Perceptiveness.

Figure 27: Skills differential between green and high carbon jobs**Skills differential between green and high carbon jobs**

The plot effectively highlights the potential of high carbon jobs in providing the required skill set for green roles. Thus, it suggests that the training needed for workers in high carbon occupations to move into green

work is rather minimal, predominantly focusing on those areas where green jobs currently demand higher skill levels – although this difference may change as a green transition progresses.

**CASE STUDY:
RETROFIT JOB CREATION**

Housing retrofit – fitting existing homes with better insulation and energy efficient heat and power solutions in order to make them more energy efficient and sustainable – is a vital part of a net zero transition. In the UK, much of our housing is energy inefficient and in need of upgrading; retrofit will bring these homes up to standard, making them more comfortable and affordable to live in, and reducing their carbon footprint. In the short term, retrofit also has the potential to generate a number of new green jobs²⁰.

National government targets aim to have as many homes as possible up to an EPC (Energy Performance Certificate) C rating by 2030²¹. Looking at the region of the proposed North East Mayoral Combined Authority, we can calculate the total number of dwellings below an EPC C rating which require retrofitting, as well as the total investment required to deliver this.

Dwellings and EPC ratings in the North East by Local Authority

Local Authority	Total number of dwellings	Share of dwellings at or above EPC C	Share of dwellings below EPC C	Total number of dwellings below EPC C	Estimated cost of investment (GBP) *
County Durham	248,105	41.2%	58.8%	145,910	£2,626,380,000
Northumberland	159,100	42.2%	57.8%	91,943	£1,654,974,000
Newcastle upon Tyne	129,555	45.1%	54.9%	71,073	£1,279,314,000
North Tyneside	100,070	49.8%	50.2%	50,235	£904,230,000
South Tyneside	72,180	44.2%	55.9%	40,312	£725,616,000
Sunderland	130,365	44.0%	56.0%	72,965	£1,313,370,000
Gateshead	94,055	42.5%	57.5%	54,081	£973,458,000
Total (sum or avg.)	933,430	44.1%	55.9%	526,519	£9,477,342,000

*Assuming an average cost of £18k per retrofitted dwelling, as per UK parliament estimates²²

To meet national government targets, 500,000 more dwellings across the region need to be upgraded to EPC C rating by 2030. Within the region, the local authority with the highest share of dwellings is County Durham, which requires just short of 146,000 homes be brought up to EPC C rating. All Local Authorities in the region have at least 50% of existing dwelling below an EPC C rating.

The UK parliament estimates that each retrofitted dwelling will cost £18,000, which suggests a little less than £9.5 billion total investment is required to achieve retrofit to EPC C rating across the region

Next, we will calculate the number of jobs which might be created through investment into this retrofit work.

²⁰ Trades Union Congress, "Can an infrastructure stimulus replace UK jobs wiped out by COVID19 crisis?", https://www.tuc.org.uk/sites/default/files/TUC%20Jobs%20Recovery%20Plan_2020-06-17_proofed.pdf

²¹ HM Government, The Clean Growth Strategy: Leading the way to a low carbon future (October 2017), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700496/clean-growth-strategy-correction-april-2018.pdf

²² UK parliament, "Achieving net zero", <https://publications.parliament.uk/pa/cm5801/cmselect/cmenvaud/346/34605.htm>

Estimates for cost and jobs which might be created for retrofit work in the North East by Local Authority

Local Authority	Total number of dwellings for retrofit	Estimated total cost for four years of investment (GBP)	Jobs created by retrofit work each year**	Current stock of workers with retrofit transferable skills	Annual mismatch
County Durham	145,910	£2,626,380,000	21,930	27,421	5491
Northumberland	91,943	£1,654,974,000	13,819	8030	-5789
Newcastle upon Tyne	71,073	£1,279,314,000	10,682	4743	-5939
North Tyneside	50,235	£904,230,000	7550	6603	-947
South Tyneside	40,312	£725,616,000	6059	9125	3066
Sunderland	72,965	£1,313,370,000	10,967	11,859	892
Gateshead	54,081	£973,458,000	8128	7841	-287
Total (sum or avg.)	526,519	£9,477,342,000	79,136	75,622	-3514

**Using the 33.4 jobs multiplier per £million invested estimated by the TUC, and assuming retrofit is delivered over four years²³

The TUC estimates that 33.4 jobs will be created per £million of investment in retrofitting homes to EPC C rating. If undertaken over four years, this could potentially create 79,000 retrofit jobs in the region each year over that period.

ASPECTT is a unique database, produced in-house by Autonomy, that allows for a much more fine-grained analysis of the UK labour market¹⁵. It does this by mapping O*NET, ONS and other international occupation codes in order to build richer portraits of every single occupation in the labour market. Such work has been long called for by the Department for Business, Energy and Industrial Strategy and key actors in the field.²⁴

Using ASPECTT, we can determine which jobs are retrofit ready; these are jobs with high levels of transferable skills for retrofit work, many of whom will currently be working in high carbon roles²⁵. From this, we can calculate the number of retrofit ready workers in the regional economy. Our analysis finds a stock of around 75,600 workers with transferable skills to do retrofit already working in the region. This suggests a deficit of around 3500 workers is required to reach the 79,000 retrofit jobs each year.

²³ Autonomy (2022) 'The ASPECTT Database'. Available at: <https://autonomy.work/wp-content/uploads/2022/01/Aspectt-occupational-tool.pdf>

²⁴ Institute for Employment Studies (2015) 'Exploring the value of an O*NET resource for the UK'. Available at: <https://www.employment-studies.co.uk/resource/exploring-value-onet-resource-uk>

²⁵ These are: Engineering professionals; Science, Engineering and Production Technicians; Metal Forming, Welding and Related Trades; Metal Machining, Fitting and Instrument Making Trades; Vehicle Trades; Electrical and Electronic Trades; Skilled Metal, Electrical and Electronic Trades Supervisors; Construction and Building Trade Supervisors; Plant and Machine Operatives; Assemblers and Routine Operatives; and Construction Operatives

SKILLS SHORTAGES IN THE NORTH EAST

Data from the Employer Skills Survey shows skills-shortage vacancies in the North East by sector to be highest in Information and Communications; Transport and Storage; and Construction; and skills gap density highest in: Financial Services; Information and Communications; Hotels and Restaurants.

Percentage of Employers with at least one skill-shortage vacancy

	2017	2019
Total	4.6%	3.8%
Arts and Other Services	3.6%	3.4%
Business Services	4.9%	4.5%
Construction	6.6%	5.8%
Education	9.0%	3.4%
Financial Services	1.9%	1.0%
Health and Social Work	5.4%	5.4%
Hotels and Restaurants	3.1%	3.1%
Information and Communications	9.2%	8.1%
Manufacturing	7.3%	3.6%
Primary Sector and Utilities	0.8%	2.1%
Public Administration	12.1%	2.1%
Transport and Storage	3.7%	6.1%
Wholesale and Retail	3.5%	2.2%

Workers in sectors such as Construction have skills which will be essential for large parts of the green economy, such as carbon-neutral building projects and retrofitting buildings. Addressing skills shortages would therefore have long term and expansive benefits through investing in the green economy and working towards the UK's commitment to achieve net zero by 2050 - and meet interim targets for 2030. Funding from the North of Tyne Combined Authority for providers to run 'Green Skills Bootcamps,' including in Green Construction, should help address the skills gap in this crucial sector.

Sectors such as Information and Communications and Hotels and Restaurants, meanwhile, have the potential to provide a repository for the kinds of 'soft' transferable skills needed in the domestic energy retrofit market, as identified by the North East LEP²⁶.

Workers who possess transferable skills will be increasingly valued within the sector and it is important that training providers embed these skills across all courses [...]

There are also specific skills gaps that have been identified and these include additional skills focused on customer engagement roles with groups of tenants and digital skills gaps ranging from data cleansing to data analytics.

Despite this, Hostels and Restaurants are amongst the lowest in training provision for employees in the sector: 47% by percentage of employers that arranged or paid for any training in the past 12 months, as compared with 88.9% in Education and 81% in Public Admin, the two sectors which rank highest for training provision. The Wholesale and Retail sector, similarly ranks poorly in training provision in comparison to other sectors - 52.1% by percentage of employers that arranged or paid for any training in the past 12 months.

²⁶ North East LEP, Understanding Skills Demand within Domestic Energy: <https://evidencehub.northeastlep.co.uk/spotlight-analysis/domestic-retrofit-skills-needs-assessment>

Percentage of employers that arranged or paid for any training in the past 12 months

	2017	2019
Total	63.1%	59.8%
Arts and Other Services	61.6%	60.4%
Business Services	68.3%	65.7%
Construction	57.4%	56.1%
Education	87.9%	88.9%
Financial Services	69.6%	70.6%
Health and Social Work	84.0%	79.4%
Hotels and Restaurants	51.4%	47.0%
Information and Communications	67.7%	56.3%
Manufacturing	59.0%	56.8%
Primary Sector and Utilities	48.4%	49.3%
Public Administration	95.2%	81.0%
Transport and Storage	58.9%	60.8%
Wholesale and Retail	57.4%	52.1%

This is a crucial missed opportunity to equip workers in sectors where customer engagement is key - and could provide these workers with the transferable skills which are necessary in the domestic energy retrofit market. This market is set to grow significantly to meet the challenge set in October 2021, when the Heat and Buildings Strategy set out the government's vision for a greener future and the pathway to transition to high efficiency, low carbon buildings.

Further evidence of the need for training in 'soft' skills such as customer engagement to provide training comes in the Summary of Evidence report on Economic Inactivity in the North of Tyne²⁷, which identifies a decline in residents confidence levels post-pandemic, including in social skills. Customer engagement and soft skills could be built in the economically inactive residents, as well as addressing the skills shortages amongst workers currently employed in sectors demanding these skills. This would provide long-term benefits as

they are transferable to a green economy, as aforementioned. It is also important in addressing the wellbeing and ability to engage in the community amongst residents in the North East.

The report on economic inactivity in the region also highlighted low levels of confidence in digital skills amongst the economically inactive residents interviewed. This mirrors the national picture: as the government report into essential digital skills shows:

- 11.3 million people (21%) lack the full basic digital skills
- 4.3 million (8%) have no basic digital skills at all
- 5.4 million working adults (10%) are without basic digital skills
- people with a registered disability are 4 times as likely to be offline
- 28% of those aged 60+ are offline

²⁷ NTCA and Learning and Work Institute (2022) Economic Inactivity in the North of Tyne: Summary of Evidence <https://ntca.kinocreative.uk/wp-content/uploads/2023/05/Economic-Inactivity-in-the-North-of-Tyne-Summary.pdf>

This points to digital exclusion outside of the workplace as well as within. The report into Economic Inactivity in the North of Tyne highlights the multiplicity of services which are delivered digitally - meaning those who are offline are locked out of access to these.

There is further indication of low digital skills in the Employer Skills' Survey measures of skills gap density by sector, with Information and Communications ranking in the top three sectors for the proportion of employees not deemed fully proficient (6.5%).

Skills gap density (proportion of employees not judged fully proficient)

	2017	2019
Total	4.6%	4.0%
Arts and Other Services	3.5%	3.4%
Business Services	6.4%	4.4%
Construction	3.2%	4.3%
Education	3.4%	1.5%
Financial Services	4.7%	13.8%
Health and Social Work	2.7%	2.1%
Hotels and Restaurants	4.6%	5.4%
Information and Communications	6.4%	6.5%
Manufacturing	6.8%	4.6%
Primary Sector and Utilities	5.2%	2.6%
Public admin.	1.9%	2.0%
Transport and Storage	3.1%	4.7%
Wholesale and Retail	5.8%	4.8%

Digital skills are clearly an area of urgent priority to invest in long term. As a recent report analysing green jobs and skills for the West of England Combined Authority points out, "digital skills and coding will play a key role in the development of technologies to enable the energy transition as well as industrial decarbonisation more widely"²⁸. The report highlights the following areas of the green economy where digital skills will play a key role:

- Retrofitting Homes
- Decarbonising the Grid
- Decarbonising Industry
- Decarbonising Transport

Though work to retrofit homes is finite, this work has potential to provide a significant number of roles: The North East LEP estimates that there are 3.4 million homes in the region, most of which will need retrofitting. Ensuring the region's workforce has the requisite digital skills to undertake this task is crucial to meeting the challenge of decarbonising the UK economy by 2050. The transferability of digital skills into other green jobs means that workers meeting this particular part of the challenge to retrofit will not be left vulnerable once the work has reached completion. It is important that all those employed in retrofitting homes are protected from job loss once this project is complete, however.

²⁸ Ecuity (2021) Green Skills Market Analysis https://www.westofengland-ca.gov.uk/wp-content/uploads/2021/07/WECA_Green-Jobs-and-Skills_Phase-2-Report_Final_01_06_2021.pdf

Decarbonising Industry and Decarbonising the Grid are of particular significance to the North East as a region with a high proportion of its workforce in these sectors. Advanced Manufacturing and Energy are highlighted as 'key sectors of strategic importance' in the North East LEP's Strategic Economic Plan for job creation. Training in the essential digital skills required for this work is therefore crucial in order to realise the targets established in the plan.

The North East Strategic Economic Plan²⁹ identifies the 'urgent priority' to enhance digital skills in response to changes in the economy and society. Digitisation is highlighted in the LEP report as being urgently needed in Health and Social Care - jobs which can be categorised as essentially

'green.' In the North East, Health and Social Care accounts for a significant proportion of jobs: employing 125,000 people, which accounts for 15% of total employment (above the national average). Across the NHS nationally, there are major digital skills shortages. Though this poses a risk for skills shortages in a sector of significance in the region, it also provides ample incentive to invest in training in digital skills for those employed in Health and Social Care in the North East.

Financial Services and Business Services account for the highest skills gap density (proportion of employees not judged fully proficient), and skills-shortage vacancy density, respectively (see above for Skills Gap Density table).

Skills-shortage vacancy density (SSVs as a share of total vacancies)

	2017	2019
Total	25.1%	25.3%
Arts and Other Services	17.4%	24.9%
Business Services	23.3%	42.9%
Construction	59.6%	37.9%
Education	18.3%	12.2%
Financial Services	Data not available	Data not available
Health and Social Work	24.9%	17.4%
Hotels and Restaurants	14.6%	17.3%
Information and Communications	Data not available	Data not available
Manufacturing	36.9%	31.2%
Primary Sector and Utilities	Data not available	Data not available
Public admin.	Data not available	Data not available
Transport and Storage	31.6%	Data not available
Wholesale and Retail	15.2%	14.5%

²⁹ North East LEP (2022) The North East Strategic Economic Plan: Creating More and Better Jobs <https://www.northeastlep.co.uk/wp-content/uploads/2022/05/North-East-Strategic-Economic-Plan-Executive-Summary-Update-Jan-2022.pdf>

These sectors provide opportunities for higher paid job roles, therefore offering training to address skills shortages could provide a route to addressing low pay and poverty in the region. It is also likely to address the digital skills gap, as a key part of these industries. Moreover, Business Growth is one of the five programmes of delivery in the North East Strategic Economic Plan, so a key area to invest in if goals are to be met.

The North East Inclusive Economy Policy statement identifies a stark contrast between affluence and deprivation in the area, with low paid jobs a significant factor in this: 23% of the workforce earn less than the real Living Wage. Addressing skills shortages and identifying where these could match up with areas of need in the emerging green economy could be key to addressing this; closing the income gap in the region and increasing the amount of 'good work,' which is well paid and has secure, decent conditions.



SUGGESTED RECOMMENDATIONS

POLICY INSTRUMENTS AND DIRECTIONS

If we are to maintain a smooth pathway between existing at-risk jobs and new green alternatives, we need to develop a robust, agile skills policy which helps residents find green training and employment. Failing to do so could lead to rises in unemployment, economic instability and insufficient progress towards a net zero economy.

The following instruments and directions are intended to avoid the negative effects of an unsteady transition by getting ahead of the skills needs of a green economy:

- **Adopt a forecast-led skills strategy**

Demand from the market for green work remains a relatively small part of the total economy, and smaller than that for high carbon work. Forecasts, however, are clear: if we are to meet net zero targets, such work must replace relatively high-carbon work quite rapidly. If demand-led policy alone cannot demonstrate the need for these skills, a forecast-led policy can help to create the green industries, jobs and skills that reaching net zero will require.

A net zero transition will need a comprehensive and well-structured policy programme that can anticipate future challenges and deliver a smooth transition. At the first stage, the Combined Authority should work with local green employers, educational facilities and experts to design a transition map that plots how to scale training for the kinds of green jobs that are either currently available or are set to emerge and grow in the coming years – for instance, retrofit work.

- **Conduct regular regional audits of green skills demand and supply**

Forecasts allow us to create capacity for the future, but they can never be totally accurate in their predictions. A skills policy for a changing economy needs to be agile to changes as they occur, and the best way to ensure this is to review both data and strategy on a regular basis.

We also know that the kinds of green skills required will change over time, from retrofit in the near future to longer term sustainable management and efficient use of resources.

A responsive skills policy requires up to date intelligence. The last skills report published for the region (by the North East LEP) was published in March of 2021, and the last NTCA Strategic Skills

Plan in 2021; while the economy is beginning to rapidly change, and as we pursue a net zero economy, more regular skills audits should be conducted to respond to changes to the skills needs of the economy as it changes. These do not need to deliver full reports, but should review and update key data-points and indicators.

- **Pursue fast-track training for those with many, but not all, of the skills required for new green work**

Many workers already use the skills required by green jobs in their current work, and so do not need to undergo lengthy retraining to access green employment opportunities. The Combined Authority should draw on up-to-date intelligence, and collaborate with employers and education providers to create bespoke fast-track training courses for specific cohorts of workers. These can be delivered as short courses to respond rapidly to emerging needs and ensure workers from within the region can access new opportunities as quickly as possible.

There is no way of avoiding the fact that delivering this training effectively will require additional funding. Ideally, this would be an ask of the national government but in the current climate, the Combined Authority is likely to have to draw on internal resources or existing funds.

- **Establish a communications/ outreach strategy for workers with the requisite skills for green jobs**

Setting up opportunities for green reskilling alone is insufficient. If workers are to navigate changes to the economy they need to be shown both employment and training opportunities which might be applicable to them. Practically, this requires a robust outreach strategy, founded on up to date data and analysis about skills supply in the labour market and skills demand from the green economy, to be pursued by the Combined Authority.

We know that many of the skills required for new green work are already present in the regional labour market – a well delivered communications strategy will help to avoid unnecessary pains caused by lack of information in a changing economy.

- **Make green skills provision accessible to all learners, workers and the unemployed**

A strategy needs to be established to enable learners, those already in work and those outside of work to find and undertake green skills training so that all three of these groups can access the green jobs market.

There are a number of routes to integrating green skills into the education system at various levels. Careers Advice Hubs should have a dedicated 'Green Jobs' list, which offers clear and intuitive advice to younger people about the opportunities available as well as the kind of training such jobs will require. This should partly be based on the national government's 'Free Training for Green Jobs' list, which details the various training courses already available. The Combined Authority should also encourage colleges and educational facilities to be bold and innovative in their course provision in terms of offering training for green jobs.

For those in work, collaboration between education providers and employers is necessary to ensure skills training is available within employment, and that best practice in industry remains up-to-date. Employers need to be reached out to and made aware of the benefits of incorporating green skills into their organisation before they will be willing to train staff.

For the unemployed, green skills training represents an opportunity to move closer to the labour market and, ideally, find employment. Adults out of work should be given access to green skills training at the lowest possible cost.

- **Make the most of the Apprenticeship Levy by establishing a matchmaking service**

The Apprenticeship Levy is vital for maximising funding for green skills training (and skills training in general) within the region. However, many organisations do not fully use their levy, which means the money returns to the national government and leaves the region.

Organisations can choose to transfer 25% of their levy fund each year to other organisations, but it can be hard to establish relationships and co-ordinate these resources. A levy matchmaking service, such as the one currently run by the Greater Manchester Combined Authority, would help to facilitate levy fund transfers among organisations within the North East, as well as helping to create apprenticeships in SMEs. This could be established with a particular focus on maximising apprenticeships which contribute towards a green transition.

SECTION 4 – THE BUILT ENVIRONMENT AND CONSTRUCTION SECTOR: GREEN SKILLS DEVELOPMENT AND GREEN JOB CREATION OPPORTUNITIES

1.0 INTRODUCTION

Supporting a just transition for the built environment and construction sector is a crucial aspect of nurturing a fair and inclusive move towards a low-carbon, sustainable future in the UK. Delivering bold transformation for the sector must be underpinned by a fair distribution of the benefits and costs as the industry works to reach net zero, which will have consequences for both existing and new buildings across the region.

The findings outlined in this section are based upon 20 stakeholder interviews and two participatory workshops with people that work in the construction industry, those looking to enter the sector who are currently studying a built-environment subject, and organisations most affected by changes to the construction industry across the region.

This section is not intended to be an all-encompassing, comprehensive analysis of what is required for a just transition for the construction sector, rather it acts as springboard for further discussion and just transition planning at the regional level and assist the Combined Authority to support green skills development of new entrants and upskill existing workers for green jobs across the industry.

2. CONTEXT

2.1 CLIMATE CHANGE AND THE CONSTRUCTION SECTOR

The UK built environment is responsible for approximately **25% of total GHG emissions**. GHGs are emitted at every stage of the construction and use cycle – from the manufacturing and transportation of materials, through the construction process and maintenance, building occupation and use, and finally, eventual demolition. Moreover, construction, demolition and excavation **generated 62% of UK waste in 2018** (Green Alliance, 2023).

The UK has a legally binding target to reach net zero by 2050 and emissions from the built environment must be significantly reduced if this goal is to be met. At COP26, the Government committed to achieving 68% reductions in the UK's carbon emissions by 2030, compared to 1990 levels. As such, and in the context of a climate emergency, **construction is one of the most significant sectors that must decarbonise to achieve a green, sustainable and low carbon future**.

The UK's Climate Change Committee (CCC, 2019: 9) directly stated that **UK homes are "not fit for the future"**, whereby GHG emission reductions from the UK's 29 million homes "have stalled, and efforts to adapt the housing stock for higher temperatures, flooding and water scarcity are falling far behind the increase in risk from the changing climate".

Therefore, **the quality, design and use of homes across the UK must be improved now to address the current and future challenges of climate change** in relation to mitigation and adaptation. It is emphasised that increasing urban green space, using sustainable urban drainage (SUDS) and making temperatures in homes comfortable in winter and summer are all crucial to adapt to climate change and improve our wellbeing (CCC, 2019).

Housing in the UK is some of the poorest performing across Europe in terms of energy efficiency, which offers potential for significant savings in energy use and therefore reductions in carbon emissions with relevant interventions.

Given that the current rate of new build is low compared to the stock of existing buildings, **retrofitting** is a significant element of achieving carbon reduction targets. **Around 80% of the UK's 2050 building stock already exists**, therefore any low-carbon transition will require both the retrofitting of existing buildings and constructing green, lower-impact new houses (O'Neill and Gibbs, 2018).

2.2 DEVELOPING A GREEN SKILLED WORKFORCE FOR A SUSTAINABLE CONSTRUCTION INDUSTRY

Focus on energy efficiency will not address all the construction sector’s environmental impacts given that a significant proportion of the emissions that are connected with the industry come from its use of materials, therefore it must **tackle embodied carbon as well as operational carbon and waste** (Green Alliance, 2023). This requires addressing the fundamental issue of the industry’s overconsumption of resources, specifically high-carbon materials, such as glass, steel and concrete.

There are many barriers that impede a sustainable, low carbon transition for the sector and research has highlighted how **engendering a “paradigm shift” in the building and construction sector** through mainstreaming ‘green’ building methods and techniques have been hampered by multiple factors. These include vested interests’ of powerful industry and policy actors, resistance to (fundamental) change from within the sector and a lack of a clear, consistent, supportive policy environment (Gibbs and O’Neill, 2015).

The **dysfunctional nature of the mainstream construction sector** has been well documented (see the Farmer Review, 2016; Box 4.1) and the scale and complexity of the challenges facing the industry are substantial, particularly ensuring an available, competent and skilled workforce. This issue is further compounded and complicated by the challenge that meeting net zero poses to the sector to reduce embodied and operational carbon, which will itself **reconfigure what skills are needed across the industry**.

The House of Commons Environmental Audit Committee (EAC) recommended that to reduce levels of carbon dioxide (CO₂) in construction (given concrete and steel together are responsible for heavy carbon emissions, particulate matter emissions and other environmental pollution), the Government should introduce a mandatory requirement for whole-life carbon assessments for buildings (EAC, 2022).

BOX 4.1: OVERVIEW – THE FARMER REVIEW (2016) OF THE UK CONSTRUCTION INDUSTRY

In the UK Government review of the construction labour market, Mark Farmer (CEO of Cast Consultancy) identified 10 symptoms of failure and poor performance across the sector, in the damning report “Modernise or Die” (Farmer, 2016), they were:

- low productivity; low predictability; structural fragmentation; leadership fragmentation; low margins, adversarial pricing models and financial fragility; a dysfunctional training, funding and delivery model; workforce size and demographics; lack of collaboration and improvement culture; lack of R&D and investment in innovation; and poor industry image.

While decarbonising the built environment offers opportunities to reduce unfairness in our society, without addressing the existing inequalities within the construction sector, a just and inclusive transition will not be delivered.

The ‘green’ **skills shortage** facing the sector (for example, to deliver retrofit) is further compounded given it is facing multiple enduring recruitment crises with an ageing male workforce, and few young people or women joining the industry.

In relation to gender dynamics, the construction sector is a **male-dominated industry and it has proven difficult to increase women's historically low-levels of participation**³⁰.

In the UK, 13% of the construction industry is made up of women – a figure that has not changed for 20 years. Furthermore, of the skilled trade professionals working in the UK construction sector (such as electricians, plumbers, joiners and bricklayers) – only 1% are currently women according to ONS figures, representing just a 0.7% increase during the last decade. Singularly focusing on recruiting more women into the sector without **addressing the working and employment conditions that lead to their exclusion** in the first place will fail to address gender inequality.

There is also often a **reliance on migrant workers** in the construction sector, which **has a regional geography across the UK**. The most recent Labour Force Survey (LFS) shows that just under one in ten (9.8%) migrant workers were not UK citizens.

Migrant workers are more highly concentrated in London with almost half (46.1%) of construction workers in London born outside the UK, followed by the East of England (15.9%) and South-East England (12.2%). A recent Home Building Workforce Census (2023) highlighted that in the North East, 91.1% of workers were from the UK, 7.2% 'EU/EEA' workers and 1.9% 'other' nationalities.

2.3 SUPPORTING A JUST TRANSITION FOR THE BUILT ENVIRONMENT

Given the scale of the challenge facing the UK building industry, **a radical transformation of the construction sector is needed to ensure a just transition** to an inclusive and sustainable economy that delivers decent work and quality jobs, affordable green homes and creates thriving, low-carbon, well-designed and equitable places designed to meet the needs of communities.

This just transition moves beyond technological solutions or purely 'techno-fixes' that draw upon ideas of ecological modernisation³¹ that focus on innovation and eco-efficiency (Barry and Doran, 2006) and rather looks to broader socio-cultural transformation and wider robust structural change.

It is important to remember that sustainable low carbon building is much more than low energy build designs that aim to reduce the carbon footprint of buildings and their associated uses. They also must take into **account wider socio-environmental sustainability concerns and factors such as working conditions, occupational health, low use of hazardous materials, resource sustainability, liveability and affordability**.

The **Combined Authority** together with partners have a central role to play in facilitating and delivering a more sustainable and inclusive built environment by steering construction towards greater energy efficiency and helping reduce its environmental impact through place-based retrofit programmes and ensuring new buildings are fit for the future.

This is crucial because designing, planning and constructing the buildings and spaces where we live and work to make them more sustainable **impacts all citizens**. Crucially, the Combined Authority can facilitate accessible and inclusive pathways to green skills development and green jobs.

³⁰ <https://www.constructionnews.co.uk/agenda/inspire-me/percentage-of-women-in-skilled-trades-shows-little-change-in-a-decade-18-03-2022/>

³¹ Ecological Modernisation refers to the belief that we can combine environmental improvements with forms of economic development that do not differ radically from the current neoliberal political economy.

3. GREEN SKILLS AND GREEN JOBS TO SUPPORT A SUSTAINABLE CONSTRUCTION SECTOR

PRIORITY ACTION
AREA 4.1: ENTHUSING AND ENGAGING YOUNG PEOPLE TO BUILD A GREEN AND INCLUSIVE SUSTAINABLE FUTURE.

Key Issue 1: There was consensus across the workshops and interviews that education is the fundamental building block to shape a sustainable, low-carbon construction sector. Early-school engagement is required to enthuse, interest and inspire children to consider a career in the construction industry.

To increase awareness, it was suggested that we need to draw upon the range of experience and specialism in the region, where students should be able to visit real-world projects to gain understanding at a young age. As a workshop participant suggested:

“There should be an organisation set up so kids in their later years in school who are looking for a career, can go around building sites, but not just big firms, but also a small-scale site, where for a day you pay them [SMEs] to do a talk. [...] So, I think there needs something to be set up in the area **to get school kids out seeing real jobs happening in real time with real people which are answering questions in a sustainable way.** To allow them to see how it happens.” **(heavy machinery operative – groundwork)**

Educational awareness was discussed as an **opportunity to highlight the green job potential related to decarbonisation of heating systems and buildings:** “if kids don’t know about or understand the sustainability or green agenda and the new technologies that come along with that then how can we expect them to want to work in this area?” (environmental organisation stakeholder).

Many stakeholders stated that there needs to be more creative, inspiring ways for young people to learn about and engage with the built environment while at school; in this context **‘Design Challenges’ linked to the curriculum** were highlighted as a great way to nurture a new generation of designers, makers, developers, planners, surveyors and builders that are needed to create sustainable, green, inclusive and affordable homes and the broader built environment of the future (see Box 4.2).

BOX 4.2: CASE STUDY – MOBIE DESIGN CHALLENGES

- Architect and TV presenter George Clarke’s educational charity MOBIE (Ministry of Building Innovation and Design) runs a variety of **‘Design Challenges’** which are an opportunity for young people to use their creative skills to design affordable, sustainable communities and places based on various design briefs such as developing a masterplan for homes and green spaces in a local area.
- The Design Challenges are a way to help bring learning in subjects such as geography, history and design and technology to life for students. They also introduce students to the built environment sector and the various jobs – from planning and architecture to engineering and construction.
- There are now a range of Design Challenges that have been successfully completed around the UK and in the North East (i.e., the Riverside Sunderland University Design Challenge). For more information see: <https://www.mobie.org.uk/challenges>

The Combined Authority could work with educational charities such as MOBIE and local partners to develop a **Student Design Challenge** that responds to the particular built environment issues and opportunities in the region to directly engage young people with sustainable design and construction.

Key Issue 2: Several stakeholders emphasised the importance of practical, industry-based learning within the school setting as a vital component of equipping young people with the enthusiasm, foundational knowledge and drive to excel in the ‘green’ construction and built environment sector.

Valuing of **practical skills** and real-world experiences in shaping students career pathways and education experiences was discussed as crucial, as a workshop participant commented:

“For Year 10 and 11, I got offered a BTEC in Construction and Built Environment course, and I just really enjoyed [it] and I thought it was something that I wanted to go on to do. Because **we did a lot of practical but a lot of theory as well, and I just found it interesting and it was something I liked**, and could see myself enjoying as a job. So, I decided to take it at college because I got a Distinction in the BTEC.”
(construction student)

For those currently studying a construction-based course in further education, the importance of meaningful, practical work experience is paramount within the school and college setting (see Box 4.3 for a workshop exchange highlighting this point).

BOX 4.3: WORKSHOP EXCHANGE

T-Level Construction Student: “I think a way to **attract people to the subject is offer it as an option in final years of school**, so Year 10 and 11 and **put a lot of practical in to it, because at school you enjoy the practical side**. And then you can see what it is really like and what type of things you can do. And then when you go on to college, do a mix of theory and practical, because you then get the less fun stuff done but also do the fun stuff.”

Architect: “Which is the fun and the non-fun?”

T-Level Construction Student: “Personally, **I enjoy the practical side more than the theoretical**. I think to mix them both, it would make it more enjoyable because you’re not just shut in a classroom all day every day, and you get that experience and that the enjoyment of going out and building something.”

An education stakeholder reflected that young people’s previous, (often negative) experience of ‘academic’ learning at school can impact how ‘theoretical’ elements of learning are received and experienced in further education.

Moreover, it was emphasised that improved and expanded practical experiences fully integrated into the more ‘theoretical’ aspects of learning within schools could overcome some students’ negative feelings towards ‘academic’ learning:

“Yeah, so there’s almost an active resistance from some about the more academic, theory side of the learning, it probably goes back to school and finding that [type of] learning stressful, so ‘I’m here because I want the practical, hands-on’, and not interested in that [more theoretical] side of things, so that can be an issue.” **(further education tutor)**

PRIORITY ACTION
AREA 4.2: ACCESSIBLE
AND MEANINGFUL
WORK EXPERIENCE
TO SUPPORT POSITIVE
TRANSITIONS INTO
STABLE AND REWARDING
EMPLOYMENT.

Key Issue 1: The majority of participants outlined the importance of work experience and work-based learning as a vital dimensions to support effective transitions into productive, stable and rewarding employment.

Workshop participants discussed the vital role of accessible, meaningful work experience that is connected to training and employment opportunities. For example, a new entrant participant reflected on their recent experience of the RE:GEON³² Training Pathway 'Access into Construction' and discussed the benefits:

"They took me on the bootcamp and I did the Health and Safety Level 1 and their in-house retrofit which will be recognised as a proper qualification and then I did a **work placement with a chartered surveyors**, where we did 3 days' work experience and then presentations and interviews. Unfortunately, I wasn't successful that time, but today I had an interview and a presentation with the RE:GEN Group³³ and last week I did 4 days' work placement with them. So, I am an aspiring building surveyor / quantity surveyor. I'd highly recommend RE:GEN and RE:GEON for what they are doing with training, they have given me a wealth of experience [...] that I can put on my CV and enhance any applications. It's just **important to get a proper insight into the jobs and what life is like as a surveyor or a site manager**. The only downside I would say, that if I am unsuccessful with RE:GEN, then I am going to be thinking **how I am I going to find another opportunity as good as that?** It is just finding the opportunities." **(construction sector new entrant)**

It was stated by several stakeholders that good work experience not only helps to increase social inclusion, but participants also credited the workplace for offering opportunities to develop the conceptual and foundational skills alongside developing technical expertise that accumulates over time. As a participant stated: "You learn it through time on the job and you can't teach 'time', it's something that you experience as you go" (plumber). It was noted that this form of practical, experiential learning cannot be delivered through a virtual, online format (which has increased since the Covid-19 pandemic).

Participants outlined that work experience must be meaningful, quality, and fully supported with appropriate mentorship over the long-term — and this is not always the case. Indeed, some participants argued that it was extremely difficult to gain work experience given the nature of the work on building sites:

"The other thing young people are up against now, is that **you can't just walk on to a building site and say 'can I come and get a month or 2 weeks' experience?**'. Because of legislation and insurance, and **no one has got the time**, or someone spare to say right we are going to show you around the site [...] just taking them around and showing them what everyone does. Because these young ones might think I want to be an architect and then will see something they never knew about, so they might then decide I want to do something else, but **people just can't get that information or insight into the business and we are going to lose out**, I think we are chasing a problem we should have addressed 20-30 years ago." **(construction worker)**

³² A training provider that specialises in delivering Domestic Retrofit Training and Green Skills to the construction sector with a primary focus on social housing. See: <https://regeon.co.uk>

³³ A regeneration specialist working across the North East. See: <https://regen-group.co.uk>

The characteristics of particular segments of the industry, for example, those working with commercial, industrial machinery and equipment was highlighted as an area of the **construction skills gap** that is difficult to address in terms of gaining experience on heavy plant machinery, as a workshop participant discussed:

“Where does someone who is 18-19 years old coming out of college, where do they go to get the experience to sit on a one and a half tonne or a 13-tonne excavator, or an 18-metre telehandler to go on to a building site? Now **there is a massive need** [...] But there’s nowhere for the younger generation to go to get that hands-on experience and get the wealth of knowledge from somebody who has worked in that sector [...] **where you do get that knowledge? There is nowhere, and if you wanted to go on a course to learn that – to get one element to drive those machines, it’s going to cost you thousands of pounds**, and then you have to re-sit after three years, so its ongoing costing you money to be able to have that certificate, but there is nowhere where you can go. Years ago, people would take someone as an apprentice [...] but you cannot get anyone insured to go on that kind of commercial, industrial equipment now to teach them.” **(groundworker)**

The Combined Authority therefore could work closely with industry to provide **funding for entry-level courses and work experience** to support those looking to enter the sector and also progression courses for people to build their skills and knowledge until they gain secure, good-quality employment.

PRIORITY ACTION
AREA 4.3: EXPANDING
HIGH-QUALITY 'GREEN'
APPRENTICESHIPS TO
FUTURE-PROOF THE
CONSTRUCTION SECTOR.

Key Issue 1: Helping employers, particularly SMEs, to identify and connect with apprentices was discussed as vital to encourage businesses to engage with the apprenticeship system.

Interviewees raised the issue that there is currently no comprehensive, joined up system that enables businesses, particularly SMEs, to identify and take on apprentices. Participants stated that the apprenticeship process needs to be made much easier for (especially, micro) SMEs to actively engage:

"Because **finding an apprentice is not an easy thing**, you have to actively take time out of your week, where if you are an SME you don't have time, you have got to ring up colleges, you have to ring these training people up and it's just a hassle, it's just a heartache. And the problem is the calibre of these young'uns; it is so hard to find these gems because they are not getting through. [...] So, what we need is a one-shot thing, **it needs to be government regulated, backed, where all of the colleges join, and you basically upload apprentices' details onto this system.**"
(electrical services business)

It was suggested that creating a structured website platform and interface that would enable employers to identify and connect with apprentices, would significantly improve the experience for smaller SMEs and enable connections to be made between those looking to enter the industry and existing businesses who have a skills gap.

The workshop discussions revealed that it would be extremely helpful to link students and workers with employers with the same interests in various aspects of construction, such as modern methods of construction or small-scale green building using low-carbon materials, as a small business stated in relation to finding the 'ideal' apprentice:

"I'm looking for an enquiring mind who can climb ladders, so it's that kind of combination. My experience of teaching generally is I learn as much from the people I am teaching as they learn from me – only I get paid for it. So having someone in the office with CAD [Computer Aided Design] skills that I don't have, with a longer vision than I have got now, is probably quite useful, so what I want really is two dozen apprentices and then chose one at the end."
(architect, small practice)

The Combined Authority with education and industry partners could examine the potential to create a structured Apprenticeship website platform that would enable employers to identify and connect with apprentices across the region. This would significantly improve the experience for smaller SMEs and enable connections to be made between those looking to enter the industry and existing businesses.

Key Issue 2: Workshop participants discussed that multiple stakeholders need to collectively support SMEs to take on apprentices to train the next generation of skilled workers that can adapt to changing industry conditions in the context of the low-carbon transition.

Overall, workshop participants and stakeholder interviewees believed that SMEs are crucial to ensuring that there is a supply of high-quality apprenticeships available across the region to support a productive inclusive, green economy.

However, it was highlighted that there are multiple barriers for SMEs and micro-businesses to invest in capacity building of both existing staff and potential apprenticeships. Particular general challenges included, limited time, knowledge, or awareness of recruitment solutions. Specific issues discussed included:

- There is a lack of long-term certainty for SMEs to invest in the various 'green skills' for the future because their main focus and capacity is often short-term survival of "keeping the business going".
- Micro SMEs need a system that is highly flexible and responsive to their particular needs, that removes administrative burdens.
- Previous negative experiences can deter some businesses from taking on new apprentices and therefore, companies must begin to take a proactive, open approach to support the next generation of apprentices.
- It was highlighted by some participants that many building businesses are extremely busy with 'conventional' construction, especially after the Covid-19 pandemic, and therefore may be less likely to engage with 'green' construction developments.
- Construction businesses need to be incentivised and rewarded for innovating and investing in people to grow local economic benefits and a highly skilled green construction workforce.
- Clients have a key role to play in **centralising the value of skills development** and training within procurement contracts that provides the conditions necessary for SMEs to invest time and resources in creating good-quality skills outcomes for local people. It was highlighted that:

"It has to make commercial sense for businesses to take on apprentices and when you're operating in a short-term, unstable, low-margin environment, it by and large doesn't make sense"
(low carbon construction practitioner).

Therefore, it was stressed that procurement contracts need to value and centralise delivering "good quality work" to encourage companies to invest in their skills base. If true social value was placed on mentoring, effective knowledge exchange and skills development then this would take place on a greater scale than currently.

The Combined Authority is well placed to proactively support SMEs to overcome any barriers that limit their engagement with the apprenticeship system, by collaborating with industry, training providers and educational institutions to raise awareness about the benefits of taking on apprentices, expand current programmes, and therefore increase the local supply of high-quality apprenticeships.

Key Issue 3: It was discussed that shared apprenticeships should be supported and funded to make it easier for SMEs to take on apprentices. Developing shared apprenticeship opportunities across the region would facilitate a broader range of SMEs to engage in the process meeting their workloads and reflecting the mobile, project-based nature of the sector and also provide learners with an array of experiences through a varied programme of work.

It was stated by a participant that shared apprenticeships (Box 4.4) work by pooling shorter-term work opportunities and providing apprentices with a variety of experiences with a wide range of host contractors, therefore apprenticeship opportunities are delivered that would otherwise not happen by utilising the traditional apprenticeship approach.

BOX 4.4: THE SHARED APPRENTICESHIP MODEL, Y PRENTIS, MONMOUTHSHIRE, WALES

- Using the Shared Apprenticeship Model, Y Prentis – a construction-based shared apprenticeship company operating in South East Wales – secured accelerated plumbing and electrical low carbon apprenticeship funding, provided by Monmouthshire County Council.
- The aim of the project was to bridge the skills shortage in the local construction industry by providing 10 ‘accelerated apprenticeships’ with a focus on developing new talent in the installation of technological solutions for the reduction of carbon in new buildings and the retrofitting for existing buildings.

Stakeholder interviews revealed that shared apprenticeships work particularly well for sectors such as construction and civil engineering, where it is frequently difficult for companies to take on apprentices full-time due to the nature of new build, repair and maintenance projects. A participant highlighted that EN:Able Futures³⁴ – a Shared Apprenticeship Service – already provide ‘Flexi-Job Apprenticeships’ across the North of England – and this model could be applied to low-carbon construction.

Finally, it was outlined by several stakeholders that the content of construction-based apprenticeships and courses must be modernised with the curricula focusing on sustainable modes of construction and broader low-carbon ‘green skills’ integrated. It was highlighted that this also should focus on how to minimise waste in the application and use of high-embodied carbon materials to support a more sustainable industry transition.



³⁴ EN:Able Futures CIC is an award-winning Shared Apprenticeship Service (SAS) which ensures apprentices remain employed for the full duration of their apprenticeship. The not-for-profit organisation works with businesses to manage their apprenticeship training programmes. EN:Able Futures CIC handle recruitment, work closely with College tutors and assessors, and offer academic and pastoral support to take the responsibility and pressure off companies.

PRIORITY ACTION
AREA 4.4: UPSKILLING
WORKERS WITH ‘GREEN
SKILLS’ TO CREATE A
HIGHLY-SKILLED NET
ZERO WORKFORCE.

Key Issue 1: It was emphasised that workers need to be ‘upskilled’ across the construction sector if they are to have the relevant ‘green skills’, knowledge and capacities to deliver, good quality green construction and heat decarbonisation.

The need to upskill existing workers and encourage lifelong skills development across the industry, is important, but participants discussed that currently there is a lack of joined-up thinking:

“So, we can’t just focus on the new students, we also need to focus on the current practitioners – and that is the industry as a whole, you know tradespeople, site managers, project managers, architects, engineers – the works... But knowledge is the key, the most invaluable tool shall we say. It’s not a product. The products will come from that knowledge.” **(architect)**

Stakeholders identified current ‘skills gaps’ within skilled trades (across the building, heat and ventilation supply trades), which if not addressed soon will impede a low carbon transition. It was highlighted that many roles will therefore necessitate ‘green skills’ training programmes, particularly upskilling the existing workforce, such as plumbers (in relation to heat pumps³⁵) and designers, builders and installers in construction (for housing retrofit).

The net zero transition will require much of our housing stock to be insulated and upgraded to low-carbon heating, such as heat pumps, and will require a rapid growth in the workforce (Reay, 2023). Participants discussed roles such as heat pump installation as a key area of future growth.

For instance, as a stakeholder discussed, heat decarbonisation across the UK’s building stock – changing away from oil and gas boilers – is essential to ensure the long-term security of our energy system,

and will be key to creating green jobs and mitigating against energy price volatility (BRE, 2022).

According to the English Housing Survey Energy Report 2020-21 (DLUHC, 2022), less than 1% of the stock (or 114,000 dwellings) had a heat pump for space and/or water heating. The UK Government had a target of 600,000 new heat pump installations every year by 2028 (HM Government, 2023), however, it is significantly off the pace, with just 60,000 installed in the UK in 2022, making it one of the slowest adopters of this technology in Europe.

At current rates of installation, it will take more than 400 years before every British home has a heat pump. Presently, there are only 4,000 trained heat pump installers in the UK (Rowlatt, 2023). Therefore, participants stated that there is a need for more skilled installers to deliver heat decarbonisation.

Several stakeholders stated that there needs to be more specialist training programmes that help qualified workers to upskill into ‘green’ roles to help deliver net zero. However, participants discussed that workers must have flexible options and be financially supported to be able to even consider upskilling at a time of a cost-of-living crisis and high child-care costs: “I already work over 40 hours a week, and weekends are taken up looking after the kids, while my partner works, so I don’t understand how we are supposed to find the time or money, so it would need to be funded” (plumber).

While upskilling is a key dimension to supporting a highly-skilled workforce for a just transition, this does not mean that responsibility for this training should be solely placed on workers or employers. Quite simply, there must be **collective responsibility** for education and meaningful work-based learning to support the skills required for a low carbon just transition.

³⁵ Heat pumps make use of heat from a source (air, ground, or water) and have the potential to provide heating using less energy than traditional systems. Being electrically powered, they also have the potential to be low carbon, if the source of that electricity is itself low carbon.

PRIORITY ACTION
AREA 4.5: PLANNING
AS A VEHICLE FOR
JUST AND SUSTAINABLE
PLACE-MAKING.

Key Issue 1: Several participants discussed that the planning system after years of chronic under-resourcing and budget cuts has in some cases led to lengthy delays in both pre-planning advice and determination on the basis of limited capacity and a growing skills shortage in planning authorities.

This was an issue emphasised by participants:

“So, my general observation is planners are under-resourced, there just isn’t the capacity to work with the current workload, so addressing capacity in local authorities is a huge issue. Nothing works when people are over-stretched”. **(architect)**

“There’s a **skills shortage** within local planning authorities.” **(local authority stakeholder)**

The National Audit Office (NAO) reported that **the overall number of local authority planning staff fell by 15% between 2006-2016** (NAO, 2019: 41). Moreover, the financial pressures on local authorities have been significant. The NAO (2019: 39) calculates that **between 2010-11 and 2017-18, in real-terms, there was a 37.9% fall in net current expenditure on planning functions** (i.e., development control, conservation and Listed Buildings planning policy and other planning policy) by local authorities.

Planning professionals must be valued and empowered as crucial workers fundamental to progressing towards net zero and supported to develop their skills and capabilities, which requires effective, well-resourced spatial planning – and opens up broader questions about institutional capacity, resourcing and governance.

The Royal Town Planning Institute (RTPI) – the UK’s professional planning body – launched the ‘Resource Planners for Climate Change’ campaign in 2019, and called for the government to take radical climate action around buildings and transport. This was a response to the fact that the RTPI reported that “Planners currently lack the resources, policies and powers to make the significant impact that is now essential to meet the government’s target to reduce greenhouse gas emissions to net zero by 2050”.

Furthermore, a 2019 RTPI survey revealed **only 17% of RTPI members in the UK felt their country’s planning system or policy framework was well-equipped enough to deal with the current climate crisis**. Nearly 90% said there needed to be stronger direction from government. The RTPI itself has set climate action as a strategic priority, and it underpins the RTPI 2020-2030 Corporate Strategy with an ambitious net zero 2025 target (RTPI, 2019).

For government to achieve net zero, there should be **significant investment in the planning profession**, in terms of the skills of new entrants and upskilling the existing workforce. This is crucial in order to expand the capacities and scope of planning teams to perform effective strategic planning, and address new complex policy concerns such as net zero and decarbonisation.

Key Issue 2: A key issue raised by stakeholders was growing regional inequalities and the significant regional differences in economic performance in the UK – which has obvious implications for policy-making and planning. In the context of supporting a just transition, it was emphasised there is a need for coordinated regional planning that focuses on social and environmental wellbeing as much as economic growth and innovation.

While the UK government has prioritised the creation of Combined Authorities³⁶ at the city-regional scale as part of its devolution and ‘levelling up’ agenda, the abolition of statutory Regional Spatial Strategies in England in 2010 somewhat **left a vacuum for regional strategic planning** between the national level and local scale.

Therefore, as suggested by a recent IPPR report (Singer-Hobbs et al., 2023), comprehensive regional strategic spatial plans should be reintroduced across England (to support consistency across the regions) and developed through deep forms of citizen engagement **at the Combined Authority level** or similar scale.

This can help to address mounting regional inequalities and enhance integrated sustainable and inclusive socio-economic development whilst having full regard for national planning policy and provide clear guidance to local plans. This would require a skilled planning workforce to implement and deliver holistic regional spatial planning for a low carbon transition.

³⁶ The uneven rollout of Combined Authorities in England has created a highly variable geometry of sub-national governance. In England, the regional governance tier in the form of Regional Development Agencies (RDAs) were abolished by 2012 and replaced by Local Enterprise Partnerships (LEPs) and Combined Authorities (CAs) via devolution at the city-regional level. Primacy has been focused on city-centric economic growth.

**PRIORITY ACTION
AREA 4.6: SUPPORTING
THE DEVELOPMENT OF
A SKILLED REGIONAL
RETROFIT WORKFORCE
TO DELIVER A PLACE-
BASED LOW CARBON
TRANSITION.**

Key Issue 1: Participants discussed that addressing the skills shortage for regional retrofit is an urgent priority. It was highlighted that this requires increased understanding amongst students, workers, businesses and communities of what actual skills and competencies are needed to work in the retrofit sector and also clear, accessible information.

Participants stressed that the skills system must increase the available pathways in the region for new entrants and up/re-skill existing workers into retrofit as a priority area. Reflecting on the skills and competencies needed to work in the retrofit sector, a practitioner stated:

“...the **main thing a Retrofit Assessor does is think about risk**, so is what we are proposing to do to this property going to make it better? Is there a risk it'll make things worse? Is there risk that there will be damage or the tenant will be in an unhealthy environment? So, to think that through you have to be interested in people, and you have to be interested in properties. If that is your type of personality, you can become a Retrofit Assessor through training, and **we are desperately short of Retrofit Assessors**”.

Research and modelling undertaken by the Energy Saving Trust (EST) found that **local retrofit rates across the NTCA will need to be scaled up quickly to achieve net zero**. A Net Zero Approach to retrofit can deliver significant energy efficiency gains, improving the NTCA stock from an average of the Standard Assessment Procedure (SAP) energy efficiency rating band D to a high B. For the 'Net Zero 2030 scenario', it was revealed that 80,000 homes need to be retrofitted per year by 2027, more than 10 times the current rate (EST, 2022).

The scale of activity required to reach net zero by 2050 has the **potential to support between 1,500 and 3,500 full-time equivalents (FTEs) in the retrofitting sector from 2022 up to 2030, and between 2,500 and 5,800 FTEs from 2030 to 2050**. Notably, the scale of activity required to reach net zero by 2030 requires a markedly higher labour input over the initial 2022-2030 period.

In particular, it was stated by participants that clearly outlining the practical skills-set people need to be trained in to deliver retrofit – such as installing high-quality, appropriate wall, floor and roof insulation and smart energy systems to make homes fit for the future – is critical. However, it was acknowledged that it is not clear for potential workers where you go for information and how to gain experience:

“There is a bit of a barrier – and the Combined Authority can do something here – so there are certain retrofit roles you can do as online training and then get started, like a Retrofit Advisor. But a Retrofit Assessor, you need a DEA [Domestic Energy Assessor] qualification, which is the EPC qualification – that allows you to do Energy Performance Certificates and it builds on top of that. So, to be an Assessor you do need prior experience – which opens up all the questions of **where do you get that experience from? Who do you talk to get that experience? How can the construction sector and the Combined Authority make that possible for people?** But yeah, there's lots of opportunities for Retrofit Assessors, it's a growing marketplace, they are hugely in demand.”

Increasing accessible information in relation to retrofit skills, qualifications and training was identified by potential new entrants as vitally important to attract people into the sector. In particular, workshop discussions revealed that **potential new entrants are not aware of where to find relevant information related to entering the retrofit sector** (as demonstrated in the exchange between potential new entrants, see Box 4.5).

BOX 4.5: WORKSHOP EXCHANGE

New entrant (man): “to be honest, from a personal perspective, **I don’t think there is a lot of accessible information out there that you can trust**, like from official government. In terms of looking at how to get into the sector itself, I am aware that a lot are self-employed, **so it is bridging that gap between somebody who has absolutely no qualifications and experience in the construction industry**, into how can you make that a sustainable career moving forward. So, there is a gap. [...] for someone who is a little bit older like myself, who has had a job and another career over the last few years, who wants to jump off into a different career, obviously, I am not in a position to start as an apprentice at £3 per hour to build-up experience. I would sort of need a little bit more, and a night-time class to start building up my skills that way. So, where would I go to get the information to weigh up my options?”

New entrant (woman): “I agree with everything there, I’m in a similar position, where **there’s not enough information out there**, it hadn’t really entered by head because until I went to a jobs fair and I was speaking to someone there, and he convinced me it’s not all for men, there’s not enough information out there to get women and girls in to it, there are barriers. If you’re on a good job and you have got a family to look after, then how do you make the switch for people to make the jump, like offering placements and working alongside people, to get a better understanding, I think there needs to be a lot more information out there.”

A lack of clear, accessible information is an obvious block to supporting new entrants into the industry. In this context, it was suggested during the workshop discussions that a **Retrofit Careers Portal** would be a useful step in the right direction, which the Combined Authority could lead:

“... there would be a **benefit of setting up a Retrofit Careers Portal so that if people are interested then at least they have a single point of contact**. So, at the moment, there is information out there, but I accept that it might not be that easy to find. And also, what that information doesn’t tell you, if you’re in a new entrants’ position, where you want to switch careers but you can’t lose an income for a year getting trained up in construction, the information I’m aware of, it doesn’t tell you that if you are in that position, how are you going to make an income while you are switching careers? So, that might be a useful consideration for the Combined Authority because it would start to link together those things. If it could link it together with their investment programme, that would have some great benefits.” **(low-carbon construction practitioner)**

The Combined Authority could therefore develop with partners a **Retrofit Careers Portal** that acts as an online jobs fair that explains the pathways, qualifications and roles available in retrofit. Importantly, it can provide broader information, guidance and advice for those looking to switch careers and outline what support (particularly, financial assistance) is available to people looking to up-skill or re-skill to enter the sector across the region.

It was also suggested that the Combined Authority can draw upon existing partnerships with local job centres and community groups that **work closely with people who are currently not in employment, education or training to raise awareness of the various retrofit career opportunities** and the entry-level pathways into retrofit that are available in the region – and importantly, provide wrap-around support to ensure that a wide variety of people enter into and benefit from the green economy.

Key Issue 2: It was emphasised that local government will play an increasingly significant role in supporting public sector-led retrofit programmes, therefore it is imperative to increase retrofit-related skills within local authorities.

It was discussed by several participants that there needs to be an urgent focus on **upskilling existing staff** and also recruit new talent that can support the retrofit agenda within local and combined authorities. As a workshop participant commented:

“the Combined Authority are going to need people in-house to staff up programmes on the liaison side, the technical side, project management and probably project supervision”.

It was recognised that retrofit is a new and complex activity for local authorities to deliver as it **requires working across internal departments and a range of other organisations and actors** such as external funders, the retrofit supply chain, householders, social housing providers and the broader community. Developing effective partnerships based on clear goals, co-operation and buy-in from all stakeholders is therefore crucial.

A first key step is to **ensure that all local authorities have staff with expertise in retrofit** and then work to mainstream these posts as delivery progresses and grows. This would require developing the skills of local authority employees to plan and deliver a locally place-based retrofit programme. It could also integrate a broader role for retrofit apprenticeships, as part of net zero workforce planning based on investing in enhancing the capabilities and capacities of local communities.

A significant part of developing a holistic place-based approach to local retrofit could be **establishing ‘Net Zero Building’ departments for retrofit within the local authority** bringing together, for example, Housing, Climate, Economic Regeneration and Planning Teams that can provide a complete, coordinated service.

For instance, a stakeholder discussed how **local authorities are perfectly placed to deliver harmonised services** from planning to retrofit with highly-qualified workers. Industry stakeholders stated that this requires upskilling staff in project management, collaborative partnership working and developing the technical knowledge needed to deliver successful retrofit and energy efficiency programmes at scale.

Developing local authority-led retrofit programmes would also ensure that these schemes were politically and economically accountable to the public, sensitive to local context and place inclusivity at the centre of its agenda.

There are likewise opportunities to develop in-house building and (green) construction arms of local authorities and there are **positive examples of councils in the UK developing mechanisms to facilitate direct employment in construction**, which creates an environment for stable work, safe working conditions and decent wages with high levels of union recognition, based on an alternative employment and building production model (see Box 4.6).

This also provides local authorities the chance for greater understanding and oversight throughout the supply chain to foster better collaboration as a primary outcome and increase the visibility of tiers in construction³⁷.

BOX 4.6: CASE STUDY – GLASGOW CITY BUILDING, SCOTLAND

- City Building is one of Scotland's largest construction companies. City Building was formed in 2006 from the original Direct Labour Organisation (DLO) or building department of Glasgow City Council and is a not-for-profit organisation. They provide a range of repairs and maintenance, manufacturing, construction and refurbishment activities across the public, private and third sectors.
- City Building has more than 2,000 staff and provides the largest construction craft apprenticeship programme in Scotland (with around 200 apprentices on its books). Their training college is the most successful apprentice training college in Scotland.
- The organisation is distinct in directly employing under decent standards such a large construction workforce and, where there is subcontracting, monitoring this through a framework agreement that sets employment and quality standards. The trade union UNITE has been directly involved with the organisation.
- Clarke and Sahin-Dikmen (2020) conclude that the City Building approach offers a practical 'just transition' example because it challenges the status quo of the industry.

Key Issue 3: Creating diverse quality training pathways are crucial to producing highly-skilled, competent professional workers to deliver good quality retrofit work.

During the workshops and stakeholder interviews focus was placed on supporting quality training pathways and creating highly-skilled, competent professional workers such as retrofit coordinators, installers, and assessors. It was continually asserted that it is crucial that good quality retrofit work is delivered across the region and that the working conditions of those undertaking the work are of a high standard.

In terms of skills delivery, **Adult Education Budget funding could be directed to support entry level training pathways** for people to gain the relevant work experience, technical skills and qualifications for retrofit and directly enhance opportunities for people who are **currently unemployed or wish to switch careers to take advantage of the high demand for skilled workers in retrofit**.

Potential new entrants attending the workshops stated that this training would need to be flexible and delivered in a way that works with people's personal commitments and busy lives – for example, there was emphasis placed on **fully-funded night classes, online and face-to-face short courses, and quality paid work experience** as invaluable routes to gain the necessary initial understanding and experience needed to work in retrofit.

It was also emphasised by a few participants that urgent focus must be placed on **"training the trainers"** across education providers and colleges to ensure that quality retrofit teaching can be delivered to train a highly-skilled local retrofit workforce in the coming years. This requires sufficient funding for providers and colleges to recruit, train and retain retrofit skills instructors.

³⁷ In construction, there are different levels of contractors, usually referred to as 'tiers'.

Promoting and **encouraging construction businesses to sign up to the Good Work Pledge (GWP)** is one practical step the Combined Authority can take to encourage decent work and help good employers gain recognition for their work. A few participants stated that oversight and broader accountability need to be embedded within the GWP programme to ensure businesses are supported to work towards becoming even better employers.

It was suggested that staff within local councils and the Combined Authority can work with the retrofit supply chain over the long-term to help understand the needs, pressures and opportunities faced by local businesses and build trust to support successful delivery. It was proposed that a collaborative in-person event would be a good format for networking, knowledge sharing and building partnerships between the Combined Authority, businesses and other actors.

An **in-person event** organised by the Combined Authority in partnership with trusted regional industry networks (such as Constructing Excellence North East) that brings employers and businesses in the construction sector together with local government would be a helpful way to begin the conversation on how the region can deliver good quality retrofit work and support SMEs to offer a range of training to people wanting to enter the sector.

Moreover, the Combined Authority's leadership role in articulating the quality of work required and prioritisation of valuing training through the procurement process was emphasised by stakeholders. As discussed by a workshop participant, **good quality work is inseparable from valued skills development and training in the sector:**

"If the Combined Authority is clear that it wants good quality work and **measures what 'good quality' looks like and incentivises it when it is achieved, then people will skill up.** [...] it just needs to be very clear that they want good quality work. But that is **a big cultural challenge because that means it needs to procure its work differently,** it needs to talk about it differently, and needs to have a lot more trust in its supply chains, and it also needs to measure much more distinctly what has actually been done, what success looks like and then rewards success."

The Combined Authority can work with Northern TUC, local authorities, social housing providers and businesses to employ a **'Good Jobs Charter'** for procurement standards to ensure good quality employment across the construction supply chain.

Key Issue 4: Participants discussed that retrofit can often feel 'distant' from people's immediate concerns and also a 'technical' process that people have little understanding of or role to play in implementing. Collaborative approaches to retrofit, whereby local residents are empowered and actively participate in the planning and delivery of retrofit are therefore crucial to deliver effective, inclusive place-based retrofit programmes.

Several stakeholders outlined that the Combined Authority could work with local communities to examine local interest in developing and supporting the planning of "a collective, community approach to retrofit" (community organisation practitioner). This granular **community-led retrofit approach** would work by building collective partnerships with local residents and organisations to determine the most appropriate retrofit interventions and improvements based on the housing stock type and localised community context through street or neighbourhood stock audits.

Importantly, community-led retrofit programmes supported by the Combined Authority could **provide the foundation to explore how retrofit can be delivered in a collective manner across whole streets, rather than on an individualistic, house-by-house basis**. This could focus on increasing access to skills development opportunities for community retrofit (see Box 4.7).

BOX 4.7: LOCAL SKILLS DELIVERY FOR COMMUNITY RETROFIT

Supporting Grassroots Skills for Just Transition – Civic Square are coordinating the **Neighbourhood Trade School** which is “a school for transition at the neighbourhood scale to exchange the wisdom of our places and democratise access to the skills we need to design, own and govern the climate transition and retrofit of our homes, streets and neighbourhoods”. It is based on the idea that everyone has something to share and learn. Through a curated series of classes as part of the Neighbourhood Trade School, Civic Square hope to equip cohorts of neighbours with the knowledge and skills to take action within their homes and streets through a range of hands-on classes working in partnership with organisations such as the Centre For Alternative Technology. See <https://civicsquare.notion.site/Skills-For-Transition->

Recent research (Putman and Brown, 2021) has outlined that community-led retrofit is effective at **engaging households, developing local supply chains, helping households access financing, and also can be a valuable delivery partner for local authority fuel poverty schemes**. This is vital because across the North East region, 14% of households live in fuel poverty (1.26% higher than the national fuel poverty average) (NEA, 2023).

While community-led retrofit offers an alternative approach to retrofit governance, it will not be able to deliver residential retrofit at scale without a broader government programme of financial and regulatory support to help accelerate community-led approaches (Putman and Brown, 2021). It was stated by several participants that it will be cheaper to act

now to deliver retrofit, because it “has significant potential to have so many positive impacts by providing warmer, better ventilated homes” (fuel poverty stakeholder).

This is because **old and inefficient housing** leads to an estimated 11,500 early winter deaths and 4,000 early deaths from overheating per year, and **adds around £2 billion to annual NHS costs through negative health impacts** (CLC, 2021: 7).

If prioritised, there could be **multiple tangible benefits of an extensive roll-out of collective approaches to retrofit**. As a workshop participant discussed:

“It’s the **multiple benefits**, so if you’re in an area where incomes are low and so people will benefit most from low heating bills and if you have people with long-term illnesses they have to be in a healthy internal environment which doesn’t always follow from a lot of modern ways of building, so all of those cross-overs get multiple benefits that arise from them, and you can get young people involved, you get them training and get the skills, you are getting pride and a sense of achievement, so there is very little negative about all of this. The multiple positive benefits are huge, it’s just the means need to be found to make it happen. Because the other costs are huge anyway, of not doing stuff.” (architect)

The workshop discussions and stakeholder interviews outlined the importance of moving beyond silos and nurturing coalitions and dialogue between a range of actors such as local policymakers, affordable housing advocates, social housing providers, community hubs, sustainability champions and low-carbon construction practitioners to support **grassroots collaborative approaches to retrofitting and campaigns for green, affordable housing**. As an architect discussed: “breaking out of your silo and doing stuff across the wider field, is maybe one way to deal with these big issues”.

PRIORITY ACTION
AREA 4.7: ADOPTING
HIGH ENERGY-
EFFICIENCY STANDARDS
(SUCH AS PASSIVHAUS)
FOR BUILDINGS AS
A ROUTE TO ZERO
CARBON.

Key Issue 1: Adopting a Passivhaus Standard was discussed by some participants as one way to achieve actual zero carbon buildings and address the ‘performance gap’ of dwellings. This is because Passivhaus developers must prove that their buildings meet the standard in order to receive certification – therefore “performance assurance” is embedded at its core (meaning that the buildings can be trusted to deliver the performance sought in practice).

Several built environment stakeholders stated that reducing the heating energy demand through a “fabric first approach” – where the thermal performance of materials that constitute a building (i.e., walls, roofs, floors, doors and windows) are maximised and attention is directed to the ways in which heat can escape (i.e., through draughts and cold bridging) – is the practical way to help achieve zero carbon homes.

Some participants specifically discussed their frustration that very low energy build designs (such as the Passivhaus Standard, see Box 4.8) are not being actively encouraged and facilitated through integrated net zero and housing policies, which they considered reflects an overall lack of ambition and coordinated policy focus.

BOX 4.8: WHAT IS PASSIVHAUS STANDARD?

- Passivhaus is a rigorous international standard that has been developed and refined specifically for ensuring high energy efficient building envelope³⁸ and ventilation system design and construction. Passivhaus dramatically reduces the need for space heating and cooling, whilst also creating excellent indoor comfort levels. Passivhaus adopts a ‘whole-building approach’ with clear, measured targets, focused on high-quality construction, certified through an exacting quality assurance process.
- It is important to note that the German word ‘haus’ means building; and Passivhaus Standard can be applied to all buildings, from dwellings to office blocks to leisure centres. For more information see: <https://www.passivhaustrust.org.uk>

The focus on closing the ‘performance gap’³⁹ (Box 4.9) of buildings with Passivhaus Standard also supports a key recommendation to emerge from the Citizens’ Assembly on Climate Change, namely, “All new housing to work towards the Passivhaus Standard (where the loss of heat from a building is so small that it hardly needs any heating at all)” (Shared Future and NTCA, 2021: 31). This highlights that there is **already significant citizen support in the North of Tyne for ensuring very low energy build designs to deliver a low carbon transition.**

³⁸ A ‘building envelope’ is like its skin – it includes surface elements such walls, windows, and the roof.

³⁹ There is significant evidence that the actual energy performance of new build dwellings does not match with the design and is greater than predicted. This difference between the measured and the predicted performance is commonly referred to as the building fabric ‘performance gap’.

BOX 4.9: THE PERFORMANCE GAP AND NET ZERO

- Much of the performance gap is attributed to issues of quality control on site. The performance gap of buildings is likely to have significant implications for the associated energy use and CO₂ emissions attributable to these dwellings in use, and also have a detrimental impact on occupant thermal comfort (Johnston et al., 2015). Moreover, closing the energy use performance gap in new homes (the difference between how they are designed and how they actually perform) could save between £70 and £260 in energy bills per household per year (CCC, 2019).
- Analysis undertaken by the Passivhaus Trust (2019) demonstrated that the **typical home (the average UK new-build house size is 68m²) is more likely to use around 40% more energy than predicted, with heating sometimes 2 to 3 times greater**. In comparison, the rigorous testing and quality assurance process that is part of the Passivhaus Standard ensures that what is designed is actually what gets built and the actual energy performance is, on average, as predicted by the design stage modelling.

Key Issue 2: Delivering highly sustainable buildings and socio-technological 'solutions' such as Passivhaus requires a high level of technical skills and knowledge, and needs significant investment in the (up)skilling of those who work in the construction industry and a rapid change in culture.

As a Passivhaus accredited participant discussed, building the skills of workers to deliver Passivhaus is important. However, there are barriers that need to be overcome to encourage others to adopt these skills and competencies, particularly a cultural resistance to change from established ways of working and wisdom. Continuous learning (and upskilling) therefore is fundamental to driving change in the sector to deliver the transition to higher energy efficiency buildings.

As a participant discussed, there are now certified Passivhaus Tradesperson Training Courses for workers, which can be rolled out to help drive awareness and increase knowledge of higher energy efficiency design:

"Passivhaus Training and Coaction are developing online training tools that will actually be adopted across all universities but that is not good enough, that is just architects, there is engineers, and architectural technologists, and also a lot of people that work hard on site that need skills as well. [...] there is a Passivhaus Tradesperson Course, so they get equipped with enough of the knowledge, they don't need to know all the levels of building physics, but they need to know enough to know why they are being asked to do something. And then there is also the skills thing about this is how you do it. So, it is two half days of theory and practice about equipping people with the right knowledge and skills so they can apply it in building projects."
(Passivhaus trainer and architect)

As discussed by an industry stakeholder, if Passivhaus or equivalent standards are to be rolled out, then there is a significant upskilling effort needed to ensure that workers are trained to understand and implement the standard – and this also would require a programme to train Passivhaus certifiers.

The Combined Authority can help **upskill workers** across the construction sector (from designers to contractors) by raising awareness of and providing funding for green construction upskilling training, such as certified Passivhaus Tradesperson Training Courses.

There is also a need to promote understanding of Passivhaus both amongst the sector and general public as part of the push towards decarbonisation and improving the energy efficiency of buildings.

Key Issue 3: There is scope for local and regional government-supported Passivhaus demonstration programmes and projects to highlight what can be achieved by local authorities in collaboration with industry stakeholders, as highlighted in the case of Exeter City Council (see Box 4.10). This would place local and combined authorities in the region as innovative leaders creating demand for, and developing expertise in, Passivhaus.

BOX 4.10: CASE STUDY – LOCAL AUTHORITY ADOPTION OF THE PASSIVHAUS STANDARD IN THE UK

- Exeter City Council was among the first local authorities in the country to build new social housing and facilities to Passivhaus Standard – including its flagship projects: Edwards Court, the UK’s first Passivhaus extra care Village and St Sidwell’s Point, which is the UK’s first leisure centre and swimming pool to be built to Passivhaus standards. Sidwell’s Point is intended to save at least 70% of energy compared to an equivalent complying with current Building Regulations.
- Beginning in 2009, the council have used their triple bottom line approach to deliver high quality builds, by being socially, environmentally and financially responsible.
- Exeter City Council has established their own council-owned development company – Exeter City Living – that deliver houses to Passivhaus Standards that are healthy and climate resilient until at least 2080. Profit is re-invested into council services.
- Due to Exeter’s long-term commitment to Passivhaus they have developed distinct expertise and experience which has enabled them to refine their delivery models and processes to drive down the cost of Passivhaus.

Several participants outlined that the Combined Authority can blaze a trail with council-led developments that meet the Passivhaus Standard. It was discussed that there are now a range of exemplar cases of local governments endorsing and implementing variations on the Standard, which practically demonstrates that this can be successfully done at scale, leading the way for others to follow.

Local governments can create and open up spaces of possibility – in both local policy terms and the availability of actual land – to support experimentation, innovation and collaborative projects for local sustainable building developments that respond to and reflect place-based context.

PRIORITY ACTION
AREA 4.8: SUPPORTING
INNOVATION, RESEARCH
AND EXPERIMENTATION
IN SUSTAINABLE LOW
CARBON MATERIALS AND
MODERN METHODS OF
CONSTRUCTION.

Key Issue 1: Several participants outlined the importance of encouraging the use of appropriate, place-based, often-biobased materials such as wool, local clay, and timber in building designs. It was stressed that good quality buildings constructed to have less environmental impact and are connected with the locality are vital to support low-carbon built environments.

A workshop participant described their experience of using timber in their designs and some of the challenges of navigating less developed, biobased supply chains across the region, and the opportunities of scaling up both the use of locally-grown structural timber⁴⁰ and environmentally-friendly processed timber:

“... the North East has great big plants producing chipboard, it would be lovely if those big plants used the same trees to make **environmentally friendly Woodfibre board**, same material, actually higher value output at the end of it, why are we not doing it? What is the impediment shifting their source of supply? I buy my environmentally friendly fibre board from Norway [...] we have lots of Sitka Spruce that was planted for the wood pulp industry and I use a lot of that for non-structural carcassing and so on, but we need the higher-grade stuff as well. And **there are lots of innovations in terms of laminated timbers, where you can use the lower grade stuff for high grade structural purposes, so again, the solutions are all out there**, you just need to nudge people in the right direction.” (architect)

The CCC (2018) have recommended that using wood for construction is the best use of **limited biomass resources** providing that it is based on strong, sustainable forestry management.

Indeed, several stakeholders warned that the **use of timber must be carefully considered** and trees must be planted, managed and harvested appropriately to ensure that forestry does not have adverse environmental impacts and negative social impacts on local communities.

There is consequently a **strong economic argument for developing regional supply chains around the provision and application of locally sourced bio-based materials such as timber** – and the region is well-positioned to lead the UK development of biobased manufacturing and construction (Material Cultures and Arup, 2021). This has potential to create good-quality land-based jobs in forestry and land management and also greener jobs throughout the supply chain if investment was made into the local processing infrastructure.

However, a lack of joined-up strategic net zero policy that focuses on designing, researching, producing, manufacturing, installing and maintaining our built environment in a sustainable manner was highlighted as impeding bold actions that can support a **more circular biobased construction sector and bio-economy** centred on low-carbon places and community wealth building across the North East.

The Combined Authority could undertake a **viability study and commission further research** to develop a business case for supporting a circular economy based on low carbon materials such as timber and the job creation opportunities that emerge from such **investment in regional infrastructure**. This could include mapping localised supply chains, identifying gaps and opportunities to stimulate investment in natural and sustainable materials to support very high energy efficiency standards and low-embodied carbon buildings.

⁴⁰The use of ‘structural timber’ in residential construction in the UK is growing; this refers to timber that is strength graded for construction use. The classification system gives reasonable predictions of structural performance of the individual piece of timber, ensuring that it can withstand the highest anticipated load. This grading system is regulated by Building Standards, in accordance with BS EN 14081 – Timber Structures. It can be either sawn directly from logs, or it can be processed into Engineered Timber.

Key Issue 2: It was highlighted that compared to other countries, the UK has been slow to adopt Modern Methods of Construction (MMC) (Box 4.11) and therefore local government and policymakers have a vital role to play in supporting the move to MMC.

BOX 4.11: WHAT ARE MODERN METHODS OF CONSTRUCTION?

- MMC is a process which focuses on off-site construction techniques, such as mass production and factory assembly and includes onsite technologies. It is seen as an alternative to traditional ‘bricks and mortar’ methods of construction. MMC ranges from whole homes being constructed from factory-built volumetric modules, through to the use of innovative techniques for laying concrete blockwork onsite.
- A MMC definition framework has been developed that consists of seven categories that spans all types of pre-manufacturing, site-based material and process innovation used in homebuilding (MHCLG, 2019).
- Engagement with alternative forms of construction in the past have been used to boost house-building output, most notably after the post-war period. With each iteration, the new approaches have been linked with various benefits, notably, speeding up delivery, reducing labour costs, eliminating unnecessary waste and improving quality and predictability (Farmer and De’Ath, 2020).

There was broad acknowledgement that moving the construction sector towards more sustainable construction is required at scale to transition towards a low-carbon society. Several **opportunities** related to MMC were identified by participants:

- If meeting both housing targets and climate-related goals are to be achieved, more sustainable forms of construction need to be supported and developed to help reduce GHG emissions – and participants pointed out that MMC has a crucial role to play to increase productivity and the quality of building. As an industry stakeholder pointed out, this will be a process of “incremental change rather than overnight transformation”.
- Some participants noted that collaboration between local authorities can create scale and more stable demand for MMC. For example, a recent report by Mike De’Ath and Mark Farmer (2020: 13) outlined that on the demand side, there are increasing signs that modular manufacture is being embraced by local authorities. They note that Birmingham Municipal Housing Trust is rolling out a programme of homes on infill sites and the West Midlands Combined Authority is mandating minimum levels of modular home delivery on certain segments of its sites as part of a broader Local Industrial Strategy.
- It was highlighted that MMC could appeal to a next generation of workers interested in a different form of construction, application of technology and assembly within indoor production environments – and who are put off by the outside and manual aspects common with many traditional on-site construction jobs. Therefore, MMC could attract more people into the construction sector and improve the working conditions of the building process, which have been identified as a reason for the poor reputation of the sector (Farmer, 2016). It was also discussed that there could be exciting opportunities to upskill the existing workforce to help address the skills gap in green construction methods (see Box 14.2).

BOX 4.12: UNLOCKING MODERN METHODS OF CONSTRUCTION FOR SMES

The “Workforce for the Future” project is supporting traditional construction SMEs across the West of England through **fully funded MMC training** – helping to bridge the skills gap and futureproof the local workforce. The CITB predicts that nearly 50% of all housing in the next five years could be built using MMC, however less than 17% of construction SMEs have any knowledge or understanding of MMC systems. Without the sufficient upskilling of the local supply chain, traditional construction SMEs will be at risk of falling behind. Building Growth South West is delivering this programme on behalf of the West of England Combined Authority in collaboration with Bristol Housing Festival and MOBIE. See: <https://www.building-growth.com/workforce-for-the-future-wfff/#contact>

It was emphasised that there are multiple reasons why MMC are not fully embraced by segments of the construction sector and broader public. There were several **challenges** discussed in relation to MMC:

- It was stated that previous iterations of modern construction methods such as pre-fabricated houses in the post-war period are associated with low-quality buildings which can influence people’s interest and perceptions of this form of construction: “I think the traditional image of ‘pre-fab’ homes is low, so there is work there to change the image, so that we think of high-quality modular housing to increase that consumer-demand side” (industry stakeholder).
- It was acknowledged that the ‘path dependency’ of the construction sector of ‘business as usual’ is hard to change. It was suggested that **the mainstream building sector often lacks the confidence, green skills and willingness or capacity to adopt new sustainable practices**. As a building participant outlined, the propensity to change or innovate in the industry is often an issue of mindset and attitude within a short-term, unstable, low-margin environment: “the building industry as a whole is a stubborn one”.

- It was mentioned by several workers in the construction sector that MMC, especially modular off-site construction which is then fully assembled on site, was a “different type of building, so not your brickies putting up your traditional brick-built home”. There was therefore **some concern that widespread adoption of MMC could reduce the number of jobs across the construction sector and also change the type of jobs available** (i.e., more focus on pre-manufactured elements developed in factories, and focus on logistics and assembly), rather than a diverse range of onsite craft and tradespeople.
- There was a perception that **job creation would be focused on manufacturing and engineering professional roles and a decrease in (on-site) skilled trades and occupations in the longer-term**. In this context, it is vital that any loss of jobs is supported by creating new employment and upskilling existing workers.
- There was also a concern raised that if other regions of the UK support and invest in the development of MMC manufacturers and encourage factories to be located in their part of the country, then the North East may miss out on direct job creation opportunities. For example, it was discussed that there is a possibility that pre-manufactured building elements could be created in one place of the country and then merely transported into the region to be assembled. In this context, the Combined Authority can engage with manufacturers and provide incentives for businesses to invest in factories, products and systems development infrastructure within the region.

Key Issue 3: Expanded digitalisation of the construction and built environment sector was discussed as a potentially transformative process that can not only improve sustainability but also attract a new generation of workers.

It was emphasised that digitalisation has the potential to both positively transform and create challenges across the construction industry, depending on how technologies are adopted, who is trained in them, and what their impacts will be on current and future jobs.

It was discussed in the workshops that if digital technologies are to be adopted across the sector, then this will require tailored and accessible training courses for new and existing workers. For those who are already familiar with various applications of new technologies like robotics, AI (Artificial Intelligence) and Building Information Modelling (BIM), there was a focus placed on enhancing the knowledge and skills of current workers:

“Training programmes are important, I am on the IT-side of things, and one of the projects I was involved in was related to smart homes that focus on digital construction technologies, such as Building Information Modelling (BIM), they can help companies to improve their efficiency and reduce waste. This training could cover topics such as digital design, 3D-modelling, and project management software. So, improving the knowledge of digital can help – so, looking at aspects of safety and health, such as PPE [Personal Protective Equipment]. We need to increase awareness of the digital side to prepare people for what is coming in the field.”

A workshop participant currently studying a construction-based course, emphasised that BIM⁴¹ was already a key part of their curriculum and while they expected technology to change the sector moving forward, they believed there were limitations to automation and AI within the industry: “I think with stuff in the construction industry it’s never going – there are some jobs that can never really be replaced by AI – so it’s always a safe option, and most of the roles in construction are well paid. So, I think it’s a good industry to work in” (T-Level Construction Student).

A few participants stated that there is a need to increase the take-up of and access to digital technology, particularly within SMEs. For example, it was stated that BIM could be used more comprehensively in the design of buildings but it was believed that there was little incentive for SMEs to invest in such modelling technology.

Finally, while digitalisation and new technology has the potential to fundamentally transform the sector, without addressing the underlying social conditions and culture of the industry that supports worker wellbeing, then there will be no just transition.

⁴¹ A BIM Model is a digital model of the entire construction project prepared, coordinated and visualised by the entire project team prior to construction.

PRIORITY ACTION
AREA 4.9: CREATING A SUSTAINABLE WORKING CULTURE THAT TACKLES POOR MENTAL HEALTH.

Key Issue 1: Some participants pointed towards the need to improve the working conditions of the sector and outlined the importance of addressing the pervasive poor mental health and wellbeing issues facing workers in the industry to support a truly just transition.

The **negative image of the industry** was discussed as a barrier to attracting new talent to the sector. Regardless of efforts to redefine the narrative of what a low-carbon construction industry can offer people in terms of a 'greener' career, if the current image of the industry reflects the often stressful and poor working environment people are operating within, then it will fail to attract new entrants, as articulated by a workshop participant:

"If SMEs are 98% of the construction sector, then they will talk to people all the time about what it is like to work in the construction sector and **if they are feeding back to people that it is an awful job, and you have to work 70 hours a week just to keep yourself above water** and then someone doesn't pay you because they have collapsed – and I have spoken to people who have had this experience, who are waking up at 2am in the morning wondering how they are going to pay their next mortgage instalment – then that is another message that will be communicated out about the construction industry and will put a lot of people off. **SME's are really, really important because they have such a big influence on the perception that people have of construction.**"

SMEs and sole traders make up the majority of the construction sector and it is reported that they experience high stress, work uncertainty, long hours and financial pressures more commonly than larger companies (CITB, 2021). In particular, the CITB (2021) outlined that **smaller companies may find it more difficult to support the mental health and wellbeing of employees** as they are said to be less

likely to have the structures and policies in place to address these issues.

In 2017, the ONS produced its first report on suicide by occupation in England. This report revealed that **the construction industry accounted for more suicides than any other industry** between 2011 and 2015, with 1,409 men and 10 women dying by suicide during that period (ONS, 2017). It was also found that the risk of suicide among "low-skilled male labourers, particularly those working in construction roles", was 3 times higher than the male national average.

Stakeholders discussed that the frequently stressful nature of working in a highly 'dysfunctional' industry (Farmer, 2016) that has multiple pressures from rising costs of supplies to heavy workloads and long working hours to job insecurity has led to pervasive **poor mental health and wellbeing issues for many in the sector**. This was a concern expressed by built environment stakeholders within the workshops:

"I would really **worry about somebody going into conventional construction, working on big sites under pressure** with productivity objectives overruling health and safety and the rest of it. So, I found myself a nicer niche and I do my buildings and I work with nice people creating delightful stuff, but it's a tiny fraction of the real world of construction and I would steer anyone who I cared about from going in to the mainstream, because it has so many negative sides to it."

It was stated by a participant that further awareness raising, education and training is needed to help eliminate the stigma that can surround mental ill-health within the industry (CITB, 2021). Moreover, the sector can only support a just and socially sustainable low-carbon transition if we look after the workforce's physical and mental health and wellbeing, and address the underlying structural issues creating poor working conditions. This would also help increase worker retention rates in the industry.

Overall, the root causes of the dysfunctional nature of the industry must be addressed by tackling the inequalities that permeate the sector. Specific support for addressing the mental health and wellbeing of the construction workforce is required.

The Combined Authority could work with relevant organisations to engage with employers and individuals to **raise awareness of and increase access to mental health support for workers** and embed a positive culture change within workplaces for everyone to have a safe and rewarding career.

As was pointed out by a few participants, **the construction sector has very low levels of trade union membership** that is predicted to decline further over the coming years⁴² – around 12% of the sector is currently unionised compared to over 30% in 1995. Given the multiple challenges facing the industry, and various recurring attempts to deskill specialised tradespeople in the sector, particularly in relation to large-scale projects, it is important to understand the potential impacts of trade union decline on construction workers' rights, health and safety, and broader wellbeing in the UK sector, especially given high suicide rates as previously outlined.

In the context of supporting a just transition, the Northern TUC and trade unions therefore have an important role to play in positioning themselves as a collective voice of workers to ensure that new 'green' and sustainable retrofit and construction embeds social sustainability as well as environmental sustainability at its heart so that **green construction is decent, quality work**. This proactive approach could entail developing strong union-employer relationships, and engaging with a younger generation of workers that have not experienced a trade union.

⁴² See: <https://www.pbctoday.co.uk/news/hr-skills-news/trade-unions-plummet/88444/>

RECOMMENDATIONS

Recommendation 1:

Enthusiating and Engaging Young People to Build a Green and Inclusive Sustainable Future.

- The Combined Authority could work with educational charities such as MOBIE and local partners to develop a **Student Design Challenge** that responds to the particular built environment issues and opportunities in the region to directly engage young people with sustainable design and construction. This can help to encourage new entrants into the sector in the context of an ageing workforce.

Indicator: Collaborate.

- The Combined Authority could work with **careers advice services** within schools to ensure that information about further and technical education pathways such as apprenticeships and T Levels within the built environment and construction sector are adequately promoted and publicised amongst young people.

Indicator: Collaborate.

Recommendation 2:

Accessible and Meaningful Work Experience to Support Positive Transitions into Stable and Rewarding Employment.

- The Combined Authority could provide **funding for entry-level courses and work experience** to support those looking to enter the green construction sector and also progression courses for people to build their skills and knowledge until they gain secure, good-quality employment. The objective of this would be to increase local employment numbers and address the skills shortages in the sector by providing meaningful employment opportunities tailored to individual learner needs.

Indicator: Implement

- The Combined Authority could explore what opportunities there are to **deliver industry-level training opportunities** in partnership with businesses in the region to ensure that there are clear pathways for new entrants to develop their skills in 'real world' work environments and with commercial, industrial equipment.

Indicator: Collaborate.

Recommendation 3:

Expanding High-Quality ‘Green’ Apprenticeships to Future-Proof the Construction Sector.

- The Combined Authority along with partners (i.e., skills providers, industry groups, large businesses and SMEs, and construction networks such as Constructing Excellence North East) could organise an **in-person apprenticeship roadshow and jobs fair with events across the region** to increase awareness about apprenticeships, learning opportunities and different careers available within the sector.

Indicator: Collaborate.

- The Combined Authority could work with SMEs to **raise awareness** about the benefits of taking on apprentices within their business and provide support to address any concerns they may have. Construction businesses need to be **incentivised and rewarded for innovating and investing in people** to grow local economic benefits and a highly skilled green construction workforce.

Indicator: Collaborate.

- The Combined Authority along with partners could examine the potential to **create a structured Apprenticeship website platform that would enable employers to identify and connect with apprentices across the region.** This would significantly improve the experience for smaller SMEs and enable connections to be made between those looking to enter the industry and existing businesses.

Indicator: Collaborate.

- In partnership with education providers, industry organisations and other stakeholders, the Combined Authority could help to **promote the high-quality, flexible shared apprenticeship model with SMEs and skills providers to support**

low-carbon construction and retrofit skills development and work-based learning by providing funding to help develop and expand this approach across the region to address the skills shortage in the industry for a green low-carbon future.

Indicator: Collaborate.

Recommendation 4:

Upskilling Workers with ‘Green Skills’ to Create a Highly-Skilled Net Zero Workforce.

- The Combined Authority could play an active role in supporting and developing **collaborative approaches to reskilling and upskilling.** In particular, it can work to support an integrated model of green construction skills delivery in the region bringing together industry across the supply chain, the training and skills sector, and clients (public and private) to unlock opportunities for partnership delivery and upskilling opportunities through ‘Green Growth Skills’ pathways.

Indicator: Collaborate.

- **Peer-to-peer learning networks for SMEs could be established to promote learning at work and fully-resourced mechanisms** co-created by the Combined Authority to support SMEs develop the skills infrastructure needed to deliver formal and informal work-based learning. The construction sector is a SME-led industry, and therefore this must be based on extensive consultation, where SMEs co-design the infrastructure, tools and content of workplace-based learning that is relevant, appropriate and meaningful to employers and workers to address skills gaps and embed a culture of quality learning and training into building trades.

Indicator: Implement.

Recommendation 5:

Planning as a Vehicle for Just and Sustainable Place-Making.

- For national government to achieve net zero, there should be **significant investment in the planning profession** – in terms of the skills of new entrants and upskilling the existing workforce (for example, through Continued Professional Development) in order to expand the capacities and scope of planning teams to perform effective strategic planning, and address new complex policy concerns like net zero and decarbonisation.

Indicator: Influence.

- **Comprehensive regional strategic spatial plans could be reintroduced across England and developed at the Combined Authority level** or similar scale to address mounting regional inequalities and enhance integrated sustainable and inclusive socio-economic development through strategic spatial planning to support a spatially just transition to net zero. The Combined Authority can advocate for this change with central government.

Indicator: Influence.

Recommendation 6:

Supporting the Development of a Skilled Regional Retrofit Workforce to Deliver a Place-Based Low Carbon Transition.

- The Combined Authority along with local councils could set out **long-term retrofit plans to provide policy certainty** at the local level for businesses and education providers to plan retrofit delivery. Establishing broader clarity will require **developing and publishing detailed retrofit plans** based on existing government funded schemes (such as the Social Housing Decarbonisation Fund) and other public-led retrofit projects outlining a **short to medium-term pipeline**

of retrofit work across the region.

This can inform the development of a “place-based approach to delivering retrofit measures”, as outlined in the North East Devolution Deal (DLUHC, 2022: 28).

Indicator: Collaborate.

- The Combined Authority could work to actively **support SMEs to directly engage with and shape regional retrofit plans and support SMEs to innovate and invest in skills development** to help ensure that competent workers and quality retrofit is delivered.

Indicator: Collaborate.

- **All local and combined authorities could invest in developing the expertise of relevant employees in retrofit** and then work to mainstream these posts as delivery progresses and grows to plan and deliver a locally place-based retrofit programme. It could also integrate a broader role for retrofit apprenticeships, as part of net zero workforce planning based on investing in enhancing the capabilities and capacities of local communities.

Indicator: Implement.

- **The Combined Authority could use Adult Education Budget funding to support entry level training pathways** for people to gain the relevant work experience, technical skills and qualifications for retrofit given the significant demand for retrofit skills across the region. There could also be tailored support for people wanting to make a career change into green construction.

Indicator: Implement.

- The Combined Authority along with relevant partners could develop a **Retrofit Careers Portal** that acts as an online jobs fair that explains the pathways, qualifications and roles available in retrofit. Importantly, it can provide broader information, guidance and advice for those looking to switch careers and outline what support (particularly, financial assistance) is available to people looking to up-skill or re-skill to enter the sector across the region.

Indicator: Collaborate.

- The Combined Authority could play a crucial role examining how it can support community-led retrofit programmes across the region to direct and deliver their own projects (such as retrofit cooperatives) and **explore innovative finance mechanisms to support a place-based, community-focused retrofit delivery programme** working closely with community organisations, citizen groups and residents' associations.

Indicator: Collaborate.

Recommendation 7:

Adopting High Energy-Efficiency Standards (such as Passivhaus) for Buildings as a Route to Zero Carbon.

- The Combined Authority could develop and deliver in partnership with relevant stakeholders (such as local councils) a **Passivhaus Standard demonstration project** in the region to showcase its leadership role in delivering public-led high energy efficiency construction to support **low carbon innovation and collaborative schemes** that benefit people and planet.

Indicator: Collaborate.

- The Combined Authority could help **upskill workers** across the construction sector (from designers to contractors) by raising awareness of and providing funding for green

construction upskilling training, such as certified **Passivhaus Tradesperson Training Courses**. There is a need to promote understanding of Passivhaus both amongst the sector and general public as part of the push towards decarbonisation and improving the energy efficiency of buildings.

Indicator: Implement.

- The Combined Authority could **arrange events with commercial developers** to start structured discussions, raise awareness of sustainability and establish partnerships to collectively work to set performance criteria for buildings in the region through a 'climate challenge' framework and co-produce a clear roadmap for action.

Indicator: Implement.

Recommendation 8:

Supporting Innovation, Research and Experimentation in Sustainable Low Carbon Materials and Modern Methods of Construction to expand Green Job Creation in the Sector.

- The Combined Authority could undertake a **viability study and commission further research** to develop a business case for supporting a circular economy based on low carbon materials such as timber and the job creation opportunities that emerge from such **investment in regional infrastructure**. This could include mapping localised supply chains, identifying gaps and opportunities to stimulate investment in natural and sustainable materials to support very high energy efficiency standards and low-embodied carbon buildings.

Indicator: Implement.

- The Combined Authority could examine how to support a **more circular bio-economy** and ensure that sustainable materials and products (such as insulation material) are developed and come to market at the right time and scale to create a **pipeline of demand for the low-carbon transition**.

Indicator: Implement.

- The Combined Authority has a key role to play in providing the necessary conditions to **stimulate further low-carbon construction start-ups and enterprises** across the region. In this context, the **NTCA Green New Deal Investment Fund** could specifically focus on supporting entrepreneurs to develop and scale-up low-carbon innovations for the built environment.

Indicator: Implement.

- The Combined Authority could act as a **convener to facilitate greater strategic collaboration** across the North East local authorities to support aggregation and cooperation given there is fragmented demand for MMC. The expanded NEMCA can bring together, at scale, councils to work across individual local authority borders and pool their demand and explore modular delivery (for example, directly commissioning more social housing built to MMC standards). The Combined Authority could also have **more joined-up conversations** with manufacturers to develop economies of scale for MMC across the region and explore opportunities for using public land for “exemplar sites to demonstrate Modern Methods of Construction” (DLUHC, 2022: 28).

Indicator: Implement.

Recommendation 9:

Creating a Sustainable, Quality Working Culture that Tackles Poor Mental Health.

- Specific support for addressing the mental health and wellbeing of the construction workforce is required. The Combined Authority could work with relevant organisations to engage with employers and individuals to **raise awareness of and increase access to mental health support for workers** and embed a positive culture change within workplaces for everyone to have a safe and rewarding career.

Indicator: Collaborate.

- The Combined Authority could work with Northern TUC, local authorities, social housing providers and businesses to employ a **‘Good Jobs Charter’** for procurement standards to ensure good quality employment across the construction supply chain.

Indicator: Collaborate.

**CASE STUDY SUMMARY:
NURTURING A JUST
TRANSITION FOR THE
BUILT ENVIRONMENT
AND CONSTRUCTION
SECTOR**

The findings presented in this case study highlight the significant opportunities and also the challenges that we must overcome to support a just and inclusive low carbon transition for the construction and built environment sector. This industry is one the largest in the UK. It also shapes the lives of every citizen through the homes we live in, the buildings where we work and the broader infrastructure that shapes our communities.

The scale of change needed across the sector to cut its climate impact and move towards a sustainable, low carbon future is immense, therefore the research placed specific emphasis on examining how the Combined Authority could demonstrate strong leadership and facilitate action on green skills and green jobs delivery across the region.

By responding to the issues and ideas illuminated throughout the report and drawing upon the diverse expertise and knowledge of participants, we hope the voice of citizens will shape the trajectory and content of future policy development related to construction and the built environment within the Combined Authority.

To reach net zero, it is crucial that the region attracts, supports and retains a diverse, highly-skilled workforce, which is required to deliver the changes needed to drive a just, inclusive and effective low carbon transition. This requires a collaborative and joined-up approach to develop a responsive green skills ecosystem that places sustainability at the centre and focuses on good quality green job creation.

The need to decarbonise and improve the climate resilience and energy efficiency of buildings has the potential to create significant opportunities for businesses and generate highly-skilled jobs. **Developing expertise in low carbon innovation across the region represents an industrial opportunity for the Combined Authority to capitalise on, becoming a regional exemplar of sustainable low carbon innovation and inclusive green prosperity.**

This case study provides a springboard for future citizen, worker and business engagement to continually develop and refine a pathway to decarbonise the built environment of the region.



CONCLUSION

Supporting a comprehensive, inclusive and just transition to a lower carbon and more equitable society requires collaboration and collective responsibility to ensure that climate mitigation and adaptation policies are fair.

As a 'just transition' becomes an increasingly significant part of current policy discussions at all governance levels (local, regional, national and international), climate action needs to provide new, long-term opportunities for young people, those currently employed in high carbon industries and people who may have missed out on employment opportunities in the past. For this to become a reality, cooperation and commitment is required from the public, private, and the voluntary, community and social enterprise sectors to ensure that programmes and policies are aligned to create inclusive, empowering and sustainable outcomes that support skills development and lifelong learning.

The Combined Authority can play an important role in supporting the creation of good-quality, secure, well-paid green jobs across the region, as well as developing (in partnership with relevant stakeholders) a holistic green skills ecosystem to effectively support individuals seeking green jobs in a rapidly changing job market, and also lead the way in formulating future policies targeted at engendering a green, inclusive economy across the North East of England.

Planned further devolution across the region to create the North East Mayoral Combined Authority provides a pertinent opportunity to position an ambitious, place-based just transition approach at the centre of regional governance harnessing the diverse natural assets and expertise of citizens, workers, businesses and organisations to drive a radically transformative and socially, environmentally and economically just 'green agenda' which leaves no one behind as we move to a net zero future.

Drawing on both qualitative and quantitative approaches to green jobs and green skills analysis, this report helps to build the evidence base to support just transition policy development and provides a foundation to develop further social dialogue to inform an ongoing and inclusive just transition process for the North East of England.

APPENDIX – SUMMARY OF EXISTING SKILLS PLEDGES AND OBJECTIVES

The North Tyne Combined Authority (NTCA) holds a number of existing pledges and objectives relating to skills.

The North of Tyne Strategic Skills Plan (2021-2023) identified five sectors as particularly important for growth and recovery in the region: tech and digital; green growth and energy; culture, creative and tourism; health, pharmaceuticals and life science; and ageing and longevity⁴³. With a particular focus on these areas, it sets out three skills priorities, each of which is supported through key actions and tracked via specific measures:

- **Secure better outcomes for young people**

Key Actions and Measures:

- Support multi-agency approaches
- Promote traineeships and apprenticeships to employers and young people
- Work with skills providers to increase the range of skills and qualifications opportunities
- To be measured via the NEET rate for 16-24 year olds; participation in Apprenticeships and Traineeships by 16-24 year olds; attainment of L2 and L3 qualifications amongst 19-24 year olds

- **Invest in skills to support the local economy**

Key Actions and Measures:

- Promote collaboration between skills providers and employers in the development of provision
- Work with the provider network to meet demand for high level technical skills, e.g. digital skills
- Commission activity which supports residents in gaining green skills
- To be measured via the proportion of employers reporting skills gaps/shortages/ hard to fill vacancies; proportion of the working age population with L3 and L4 qualifications; participation in provision related to recovery and growth sectors, as well as green skills

- **Help people progress to work**

Key Actions and Measures:

- Support residents of all ages (including those in work) to develop skills
- Extend the reach of learning opportunities to underrepresented groups
- Address barriers to employment by supporting provision
- Continue to promote the Good Work Pledge
- To be measured via participation of low wage residents in Adult Education Budget (AEB) funded provision; participation in learning by underrepresented groups; participation and outcomes from AEB funded maths, English and digital; employer engagement in the Good Work Pledge

In addition to these key priorities, there are some existing initiatives currently maintained by the combined authority:

- **Green New Deal Fund⁴⁴**

The Green New Deal fund aims to invest £18 million in low carbon infrastructure in the North of Tyne region. The fund makes loans, equity and grants available to SMEs that can deliver significant carbon savings, create green jobs or – most relevant here – develop green skills within the regional economy.

- **The Good Work Pledge⁴⁵**

This scheme offers employers information on best employment practice, and certifies employers as meeting these standards. The Pledge promotes ‘Good Work’, which offers employees security, skills training opportunities, progression, a decent standard of living and promotes employee wellbeing.

⁴³North of Tyne Combined Authority, Strategic Skills Plan (2021-2023)

⁴⁴North of Tyne Combined Authority, Working Together: Our Corporate Plan (2023-2024)

⁴⁵North of Tyne Combined Authority, Strategic Skills Plan (2021-2023)

- **Youth Employment Partnership**

In order to help ensure children and young people are supported in terms of economics and wellbeing, Youth Employment Partnerships coordinate and maximise existing capacity. They ensure additional provision is given to young people not supported by the existing framework, ensure capacity is effective at the local level including by drawing on the voluntary sector, and gather insight and intelligence in order to assess need and ability to meet demand locally. This initiative is part funded by the DWP's Flexible Support Fund.

- **Digital Bootcamps**

National government has committed £8 million for Digital Skills Bootcamps, which NTCA is working to provide across the North of Tyne. Sector-specific bootcamps run for 12-weeks and are provided as collaborations between employers and education providers.

- **Lifetime Skills Guarantee**

The lifetime skills guarantee is a national project which offers adults without an A-level or equivalent qualification a free L3 college course, funded by the National Skills Fund. NTCA is tasked with delivering this entitlement in the region.

- **The Skills Toolkit**

The skills toolkit is another nationally funded initiative, which provides free online digital skills, computer science and numeracy courses which residents can use to boost employability.

The North of Tyne "Zero carbon, Zero poverty 5 point plan" indicates "Future Green Skills" as one of five policy areas for a zero carbon economy⁴⁶. Within this, it commits to facilitate collaboration between industry and education, to create "green retraining opportunities" and to invest in STEM education.

Local Authorities in the North East have also indicated commitments to skills provision and especially green skills provision. Newcastle city council has committed to supporting residents' to train for emerging sectors, suggesting this might be achieved by reskilling existing tradespeople, supporting training, collaboration with businesses and support for young people and those from disadvantaged communities⁴⁷. The North Tyneside Local Authority has made commitments to work with the LEP to expand understanding of the skills needs of green roles, maintain accurate data and analysis of the labour market and to ensure funding is available (including via NTCA) for a green skills agenda⁴⁸. Northumberland County Council has committed to implementing climate literacy training for both its staff and councillors, in addition to engagement with schools and early years settings to create resource packs for teachers⁴⁹.

⁴⁶ North of Tyne Combined Authority, "Zero carbon, Zero poverty 5 point plan", <https://www.northoftyne-ca.gov.uk/projects/zero-carbon-zero-poverty-our-5-point-plan/>

⁴⁷ Newcastle City Council, Net Zero Newcastle - 2030 Action Plan (September 2020), https://www.newcastle.gov.uk/sites/default/files/Climate%20Change/Net%20Zero/Net%20Zero%20Newcastle%20-%202030%20Action%20Plan_0.pdf

⁴⁸ North Tyneside Council, North Tyneside Carbon Net Zero 2030 Action Plan (August 2022), <https://my.northtyneside.gov.uk/sites/default/files/web-page-related-files/North%20Tyneside%20Carbon%20Net-Zero%202030%20Action%20Plan.pdf>

⁴⁹ Northumberland County Council, Climate Change ACTION PLAN 2021-23

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