

Voice and Place: How to plan fair and successful paths to net zero emissions



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Executive summary

Climate change is the most pressing existential threat facing the planet. In an attempt to meet this threat, the 2015 Conference of the Parties (COP) 21 summit in Paris agreed to try to limit global warming to 1.5 per cent above pre-industrial levels. This is a stretching target; success requires cuts of carbon dioxide emissions by 45 per cent by 2030. We do not have long, yet a failure to meet this threat is unthinkable.

The UK government is committed to a 'net zero carbon' economy by 2050. The TUC strongly supports this target, but we believe that meeting it requires a reset of the way we live and work. Get it right and we can develop new, innovative industrial sectors providing great new jobs. Get it wrong and those working in fossil fuel sectors of the economy will lose their jobs and livelihoods, with only low skill, low value jobs to replace them. It is for this reason that trade unions call for a 'just transition' to a net zero economy.

The economy of the UK varies greatly by region and nation. For this reason, a just transition may look very different in different parts of the country. This report heard from trade unionists in four UK regions – the North, the North West, the Midlands and Yorkshire and the Humber – as well as Wales, to understand the history and culture of those places, as well as to identify the opportunities and threats of the move to net zero, in terms of jobs and skills. We demonstrate the expert knowledge of trade union full time and lay officials, using that knowledge to provide practical and achievable policy recommendations whilst also highlighting, yet again, why trade union voice should become an established feature of UK industrial policy, as it is in the industrial policies of so many of our continental neighbours.

How to achieve a just transition to a net zero economy across the regions and nations

A just transition will require different policy levers at different levels. Industrial policy is crucial to achieving both a just transition and net zero. Industrial policy works at the national, regional and local level.

At the national level, the government needs a co-ordinated industrial strategy which includes the following elements:

- An integrated energy policy with a long-term plan for how to reach net zero
- Support for specific industries
- Investment to support these priorities, with a clear focus on good jobs
- An integrated skills policy
- A Just Transition commission to ensure that workers' voice is central to guiding these policies.

The Committee on Climate Change has reviewed the scientific evidence on how best to deliver the change we need and now needs to build a consensus on how this change should be delivered so that it works for workers and consumers alike. The Just Transition Commission we set out below should advise the government on long-term energy strategy, involving affected workers, unions, industries and consumers, to plan a path that will deliver a just transition to a clean, affordable and reliable energy supply for the future alongside reductions in emissions.

The TUC supports a balanced energy policy which enables us to meet our net zero commitments. Key technologies focused on by unions in this report include Carbon Capture Storage and Use (CCSU), which was highlighted by trade unions in the Northern and the Yorkshire and Humber regions as being key to a just transition in their areas. Nuclear energy was highlighted in the North West and is an integral part of a net zero carbon energy policy. Trade unions call for a net zero roadmap that embeds a fully integrated, whole systems approach, including nuclear energy at scale, with direct government investment in order to create high quality employment.

The UK is a world leader in offshore wind, but whilst it is great news that turbine blades are built on Humberside, the turbines themselves are built overseas. This is a missed opportunity for the UK economy and a more mature industrial strategy is necessary to change this. Hydrogen technology has the potential to play a key role in achieving our net zero targets, as well as to create and sustain hundreds of thousands of high-quality jobs across the country. A cross-departmental hydrogen strategy must be developed between government, industry and unions.

Battery technology will be vital to the Midlands, the North East and Wales, given their historic motor industries. The UK's decision to phase out petrol and diesel engines by 2035 means that companies such as Toyota, Vauxhall, Ford and Nissan face a massive threat – but also a massive opportunity if we can develop the battery technology here in the UK. Meanwhile, buying steel from China can produce up to fifty times more carbon than sourcing from the UK, so this is important from the perspective of both UK – and particularly Welsh industry – and environmental objectives. Steel producers join the ceramics sector, based mainly in the Midlands, in highlighting the imbalance between the price they pay for electricity and that paid by overseas competitors.

Government investment in support of these sectors must prioritise job creation. Research by Transition Economics for the TUC shows that an £85bn programme of investment now could create 1.24 million jobs over the next two years, with significant benefits for jobs in each region of the UK. Government should use its procurement powers to focus on high quality jobs and every new infrastructure project must come with an Olympics-style plan to promote good quality jobs and training.

Government must ensure that investment aims to promote decent work, against the background of a strong framework of employment rights that prevents a race to the bottom.

Skills are an essential part of the move to a just transition. And to make all this happen, a Just Transition Commission, similar to that which exists in Scotland, is necessary for the whole of the UK, with regions being able to input into its work.

An intelligent, sustainable industrial policy with a focus on delivering high employment standards at national level is necessary, but not sufficient, to bring about a just transition across the whole country. This policy must be complemented at the regional, sub-regional and local levels. Combined authorities and Local Enterprise Partnerships (LEPs), have a crucial role to play in shaping how infrastructure is delivered to maximise good job creation. Combined authorities, local councils and LEPs should work with other local actors to articulate the need for greater government investment in infrastructure, especially green infrastructure, and define what works best for those areas, including through recovery panels. Community and workforce representatives can ensure that infrastructure and regeneration is delivered in a way that meets genuine need and enhances wellbeing in those communities.

It is further essential that regional and local bodies work with trade unions to ensure that every investment programme comes with a plan for decent jobs attached; all infrastructure projects, including house building, should include framework agreements that maximise employment and training opportunities for local people and deliver great jobs, employment standards and positive industrial relations.

We have an opportunity to build back better – and build back greener after the economic crisis caused by the coronavirus pandemic. We must seize that opportunity to deliver the just transition working people want and need.

1. Introduction

The climate emergency

Climate change is the most pressing existential threat facing our planet. After some decades in which occasional siren voices tried to claim that climate change does not exist, we can now say this with little fear of contradiction. Information on the existence and the consequences of global warming is widespread, from multiple, highly credible sources. Given the ambivalence of the current US administration to the climate challenge, this report quotes the US National Aeronautics Space Administration (NASA), to make the point for us:

The planet's average surface temperature has risen about 1.62 degrees Fahrenheit (0.9 degrees Celsius) since the late 19th century, a change driven largely by increased carbon dioxide and other human-made emissions into the atmosphere. Most of the warming occurred in the past 35 years, with the six warmest years on record taking place since 2014. Not only was 2016 the warmest year on record, but eight of the 12 months that make up the year — from January through September, with the exception of June — were the warmest on record for those respective months.¹

Happily, the world has started to wake up to the climate threat and, every year, comes together under the auspices of the United Nations to try to address it. Accordingly, in 2016, to so-called Conference of the Parties (COP) concluded a landmark agreement (the Paris Agreement, named after the city in which the conference took place) to limit the increase in global average temperature to “well below two degrees Celsius above pre-industrial levels, and to pursue efforts to limit the increase to 1.5 per cent, recognising that this would substantially reduce the risks and impacts of climate change.”²

This has led to some discussion about the merits of 1.5 per cent, compared to two per cent. To avoid any confusion as to whether 0.5 per cent really matters, the Intergovernmental Panel on Climate Change (IPCC) spells out the difference, in stark terms:

For instance, by 2100, global sea level rise would be 10cm lower with global warming of 1.5 degrees Celsius compared with 2 degrees Celsius. The likelihood of an Arctic Ocean free of sea ice in summer would be once per century with global warming of 1.5 degrees Celsius, compared with at least once per decade with 2 degrees Celsius. Coral reefs would decline by 70-90 per cent with global warming of 1.5 degrees Celsius, whereas virtually all (>99 per cent) would be lost with 2 degrees Celsius.³

¹ National Aeronautics and Space Administration: <https://climate.nasa.gov/evidence/>

² Paris Agreement, UNFCCC: https://unfccc.int/sites/default/files/english_paris_agreement.pdf

³ Intergovernmental Panel on Climate Change: <https://www.ipcc.ch/2018/10/08/summary-for-policy-makers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/>

Needless to say, 1.5 degrees is the target to aim for, but in 2018, the IPCC reported that to keep the rise in [global temperatures below 1.5C this century](#),⁴ emissions of carbon dioxide would have to be cut by 45 per cent by 2030. This led to headlines such as that in the Guardian of 8 October 2018, stating 'We have 12 years to limit climate change catastrophe, warns UN'. Those five years are now ten years. The situation is urgent.

The TUC is conscious that we are publishing this report at perhaps the most difficult time, economically and socially, since the end of the Second World War. The coronavirus crisis has disrupted economic activity, putting jobs and livelihoods at risk. In response, government has had to think more about how to support the economy. There will be some who argue that, at this time, addressing environmental priorities is a luxury that we cannot afford. The TUC disagrees profoundly; we have argued that, on the contrary, this is an opportunity to build a better recovery, and that achieving our climate change commitments could help us to deliver the jobs we need.

Trade unions and a just transition

Addressing the climate challenge entails fundamental changes in the way we live and work. As a workplace issue, climate change is a trade union issue. Moreover, alongside our role in the workplace, trade unions are social actors. We were at COP21 in Paris – and many other COPs besides – working with environmental organisations, youth groups, civil society organisations and others – making the case for deep cuts in greenhouse gas emissions. But trade unions bring a specific issue to the table, that of a just transition to a low carbon economy.

A just transition means that, as some industrial sectors adapt and others disappear, our economy provides new, great jobs for those whose work will change. A just transition is not an optional extra; without it, many thousands of workers will lose their jobs and their livelihoods. Trade unions believe that a just transition must be central to energy and climate change policy. The need for a just transition was included in the preamble to the Paris Agreement.

But a just transition will look very different in different parts of the UK. Some regions, and particularly some communities within regions, are built on industries based on fossil fuels. These communities have most to risk if we get this wrong. Moreover, our economy is already highly unbalanced, after the trauma of deindustrialisation that has particularly hit some communities in recent decades. A just transition for the North West of England, then, might look quite different to that in Wales, or in the Midlands.

This report considers a just transition for the regions and nations of the UK. Central to the TUC's understanding of a just transition work is that it listens to workers' voices – this report seeks to do that, and shows the expertise and knowledge of workers in this area.

The report is structured as follows. We begin with a look at climate change policy, from the 1970s to the UK's recent adoption of a policy of net zero carbon emissions by 2050. We

⁴ BBC News (October 2018) 'What does 1.5C mean in a warming world' at <https://www.bbc.co.uk/news/science-environment-45678338>

look at the implications of that policy, from an industrial perspective, based on evidence produced by the independent Committee on Climate Change (CCC). We then consider the regional divide in the UK, as well as looking at divisions within regions. We ask the question: how much does achieving a just transition depend on national, regional or local economic strategy?

The report then considers case studies from five regions and nations: the North; the North West; the Midlands; Yorkshire and Humberside; and Wales. In each case, round tables brought together full time and lay trade union officials to share their local and regional experience and knowledge of the history, the opportunities and threats of moving to a net zero economy. Hearing the voices of trade union officials and reps from those regions and nations, we consider the specific challenges they face, as well as the opportunities they bring. Finally, the report sets out recommendations for national, regional and local policy, designed to create a just transition to a net zero economy.

2. UK climate change policy – a short history

Background

Awareness of the potential for industry to increase global temperatures has existed since the nineteenth century. It was not until the late 1970s, however, that the World Meteorological Organisation (WMO) began to express concern that human activities – notably the emission of carbon dioxide – might lead to serious warming of the lower atmosphere. Scientific concerns about global warming grew during the 1980s and in 1988 the WMO and the United Nations Environment Programme (UNEP) established the International Panel on Climate Change (IPCC) to investigate and report on scientific evidence on climate change and possible international responses to climate change.

The IPCC's first assessment report (in 1990) fed into the drafting of the United Nations Framework Convention on Climate Change (UNFCCC) in 1991. This was signed by 166 nations at the Earth Summit in Rio de Janeiro in 1992 and came into force in 1994.

The UNFCCC was an important step in establishing foundational principles to guide subsequent negotiations over national reductions in greenhouse gas emissions. These culminated in a Conference of Parties (COP) meeting in Kyoto, Japan, in 1997. This was the third Conference of Parties meeting (COP 3) where delegates agreed what is known as the Kyoto Protocol. This established developed country emissions targets for 2008–12 and three main mechanisms for meeting them:

- an emissions trading scheme (ETS which allows international trade in emission allowances)
- Clean Development Mechanism (CDM), allowing developed country signatories emission credits for investing in emissions savings in developing countries. The only Kyoto mechanism that allows for investment in developing countries is the CDM
- Joint Implementation (JI), allowing emission saving investments in other industrial countries, including emerging economy countries, to be credited to signatory developed countries, promoting more cost-effective emission saving than could otherwise be achieved.⁵

The United Kingdom started to pursue policies to reduce greenhouse gas emissions at a relatively early date. To begin with, it set clear targets for emission reductions consistent with international goals of limiting global warming and pioneered statutory underpinning of target-setting. On the international stage, it has been an active protagonist of a global deal to limit human-induced climate change. The UK's early success in emissions reduction

⁵ School of Oriental and African Studies, University of London: https://www.soas.ac.uk/cedep-demos/000_P524_CCD_K3736-Demo/unit1/page_14.htm

was partly due to non-climate related activities, however, such as the so-called 'dash for gas' in the 1980s, alongside the demise of the coal industry.

The Climate Change Act

The Climate Change Act became law in 2008. The Act set legally binding targets to reduce carbon dioxide emissions in the UK by at least 80 per cent by 2050, from 1990 levels. Carbon budgets, set every five years, were established as steps along the journey to the 2050 target. The independent Committee on Climate Change (CCC) was established to advise government on the level of the carbon budgets, as well as to report to parliament on progress made towards reducing emissions. The CCC also conducts independent analysis into climate change science, economics and policy. The UK was the first country in the world to introduce long-term legally binding targets to tackle climate change.

According to the CCC, UK emissions were 44 per cent below 1990 levels in 2018. The first carbon budget (2008–2012) was met, as was the second (2013–17) and the UK is on track to outperform the third (2018 to 2022). Whilst this is good news, a strong note of caution is necessary. The UK only achieved the target set in its second carbon budget because the global financial crisis of 2008 dampened economic activity; according to the CCC, UK GDP was 14.5 per cent lower by 2017 than the government expected when the carbon budgets were set in 2009. Manufacturing output was 22 per cent lower.⁶ Had that not been the case, the second carbon budget would have been missed. Furthermore, the UK is not on track to meet its fourth (2023 to 2027) or fifth (2028 to 2032) carbon budgets.⁷

It should be noted that there are two layers of climate governance operating in the UK. Alongside the UK climate change Act, Scotland and Wales have devolved climate change governance laws which set out their own targets and monitoring strategies. In Wales, this includes the Environment (Wales) Act 2016, which gives powers to Welsh Ministers to set carbon budgets for Wales.

The Clean Growth Strategy

In October 2017, the government published its Clean Growth Strategy⁸.

This strategy phases out the use of unabated coal to produce electricity by 2025. It invests up to £100m in Carbon Capture Use and Storage (CCUS) technology and provides up to £20m to support a new clean technology early stage investment fund. It started the process of establishing a Sector Deal for offshore wind, which could result in 10 gigawatts of new capacity, with the opportunity for additional deployment if this is cost effective, built in the 2020s.

⁶ See 'How the UK met its carbon budgets', a report for the Committee on Climate Change by Cambridge Econometrics, July 2019: <https://www.theccc.org.uk/wp-content/uploads/2019/07/How-the-UK-met-its-carbon-budgets.pdf>

⁷ Committee on Climate Change: <https://www.theccc.org.uk/our-expertise/advice-on-reducing-the-uks-emissions/>

⁸ Clean Growth Strategy, Department for Business, Energy and Industrial Strategy, October 2017: <https://www.gov.uk/government/publications/clean-growth-strategy>

On transport, the strategy ends the sale of new conventional petrol and diesel cars and vans by 2040 (which has since become 2035). A Centre for Connected and Autonomous Vehicles is set up, with an investment of over £250m, matched by industry. The development of electric batteries is supported through a £246m investment of up to £246m in the Faraday Challenge. It announces a £1bn budget to support the take-up of ultra-low emission vehicles (ULEV), including helping consumers to overcome the upfront cost of an electric car. It also invests an additional £80m, alongside £15m from Highways England, to support charging infrastructure deployment. £1.2bn was made available to make cycling and walking the natural choice for shorter journeys.

The industrial strategy

In November 2017, the government published its Industrial Strategy White Paper⁹. This set out four 'grand challenges', designed to focus government and business effort in the following years:

- Putting the UK at the forefront of the artificial intelligence and data revolution
- Maximising the advantages for UK industry from the global shift to clean growth
- Being a world leader in shaping the future of mobility
- Harnessing the power of innovation to help meet the needs of an ageing society.

An independent Industrial Strategy Council was established to make recommendations to government on taking the Industrial Strategy forward. This board had one place for a trade union representative.

The TUC welcomed the fact that we had an industrial strategy, although the amount of money dedicated to its aims, especially around research and development, was disappointing. We were critical of the section of the strategy dedicated to 'place', which was insignificant, and we were disappointed at the lack of any proposal for social dialogue or workers voice, which is a characteristic of the most successful industrial strategies in Europe.

Net zero

Technology, meanwhile, has not stood still. The Climate Change Act set a target of an 80 per cent reduction on 1990 levels of carbon emissions because going further seemed impossible to achieve. The good news is that a 'net zero' carbon economy, whilst ambitious, is now possible by 2050. In one of her last acts as Prime Minister, Theresa May committed the UK to a net zero economy by 2050, having been advised to do so by the CCC. Her successor as Prime Minister, Boris Johnson, has maintained that commitment. It should be noted that the 2050 target, like the 80 per cent target of the Climate Change Act, assumes no new technological breakthroughs. Given the amount of progress made in the last fifty years, it seems inconceivable that no breakthroughs will occur. This means that, scientifically at least, we should be able to reach net zero before 2050. This is good news for the planet,

⁹ Industrial Strategy, Department for Business, Energy and Industrial Strategy, November 2017: <https://www.gov.uk/government/publications/industrial-strategy-building-a-britain-fit-for-the-future>

but a wake-up call for advocates of a just transition; we do not, as may seem, have thirty years to get to net zero. We have to be prepared to act more quickly than that. A just transition, like the need to address global warming itself, is urgent.

The Conservative manifesto 2019

The Conservative manifesto for last year's general election set out Boris Johnson's plan for energy and climate change policy for the next five years, giving an indication of the priorities of the current government. Commitments included:

- working with the market to deliver two million new high-quality jobs in clean growth in the next decade
- producing 40GW of energy from offshore wind by 2030, and enabling new floating wind farms
- investing £800m to build the first fully deployed carbon capture storage cluster by the mid-2020s
- investing £500m to help energy-intensive industries move to low-carbon techniques
- supporting gas for hydrogen production and nuclear energy, including fusion, as important parts of the energy system, alongside increasing our commitment to renewables
- opposing fracking unless the science shows categorically that it can be done safely
- investing £9.2bn in the energy efficiency of homes, schools and hospitals
- supporting clean transport to ensure clean air, as well as setting strict new laws on air quality.

In addition, it was announced in March 2020 that the government has abandoned its [opposition to subsidising new onshore windfarms](#), four years after ministers scrapped support for new projects.

3. The UK and the regions and nations

A great deal of inequality exists between the localities, sub-regions, regions and nations of the UK. This makes national policy interventions difficult – and explains why this report makes a number of the recommendations on local and regional activity, as well as the role of national government.

It is often stated that the UK is divided between London and the South East and the rest of the nation. If we only look at the regional picture, this holds true: In 1994, the share of the South East of England in total UK GDP was 35.8 per cent. Wales, by contrast, is stuck at 4.2 per cent. Scotland and Northern Ireland respectively stood at 8.8 per cent and 2.3 per cent of GDP in 1994.¹⁰ The figure relating to the South East of England – 35.8 per cent – was exactly the same in 1966, making this regional imbalance a long-standing one.

Yet this does not tell the whole picture, because differences within regions can be more important than differences between regions. For example, alongside great wealth, in London approximately a million people live in neighbourhoods where the average household income after housing costs is as low as the poorest parts of the country (neighbourhoods in the bottom 20 per cent of the household income distribution nationally). Meanwhile, the 2019 Indices of Deprivation ranks Jaywick in Essex as the most deprived locality of 32,844 local areas in England – the third time in ten years that Jaywick has held this position. Jaywick is in what some commentators would describe as the prosperous south and shows how meaningless such a description is.

Economic divides play out into wealth. The gap between the richest and poorest regions in the UK is around 150 per cent. For wealth per household, the gap is 130 per cent. The gap between the richest and the poorest regions in the UK is almost twice as large as in France and three quarters larger than in Germany. This has consequences; richer people tend to live longer, for example, which means the gap between the highest and the lowest life expectancies regionally is around 3.4 years, or 4.2 per cent of the UK average.¹¹ Yet, once again, differences within a region or local authority are larger than those between regions. The difference between the highest and lowest life expectancy among UK local authorities is twelve years, or 15 per cent of the average lifespan – more than three times the difference noted earlier for regions.¹²

The role of cities

Cities – thriving or not – complicate the picture further. We know that cities tend to create more wealth than towns. Trade unionists in the North West, who we will meet later in this report, spoke of Manchester and Liverpool sucking talent from the rest of the region, in a

¹⁰ 'Regional Economic Disparities and Development in the UK', Dr David Hguyen, National Institute of Economic and Social Research, 15 January 2019.

¹¹ 'Is all economics local?', speech by Andy Haldane, Chief Economist, Bank of England, 7 May 2019.

¹² 'Andy Haldane, op. cit.

similar way that London is said to suck talent from other parts of the UK. A lively debate exists as to the extent to which cities assist poorer surrounding towns, as wealth “trickles down”, or the extent to which those towns struggle in the cities’ wake. It is beyond the scope of this report to try to resolve this dispute. At this stage, we must simply be aware of the complexity of spatial policy.

What we know, moreover, is that UK cities underperform; only Bristol and London, among English cities, have a growth rate above the national average. And compared to the ten UK Core Cities combined average productivity, Munich is 88 per cent higher, Frankfurt 80.7 per cent higher, Rotterdam 42.8 per cent higher and Barcelona 26.7 per cent higher.¹³

Why do companies locate where they do?

From a firms’ perspective, there are a number of ways of assessing the performance of localities and regions and if we wish to attract and build private sector companies across the nation, this assessment is important. Investment in physical assets is one way. This includes infrastructure, such as roads, rail and airports, as well as fixed capital formation by business, in machinery and buildings. Investment in human capital, i.e. skills, is another measurement and investment in intangible capital relating to innovation and stocks of knowledge is a third, although the latter is famously difficult to measure.

Factors affecting the economic success of localities and regions include agglomeration, which refers to the spatial concentration of economic activity. Ideas, labour market pools and specialised production inputs can all be shared among local employers. Agglomeration is a factor in location decisions for firms. The more firms that move towards each other, the greater can be the reward, although agglomeration can also reinforce disparities between places. ‘Localisation’ economies, where specific companies group together, can be distinguished from ‘urbanisation’ economies, where different types of firms move to the same area, exposing them to new ideas from other industrial sectors. Specialisation can be beneficial, but a more diverse economic base is generally seen as beneficial in mitigating idiosyncratic shocks (although there is a long debate about the relative merits of these factors).

National, regional and economic policy

What does this mean for policy? In a speech to the Sheffield Political Economy Research Institute, Andy Haldane, the Chief Economist of the Bank of England (and Chair of the Industrial Strategy Council) made a number of relevant points¹⁴:

- Some areas of public policy can only operate at the national level. Haldane gives the setting of interest rates as an example.
- The more economically diverse an area, made up of different sectors and industries, the stronger the case for recognising these difficulties in the setting of economic policy.

¹³ ‘Making our Economy work for Everyone’, RSA Inclusive Growth Commission, 2017.

¹⁴ Andy Haldane, op. cit.

- The more a region has a competitive advantage, such as the production of a niche good or a service in particular demand, the stronger the case for having it recognised and supported in the setting of economic policy.
- A diverse economic area allows differences across that region to be smoothed out, by transferring resources from one part of the region to another, if unexpected economic events affect some sectors more than others.
- The ideal policy strategy involves balancing these all of these factors.

Clearly, there are many factors to be addressed in pursuit of economic opportunity and good jobs. The TUC is clear that we seek great jobs for everybody. This means a narrowing of the gap between regional (and sub-regional) economic performance but raising the performance at the bottom to the level of that closer to the top. It is in this context, and within the caveats described above, that we consider five TUC regions and nations and what a just transition would look like in each of them.

4. Case study one: Yorkshire and the Humber

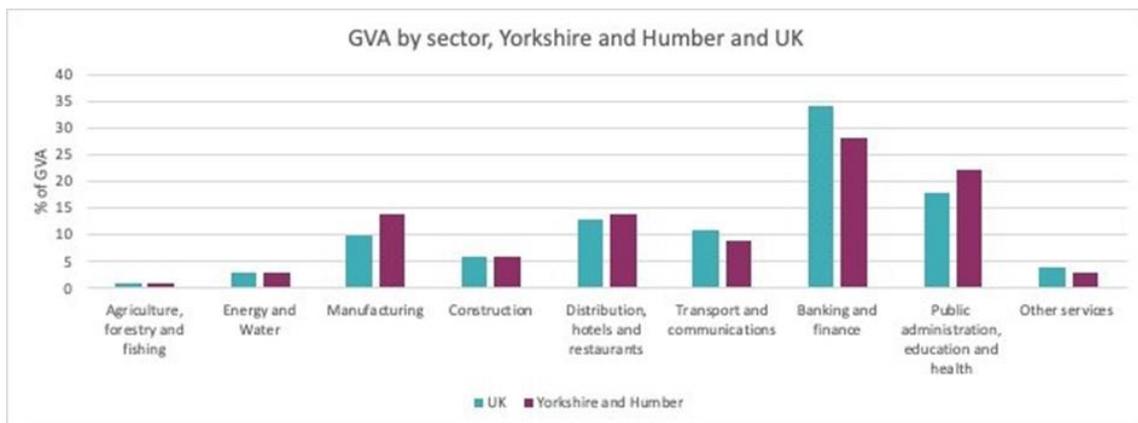
Background

The working population of Yorkshire and the Humber is about 2.75 million. The major cities of the region are Leeds, Sheffield, Bradford, Wakefield, Hull and York. Major companies and organisations include British Gas, Siemens and Drax, along with two major teaching hospitals in Leeds and Sheffield, eight universities, and the city councils of the major cities listed above. These companies and organisations are unionised – 90 per cent of British Gas engineers are union members, for example – and industrial relations, historically have been good. Company restructurings are putting pressure on relationships, however, especially in the energy sector.

The regional economy

The latest full year of regional growth data we have, for 2018, shows that the Growth Value Added (GVA) figures for Yorkshire and the Humber were slightly lower than the rest of the UK, at 1.2 per cent compared to 1.3 per cent. Since 2015, Yorkshire and the Humber has experienced five quarters where there was no or negative growth.

Economic activity in Yorkshire and Humber is more concentrated in manufacturing and public administration than the rest of the UK, with 14 per cent of economic activity in manufacturing, compared to 10 per cent across the rest of the UK.



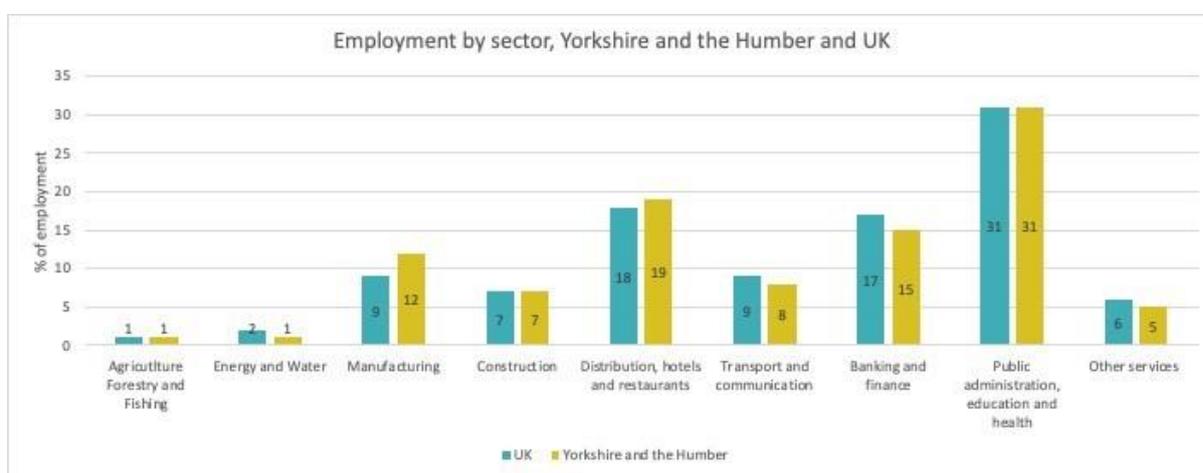
Source: ONS 2019

<https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/nominalregionalgrossvalueaddedbalancedperheadandincomecomponents>

Where do people work and what's their job quality like?

The latest statistics, covering the period February - April 2020, before the economic impacts of the coronavirus pandemic had been fully felt, show that 74 per cent of the working age population were employed in Yorkshire and the Humber, lower than the UK average of 76.4 per cent, with an unemployment rate of 3.9 per cent (compared to 3.9 per cent across the UK).

People in Yorkshire and the Humber are more likely to work in manufacturing, and slightly more likely to work in distribution, hotels and restaurants than the rest of the UK.



Source: TUC analysis of Labour Force Survey, Q4 2019

Across the UK, one in nine people are in insecure work. In the Yorkshire and the Humber 11.1 per cent of people are in insecure work, according to TUC analysis last year.¹⁵ National figures show that insecure work has a disproportionate impact on those already facing structural discrimination in the labour market, including women and BME groups.¹⁶

Median gross weekly pay in Yorkshire and the Humber is considerably below the UK average, at £442 a week compared to £479.75.¹⁷ Union membership in Yorkshire and the Humber is higher than the rest of the UK, at 25 per cent compared to 23 per cent of employees.¹⁸

The context: de-industrialisation and the demise of coal

¹⁵ TUC (2019) 'Insecure Work: Why the PM must put decent work at the top of his to do list' at <https://www.tuc.org.uk/research-analysis/reports/insecure-work>

¹⁶ TUC (2019) 'BME Workers far more likely to be trapped in insecure work' at <https://www.tuc.org.uk/news/bme-workers-far-more-likely-be-trapped-insecure-work-tuc-analysis-reveals>

¹⁷ ONS, 2019. Earnings and hours worked, UK region by industry by two-digit SIC: ASHE Table 5

¹⁸ BEIS, 2020. Trade Union Statistics, table 4.1

Any conversation about the industrial future of Yorkshire and Humber takes place in the context of a difficult past, certainly in recent decades. One union official told this report:

We had deindustrialisation in the 1980s and early 1990s, so there is a threat going forward, but there is also a loss of opportunities.

A second said:

Those massive pit closures, steel manufacturing reductions, all took place between 1985 and 1990... in this region... the likes of the Barnsleys of this world, the Doncasters, Immingham, Hull, Grimsby, Scunthorpe, [have seen] massive reductions in [good] jobs... A lot of the steel in Sheffield was specialist manufacturing... There's been an expansion, maybe even a massive expansion, in the service industry, but it's all minimum wage, lift and lay, zero-hours contract jobs, where people cannot budget and they cannot plan.

Yorkshire was, of course, central to the UK's coal mining industry. Memories of the demise of coal inform thinking about the importance of a just transition. One former mining employee, now a union rep, told us:

"I can remember British Coal just collapsing.... I would say the three mining unions of the time did their best... we put a lot of investment into British Coal Enterprise, but there was nothing for people to go to. The discussion just became how much money do we throw at your members to go quietly. My father-in-law was 59, he'd worked underground for 44 years or something, he'd been there man and boy, he was very happy. But that meant that [there was nothing left for] my children's generation... we just pulled the guts out...

What upset me about the run down of coal, the run down of power stations is, these people weren't stupid, they weren't unskilled, but there was no recognition, so you'd get people like ventilation officers in a mine... these are highly skilled people, the fact that they'd left school at 15 or 16 and worked their way up, it's actually getting that recognition... It's making sure the just transition protects workers. I just never again want to be in a position where I know someone who is 80 per cent skilled and no-one is prepared to fund the 20 per cent...

Issues raised during the roundtables were:

- carbon capture and storage
- offshore wind
- industrial strategy
- local government
- district heating
- a just transition for non-industrial workers

We explore each of these in more detail below.

Carbon Capture and Storage

Carbon Capture and Storage (CCS) is a technology that can capture up to 90 per cent of the carbon dioxide emissions produced from the use of fossil fuels in electricity generation and industrial processes, preventing the carbon dioxide from entering the atmosphere.

Government commitment to CCS has wavered over the years; a competition for a CCS demonstration plant, promised by the government of David Cameron, was scrapped on cost grounds. Some see CCS as a long-term technology, others as a stop gap as new, environmentally friendly energy solutions are found. The UK's Committee on Climate Change, however, argues that CCS is central to efforts to achieve a net zero emissions economy by 2050, and the Conservative manifesto of 2019 promised £800m to develop CCS technology in the UK. Drax Power Station, in North Yorkshire, withdrew as a partner of the White Rose CCS project in 2015, after the scrapping of the government competition.

Unions continue to believe that CCS is a big potential technology for Yorkshire and the Humber, but a lack of certainty and a lack of government commitment has undermined its potential. One union official told us:

When the government pulled the plug on carbon capture and storage, there was the White Rose project in Drax which got cancelled... Drax had been prepared to build that, as well as a hydrogen plant on site, those pipelines would connect to the North Sea via the different industrial clusters along the Humber Basin and down the south bank, so you could take on the steel plant in Scunthorpe For me it's a stop gap. {But} if you want government or private industry to build it, they will need 30 or 40 years lead-in time, in terms of the investments they are going to make, because they are not going to do it for five years, they will want a guarantee that it is going to be working for 30 years. The government, under (former Energy Minister) Claire Perry said 'we are up for it', but that's now up in the air...

A second official added:

The real problem we have is renewables technologies at the moment are highly intermittent, which is why you need a contractual basis, otherwise when there is a lot of wind, electricity is almost free... We need to look at CCS, how it contributes to the region, and we have to get past this view that any form of electricity generation that involves people of any skill must be a bad thing, because I think that's where we were drifting. The debate we need to have about CCS is, is it going to be a major global player, ... if we are going to develop the technology, can the UK be an exporter rather than be an importer?

This is important because, by contrast, in gas fired power stations, much of the higher paid, "knowledge" jobs are done in Germany and Switzerland. There are three reasons for this:

"The home market is more economically benign and orientated to long term investment, so they have an advantage. Secondly, they probably have a more robust vocational training system, so they have the bodies to do the work, and I think thirdly, a huge level of government support in saying we are prepared to take some pain to develop."

Union officials felt CCS to be essential to Yorkshire and Humber's industrial future.

"It's very simple, you either develop it in the UK or you pay an arm and a leg... If we could connect up Drax, the gas stations that still exist in the Humber estuary, there's three left, steel, you've got some collaboration there. It needs a regulatory system. It's worth experimenting with something to see if you can deliver it."

A second official said,

"It's more important here than for any other region in the country, because we are the biggest contributor ... we have the biggest number of dirty industries that produce more carbon than any other region.... If we didn't have CCS, we are on target for losing 100,000 jobs."

Drax is doing important work in encouraging STEM careers for girls, according to one official:

"One of the things [Drax is] trying to do, to their credit, is they try to get local schools to bring kids in... to get them interested in STEM apprenticeships... (they) are encouraged by the number of kids who are interested, including lots of girls, they've made a special bee-line to get young girls interested in engineering and science apprenticeships.... I've still got a few nagging doubts ... but it's about the best example we have in the region in terms of taking [CCS] forward."

Another, interesting point was this:

"We don't know the life of an average wind farm. 25 years, I'm told.... But {a representative from one company told me} 'we don't know. No-one has ever stuck this lump of steel five miles off the coast,' We could end up in that 35-40 years of Drax CCS, having to replace every offshore wind turbine in the UK twice, because it's a very, very hostile environment, not like an oil rig ... which is being rebuilt all the time. CCC is interesting... if it works it's about how we develop jobs and move forward."

Offshore wind

When considering the move to a net zero economy, offshore wind is also an important opportunity for Yorkshire and the Humber. One union official told us:

"There is a potential benefit in the North Humber, in East Yorkshire maybe, in terms of the jobs [offshore wind] is creating. From manufacturing the turbines, to servicing and installing them, all of it."

However, another official said:

"We only make the blades, the turbines are made abroad and shipped across."

Industrial strategy

This leads us to industrial strategy. There was a sense that other northern European countries are able to develop the skilled jobs in industries like offshore wind because they have the eco-systems – the skills policies, the infrastructure and an active government commitment – that the UK lacks.

There have been positive examples in the past, including from Conservative politicians:

"In the 1990s, BAe was under a lot of pressure. [There was a] Risk of huge job losses... One of the things that kept the xxx factory open was Michael Heseltine introduced this shared innovation scheme where basically the British government invested in BAe's wings technology on the basis that if it is a success they take the money, they mimicked a German-style long term investor. There's a lot we can do in this region. We still have a tradition of engineering. There's some wiggle room here for us to go back and say, "If you want a just transition, let's talk about what a just transition is..."

Further education was also a priority, as a union official explained:

"They've squeezed FE colleges' budgets. Perversely apprentices in South and West Yorkshire, craft apprentices, have to go to Tyne Met College to be trained, it's ludicrous, some of them, if you trained them in central London it is probably easier for them to get to. [The challenge is] actually building that broader industrial alliance, building some strengths and playing to them... the problem with wind, solar and gas technologies, in every case the UK has come in last, we are one of the biggest implementers of new technology, but we've just bought it off the shelf. As long as other European nations and the States are prepared to operate at low levels of profit to get their products developed and delivered, we're always on the back foot."

This point was repeatedly made. When asked the single most important thing government could do to promote a just transition for Yorkshire and the Humber, union officers said, 'plan and resource'. As one put it,

"If I know I'm going to have to run a complicated electricity system or wind farms for 25 years, I will go and train someone to do it, if I know it could disappear after two years, and it will take me four years to train them, I won't do it."

Local government

A number of councils in the region are introducing climate change policies, as are NHS Trusts. These are reactive, however. Local authorities are starting with easy wins; taxi drivers, of which there are probably 5,000 in Leeds alone, face a surcharge going into green zones, whilst others face no such fee, because local authorities have the power to address these regulations. One union official said:

All good, all great, greener environment and all the rest of it, but it's punitive in that it is not really addressing anything, if they were doing something across the piece, the offset for the taxi trade and private hire trade is that less people would be taking their cars into city centres and would use that public transport which would offset the extra costs faced by the drivers.

Another union official said:

They are trying to push car use away from city centres and are encouraging this by at least part funding, if not fully funding, electric charging points. So if you have a new office and you indicate to them that you are going to install charging points for electric cars, you will get a grant of anything up to 100 per cent for that...

The problem is that, given cuts imposed on local authorities, the money available to incentivise good behaviour, as opposed to the 'big stick' approach, is limited.

Poor quality public transport is another issue. Only about 40 per cent of those who work in Leeds arrive by train, partly because of cost and availability. Buses are privately run and don't necessarily run services where people need them. A person on a late work shift cannot get home without using a car.

District heating

In terms of other ideas for Yorkshire and the Humber, district heating was suggested. Seen in cities like New York, district heating is an alternative to the need for people to have a heat pump attached to their house, post-gas. Perhaps the best UK example can be found in the city of Nottingham which, for historic reasons, has its own power station in which rubbish is burned. Hot water from this power station is pumped into the Victoria Shopping Centre and the flats above it. The energy that was lost as heat is sold via hot water pipes. This could create semi-skilled jobs through construction and maintenance. It could be a niche idea; one big solution to the region's problems will not work, so we need to think about smaller scale alternatives but finding a variety of them.

Just transition for non-industrial workers?

Just transition has been explored from an industrial perspective, but it must also be considered from the point of view of workers in the public sector. A public sector union official told us:

"Our role is partly, as unions, making sure that [just transition] is on every industrial agenda, so every discussion we have with management should include climate change and so forth, with just transition in our bargaining areas. It's also about us, as civil servants, government is our employer, keeping pressure on them, to say, 'You need to do this'. For us, [just transition] is a massive organising issue for trade unions. If we put our efforts into just transition, I think we will capture those legions of younger people who, at the moment, are not joining trade unions, so it is a massive organising and recruitment opportunity as well for unions."

5. Case study two: the North of England

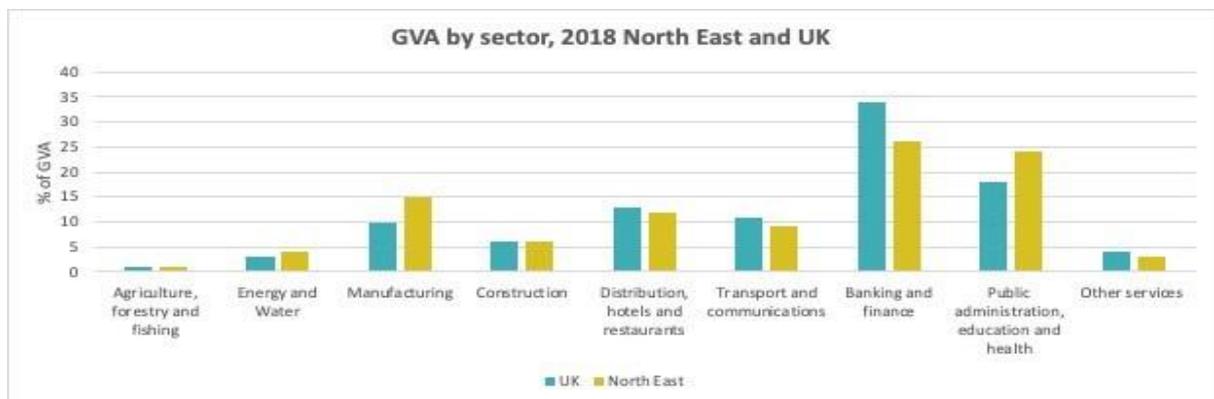
Background

The major conurbations in the Northern Region are Newcastle/Gateshead on the Tyne, Sunderland/Durham on the Wear, and Middlesbrough/Stockton on the Tees. A million people live on the Tyne. However, the Northern Region is also massively rural, edging the Pennines to the West, the North Yorkshire moors to the South, and with a long coastline. The major industries include motor manufacturing, biomedical sciences and chemicals, higher and further education, and tourism. There is a big service sector and foundation economy. Local government and government departments are also important. Major companies include Sage software, Nissan and its supply chain, Hitachi, Komatsu, Liebherr Cranes, Savic on Teesside, Siemens, Cummins Engines and a surprising number of small manufacturers and SMEs more generally. The space industry is important, if not a big employer, based around the astrophysics department of Durham University. Industrial relations are generally good, although Nissan has been winding down shifts in response to Brexit. Hitachi is losing jobs.

The regional economy

The latest full year of regional growth data we have, for 2018, shows that the Growth Value Added (GVA) figures for the North were lower than the rest of the UK, at 0.9 per cent compared to 1.3 per cent. Since 2015, the North has experienced seven quarters where there was no or negative growth.

Economic activity in the North is more concentrated in manufacturing and public administration than the rest of the UK, with 15 per cent of economic activity in manufacturing, compared to 10 per cent across the rest of the UK.



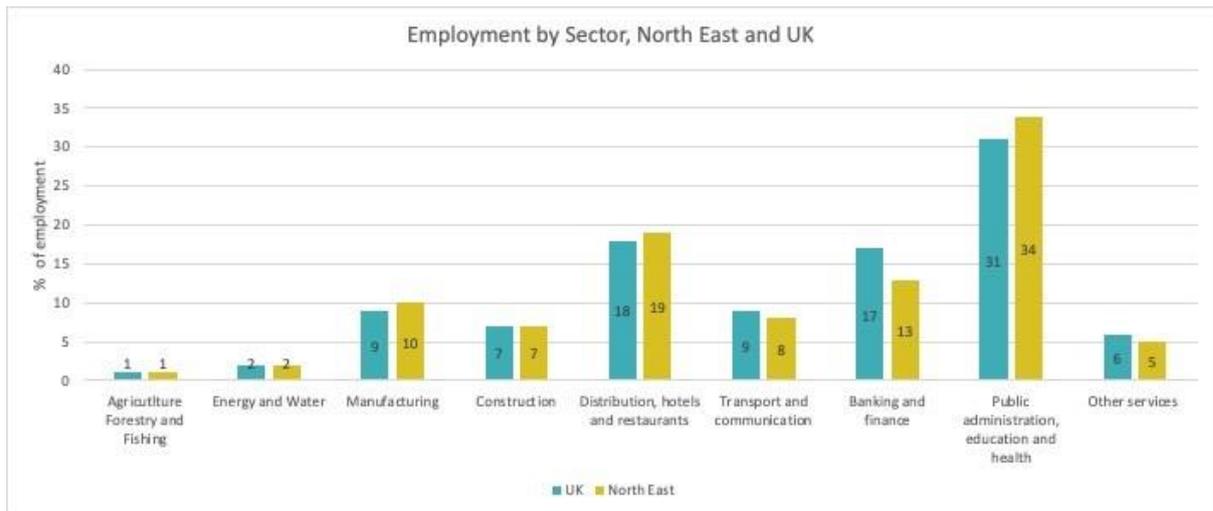
Source: ONS 2019

<https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/nominalregionalgrossvalueaddedbalancedperheadandincomecomponents>

Where do people work and what's their job quality like?

The latest statistics, covering the period February to April 2020, before the economic impacts of the coronavirus pandemic had been fully felt, show that 73.9 per cent of the working age population were employed in the North, lower than the UK average of 76.4 per cent, with an unemployment rate of 5.2 per cent (compared to 3.9 per cent across the UK). (Figures in this section use the same sources as in chapter four, footnotes 15-18).

People in the North are slightly more likely to work in the public sector, in manufacturing and in hotels, distribution and restaurants than in the rest of the UK.



Source: TUC analysis of Labour Force Survey, Q4 2019

Across the UK, one in nine people are in insecure work. In the North 11.3 per cent of people are in insecure work, according to TUC analysis. 62 47,000 people or 3.9 per cent of those in employment were on a zero-hours contract. National figures show that insecure work has a disproportionate impact on those already facing structural discrimination in the labour market, including women and BME groups.

Median gross weekly pay in the North is considerably below the UK average, at £437 a week compared to £479.⁶⁵ Union membership in the North East is higher than the rest of the UK, at 29 per cent compared to 23 per cent of employees.

Issues raised during the roundtables were:

- opportunities and threats of a just transition
- low carbon energy sources
- the public sector role in a just transition
- environmental reps
- electric vehicles
- carbon capture and storage

We explore each of these in more detail below.

Opportunities and threats of a just transition

Any transition brings with it both opportunities and threats. One union official said that, between 1970 and 2000, the region lost 300,000 jobs in industrial production, including mining and power:

"That's 30,000 jobs a year. That's the unjust transition. And it still makes me livid!

However,

"There's been opportunities from the just transition on Teesside, obviously in carbon capture and storage, where employers have got together and formed the Teesside Collective, that's looking at the circular economy, lobbying the government and we got on board with them to lobby the government for investment in carbon capture and storage, because the infrastructure down there is just perfect for it. So there are assets that we've got, but the challenges are employers like Sabic, for example, in petrochemicals, the challenge is how do we produce what we've still got to produce, using hydrogen or carbon capture and storage, how we would do that, it's the science bit isn't it...?"

Low carbon energy sources

Offshore wind is a UK success story and impacts on the Northern region. One union official told us that the production of the turbines happens at Siemens who are unionised. Another official said:

"The nature of putting an onshore or and offshore wind turbine up requires a moderately small number of really highly skilled jobs, requiring a really high safety environment... Offshore wind, the whole image is that it has got to be clean and safe.... I've been in Siemens recently and all they are doing now is servicing power station turbines, there's no construction happening there at all... They are building the blades on the Humber, but all of the turbines are imported, which given that we invented the damn things is a bit sad. There's a sense that we've really lost a manufacturing base for something which is going to affect people, but quite a nice thing is that two of the first offshore wind turbines that were put in at Blyth are now being decommissioned after 25 years, so you've got 25 years life in a wind turbine, which is about how long it takes to grow a citrus fruit, and cut it down and forest it, so you've got this sense that the landscape doesn't last forever, we can change the landscape for 25 years building a gigantic forest and putting up a huge set of wind turbines but eventually they will come down and be decommissioned and the forest will be used for something else. We tend not to think that way..."

When asked why the turbines are not built in the UK, one official said:

"We exported the technology, because more money could be made by doing other things. And the pesky unions were getting in the way – they said!"

This neatly contrasts the view of unions as social partners, who are seen as part of the solution to industrial problems, with the sadly too-often-prevailing Anglo Saxon view, which for too long has seen us as part of the problem.

The public sector role in a just transition

UNISON is a predominantly public sector union. The union in the Northern region is trying to build just transition into their negotiation strategy. This includes internal audits, of local energy emissions of public sector bodies, as well as their role in public education. Newcastle College Group is one of the biggest further education providers in the country and UNISON are holding conversations with them regarding the future concerns of young people. The North East Ambulance Service is another organisation that might build climate change concerns into their work as a public service. Health trusts are further ahead when it comes to concerns about carbon reduction, but local authorities have been considering climate change from the perspective of their liability as an employer, but less as a community influencer. A lot of local government emissions are internal, so there is an attempt to build a conversation around housing and public transport, as well as around the role of cities as leaders in the fight against climate change. This can lead to a response which argues that money for such ventures will need to come from other, pressing needs on the council budget. There is another, possible conversation exploring where local authorities, as major employers get their energy.

Environmental reps

One union official made the case for trade union environmental reps:

"Every company has its own environmental policy and its our job as trade unionists to hold them accountable to that and to make sure they are hitting their own standards. That's where environmental reps come in, because you are going to have to work with your environmental and sustainability managers in each company."

Electric vehicles

With Nissan in the North East, the potential for electric cars was clear to the union reps. Things were not straightforward, however:

One said:

"Nissan [in Sunderland] leads their company's production of the Leaf [i.e. Nissan's electric car]. With the uncertainty of Brexit we don't know if that company is going to stay, or it certainly isn't going to stay with the capacity that it has.... Whether they want to stay and fight for a larger share of the UK market or shut the factory and move [production] to ... their existing factory in Spain, where they can service the European market, is something for them to decide. They do make the Leaf there and I hear that they are going to refocus on that."

However, suppose the UK achieved a good Brexit deal, with alignment to the single market. Would Nissan stay in Sunderland and, if so, would the move to electric cars be a big opportunity from the shift to green production?

"Certainly. If the government is legislating that there has to be electric cars by X then they are already in place to manufacture the Leaf and any subsidiaries of the Leaf... They've closed down production and they've lessened hours and shut down shifts, so

there is potential there to reopen the factory... [They've reduced shifts] solely to the uncertainty [of Brexit]."

Another trade union official added:

"The point is there is going to be a massive increase in demand for electric vehicles made and manufactured if we do get tariff walls, inside the tariff wall, inside the UK, it is still a very big market... but the fear of the loss of that, and the loss of the supply chain, is huge."

A third trade union official said:

"My main concern is that a new electric car costs between £20,000 and £30,000, and forcibly making people change to an electric car isn't financially feasible. We have big discussions about what we can do [to protect the environment] in the North East and it always seems to be focused on the working classes and with trade union reps, that isn't primarily where the problem is coming from. It's not something I think is personally feasible for a working-class family to buy a brand-new electric vehicle."

Reps felt the price of an electric car will come down a long way, but not something as sophisticated as the Leaf. Furthermore, the second-hand market at the moment is appreciating, the cost of second-hand electric cars is going up. There is also still not basic infrastructure to charge them.

This links to the issue of the 'cost' of climate change to families that are already struggling financially.

"When we are talking about working class areas that are really struggling, there's not going to be, despite political will, the ability to do it... Go to ward meetings and clinics and surgeries and people are worried about putting food on the table. They can't worry about climate change, because it's too big to worry about... Their immediate concern is not climate change, it is feeding the kids. Without a massive political shift, I'm not sure that this is achievable."

Union officials felt there was a link between public transport and car ownership.

"Getting a proper bus based public transport system... because I'm so old I can remember as a kid, the buses were how you got around, not that every family had a car... whereas if you live in the rural area you've probably got to have an old banger of some kind, but then maybe you'll not be subject to pollution controls [in bigger cities]... Public transport has got to be at the heart of this, then we need charging points for people who can afford cars, and we need car shares, and we need these new, are we heading towards driverless cars, these new designs that'll take four people. That'll happen fast, that's going to happen really fast."

"The North East is severely lacking in public transport funding. The last I checked we get £1 for every £7 that London gets... Bus companies aren't doing enough joined up thinking... There's no consensus, again it's all profiteering. There is one ultra-light electric [public service] vehicle in the North East, others are moving towards euro 6 (look this up) is the engine, trains are, everyone thinks it's fantastic that we have brand new trains on Northern Rail, but these trains are 30 years-old, they think it's

better because we've got rid of 50-year-old trains, they are still pumping out huge amounts of diesel..."

Carbon capture and storage

One union official told us:

"I see carbon capture being the future of fuel.... There's a company in Cannock called that uses carbon capture to create a biofuel.

What some environmentalists would say is, it becomes like nuclear, you put it down there, it might leak, etc. etc. But certainly there's a lot of technology solutions lurking around there and if they happen, they'll happen very quickly... the hydrogen economy, potentially, we are quite advanced on that on Teesside, also Gateshead have re-piped the central area, with pipes that will allow them to put initially ten per cent of hydrogen in with natural gas, then gradually increase that. "Then the mines were left, they flooded. Because they are deep, the water's hot. You can drill a bore hole, you can bring the water up using a simple heat pump and you can turn that into heating for factories. Lanchester wines in Consett heat and refrigerate all of their storage... There's a public sector trial for the Louisa swimming pool in Stanley, which is actually heating a public swimming pool using mine water. But the big thing is district heating, and the lovely thing is it precisely those communities that are the most left behind, in the East Durham coalfield or whatever, that are sitting on top of the hot water that is the consequence of what their families did in the mines that gets the benefit. And there is so much of it that you can actually grow a huge horticulture, for example, using, they don't call them greenhouses anymore but you can do hydroponics and everything else because once you've dug your borehole you've got potentially a free local energy source. Pineapples from Horton is shorthand for it, and there's absolutely no reason why a huge new set of food-based industries based around the availability of essentially free heat, which has its roots in the work of the families before.

Electrification of transport – the North's top just transition priority

In each interview session, the TUC asked the trade union reps what their top priority would be in terms of a just transition strategy, from the perspective of their region. In the North, reps highlighted the electrification of transport.

One rep said: "I think industry and employers are lobbying for [specific industries and climate change interventions] already, and they've got a Teesside Mayor who will probably get them there, the bit they are not really talking about is the electrification of transport. So that might be an interesting one that we can look at, to say there's a bit of a priority."

"... the ability to charge your car, at some point... if they electrify the railway, get electric buses, and put charging points in for public use..."

A second rep spoke of the importance of natural capital:

"In terms of investment in natural capital, I think it is very much using the natural asset we've got of the Pennines and the borderlands and the links across to Scotland, and down to north Yorkshire, we've got the largest area of plantable, peatable land, so there's a natural priority for investment in natural capital up here, and in human capital it's got to be the training infrastructure being in place for the new jobs in advance of the volume of jobs being there. Good quality, unionised jobs in the new rural economy, the new transport economy, and in the care service for the changing demography that we've got, the changing work pattern, and that's further education investment it's not universities, it's not schools, it's FE and apprenticeships."

Case Study: Teesside Collective and CCS

Teesside Collective (TC) is a cluster of energy-intensive industries on Tees Valley that have a shared vision to establish Tees Valley as the preferred location for future clean industrial development by creating Europe's first CCS-equipped industrial zone. TC is a unique industrial cluster, and in 2015 it published a blueprint for delivering Industrial CCS in the UK, which received widespread support from business, environmental groups, the public sector and academics. TC is pushing for regulatory and financial support from government – including the development of a clear, long-term CCS policy and viable investment mechanism. In September 2016, the Parliamentary Advisory Group on CCS, led by Lord Oxburgh looked at business models for CCS hubs. TC was keen to expand upon the Oxburgh report and examine the commercial realities of progressing CCS. This resulted in a further piece of work commissioned by TC, in October 2016, which examined the financial means of getting CCS off the ground. The findings from this study were published in February 2017, and it injected some commercial realities into the CCS project by identifying a viable business model, and outlining the financial contribution required of government and industry. The Department for Business, Energy and Industrial Strategy (BEIS) has been keen to understand the financial costs and benefits of CCS. A number of companies in Tees Valley are keen on the area pushing ahead and going 'first' on CCS. The resources needed to build the infrastructure for CCS extend far beyond the capacity of the Tees Valley Mayor's Investment Fund. However, the Mayor of Tees Valley is expected to play a strong political role lobbying UK Government for investment and making the case national support. Estimates suggest that new investment will see 1,200 jobs created during the construction phase, helping to retain 5,900 jobs whilst in operation, and enabling the UK to meet its climate change targets.

This case study first appeared in 'How to Create Great Jobs: Towards a Regional Industrial Strategy for Tees Valley: A Report for the Trades Union Congress by the Centre for Urban and Regional Development Studies, Newcastle University'. Report authors: Peter O'Brien, Mike Coombes, Stuart Dawley, Lewis Evans and Andy Pike.

6. Case study three: the Midlands

Introduction

The Midlands region of England has historically been synonymous with manufacturing in general, and the motor industry in particular. Rover – previously British Leyland – based at Longbridge was one of the major automotive companies in the UK, at a time when we were a major manufacturing nation. The manufacturing sector is very much in the DNA of the Midlands.

Trade unionists described the region as “very much a hub and spoke”, with Birmingham at the actual centre, and then moving out. The West Midlands might be defined as the area covered by the West Midlands Combined Authority area, which is made up of Birmingham and the Black Country, i.e. Wolverhampton, Dudley and Cannock, as well as Coventry, which is in Warwickshire. Stoke is on the boundary between the Northwest and the Midlands.

East Midlands is characterised by a major town in each county: Derby, Leicester, Nottingham, Northampton and Lincoln are at the heart of their respective shire counties. Trade unionists spoke of two distinct areas, with Birmingham in the centre of the West Midlands and the East Midlands’ being more of a ‘town and county’ association.

Manufacturing, whilst being part of the Midlands’ past, is also a strong part of its present and – hopefully – its future. One trade unionist told us:

“There is advanced manufacturing around Birmingham and Warwick.... It flows across into the East Midlands in Derby with Toyota, Bombardier, etc. Manufacturing is crucial. Associated with that [are the industries that you would associate with] the service economy and the cultural sector.... Academically... higher education is certainly strong and increasingly important: manufacturing, education and life sciences in Nottingham...”

In terms of major Midlands companies, Bombardier, Rolls-Royce and Toyota are based in the East Midlands. Jaguar Land Rover is in the Midlands, Boots are in Nottingham, JCB in Staffordshire and the ceramics industry in Stoke. Siemens is in various places, including Lincoln. Unite and GMB are the major unions operating in these companies, with Usdaw in Boots. Burton has a significant brewing industry, with Marstons and Carling being its most famous names. Weetabix is based in Northampton, with Usdaw representing the workforce.

Northampton was also famous for another sector:

“There was traditionally a lot of footwear and leather manufacturing [in Northamptonshire] that has declined. There is a bit left, but not as much. There is a

lot less than there used to be. That has been replaced by logistics warehouses. Large parts of Northamptonshire and the surround are covered in these bloody big warehouses. I do not necessarily know how green they are."

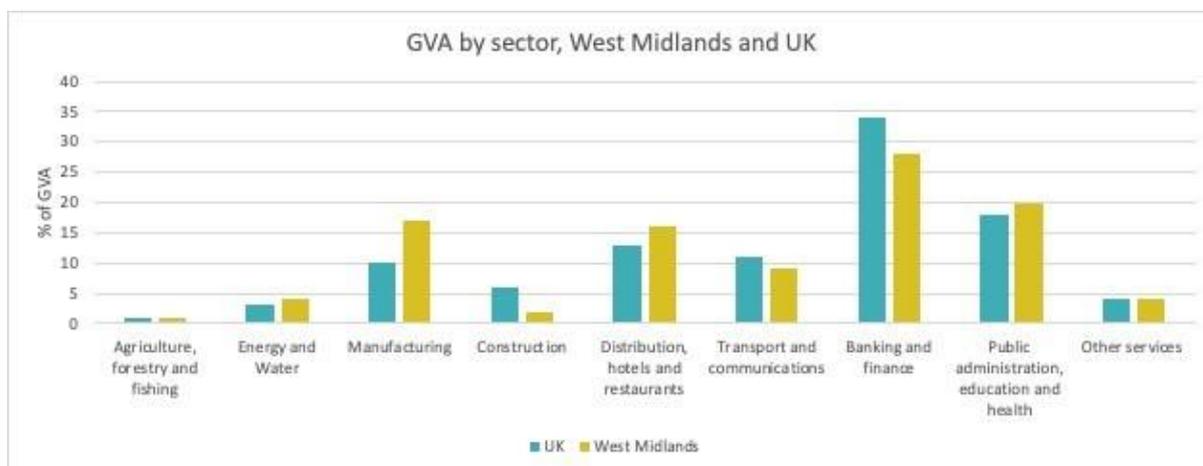
Despite the continuing importance of the Midlands' manufacturing companies, with world class companies like Siemens and Toyota among them, trade unionists that we spoke to had a fear of being forgotten in the national conversation about economic renewal:

"From our point of view, crucially in the debate around the national industrial strategy, I always use the phrase 'the flyover states'. In America, there is an East Coast and West Coast. Everyone forgets about the Midlands. People keep talking about the Northern Powerhouse and rebalancing the economy. 'Levelling up' is the new phrase now in the Southeast and North. People often forget about these huge swathes of the Midlands where lots of communities were historically built on manufacturing, mining over in the East Midlands, and so forth. There is a challenge there in terms of ensuring the Midlands is not 'the flyover state' in terms of thinking about the future investment, infrastructure and all those issues."

The West Midlands regional economy

The latest full year of regional growth data we have, for 2018, shows that the Growth Value Added (GVA) figures for the West Midlands were significantly higher than the rest of the UK, at 2.1 per cent compared to 1.3 per cent.²⁰

Economic activity in the West Midlands is more concentrated in manufacturing than the rest of the UK, with 15 per cent of activity here, compared to 10 per cent across the country.



Source: ONS (December 2019)

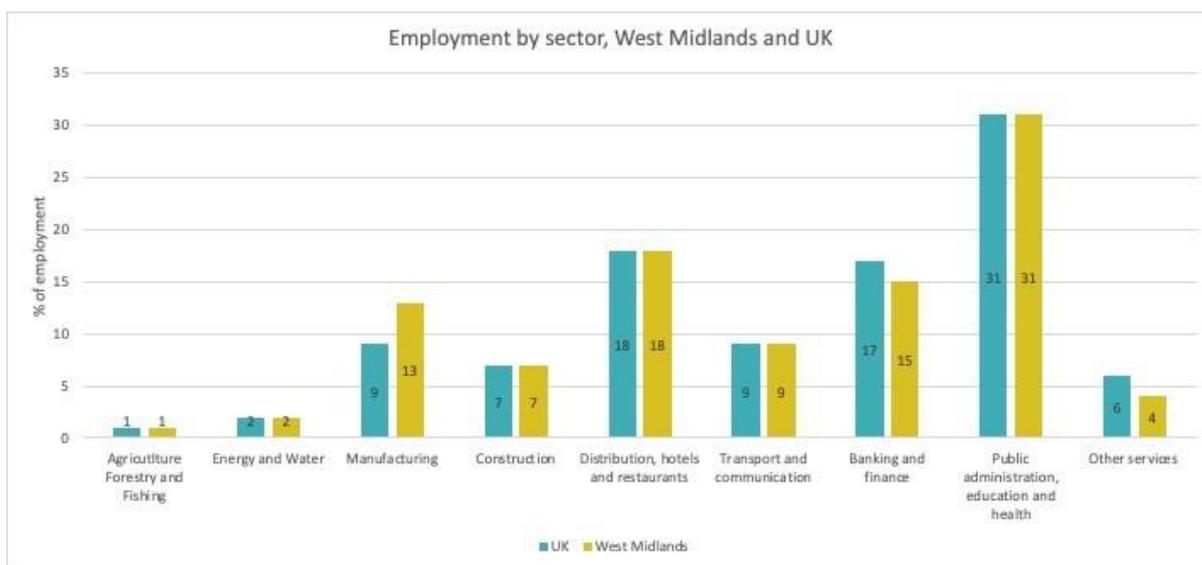
<https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/nominalregionalgrossvalueaddedbalancedperheadandincomecomponents>

Where do people work and what's their job quality like?

The latest statistics, covering the period February to April 2020, before the economic impacts of the coronavirus pandemic had been fully felt, show that 74.5 per cent of the working age population were employed in the West Midlands, slightly lower than the UK

average of 76.4 per cent, with an unemployment rate of 4.8 per cent (compared to 3.9 per cent across the UK). (Figures in this section use the same sources as in chapter four, footnotes 15-18).

People in the West Midlands are significantly more likely to be employed in manufacturing than in the rest of the UK.



Source: TUC analysis of Labour Force Survey, Q4 2019

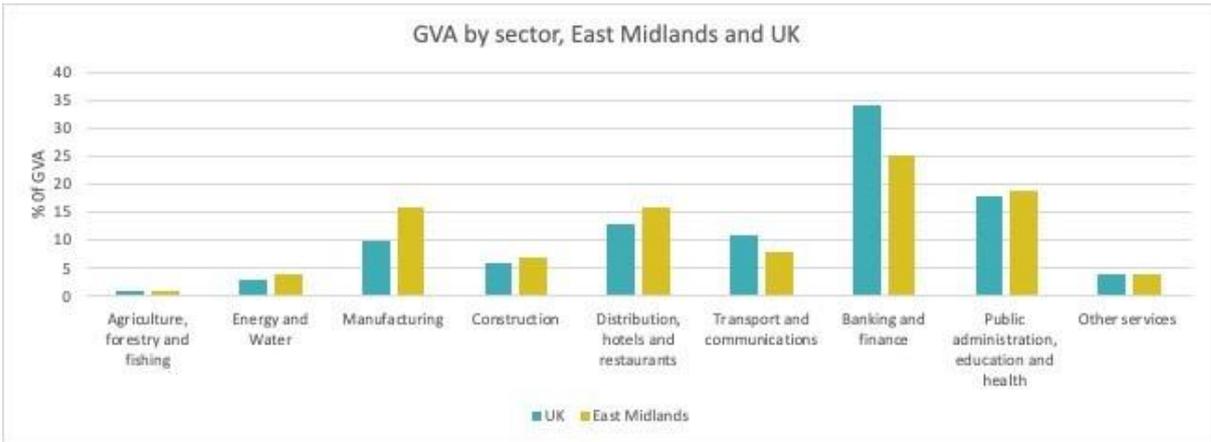
Across the UK, one in nine people are in insecure work. In the West Midlands, 11.9 per cent of people are in insecure work, according to TUC analysis. 67,000 people or 2.4 per cent of those in employment were on a zero-hours contract.²National figures show that insecure work has a disproportionate impact on those already facing structural discrimination in the labour market, including women and BME groups.

Median gross weekly pay in the West Midlands is below the UK average, at £458 a week compared to £479. Union membership in the West Midlands is slightly higher than the rest of the UK, at nearly 24 per cent compared to 23 per cent of employees.

The East Midlands regional economy

The latest full year of regional growth data we have, for 2018, shows that the Growth Value Added (GVA) figures for the East Midlands were lower than the rest of the UK, at 1 per cent compared to 1.3 per cent.

Economic activity in the East Midlands is more concentrated in manufacturing, with 16 per cent of per cent of economic activity coming from manufacturing, compared to 10 per cent across the rest of the UK.



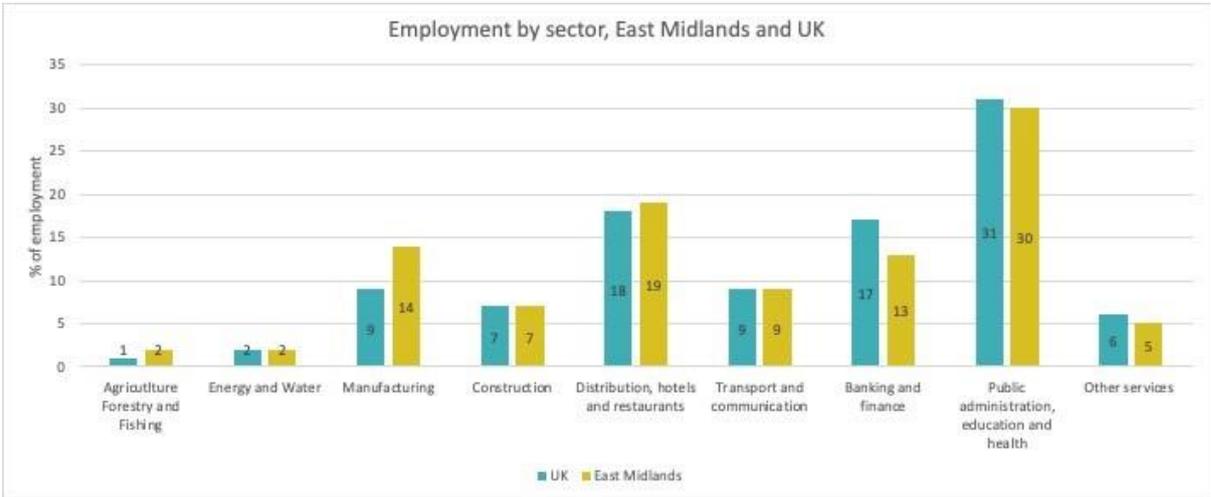
Source: ONS (December 2019)

<https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/nominalregionalgrossvalueaddedbalancedperheadandincomecomponents>

Where do people work and what's their job quality like?

The latest statistics, covering the period February to April 2020, before the economic impacts of the coronavirus pandemic had been fully felt, show that 78.1 per cent of the working age population were employed in the East Midlands, slightly higher than the UK average of 76.4 per cent, with an unemployment rate of 3.7 per cent (compared to 3.9 per cent across the UK).

People in the East Midlands are significantly more likely to be employed in manufacturing than in the rest of the UK.



Source: TUC analysis of Labour Force Survey, Q4 2019

Across the UK, one in nine people are in insecure work. In the East Midlands, 11.6 per cent of people are in insecure work, according to TUC analysis. 100,000 people or 4.2 per cent of those in employment were on a zero-hours contract. National figures show that insecure

work has a disproportionate impact on those already facing structural discrimination in the labour market, including women and BME groups.

Median gross weekly pay in the East Midlands is considerably below the UK average, at £441 a week compared to £479. Union membership in the East Midlands is the same as the rest of the UK, at 23 per cent compared to 23 per cent of employees. (Figures in this section use the same sources as in chapter four, footnotes 15-18).

Issues raised during the roundtables were:

- the definition of a just transition
- the motor industry
- transport connectivity
- ceramics
- devolution
- Birmingham's aim for net zero by 2030
- Just transition and the cultural sector

We explore each of these in more detail below.

‘Just transition’

Just transition, to these trade unionists, meant moving to new work that provides good terms and conditions as old jobs disappear. To ensure that the transition is just, they believed that two things are necessary: first, that government takes a strategic role; and second, that workers have a voice in shaping change. Far from resisting change, these trade unionists saw an opportunity. At the time of the 2012 Olympics, trade unions negotiated ways of working to ensure that good jobs were delivered as the infrastructure for the games were built. Our trade union colleagues in the Midlands had something similar in mind, for both HS2 and the Commonwealth Games, which are due to take part in Birmingham in 2022. In particular, just as the Olympics came to a deprived borough of London, trade unionists targeted poorer communities as deserving of help as these projects come on stream.

One trade unionist told us

“Just transition is a just or fair change from current working arrangements and practices that have existed so far into what will be needed for the next 20 to 30 years in not necessarily different industries, but maybe different organisations... there are going to be new companies and ventures. You would think that there will be some strategic oversight from the government to help achieve these targets... ‘Fair’ would be the continuation or extension of terms, conditions and pensions to ensure that people are not exploited within any new organisations that come up to deliver these activities...”

A second colleague said:

"In terms of just transition and what it means, that phrase 'nothing about us without us' is the guiding principle. In terms of a practical delivery in the Midlands, it is the same test that we are applying to things like our big HS2 devolution projects and the Commonwealth Games that is coming in. These will have failed if they do not do anything to move the dial on entrenched inequalities that have been there for 30 to 40 years. We all know pockets of Birmingham, the Black Country, Coventry, those particular wards that have those particular challenges. Rahm Emanuel [Barack Obama's Chief of Staff, who went on to become Mayor of Chicago] said 'Never let a crisis go to waste.' How does it move that? How does HS2 allow job opportunities, decent jobs and good jobs for people in those deprived communities to actually generate sustainable communities and developments? ... How can we do it in a way that actually delivers social benefits, which have been stuck here for 30, 40 or 50 years?"

The motor industry

One of the industries particularly affected by the move to a net zero economy is the motor industry. This could be a major threat to the Midlands. Specifically, the government is committed to phasing out the sale of conventional petrol and diesel cars and vans by 2035. What challenges will this pose?

Trade unionists felt that it was difficult to underestimate the damage that would be caused without a just transition for the motor industry. One said:

"Well, it is massive. Say you lost JLR and Toyota, and compounded that with the whole Brexit issue... They are huge challenges... When Rover and the Longbridge plant [closed] we [identified] living wage black spots by constituencies that had the highest number of workers paid below the living wage... Birmingham Northfield had the highest rate in the country, which always struck me. It was the home of Rover. If they went, the potential to decimate and set back the regional economy would be absolutely huge. They ... need support to be in a position to be part of the conversation. All things being equal, and if nothing else changed, the blow to the West Midlands economy would be absolutely massive if they just went. There is no other way around it."

Transport connectivity

One of the major advantages of the Midlands, however, is its central location. With its strong universities and its industrial heritage, good transport links could put it in a strong position. That depends, crucially, on East-West connectivity. As one trade unionist told us:

"We will literally be the heart of the country if we get the transport system right and get that East-West connectivity. If you try and travel between the East and West of region, it is a nightmare. You can get down to London okay. If we get the East and West, we could be at the heart of the country with good transport. We have good universities here; they would be the heart of innovation and R&D. There is a lot of good knowledge here, so we can grow."

East Midlands Airport is another opportunity, especially as freight is moved to rail as part of a net zero economy:

"East Midlands Airport is ... very significant in terms of international freight... I think the railway is all being hooked into the East Midlands Gateway with freight coming through onto rail... Shifting freight off the roads and onto rail, and then hooking everything into the East Midlands Gateway rail hub, is a huge opportunity. There are various talks around the tram networks out from Nottingham connecting there and how to maximise the huge job expansion... How do we hook things into this rail gateway if we see a shift of freight onto here? Tying it into the airport, is potential for a significant amount of growth in jobs."

Ceramics

The ceramics industry, based around Stoke, is suffering. This must clearly be addressed, as part of any just transition strategy. One trade unionist said:

"What I do know is that, if you lost [ceramics] from Stoke and the Potteries generally - the vast majority of it has already gone - but it is still leading the way. It is still providing thousands of jobs in Stoke, and there are not that many well-paid decent jobs of pride in Stoke... I do not really want to think about giving a final kick to the remaining bit of the ceramics industry, which has gone through all the change and is still there. I do not know how you overcome that one... Someone is going to be making ceramics somewhere in the world, are they not? I do not know how we do that in the most energy-effective way whilst protecting what we still have."

Devolution

Devolution – specifically the West Midlands Combined Authority – provides an opportunity, but there was some fear that it could produce a two speed Midlands. Trade unionists praised the pragmatic approach, in which representatives of different interests worked together for the greater good. Trade unions are also represented on the board of the Combined Authority and participated in its workstreams.

One trade unionist said:

"The Combined Authority has just generally been useful in terms of knitting together that regional governance that was ripped apart when we lost that in 2010... There is a danger of a two-speed approach emerging in the region, let alone again outside of other regions. The Combined Authority might be able to push Greater Birmingham, for want of a better term, forward, whereas the eastern part of the region is not able to punch its weight. We have seen that in terms of HS2 where I have had a very real fear that the eastern leg could be lost. I have had to lobby that one because people have not been able to coordinate and speak from one place."

The Combined Authority has helped us to give the West Midlands one voice, certainly in terms of lobbying the Government. People have been very pragmatic in terms of almost parking their politics the door and realising that this is our opportunity for our region to speak, and punch, and get something. That has been helpful. They are certainly talking around this agenda and are in that space. They sit with Birmingham

City Council and local firms doing their own thing, but the Combined Authority has helped give it that scale.

The TUC have got a seat on the board of the Combined Authority... [Unions] are plugged in to the [Productivity Commission, the Public Services Commission and the Health Commission]... The learning and skills agenda is there. It is how education budgets come down and how Unionlearn is plugged into that... It is certainly not perfect. It is not ideal, but it does exist, and that has been helpful for us to actually at least influence, definitely."

Clean air zone and Birmingham aiming for net zero by 2030

Birmingham is aiming to become a net zero city by 2030. Whilst this ambition is to be welcomed, it obviously shortens the timescale in which unions and other practitioners have to achieve a just transition. A clean air zone, due to have been introduced in 2020, has been delayed for a year by the Covid-19 pandemic. Nevertheless, pre-corona virus it had begun affecting vehicles entering Birmingham and therefore impacting on choice of vehicles and transport. This is part of the strategy to achieve net zero by 2030. The 2030 target has also affected attitudes towards HS2, on which opinions are mixed. It was not believed that ambition on climate change was driving government policy towards HS2, however.

Trade unionists said:

"We have had some conversations there about 'What does that mean? How do we do it? How do we get there? How do we deliver this in a just fashion?' ... We have then obviously seen issues in terms of 'How do we get there?' around HS2 as a means of public transport and a spur to making that happen. You see people on different sides of the argument, but I think generally, HS2, for example, has helped bring together many disparate groupings. On a transport focus, I think that is ahead of the curve, but I think that is mainly driven by the HS2 being there as opposed to the carbon agenda driving that forward."

Just transition and the cultural sector

The Committee on Climate Change has argued that, in order to achieve net zero by the national target of 2050, we need a "whole economy" approach. Whilst the focus is on power, energy and heavy industry, all sectors of the economy will have a role to play in reaching net zero.

A trade unionist from Equity, the actors' union, described the battle against climate change from his union's perspective:

"Phantom of the Opera was performing at the Curve Theatre [in Leicester] until the government told people not to go to theatres [because of Covid-19]. Within that were 110 people who were cast and crew. That is not a big workforce, but it is a decent size, and they were going to be touring for a few months, including venues in the Midlands. Every night, they were attracting audiences of around 900 into the Curve; that is the capacity of the Curve... Of course, you are going to get 1,400 or 1,500 people when it goes to places like the Birmingham Hippodrome. It generates big crowds of people coming into a city, which then in turn generates those people

paying money to park their cars, having pre- or post-theatre meals and spending money in the theatre. Those 110 people are generating a lot of footfall and boosting the economy of those city centres.

They use 18 40-foot trucks to move that show around because of the size and scale of it. It is big. Of course, [one thing] that needs to be considered is how big shows and events like that are going to be moved around in a greener way. If Coldplay or something does a big pop concert at the NEC in Birmingham, they have a crew of Christ knows how many working... Of course, tens of thousands of people journey to watch it. Everybody is leaving big carbon footprints, but there does not seem to be a lot of thought in terms of that or those casuals or freelancers who are employed on those shows. They do not have the employment protection that others have."

What one thing could government do to support the just transition in the Midlands?

As in each region, we asked what one thing the government could do to support a just transition in the Midlands. Similar themes of funding and the development of a sustainable industrial strategy were mentioned in all regions, but when asked specifically about their region, Midlands trade unionists naturally mentioned the motor industry. Whilst the phasing out of petrol and diesel cars by 2035 is clearly a threat, trade unionists also saw an opportunity.

One said:

"Because of the history of manufacturing in terms of automobiles and vehicles, I think it is crucial that there is a move to put the investment in. They can build really economical, viable electric batteries, whether it is the hydrogen or the rechargeable ones."

A second union official agreed:

"The Midlands can be the heart of the world leaders in car battery, transport or whatever it might be that gives it that 'We are not being forgotten. We are going to world leaders in this.' The rest of manufacturing flows out from that car industry. Be it on battery technology or something, this is going to be the home. This is going to be an investment and we are going to use this as the centre everything else can flow out from."

7. Case study four: the North West

Background

The major cities in the North West are Liverpool, Manchester, Salford, Preston, Lancaster and Chester. The major industries include manufacturing, chemicals, automotive, aerospace and defence, and nuclear. Cities like Liverpool and Manchester are also big in hotels, retail, shop workers and entertainment. Media City is based in Salford. Bentley is based in Crewe and there is the petrochemical sector around Runcorn. The finance sector is present as well, as are a number of breweries.

Manchester and Liverpool are seen as the two big centres of the region. Their political structures make it easier for trade unions to engage with. One trade unionist told us:

"...you would have Merseyside with Liverpool obviously being the focal point... Greater Manchester is a combined authority and then Lancashire and Cheshire, which are harder for us to work in sometimes because there is less political cohesion around leadership..."

To get a sense of the importance of manufacturing to the North West, another trade unionist said:

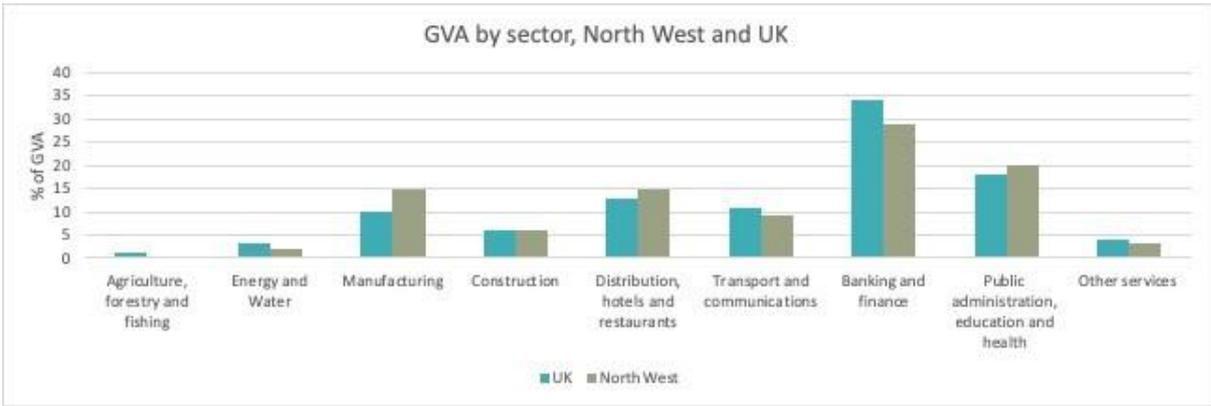
"22 per cent of the working population in Halewood (a metropolitan borough to the South East of Liverpool) are in manufacturing, which is mainly Jaguar Land Rover and Vauxhall. There is BAE just over the border. It is a big employer for the North-West even though, technically, it sits in Wales and Warton..."

Industrial relations were described as "decent", but "There are battles at times, like always."

The regional economy

The latest full year of regional growth data we have, for 2018, shows that the Growth Value Added (GVA) figures for the North West were slightly higher than for the rest of the UK, at 1.4 per cent compared to 1.3 per cent.

Economic activity in the North West is more concentrated in manufacturing and in distribution, hotels and restaurants than in the rest of the UK, with 15 per cent of economic activity coming from manufacturing, compared to 10 per cent across the rest of the UK.



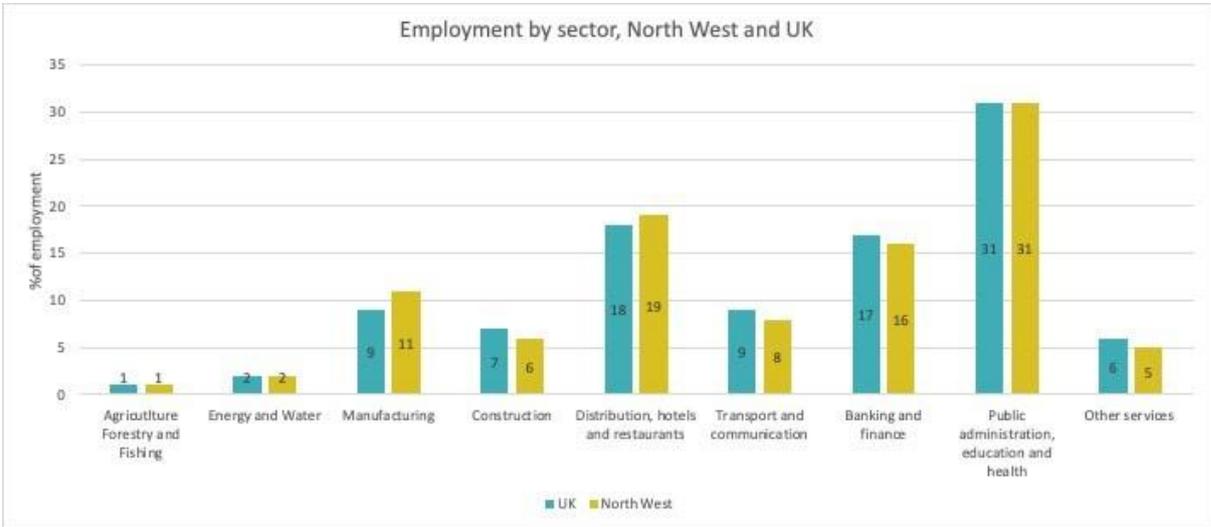
Source: ONS 2019

<https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/nominalregionalgrossvalueaddedbalancedperheadandincomecomponents>

Where do people work and what's their job quality like?

The latest statistics, covering the period February to April 2020, before the economic impacts of the coronavirus pandemic had been fully felt, show that 75.9 per cent of the working age population were employed in the North West, slightly lower than the UK average of 76.4 per cent, with an unemployment rate of 4.1 per cent (compared to 3.9 per cent across the UK).

People in the North West are more likely to work in manufacturing than in the rest of the UK, and slightly more likely to work in distribution, hotels and restaurants.



Source: TUC analysis of Labour Force Survey, Q4 2019

Across the UK, one in nine people are in insecure work. In the North West 11.4 per cent of people are in insecure work, according to TUC analysis. 92,000 people or 2.6 per cent of those in employment were on a zero-hours contract. National figures show that insecure work has a disproportionate impact on those already facing structural discrimination in the labour market, including women and BME groups.

Median gross weekly pay in the North West is considerably below the UK average, at £455 a week compared to £479. Union membership in the North West is higher than the rest of the UK, at 28 per cent compared to 23 per cent of employees. (Figures in this section use the same sources as in chapter four, footnotes 15-18).

Issues raised during the roundtables were:

- Moves to address climate change in the North West so far
- The gas sector
- Renewable energy
- The motor industry
- What is a just transition?
- The need for a just transition
- Nuclear energy
- The geographical opportunities of the North West
- Brexit

We explore each of these in more detail below.

Moves to address climate change in the North West so far

Trade unionists reported that Andy Burnham, the Mayor of Greater Manchester, is aiming to make this combined authority carbon neutral by 2038. This is twelve years ahead of the target for the UK as a whole.

Among industrial initiatives, energy-from-waste plants are being introduced, in Runcorn and in Eastham. There are plans for others, but those plans are at a very early stage. Some of these are controversial, however, as one trade unionist explained:

"The big waste-to-energy plant that they built at Runcorn is the biggest one in Europe. Viridor was built about five years ago and it is running now. It is a clean energy provider but I know for a fact that the people who live in and near Runcorn are not happy with the waste that goes into it because what we appear to be doing now is replacing the poison that comes up the chimney stacks with poison that arrives in wagons and gets tipped into huge pits where it is being processed and pulverised and everything else. So, there is good on some side but there are displeasing areas on other sides."

Fiddler's Ferry is a 50-year old coal-fired power station that is about to close. One trade unionist said:

"It was supposed to close about 15 years ago because of the move towards carbon neutral. Then they brought in the technology of flue-gas desulphurisation and they built them on every coal-fired power station around the country. It gives the station another 10 to 15 years of life and it cleans the atmosphere up a little. However, when you build an FGD on one of the coal-fired power stations, it reduces the output

of the generators and the turbines. Therefore, the company, Scottish and Southern Energy, are not producing as much electricity as they want at the rate that they want. They therefore want subsidies off the Government but, as they do not get those subsidies, stations close or start to work at half capacity."

These developments neatly make the case for a just transition, as both the numbers of jobs and the terms and conditions enjoyed by the workforce at older companies like Fiddler's Ferry are not replicated in the newer companies. This was explained thus:

"One of the key things that we are seeing is that the Fiddler's Ferry terms and conditions are far more generous than the energy-from-waste terms and conditions. The end capacity on a like-for-like replacement is greatly reduced, so that is one of the things we are keeping an eye on."

A second trade unionist added:

"What we are seeing now is that the move away from large-scale power stations as we know them to smaller waste-to-energy plants is taking us away from the companies and the organisations that we had relationships with where we quite easily achieved our recognised national agreements. We now have cheaper European investors – consortia of investment bankers in some ways – coming in and putting the money in to these places being built with no concern or regard whatsoever for the terms and conditions that we have had.

When Fiddler's Ferry was built, for instance, there were probably 1,500 to 2,000 people on that, and likewise around the country. With these smaller waste-to-energy sites, you are probably looking at a peak of around 200 people on construction with companies that we have no relationship with and that do not want a relationship..."

The gas sector

The gas industry has provided many thousands of jobs in the North West. Gas is, of course, a fossil fuel, so its future depends on whether technology to convert it into a clean fuel, such as hydrogen, is eventually developed. If the industry is lost, the fear is that, as we have seen above, the new jobs that replace it will be of a much lower standard. Moreover, a small but transient workforce was employed in the construction of coal- and gas-fired power stations, whose livelihoods are also under threat.

The story was told as follows:

"We had the big 'Dash for Gas' in the 1980s and we built quite a few large-scale gas-fired power stations around the UK. There is one at Runcorn. There is one at Connah's Quay in Wales and another in Blackburn. They built them all over the place. They are all now coming to the end of their lives. At the time they were built, they were provided with North Sea gas. During their lifetime, the gas supply from the North Sea started to drop off so they were dependent on gas coming in from Europe and Russia because the pipelines can cross continents now. Obviously, the cost of gas and everything going up is tied into that..."

Somebody could have come up with the technology 15 or 20 years ago to build FGDs on the gas ones as well as the coal ones. Technology has moved on now. I would

like to see someone, or some organisation, produce some piece of technology that can deal with it now better than the FGDs have dealt with it for 20 years."

Carrington Power Station is a combined cycle gas turbine power station that began commercial operations in 2016. It is located on the site of a former coal-fired power station in Greater Manchester.

One trade unionist said:

"The part that I am interested in is that the 2,000 people who built that, when it was finished, were looking around the country for where the next one was being built. Anyone who worked in the industry knew where they were being built so you went from one to the other. Whereas, as we now drop away from gas and coal-fired power stations, all you can look around for is the waste-to-energy plants that [employ much fewer] people when they are under construction as opposed to 2,000 people when you are building a gas one... It is a transient workforce and they are quite used to working around the country. You will find that the ones who built the job down in Portsmouth would be the same people who built it in Aberdeen. There are 20,000 people working in the industry at peak but it is very doubtful that you will have 20,000 people working on the construction of waste-to-energy plants."

Renewable energy

Being on the coast, the North West has large wind turbines and wind farms. Attitudes can be negative; people often believe them to be an eyesore. Yet the Metro Mayor of Liverpool, Steve Rotherham, is proposing a tidal project to harness the power of the Mersey. Unions are optimistic that, if based at the combined authority, such a project could lead to good, unionised jobs. One trade unionist said:

"There was an initial report last week on the tidal barrage, which estimated that it could power a million homes... You would be looking at the full line of technology on this. You will be harnessing services that are, from the sounds of the others, led by and run by the combined authority so you are looking at good unionisation to protect the current salaries."

The motor industry

The motor industry is another possible source of future jobs, but only if the concept of a just transition is developed, and trade unionists feel that this is not pursued to the degree that it should be. Both employers and the government need to raise their game. We were told:

"I will use Jaguar Land Rover as an example... Jaguar Land Rover is going to lose some jobs under redundancy at a time when the Government have just committed to 2035 [for the phase out of cars powered by] petrol and diesel and are having a conversation around batteries. Alright, we will move to battery cars by 2035. Someone is going to pop up and build them. There might be a car manufacturer that wants to build them in the North-West but what is the conduit to joining those two things? There is an interest in the combined authority and the Metro Mayors to make sure that those good jobs stay in their area, with the tax base and all of that stuff, but

there is a disconnect as to who provides that and I know the national retraining scheme is saying the employer will provide those skills.

... The problem is that is not happening. If you were Jaguar Land Rover and you said, 'We are going to build electric vehicles in Merseyside,' you would train your staff to get ready for it. However, it is not Jaguar Land Rover doing it. If Jaguar Land Rover are cutting down jobs and Vauxhall, for example, say they are going to ramp up to do it, the Government would think that Vauxhall will train all these Jaguar Land Rover staff to do a job that might come onstream down the line, and they are just not going to do that."

What is a just transition?

In defining a just transition, union officers spoke of the need to avoid austerity, workers voice and a rebalanced economy. One union official said:

"We have to make it a green agenda for workers... I come from Burnley and we had the Lucas workers in the 1970s who were facing defence cuts. They put forward alternative products, including a lot of environmental products 30 years ahead of their time, but the company was not interested and at the time the Government were not really interested and so it never happened. It is about paying people more to save the planet than to not save the planet."

A second official said:

"Another way of putting that is to see the threat of climate change as a driver for a rebalancing of the economy; to see it as a driver for social progress and for a transition to a more sustainable model of economic development and economic growth. [My union has] called for changing further education policy as well as adult education policy and even prison education policy to embed the culture of sustainability and to generate the skills that are needed to make those transitions into the new jobs that are definitely going to be required.

Two years ago, the Department for Business, Energy and Industrial Strategy (BEIS) did a survey of young people and found that something like 3.7 million young people said they wanted jobs in the green sector because of their concerns about the climate, because of ethical concerns and because they think it will be a growth area. There is clearly a need there. There is clearly a willingness to create the conditions for a just transition...

"There are points at which trade union interests and environmental interests do come together if we see just transition as being about social justice as well as saving the planet. They are absolutely bound together. That is the message that we have to deliver."

This trade unionist continued:

"... This is the bit that we, including politicians, are still grappling with in the region. Andy Burnham puts out whatever target he wants and Steve Rotherham says, 'Let us build a tidal barrage,' but we are thinking not only about the jobs created in the tidal barrage but about how that becomes a job for someone at Fiddler's Ferry or British

Gas. How do we move them to it? My increasing concern... is that other companies are coming in to fill the gap at lower terms and conditions, and the people in Electricity North West and British Gas will be out the door in 2030 or 2035. Someone else will have filled it. We will have gone in the right direction towards climate protection but it is also about protecting the good jobs for a just transition."

Nuclear

Another part of the energy jigsaw is nuclear power, but massive uncertainty hangs over the industry. Wylfa Power Station on Anglesey was closed after 44 years in 2015. A new nuclear station, Wylfa Newydd (literally New Wylfa) was due to be built on a site adjacent to the old plant, but Hitachi, which was building the plant, has suspended work. A lack of government strategy for nuclear was identified as the main problem:

"I think [nuclear] is a vital component of the energy provision for the UK moving forward, given that we are moving away from carbon-intensive providers, and the latest idea seems to be smaller reactors dotted about. However, there is no strategy behind it and that is part of the problem. The trade union movement has developed a just transition strategy to say, 'This is going to happen but it has to happen fairly so that this is looked after,' and Government seem to have said, 'We will be carbon neutral by 2050, end of statement.'"

The geographical opportunity of the North West?

Trade unionists recognised that the geography and geology of the North West was a major opportunity, as was its industrial history. Good universities made this opportunity even bigger. A need for the main cities of the region to support smaller towns and communities outside was identified as a challenge, however.

One trade unionist told us:

"We are on the coast with a river and a sea to benefit from in terms of things like wind power. The geography of the region means that we could cope with different changes and that we will have different ways of doing things. We have a big industrial heritage so the idea of us being at the heart of new technology is not something that would faze this region. It would have a huge economic impact on the employment prospects for people in places like East Lancashire, North Lancashire, Blackpool and so forth up the Fylde coast. There would be big opportunities that would have a reforming impact. There is a good opportunity in terms of joining up the Northern Powerhouse with the West-East link. All of those things fit together for us doing that.

We have a good knowledge economy, as nobody says anymore. We have good universities and some good colleges, while others are struggling. They can be mobilised, they can be used and they can develop training opportunities. There are opportunities there.

There is a big belief that London sucks everything in but Manchester and Liverpool also suck everything in in the North-West. We could use this opportunity for a green revolution to devolve ourselves and to spread the jobs out to those areas that need

them. I am not necessarily talking about moving it away from Manchester and Liverpool but rather to stop it being that vacuum. "

Brexit

Brexit is another uncertainty. We were told:

"There is a challenge with Brexit in terms of one of the car manufacturers securing the ability to make an electric car, which I am not sure we have at the moment, but that would seem to be a just transition away from something that we understand will clearly phase out over a period of time.... The movement of parts [makes this a Brexit issue].... Liverpool may well become the new Irish border."

Priorities for government action

As in other regions and nations reported here, we asked what one thing the government could do to support the move towards a just transition. A young trade unionist said:

"A lot of us have said that it is about education. It really is and I do not think the government are doing enough to educate people that are of the older generation. I say to my mum, 'Do not do that; it is bad for the environment,' and she says, 'Oh, I did not know.' That is just in my house. Supermarkets always get a bad rap for not being good for the environment, but it is about education. People do not know how to save the planet, and so the government need to educate people ... from the bottom up and that is how it will change."

The main need, however, was identified as a strategy to join up the North West's many strengths into a coherent whole. One trade unionist said:

"What we should be asking for from government is that it has a knock-on impact into other sectors, for example training, and supporting FE, HE and schools as a provision. The other one is subsidies into science and technology. Smartphones exist because of the technology decisions and spending on science and research in the 1970s and 1980s. We have put people on the Moon and we will potentially have space tourism because of public sector investment. It is maybe about that public sector investment into new technology."

"The businesses that already do well will keep to themselves and marketise whereas they could make that investment into something to trial ideas. You can spread that around the regions. Daresbury has the science and technology park and you could easily imagine them testing something that would work in Merseyside. Similarly, I know Alstom is talking about hydrogen-powered trains. They want to work with Teesside. They are saying, 'We will build the trains. You give us the hydrogen. We will ask the government for money and we can make it work.' Trialling those things in regions would be good and would truly be the government leveller."

8. Case study five: Wales

The economy of Wales

Unlike the other chapters of this paper, this one focuses on a nation, rather than a region. Wales has a very specific industrial history; for the purpose of this report, it is also important to note that it also has its own government, with many significant powers devolved from Westminster.

In April 2019, the Senedd became the first parliament to declare a climate emergency. The Welsh Government has stated its ambition to reach net-zero carbon emissions by 2050 and to make the Welsh public sector carbon neutral by 2030.

Wales has its own devolved climate governance. With the framework of the Well-being of Future Generations (Wales) Act 2015, Wales has established a unique approach by placing a well-being and sustainable development duty in the decision making and actions of public bodies in Wales. Tackling climate change is central to the Act and integral to its wellbeing goals. The promotion of 'decent work' is also a key part of the legislation. Under the powers of the Environment (Wales) Act, the Welsh Government has also put in place emission reduction targets and its own five-yearly carbon budgets.

For much of the 20th century, the mining and export of coal was the dominant industry of Wales. As industrial restructuring has taken place in recent decades, Wales has been hit hard. Heavy industry – notably coal and steel – has declined, to be replaced with light industry and services. Three national parks bolster the tourist industry in rural Wales. Meeting the challenge of climate change increases the pressure on those industries that remain, making a just transition essential for Wales.

One trade unionist set out the scale of the challenge:

"We know [that] in Wales around one in five workers are in climate critical sectors, so manufacturing, construction, transport and energy, and that around one in ten workers are in roles that are predicted to need significant upskilling or reskilling as part of the transition.

We know we have carbon-intensive sectors like steel that are critical to the whole UK economy, and that have challenges around transitioning, and we have a greater share of harder-to-reduce emissions than elsewhere in the UK due to steel manufacture, petroleum refining, things like cement manufacture and also more solid-walled homes and barns, and then we have fewer sites for carbon capture and storage. So those are some of the challenges."

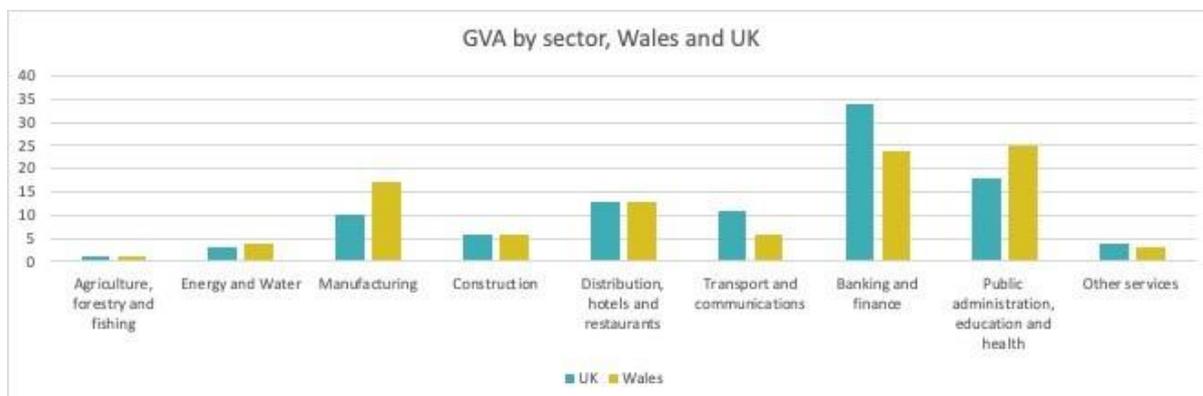
A common theme among trade unionists was that although they welcomed action from the Welsh Government to tackle the climate emergency, they recognised that there are some levers that lie outside of the Welsh Government’s powers. It is a more complicated picture with the power to reduce emissions in different policy areas a mixture of fully devolved, partly devolved and others remaining reserved to Westminster.

Many trade unionists spoke of how Wales’ financial resources are limited by the constraints of the funding settlement from UK government. Although Wales now has additional borrowing powers, it was felt that these were nowhere near the order of magnitude that will be required to fund the transition. There was a clear sense that the Welsh Government had the right intentions in terms of its commitment to sustainable development, fair work and social partnership but that it was ‘hamstrung’ in terms of its ability to make the necessary investment to deliver a transition with good quality green jobs. Trade unionists felt strongly that Wales would not be able to deliver a just transition without a significant increase in funding, investment and policy changes from the UK government.

Where does economic growth come from in Wales?

The latest full year of regional growth data we have, for 2018, shows that the Growth Value Added (GVA) figures for Wales were slightly higher than the rest of the UK, at 1.4 per cent compared to 1.3 per cent. Since 2015, Wales has experienced five quarters where there was no or negative growth.

Economic activity in Wales is significantly more concentrated in manufacturing and public administration than in the rest of the UK.



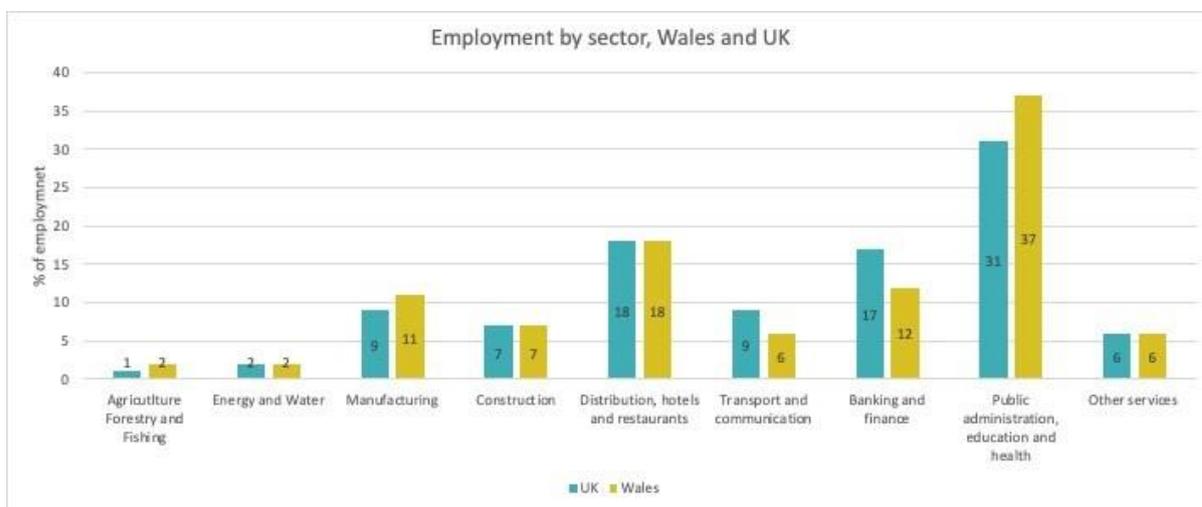
Source: ONS (December 2019)

<https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/nominalregionalgrossvalueaddedbalancedperheadandincomecomponents>

Where do people work and what’s their job quality like?

The latest statistics, covering the period February to April 2020, before the economic impacts of the coronavirus pandemic had been fully felt, show that 74.4 per cent of the working age population were employed in Wales, slightly lower than the UK average of 76.4 per cent, with an unemployment rate of three per cent (compared to 3.9 per cent across the UK).

People in Wales are more likely to be employed in manufacturing and the public sector than in the rest of the UK.



Source: TUC analysis of Labour Force Survey, Q4 2019

Across the UK, one in nine people are in insecure work. This is higher in Wales, with 12.4 per cent of people in insecure work, according to TUC analysis. 50,000 people or 3.4 per cent of those in employment were on a zero-hours contract. National figures show that insecure work has a disproportionate impact on those already facing structural discrimination in the labour market, including women and BME groups.

Median gross weekly pay in Wales is below the UK average, at £441 a week compared to £479. Union membership in Wales is higher than the rest of the UK, at 31 per cent compared to 23 per cent of employees. (Figures in this section use the same sources as in chapter four, footnotes 15-18).

Issues raised during the roundtables were:

- The power sector
- Steel
- The motor industry
- Transport
- Housing
- Relationships with the Welsh Government

We explore each of these in more detail below.

The power sector

A common theme among trade unionists was a belief that, with proper government support, they could transform to become greener and to provide quality jobs.

This was true of Baglan Bay Power Station, which is situated just to the west of Port Talbot. Trade unions were sceptical of its ability to meet environmental targets without new investment, as one explained:

"... the general feeling down there – the numbers that were being banded around to me to upgrade that power station to be compatible with the green things were absolutely huge, and without that investment which, to be frank, the guys that work there, do not think is going to come... is not going to be able to carry on. It is not going to be able to ... meet the targets that are being set for it, the green targets... All those guys are very highly trained, they have got a lot of experience of power generation, and they are looking at a very uncertain future... because the sort of money they need for that place, and places like it, is huge. "

Steel

The same issue was true of steel. A trade union colleague described the situation:

"...one of the challenges that we have is carbon leakage to other countries, because the UK's higher energy costs, green taxes – all those kinds of things deter investment in the UK steel industry, and that is why you have got a lot of it going abroad ...

A good example of this was the Orb works in Newport that closed just after Christmas. The only electrical steel plant in the UK, it required a £20-40m investment to turn it around, and make the kind of steel that we would require for electrical transformers that will go into car engines. "Again, a missed opportunity. What was interesting about that plan was that, in the weeks before its closure, they had done a test run where they used electrical arc steel and they rolled it through the mill, and then that is the only example in the world where that kind of steel has been converted from an electric arc furnace and rolled into electrical steels...

The only company that is getting to grips with this in the steel sector is Liberty. Their whole business model is about green steel, but again it needs government intervention. There is a conversion from what are quite antiquated steel plants in the UK into something that we would require, ... going into the products ...to make it a green economy."

A second trade unionist added:

"...Appledore Shipyard [in Devon]... was closed in March 2019. [There were] 300 jobs lost there. Highly skilled men and women working on that site. There is a consortium headed up by a Danish businessman, who is trying to reopen that with the intention of still building ships, but also investing heavily in research and development... [Now] Port Talbot [Steelworks] has got a deep dock, so they can actually get any large ships in and out of there. Port Talbot could link up with something like Appledore. They could actually use British steel, use steel from South Wales to develop that, and then ship that across the whole of the world. If we invested in this it could be a game changer for us."

The motor industry

The motor industry is a third industry that is in decline in Wales, but has potential if the necessary investment is put in place, as one colleague described:

"... the big blow was the loss of Bridgend Ford's... There are plans for INEOS¹⁹ to open, fingers crossed with that. They are talking about an electric vehicle but yes, we still have a motor industry. It is holding on by its fingernails at the moment as many of them are but yes, we do still have an industry that we need to invest in."

A second trade unionist commented:

"... a lot of the car industry in Wales is more in the supply chains rather than the big projects... the Orb plant in Newport ... was making electrical steels that would have gone into the car industry, if we could have converted our plant into making the proper steel, but unfortunately the engines for Jaguar Land Rover's new model of cars that are coming through in the near future will be made by Hyundai, outside of the country. Clearly there is no sort of joined-up approach from the national [i.e. UK] government... A lot of the R&D projects that they have supported within the Welsh government are highly commendable, but unfortunately the national government in Westminster do not seem to be interested."

Transport

Sustainable public transport is vital for any decarbonisation strategy, but trade unionists felt that more could be done, especially with regard to rail. One told us:

"... there is glacial pace of electrification of rail lines.. [Then] there are still huge swathes of Wales which are completely without rail services. It would be marvellous if there was a huge rail-building operation and an infrastructure operation, particularly around mid-Wales, to link up to some of the country-wide networks. I think it takes five hours to get from Holyhead to Cardiff by train, for example, which is not viable. So we are very optimistic about the potential for jobs, and in terms of conditions in the rail sector, to benefit from carbon-reduction policies and have a just transition..."

On maritime... the shipping industry as a whole is moving towards low-emission fuels from heavy sulphur bunker fuels, which are extremely polluting, and [the port of] Milford Haven will continue to be, we think, an important bunkering port for those new fuels, as it is for the old fuels...

What else have we got? The freight network – the Holyhead routes are obviously really important. Keeping those going and switching to a low carbon source. I think operators have ordered new roll-on, roll-off freight and passenger ferries. Stena Line have Stena Edda, who has arrived in the Holyhead-Dublin route recently, and Irish Ferries as well....."

Housing

¹⁹ In fact, it was announced in July 2020 that a plan by INEOS to invest in a 4x4 plant in Wales has been put on hold.

An obvious win for a just transition strategy is to decarbonise housing. That can include building new, sustainable homes. It can also include insulating the existing housing stock. As one trade unionist told us, skills and training, along with social partnership, should form cornerstones of any such transition:

"... there is a really strong interest in getting some sort of big housing infrastructure project off the ground. That predated the [Covid-19] crisis, but I think now it seems more relevant than ever as a way to bring about some sort of recovery, and it is about how we can decarbonise existing housing stock as well, but thread the fair work aim through that. So I think the skills and training offer will be absolutely critical to delivering that, but also how we work with construction affiliates in social partnership with government, and with the social housing providers in Wales, to deliver a just outcome in the fullest sense. So it is about the decarbonisation, environmental impact, the quality of work impact, but also the quality of housing and affordable housing for people in Wales... I think ... something like that would be really beneficial for our movement as well as for society in Wales."

Relationship with Welsh Government

Clearly, Wales faces a very challenging future, although it has many industries which, with the right support, could develop as part of a sustainable industrial strategy. In its favour, the trade union movement in Wales has a government with which it can work as part of a social partnership. This relationship was prized by the trade unionists that we spoke to:

"As far as the Welsh Government is concerned, we do work very closely with them on a regular basis in social partnership, and that has actually continued during this period as well. They have also reaffirmed their specific commitment to social, economic and climate justice as part of the recovery programme. We have been saying to them that, as far as any recovery is concerned, workers need to be right at the forefront of all of this, and as far as climate justice is concerned, that is a primary issue."

The trade union movement of Wales has got just under 400,000 plus members. There are so many thousands of reps. Many are health and safety reps. Many of them are actually green reps, and if anyone is best placed to begin those discussions at a community level and within the workplace, it would be those individuals. "

To underpin their work with the Welsh Government, the Wales TUC has been gathering information about the situation among the Welsh workforce. Not all companies are as keen on social dialogue as is the Welsh Government, however:

We have carried out a survey of union reps in Wales to gather more information on what is happening in workplaces. That has indicated that a lot of workplaces are making changes, and they are not necessarily consulting with unions on those changes. We have started work on putting together some new training resources for reps, so that is looking at transition agreements in workplaces and training for green reps. "We see our social partnership structures with Welsh Government as the obvious starting point for just transition discussions, and we want to see unions and workers given a central voice in any future climate justice body.

"Obviously, we have got the different legislative framework in Wales, and our carbon budget and the framework of the Future Generations Act. So, there are many aspects of the agenda that are devolved, but there are also some that are only partially devolved, or reserved to Westminster. There are issues around funding from Westminster Government.

.... We certainly need the Welsh government to be either equipped with the powers, or to say what it would do with powers if equipped with them, to move to that greener climate and those green jobs, and covered by collective bargaining agreements. It is interesting to look at the Just Transition Commission in Scotland, and this interim report has got some interesting stuff in it as well. Obviously, the circumstances are completely different in Wales, but the model of a Just Transition Commission is useful to draw up what we want to ask

I know the Welsh government at the moment are consulting on a circular economy strategy, and as part of that it includes the goal to make Wales net zero waste by 2050 as well, and they have launched a big circular economy fund that businesses can bid into in terms of funding, like technology for innovations around packaging and re-manufacturing, and reusing items and things like that, and there is a real communities focus to what they are doing with that as well."

What should be the priority?

From these comments, it is clear that a sustainable industrial strategy, of which social dialogue is a key part, was highlighted as the biggest priority for Wales going forward. Trade union colleagues were optimistic about a skills agenda, especially as this is a devolved policy area, but cautioned the need for employers to develop into new areas where these skills could be used. There was also a lot of interest in a just transition commission, learning from the commission that has been established in Scotland.

More specifically, colleagues' points included the following:

"... [W]hatever changes are going to take place, workers cannot be an afterthought... It has to be done with them and not after them. So as an absolute starting point that's where we would come from."

"[Steel] is the foundation of this industry for the UK, and it's very important to the Welsh economy. We have been saying this for years now, but I think all manufacturing. We have to have a proper strategy for manufacturing..."

...[D]o we in steel get breakthrough technologies to reduce our carbon footprint? This is an issue for steel production globally. Who pays for the research and development of this technology, and who owns it when we are currently using the best available technology?"

"We have potentially got a chance in Wales to plan better around the skills system, because obviously it is devolved, so we can work on this. For example... a lot of the existing housing stock will need to install heat pumps and things like that, yet I think at the last count we had nobody training anyone to fit heat pumps, no apprenticeships around that... so those sort of things, long-term skills system

planning. I know there is going to be a massive shortage of funding in adult skills after the crisis, but we can have those sorts of discussions now. "

"... I think we do need to have a discussion about how we encourage employers to design jobs so that they are actually there when we train people, because at the moment in Wales our industry is geared up for more of the same..."

"...in their current low-carbon delivery plan, Welsh Government have put a lot of emphasis on the regional skills partnership in terms of gathering intelligence and skills, and also identifying opportunities to decarbonise and transition in high-energy sectors. So part of what we want to look at in terms of the just transition structure in Wales is how those discussions are fed in and integrated, and how it all works within the social partnership model, to make sure it is mainstreamed into discussions rather than being on the side. "

"When we spoke to colleagues in Scotland about the Just Transition Commission there, they ... said one thing that has worked well for them there is they have had a partnership with some environmental organisations, Friends of the Earth and the World Wildlife Fund for Scotland. They said that has been helpful in terms of establishing where they have common ground..., and also getting just transition principles included in wider environmental campaigns."

9. Conclusions and recommendations

This report has sought to highlight particular elements of a just transition strategy that are important to the different regions and nations of the UK. It does not cover all regions and nations and, therefore, does not collect all issues. Some industries, such as the motor industry, are important in regions not covered by the report, such as London, the East and South of England. However, the report provides an important snapshot of the issues to be considered.

Earlier, we noted that the Chief Economist of the Bank of England, Andy Haldane, has said that different tiers of government are best placed to address different elements of policy. Haldane gave the example of monetary policy, which can only operate at the national level. To this, we can add industrial strategy which, if operating effectively, has national, regional and local elements to it.

Interviewees were scarred by their experiences of industrial decline. All of the regions covered in this report had stories to tell of thousands of people, in industries like coal mining, losing their jobs. Particular bitterness was displayed at the fact that no serious government intervention sought to bring new industries to those communities blighted by the loss of heavy industrial sectors.

Of course, the loss of old industries and the creation of new ones is as old as industrialisation itself. The OECD says that “labour reallocation is an integral part of the ‘creative destruction’ process that underlies economic growth and rising living standards. It adds, however, that “[a] considerable number of workers who lose their jobs to economic change (“displaced workers”) nevertheless experience significant income losses and other hardships...”²⁰

What does this mean? The OECD finds that:

Income losses are particularly large during the period of joblessness that immediately follows displacement in the majority of cases. In certain countries earnings can fall by up to 50 per cent on the year of dismissal and remain up to 10 per cent below pre-displacement years even four years after being laid-off. However, income losses can continue after displaced workers are re-employed, because wages in post-displacement jobs are often lower than those from the lost jobs.

Intervention is clearly needed, both to cushion the blow of such job losses and income falls, as well as to bring new industries to regions that have suffered industrial decline. Happily, UK policy has made progress in recent years. Since 2009, governments have adhered to some form of industrial strategy. Some have been more energetic than others and, whilst the narrative has shifted, the UK’s industrial strategy is seen as piecemeal in comparison to those of other European countries. This has an effect; we hear stories of low skill, low value work coming to the UK, but prized high value industry going abroad, to countries with a

²⁰ OECD Employment Outlook, 2018.

long history of engaged industrial strategy, such as Germany and Denmark. We must put ourselves in the shoes of a director of a multinational manufacturing country. Making a rational decision, would that director choose the UK over Germany, given the latter country's strength in apprenticeship training, its powerful Fraunhofer Institutes and its experienced, nimble government, prepared to step in quickly when the need is there? Blaming international companies doesn't get us very far. The competition has, up until now, simply been better at industrial strategy than we have.

The TUC has a long history of supporting policies to reduce inequality and deprivation; our motives are driven by a commitment to justice, yet we are aware that inequality is inefficient, as well as unfair. As the Royal Society of Arts, quoted earlier in this report, makes clear, reducing inequality and deprivation can itself drive growth. Investment in social infrastructure, including public health, early years support, skills and employment services, should go hand in hand with investment in physical infrastructure and business development. The key shift we need is from an economic model based on growing now and distributing later to one that sees growth and equality as two sides of the same coin.

Interviewees from the regions and nations covered made a variety of suggestions regarding how to support a just transition. Interviewees also talked about the role of government and we can think about policy interventions at the national, regional and local level.

Transition Economics have modelled job creation figures in specific industries for the TUC. Where appropriate, their forecasts of possible new jobs are included in the conclusions below, and we also present figures for the jobs we believe we could be created in each region through and overall programme of national investment.

We have split our recommendations into recommendations for national government and for regional government.

Recommendations for national government

As we have argued, government needs a co-ordinated industrial strategy that seeks to deliver a just transition to net zero. Key elements of this should involve:

- An integrated and balanced energy policy with a long-term plan for how to reach net zero
- Support for specific industries
- Investment to support these priorities, with a clear focus on good jobs
- An integrated skills policy
- A Just Transition commission to ensure that workers' voice is central to guiding these policies.

We look at each of these in turn below.

An integrated energy policy with a long-term plan for how to reach net-zero

Energy is both a major polluter and the most important opportunity for growing new industrial sectors and delivering cleaner power. UK trade unions have long supported a balanced energy policy, measures to reduce carbon and other harmful emissions from energy intensive industries such as steel and cement manufacture, a just transition to electric vehicles, and an integrated low emission public transport system, all of which will help us meet our climate change commitments, while delivering a reliable, resilient and affordable energy supply for the whole country.

At present, our efforts to plan for this goal are held back by the lack of a clear commitment by government, or a plan for how to achieve this. Addressing the energy sector, the Committee on Climate Change, a committee of experts, has reviewed the scientific evidence on how best to deliver the change we need. But it needs to build a consensus on how this change should be delivered so that it works for workers and consumers alike. The Just Transition commission we set out below should advise the government on long-term energy and energy usage strategy, involving affected workers, unions, industries and consumers, to plan a path that will deliver a just transition to a clean, affordable and reliable energy supply for the future alongside reductions in emissions. As part of its remit, this commission should carry out a study of the social impacts of such a transition, its regional impacts and necessary mitigation measures.

The trade unionists we spoke to in this report argued that specific elements of that strategy could provide new decent jobs.

CCSU

Carbon Capture Storage and Use (CCSU) technology is important for the industrial communities of the North East and Yorkshire and the Humber; The Committee on Climate Change (CCC) has stressed the importance of carbon capture storage and use (CCSU) technology as part of the move towards net zero.²¹ Specifically, the CCC states that we need 10m tonnes of CO2 stored annually by 2030.

The TUC strongly supports the development of CCSU technology. CCSU in the Irish and North Seas could reinvigorate key UK industries in Merseyside and South Wales, Teesside, the Humber, and Scotland. In its election manifesto, the Conservative Party promised £800m for the development of CCSU technology. It is vital that this money is spent in a way which both retains existing jobs and creates new ones.

Nuclear

Another element of a net carbon energy mix is nuclear. Trade unionists in the North West spoke of the loss of Wylfa Power Station on Anglesey and of Hitachi suspending its work on the new nuclear plant to be built in its wake.

²¹ Committee on Climate Change, 'Net Zero: the UK's contribution to stopping global warming', May 2019.

Nuclear energy is an integral part of a net zero carbon energy policy. Trade unions call for a net zero roadmap that embeds a fully integrated, whole systems approach including nuclear at scale and Advanced Modular Reactors/Small Modular Reactors (AMRs/SMRs). We seek a firm plan from government to expedite the development of 10GW of replacement i.e. new nuclear capacity, including willingness to invest directly in order to maximise maintenance and creation of high-quality employment as part of a green economic recovery plan. We also support the development of low carbon energy hubs at Sizewell and Moorside.

Offshore wind

Much is made of the fact that the UK is the world leader in offshore wind and this is, indeed, to be celebrated. We have more capacity installed than any other country. Offshore wind powers over 7.5 million UK homes a year and is set to become the backbone of a clean, reliable and affordable energy system. By 2030, the UK will be getting about a third of its electricity from offshore wind.

But what does this mean for jobs? Trade unionists were pleased with the wind turbine plants on Humberside, but noted that only the blades are built here, with the turbines themselves being built overseas. This is a missed opportunity for the UK economy. A more mature industrial strategy, as described above, is necessary in order to change this. Moreover, it would be naïve to think that this was the only example of our losing highly skilled work and well-paid jobs because of our lack of an active government. This issue needs to be addressed urgently.

The offshore wind sector should also offer more and better jobs in the supply chain and this means raising our game. For example, the government's sector deal for offshore wind currently requires 60 per cent UK content for construction and maintenance. This is a good start but is too limited; the government should use this Budget to announce a raising of that target to 80 per cent.

Such action could see the creation of thousands of new jobs. In their analysis for the TUC, Transition Economics modelled the expansion and redevelopment of ports and shipyards, and the upgrading of fabrication yards. It also looked at enabling greater domestic and regional capture of the manufacturing supply chain for offshore wind, including manufacturing foundations, jackets, chains and components for floating offshore wind. This modelling forecast new job creation in these two activities and found that 3,500 jobs could be created in the Northern region, 1,338 jobs could be created in the North West and 1,908 jobs could be created in Wales and 5,621 jobs could be created in Yorkshire and the Humber.

Hydrogen

Another part of the clean energy mix is hydrogen. Unions indicated their support for the hydrogen strategy drawn up by the All-Party Parliamentary Group on Hydrogen and published in July 2020.²²

The UK is a global leader in hydrogen technology, which has the potential to play a key role in achieving our 'net zero' targets, as well as to create and sustain hundreds of thousands of high-quality jobs across the country. A cross-departmental hydrogen strategy should be developed between government, industry and unions. Since hydrogen technology forms part of the just transition, it is essential that unions have a seat at the table.

Thirty per cent of UK greenhouse gas emissions come from the heating of homes and businesses. Interim targets for low-carbon hydrogen production should be set by 2030 alongside the introduction of a Low Carbon Obligation to enable investment in low carbon forms of heating such as hydrogen, as well as heat pumps, biomethane and hybrid systems. Government should work with industry and unions, through a formal working group, to incentivise the public uptake on hydrogen-ready boilers and mandate hydrogen-ready boilers by 2025

Hydrogen technology can lead to greater production and rollout of hydrogen cars, trains, buses, lorries and ferries, as well as in heavy industry and domestic appliances. Subsidies should be created to help stimulate hydrogen vehicle purchases or a subsidy per kg of hydrogen sold. This can be further supported by establishing incentives such as capital investment grants and business rate relief on hydrogen refuelling stations. Alongside this, government should continue to invest in hydrogen alternatives and incentivise organisations and customers who produce, purchase or use hydrogen HGVs, buses and trains.

As with most areas of energy policy, the regulatory regime is vital. A regulatory framework to support early deployment and help to commercialise renewable hydrogen is necessary. Furthermore, policymakers and industry must ensure any funding models developed deliver investment and economic jobs directly to the UK. The Government and industry should work with local and regional authorities already exploring hydrogen's potential and support the uptake and commercialisation of existing projects.

Support for specific industries to achieve a just transition

Unions we spoke to in our report raised a clear need for tailored support for specific industries.

Motor industry and electric cars

Battery technology will be vital to the Midlands, the North East and Wales, given their historic motor industries. The UK's decision to phase out petrol and diesel engines by 2035 means that companies such as Toyota, Vauxhall, Ford and Nissan face a massive threat –

²²All Party Parliamentary Group on Hydrogen, 'How the UK's hydrogen sector can help support the UK's economic recovery', July 2020: <https://connectpa.co.uk/wp-content/uploads/2020/07/Hydrogen-APPG-Report-2020.pdf>

but also a massive opportunity if we can develop the battery technology here in the UK. The Faraday Battery Challenge brings together academia and businesses to accelerate the research needed to develop the latest electric car battery technologies. In June 2019, i.e. well before Covid-19, the government committed £23m to develop the latest vehicle technology. This money is welcome but is nowhere near enough to keep the UK as a world leader in this field.

Unions strongly support a battery plant. Furthermore, whilst a battery plant is the big marquee item, barriers such as uptake/demand, skills and infrastructure (in terms of both charging and battery recycling) must also be addressed.

Steel

Trade union colleagues from Wales raised the issue of the steel industry, in the context of the Orb Steelworks in Newport, which has closed since those conversations took place. A number of urgent actions are needed to support the UK steel industry as part of a just transition. Greater weighting should be given to environmental factors in the procurement of steel; buying from China can produce up to fifty times more carbon than sourcing from UK, so this is important from the perspective of both UK industry and environmental objectives. Meanwhile, the fact that UK producers are reported to pay fifty per cent more for energy than their French and German colleagues must clearly be addressed. And when UK introduces its own Emissions Trading Scheme in 2021, it must at least penalise our steel producers no more than the current regime.

Financial support for the steel industry also needs to be brought forward; the UK government has announced more than £500m to help transition, through the Industrial Energy Transformation Fund and the Clean Steel Fund – but much of this is not available until mid-2020s. Bringing this funding forward could help us invest out of crisis.

Apart from funding, greater vision is necessary for the steel industry. Unions say the disappointing thing about the Orb steelworks is less that the UK government did not support investment to keep the plant going, but more that it didn't see the wider picture. The electrical steel that Orb could have made for electric motors represented a small part of the value of the power train in isolation, but the capacity could have incentivised others to invest in other essential parts of process, like stamping and laminating, and so persuading companies to build powertrains for electric vehicles in the UK. Our experts say this could mean lost value of more than £1bn over 10 years to economy – a joined up green industrial strategy could have prevented this.

To give a wider sense of that lost opportunity, Transition Economics modelled the jobs effect of investment to transform and decarbonise the Welsh steel industry, through co-located research and development sites at steel manufacturer facilities: enabling demonstration projects such as upgrading the Orb steelworks (had it remained open), a Hlsarna furnace, or hydrogen and direct reduction furnaces connected to floating offshore wind. Transition Economics found that this could have created 3,426 direct construction and research and development jobs in steel industry decarbonisation.

Ceramics

Trade unionists in the Midlands raised the huge problems faced by the ceramics industry, which is so important to workers around Stoke and elsewhere. It is vital that the UK protects this sector: decarbonisation must not be achieved by 'offshoring' UK industry, jobs and emissions. Instead, we need fair and equitable policies that achieve genuine emissions reduction by incentivising investment and innovation in sustainable production at a competitive cost. This needs genuine partnership between industry, unions and government.

Like the steel industry, ceramics suffers because of UK electricity costs are uncompetitive. Failure to maintain a level playing field on electricity prices has already resulted in significant numbers of electro-intensive UK manufacturers leaving the UK for elsewhere (including to France and Germany) and curtailed investment – and these are often the high technology firms supplying products necessary for a low-carbon economy. Action to drastically reduce industrial electricity costs is needed if the sector is to retain an internationally competitive position and to avoid stifling electrification as a decarbonisation option.

Meeting the net-zero challenge, whilst maintaining competitiveness, will require extensive financial support from Government to accelerate the development and deployment of both proven and innovative new technologies. Key decarbonisation technologies for the sector include: energy/carbon/resource efficiency measures; hydrogen firing; electrification of large kilns; and syngas / biomass gasification. Unlike some energy-intensive sectors, on-site implementation of carbon capture is likely to be more muted due to ceramic factories being more numerous, smaller in size and geographically dispersed in locations away from industrial clusters; rendering CCUS impractical and costly. These technologies also require significant national infrastructure investment; without which industrial decarbonisation cannot progress.

These sectoral interventions are necessary in the context of an economy ravaged by the Covid-19 pandemic. They must be seen hand-in-hand with a recovery strategy at national, regional and local level.

Investment with a focus on jobs

These projects will require investment to deliver them.

In the March Budget, before the scale of the coronavirus pandemic became clear, government promised a programme of infrastructure investment totalling £640bn by 2024–25 and promised a National Infrastructure Strategy in 'spring'.²³ There is now an urgent need to bring forward this spending.

Research by Transition Economics for the TUC shows that an £85bn programme of investment now could create 1.24 million jobs over the next two years, with significant benefits for jobs in each region as set out below.

²³ HM Government, Budget 2020 at <https://www.gov.uk/government/publications/budget-2020-documents/budget-2020>

And this investment will need to continue. Government must be prepared put in the investment needed to deliver the net zero target, through progressive taxation, as well as to ensure that the regulatory framework supports a just transition. Like high energy use sectors such as steel and construction, the energy industry needs long-term certainty in order to plan, and there needs to be effective strategic oversight and accountability.

But investment is needed well beyond this. Government must also fund necessary infrastructure investment and to support transition in affected sectors including automotive, aerospace, steel and construction, alongside household energy efficiency programmes, a public service response to tackle extreme weather, and public service responses in housing, planning, regulation and public transport, helping to bring the UK's public and private investment up to at least the levels of other developed countries.

Government must also use this investment strategically by:

- Using procurement to support UK jobs by working strategically with commissioners and both current and potential providers (i) to map goods and service requirements and identify procurement opportunities in advance (ii) build capacity to bid and deliver through the supply chain and (iii) use intelligent, social value procurement to secure employment, labour standards, skills and environmental outcomes.
- Setting out an Olympics-style plan to promote good quality jobs and training on every new infrastructure project, and specifying how these projects will help deliver on a Jobs Guarantee: When the Olympics were planned, government and the Olympics Delivery Authority worked with trade unions, local authorities and others on an agreement that ensured that the project would deliver good quality local jobs and skills programmes. A similar agreement was reached to deliver HS2. We now need similar framework agreements, which set out how contractors will work with trade unions to deliver local jobs and apprenticeships, for every infrastructure project backed by government investment. These agreements also need to set out a commitment to tackling labour market inequalities and ensuring equal access to work for those with protected characteristics.
- Ensuring that investment aims to promote decent work, against the background of a strong framework of employment rights that prevents a race to the bottom.²⁴

²⁴ The TUC's proposals for improving employment rights in the UK are set out in TUC (2020) 'Insecure work: Why decent work needs to be at the heart of the UK's recovery from coronavirus' at <https://www.tuc.org.uk/research-analysis/reports/insecure-work-0>

Regional job creation in UK wide infrastructure projects

Transition Economics analysis for the TUC estimates that 1.24 million jobs across the UK can be created in the coming two years through a two-year emergency clean infrastructure stimulus, reabsorbing workers who have lost employment due to the Covid-19 crisis. Our analysis recommended 19 infrastructure projects totalling £85bn public investment, based on investment and employment modelling and ten World Bank-derived criteria including long-term job creation, resilience and sustainability.

As a result, this analysis demonstrates the regional distribution of 506,000 English and Welsh potential direct jobs, of the 1.24 million jobs (direct and supply chain) that can be created by an infrastructure stimulus UK-wide. Actual regional job creation potential for any NUTS1 region would be higher than the sum of estimates provided for that region in this analysis, due to indirect (supply chain) job creation and smaller projects not included here. Additional Transitional Economics has produced a Wales job creation analysis for Wales TUC which includes additional projects. Details available here <https://www.tuc.org.uk/research-analysis/reports/job-creation-wales-infrastructure-investment>

Project	Direct regional job creation, England & Wales										Indirect jobs, England & Wales	Total UK jobs	
	East	East Mids	London	North East	North West	South East	South West	Wales	West Mids	Yorks & Humber			
Transport													
Expand and upgrade rail network	2,729	4,875	522	4,176	13,254	569	6,504	5,870	7,759	9,410	53,999	126,540	
Electric car charging points (rural)	1,503	1,211	59	440	1,115	1,544	1,761	1,077	1,094	1,053	10,533	23,768	
Build cycle lanes & pedestrianisation	4,530	3,867	0	2,789	7,761	3,818	4,426	2,725	5,269	5,325	39,296	103,018	
Buildings													
Build social housing (using domestic offsite manufacture)	18,089	13,910	26,917	7,229	28,797	22,327	16,755	9,370	13,249	20,906	172,222	361,613	
Retrofit social housing	10,766	8,359	20,949	7,089	15,183	13,702	8,676	7,882	12,141	11,189	112,456	267,715	
Energy efficiency assessments	5,201	4,044	6,911	2,385	6,355	7,583	4,962	2,731	4,835	4,703	22,369	79,200	
Retrofit public buildings	1,300	904	1,651	597	1,695	1,862	888	572	1,216	1,233	11,561	26,089	
Land													
Reforestation schemes	0	1,092	0	5,496	6,376	0	2,481	2,895	1,013	4,402	16,629	63,102	

Skills

Upskilling workers for the jobs of the future is a key part of a just transition. With this in mind, unionlearn, the TUC's skills arm, published 'Cutting Carbon, Growing Skills: Green Skills for a Just Transition', in May 2020.²⁵

It is vital to ensure that workers in energy intensive sectors, as well as those developing transitioning technologies, have the skills and expertise that will be required to help these sectors transition to lower carbon models, and it's vital that these skills are maintained. Investing in good, new, sustainable jobs while helping workers in carbon intensive industries transition to those jobs in the wider economy will ensure that skills and experience are not lost.

We will also need to develop new skills across the workforce for new types of role, so government must dramatically increase its investment in skills.

Unions must have access to all workplaces, to discuss the importance of transition as well as the benefits of joining a trade union.

Apprenticeships have long been the best guarantor of skills excellence in industry. The trade union role in agreeing the substance and the quality of apprenticeships has ensured consistent high standards.

Government should give workers the confidence to train, starting by establishing lifelong learning accounts for all adults so that everyone has a personalised budget for training, and introducing a new right to retrain for everybody, including bringing forward National Skills Fund funding and accelerating work of the National Retraining Partnership.

We have also called for all workers to have a right to paid time off for education and training

Further and higher education unions have called for an integrated skills strategy, including the effective embedding of Education for Sustainable Development across the curriculum and the rapid introduction of a short-course sustainability skills programme to train the existing workforce. Unions further support an expansion of quality apprenticeships based on a coherent system of delivery addressing the inequalities in apprenticeships to ensure access by under-represented groups promoting effective community engagement by the further and adult education sector to support the supply and demand issues of skills and jobs.

Meanwhile, investment into further and higher education will help UK to meet its binding climate targets as set prior to and during the Paris agreement in 2015 and the UN sustainable development goals. Such goals include to ensure that we can deliver green skills, to provide green collar jobs, and to provide for lifelong learning for a just transition and to fund research and innovation.

For trades unions to negotiate Transition Agreements with their employers, and participate effectively in a just transition they will require additional support and recognition. The value

²⁵ Unionlearn, 'Cutting Carbon, Growing Skills', May 2020:
<https://www.unionlearn.org.uk/publications/cutting-carbon-growing-skills-green-skills-just-transition>

of engaging with Health and Safety reps has become clear during the COVID-19 return to work process. These union reps have statutory rights and something similar is needed to support trade unions on green recovery engagement issues. That recovery will only work if there is support at workplace and regional level, to strengthen employee engagement and union-management co-operation. Unions should be given the legal right to appoint Green Reps with similar rights to those laid out in the Safety Reps and Safety Committee Regulations and this is something that should be included as a priority.

A Just Transition Commission

Some countries, including Scotland, have established just transition commissions, bringing interested parties to the table to develop strategies for transition, as well as key milestones and policies to bring them about. The TUC supports the establishment of a just transition commission for the UK, with government, unions, employers and civil society partners given a voice in the work of the commission. This report has highlighted the diversity of both experience and need across the UK; it is clear, then, that a just transition commission for the UK must include the participation of the regions of England, along with Wales, Scotland and Northern Ireland.

Recommendations for regional, sub-regional and local policy

We have called for regional recovery panels to help drive the recovery after the corona virus. These panels should be given a specific remit to look at just transition. These regional and devolved nation structures are essential because, as we have seen, there are wide variations across the country in terms of both the nature and scale of the challenges faced and the institutional arrangements and capacities for addressing these challenges.

As set out above, we argue for significant additional investment to aid the progress towards net zero. But investment alone won't guarantee good jobs are accessible to the people who need them. Combined authorities and Local Enterprise Partnerships (LEPs), have a crucial role to play in shaping how infrastructure is delivered to maximise good job creation.

Recommendations for combined authorities, local councils and LEPs:

- work with other local actors to articulate the need for greater government investment in infrastructure, especially green infrastructure, and define what works best for those areas, including through recovery panels
- work with community and workforce representatives to ensure that infrastructure and regeneration is delivered in a way that meets genuine need and enhances wellbeing in those communities – not just in terms of identifying the infrastructure that meets that need but in shaping the way it is constructed and delivered in a way that maximising community benefits; consultation must be an on-going process that provides a feedback loop from communities and the workforce to the relevant delivery partners, to relevant local authorities and LEPs

- work with trade unions to ensure that every investment programme comes with an Olympics-style plan for decent jobs attached; all infrastructure projects, including house building, should include framework agreements that maximise employment and training opportunities for local people and deliver great jobs, employment standards and positive industrial relations. Needless to say, these plans should ensure that we build back better – and build back greener.

Public sector organisations can have significant spending power, which can be used as a strong economic lever to stimulate and restructure a region’s economy. Combined authorities and local councils should work with anchor institutions in the region to coordinate strategic procurement spending in support of a just transition.

These objectives should be a key measurable outcome and condition of the financial support co-ordinated by combined authorities, local authorities and LEPs through City Deals, the Local Growth Fund and the forthcoming Shared Prosperity Fund.

To develop strong local recovery strategies, combined authorities and LEPs should establish new sectoral boards, bringing together with employers, unions and other stakeholders to support productivity improvements and better jobs across key industries. These sectoral boards would provide strategic guidance for each sector, looking at and planning for:

- opportunities for growth
- resilience of the sector and the key employers within it – including how they are adapting to plans for net zero
- local labour supply
- development of robust supply chains in the local economy
- education and training that enables local people to access the skills required for key sectors
- provision of workforce development and training, pay and conditions and career progression – these would be useful contributors to recovery panels as we seek to deal with the current crisis, and would then help with future planning on Brexit.

Worker voice must be embedded in these plans, whether through the promotion of collective bargaining at a workplace level, enterprise and sectoral level or using a social partnership model to ensure equal voice between government, workers and employers. Collective bargaining delivers. Workers in unionised workplaces have better pay, more training, better work-life balance policies, better pensions, and are less likely to leave their job.

More and more evidence shows that collective bargaining also delivers for workers across the economy too – particularly when workers can bargain with employers to set standards across a whole industry or sector. The OECD has published evidence showing that collective bargaining can help tackle inequality, boost business productivity, and help groups who are discriminated against in the labour market get and keep jobs. It also says collective bargaining is at the heart of how governments can deliver better work. Furthermore, as this report has demonstrated, worker representatives have detailed, specialised knowledge dating from years of experience in those sectors that are central to the transition from a

fossil fuel-based to a low carbon economy. Their primary role is to protect and enhance the interests of their members, but wise employers see their unions as a resource, harnessing their expertise for the growth potential and success of the company or organisation.

To embed this kind of good practice and increase workers' voice in the long term, combined authorities, local councils and LEPs should:

- set a headline aim to increase employee and trade union engagement, explaining the benefits that this can bring for productivity, and use commissioning, procurement and the allocation of specific funding streams to require evidence of effective workforce engagement
- build employee, worker and trade union engagement by promoting the value of social partnership through collective bargaining and workforce voice in strategic decision making; this could take the form of establishing greater information and consultation mechanisms with recognised trade unions or through other forms of employee engagement in non-unionised workplaces, including through new recognition arrangements where none currently exist; combined authorities and local authorities should work with LEPs to jointly promote this as a core objective of the recovery strategy
- develop structures and mechanisms for engaging trade unions and other stakeholders in the heart of regional decision making and economic strategy – this should come with equal weight to trade union representation as that of business and other stakeholders.

Regional and local responsibility for skills provision means that combined authorities and LEPs have an opportunity to drive change in skills provision in the regions and sub-regions. They should:

- use procurement and advocacy and soft powers to ensure that the recovery strategy has a core aim of driving up employer engagement in training, with a view to increasing: – the number of employers providing workplace training – engagement with unions on the learning and skills agenda, including the use of workplace learning agreements negotiated with relevant trade unions – the number of employees provided with time off to train
- ensure local skills strategies are aligned with infrastructure and investment decisions, around investment in a future net zero economy
- secure employment and training opportunities for local communities through intelligent procurement and framework agreements such as those used for the London Olympics and HS2, including making sure that apprenticeships and other training opportunities are established across supply chains
- sign the TUC Apprenticeship Charter, like has been done with Liverpool City Region, and work with LEPs to engage employers to ensure every apprenticeship has purpose, is paid fairly, with high-quality learning and training elements and access to trade unions.

Appendix one: Wales's national policy

In Wales, the Social Partnership Council brings together trade unions, employers and the Welsh Government. The Wales TUC has called for the Social Partnership Council to play the role of a national recovery council in response to the Covid crisis. It believes that in Wales, [social partnership](#) provides a strong foundation for social dialogue, which can be the catalyst for achieving a greener, fairer, more equitable recovery and pathway to a net-zero Wales.

The Wales TUC has called for the Welsh Government's Covid recovery plans to prioritise green growth to boost jobs and the economy while protecting the climate. It also wants to see a just transition become an integral and ongoing part of social partnership discussions. Discussions are already underway through the social partnership structures to identify the best ways of supporting key sectors and industries through the crisis and towards recovery. Welsh Government has been working with social partners to go beyond what the UK government is offering in terms of offering support and seeking to retain good jobs

For example, the Welsh Government has recently announced a new £40m package to support those looking to upskill in work or find a new job in the wake of the Covid crisis. The Wales TUC has welcomed this and particularly welcomed the funding pledged to ensure that 5,000 apprentices can start or continue their training. This will benefit many younger workers in particular, who've been disproportionately impacted by the economic crisis. Also welcomed is the almost £9m that has been pledged to help people to retrain and find new employment, including through the Wales Union Learning Fund.

The Welsh Government has [reaffirmed its commitment to social, economic and climate justice as part of the post-Covid recovery](#). It is also committed to using all its available levers to implement the recommendations of the Fair Work Wales report. The report recommended that Fair Work Wales Standard(s) should be used as criteria for access to public funding. The Welsh Government plans to introduce a Social Partnership Act and has committed to incorporating the Fair Work Commission's definition of fair work into the well-being objectives under the Well-being of Future Generations Act.

The Wales TUC has recently published a report, ['A green recovery and a just transition'](#), which calls for a massive economic stimulus and sets out a five-point plan to achieve a 'just transition' to a net-zero economy for workers and communities in Wales.

It says that Wales could see a huge return on investment and thousands of new jobs if the Welsh Government had more money to invest in greener travel, renewable energy projects and sustainable homes.

The Wales TUC echoes the TUC's calls on the UK government in terms of the actions needed to deliver a recovery. It supports the call for UK government to fund a job guarantee scheme that supports decarbonisation and wants to see this managed and delivered by Welsh Government in social partnership with trade unions and employers in Wales.

The Wales TUC has also called for Wales to be given further flexibility in its powers to borrow to invest in its climate priorities. But it says it is clear that Wales will not be able to deliver this transition without the significant increase in funding, investment and policy changes from Westminster called for by the TUC.

The report says:

Wales needs a clear and funded pathway to net-zero that maximises the opportunities to create good quality green jobs in areas of the transition where Wales has clear opportunities. This includes the development of greener steel, marine, tidal and hydrogen energy, decarbonisation of housing, low carbon travel and local supply chains.

Welsh Government must use all its levers to promote Fair Work to ensure new green jobs are good jobs that offer 'fair work' as defined by [The Fair Work Wales report](#).

Workers must be given a central voice in planning the transition to 'net-zero', through social partnership discussions with Welsh Government and, at a workplace level, through workplace 'transition agreements' agreed between employers and unions. The Wales TUC wants to see the Welsh Government support the development of workplace transition agreements in workplaces where it has influence. It believes this could be achieved by strengthening the Economic Contract and through social partnership structures.

Employers should work with unions to develop workplace sustainability initiatives. The Wales TUC is calling on the Welsh Government to promote greater employer support for the role of trade union 'green' or environmental reps in workplaces where it has influence.

Workers need more funding for skills to provide a clear pathway to new, greener jobs. Through programmes such as the Wales Union Learning Fund, Personal Learning Accounts and ReAct, the Welsh Government has shown a consistent commitment to investing in skills. And the Welsh Government's recent announcement of a £40m package to help those looking to upskill or find a new job in the wake of the Covid crisis is very welcome.

But the Wales TUC says investment in skills will need to increase significantly to keep pace with the challenges of transitioning to a net-zero economy. To be most effective, funding should be targeted using a tripartite approach through social partnership, to ensure the skills system is industry led, rather than employer led. Access to skills for workers must be widened, in line with the Fair Work Report recommendations.

Responsive and extended funding of the adult education sector is essential if the demand for new skills as a result of the move to a greener economy is to be met. A well-funded, targeted 'skills for transition' fund should be established, which must be free to workers and aimed at preparing workers for the transition to net-zero. This could work alongside and maximise the impact of other funding streams, including WULF, ReAct and the Personal Learning Accounts.

More support for apprenticeships, such as schemes to support supply-chain shared apprenticeships, is also vital. This needs to be alongside targeted funding to overcome the lower economies of scale in Wales in terms of learner numbers, so that the apprenticeship framework can be more responsive to the needs of the transition.

Appendix two: regional employment creation from a Covid-19 clean infrastructure stimulus: analysis from Transition Economics

Research questions

- What is the regional immediate-term job creation potential of national infrastructure projects as part of COVID19 economic recovery in England and Wales?
- What regional immediate-term jobs can be created by key industrial infrastructure projects identified by the TUC's Just Transition for the Regions and Nations report in England and Wales?

Introduction

Given spiralling unemployment, large-scale government action is necessary to balance out the expected loss of jobs from dampened production and demand and disrupted supply chains. Investing in infrastructure is one of the key tools for government action to create jobs and help economic recovery.

Transition Economics analysis for the TUC estimates that 1.24 million jobs across the UK can be created in the coming two years through a two-year emergency clean infrastructure stimulus, reabsorbing workers who have lost employment due to the Covid-19 crisis. Our analysis recommended 19 infrastructure projects totalling £85bn public investment, based on investment and employment modelling and ten World Bank-derived criteria including long-term job creation, resilience and sustainability.

The Covid-19 crisis threatens to exacerbate pre-existing economic inequalities, hitting areas with weaker economies hardest. It is therefore important that economic recovery measures prioritise support to held-back regions.

TUC's report Just Transition for the Regions and Nations identifies a number of priority industrial policy proposals to support a just climate transition for workers in England and Wales.

About these estimates

This briefing estimates regional job creation potential in England and Wales from a) the largest infrastructure projects identified by our assessment and b) priority industrial infrastructure projects identified by the TUC's Just Transition for the Regions and Nations report.

This briefing estimates direct employment creation (e.g. jobs in railway construction) by NUTS1 region in England and Wales, in the immediate-term.

Indirect, or supply chain employment creation (e.g. jobs in manufacturing construction materials for railway upgrades) is estimated at a national level, as regional estimates for these are likely to be unreliable.

The employment figures modelled here represent the immediate-term job creation over the coming two years to deliver infrastructure projects - not ongoing employment from these projects.

As a result, this analysis demonstrates the regional distribution of 506,000 English and Welsh potential direct jobs, of the 1.24 million jobs (direct and supply chain) that can be created by an infrastructure stimulus UK-wide. Actual regional job creation potential for any NUTS1 region would be higher than the sum of estimates provided for that region in this analysis, due to indirect (supply chain) job creation and smaller projects not included here.

A breakdown of Scottish employment potential is not included in this analysis, but is included in separate Transition Economics analysis for the Scottish TUC. See Methodology below for a more detailed explanation.

Regional job creation in UK-wide infrastructure upgrades

Project	Direct regional job creation, England & Wales										Indirect jobs, England & Wales	Total UK jobs	
	East	East Mids	London	North East	North West	South East	South West	Wales	West Midlands	Yorks & Humber			
												.	
Transport												.	
Expand and upgrade rail network	2,729	4,875	522	4,176	13,254	569	6,504	5,870	7,759	9,410	53,999	126,540	

Electric car charging points (rural)	1,503	1,211	59	440	1,115	1,544	1,761	1,077	1,094	1,053	10,533	23,768
Build cycle lanes & pedestrianisation	4,530	3,867	0	2,789	7,761	3,818	4,426	2,725	5,269	5,325	39,296	103,018
											.	
Buildings											.	
Build social housing (using domestic offsite manufacture)	18,089	13,910	26,917	7,229	28,797	22,327	16,755	9,370	13,249	20,906	172,222	361,613
Retrofit social housing	10,766	8,359	20,949	7,089	15,183	13,702	8,676	7,882	12,141	11,189	112,456	267,715
Energy efficiency assessments	5,201	4,044	6,911	2,385	6,355	7,583	4,962	2,731	4,835	4,703	22,369	79,200
Retrofit public buildings	1,300	904	1,651	597	1,695	1,862	888	572	1,216	1,233	11,561	26,089
											.	
Land											.	
Reforestation schemes	0	1,092	0	5,496	6,376	0	2,481	2,895	1,013	4,402	16,629	63,102

Immediate-term regional job creation in TUC-identified industrial infrastructure

Gigafactories

Construction of battery factories for electric vehicles, to support the electrification of private transport and continued manufacturing of EVs within the UK.

Job creation (direct construction jobs)	North East	Wales	West Mids
Build battery factories for EVs	2,040	3,960	3,960

Offshore wind supply chains: ports and manufacturing

Expansion and redevelopment of ports and shipyards and upgrading fabrication yards. To enable greater domestic and regional capture of the manufacturing supply chain for offshore wind, including manufacturing foundations, jackets, chains and components for floating offshore wind.

	North East	North West	South West	Wales	Yorks & Humber
Upgrade ports and shipyards for offshore wind supply chain	2,780	778	556	1,668	5,004
Build manufacturing facilities for offshore (including floating) wind turbines	720	560	309	240	617
Total	3,500	1,338	865	1,908	5,621

Steel industry R&D

Investment to transform and decarbonise the Welsh steel industry, through co-located Research & Development sites at steel manufacturer facilities: enabling demonstration projects such as upgrading the Orb steelworks, a Hlsarna furnace, or hydrogen and direct reduction furnaces connected to floating offshore wind.

Job creation (direct construction and R&D jobs)	Wales
Steel industry decarbonisation	3,426

R&D in Carbon Capture & Storage for heavy manufacturing industry

Research & Development pilot funding to connect heavy industry that does not have existing decarbonisation pathways - specifically cement and chemicals - into potential CCS networks. This would be additional to existing government funding and focus on heavy industries that are not receiving funding for CCS development.

Job creation (direct construction and R&D jobs)	North East	Yorks & Humber
R&D in Carbon Capture & Storage for heavy industries (incl cement, chemicals)	685	685

District heating

Expanding foundational infrastructure for district heat networks, specifically focused on utilising mine water – geothermal energy drawn from disused and now water-filled former mines.

Job creation (direct construction and engineering jobs)	North East	Wales	Yorks & Humber
District Heating	2,102	1,051	2,102

Methodology

Selection of projects

The list of projects considered in this research is not exhaustive. It is also limited to infrastructure upgrades that can be initiated and delivered to a substantial extent at short (under two years’) notice.

National projects were selected for inclusion from the TUC infrastructure stimulus assessment based on government investment of £2bn or over, and sufficient data available to enable a reliable estimate of regional investment split. Broadband upgrades and R&D for heavy industry were not included based on insufficient data. See the infrastructure stimulus assessment for more on project selection.

Additional priority industrial projects were selected based on the recommendations in TUC’s Just Transition for the Regions and Nations report. Non-infrastructure (e.g. further education) and longer-term (e.g. nuclear energy) projects were not included.

Investment estimates

UK-wide government investment scale and investment leverage multiplier were assessed based on existing published proposals for these or similar projects: e.g. the social housing programme uses Shelter’s assessment of the need for social housing investment.

Regional split in investment was assessed using appropriate government and 3rd party data (e.g. ONS and other government data on roads, farmland areas, housing, and public buildings) or third party data (e.g. third party assessments of shovel-ready rail improvement projects).

Job creation multipliers

Unlike our UK-wide assessment, the regional job creation assessment includes only direct (not supply chain) jobs. While supply chain employment can be reliably estimated on a UK-wide level, this is not possible at the required level of detail on a regional level.

Multipliers are sourced or calculated from ONS, Homes and Communities Agency and other government sources and supplemented with data from published third-party economic modelling. Note that nearly every multiplier in the assessment relies on input-output modelling (top-down) methodology, which tends to slightly overstate job creation compared to empirical (bottom-up) methods. Due to the lack of exact precedent for many of the projects and due to the need to account for supply chain jobs, we consider input-output based multipliers the most appropriate methodology.

Important note: The employment multipliers presented here describe the jobs created in the immediate term as part of an economic recovery stimulus - which often do not correspond to ongoing long-term employment. For example, a government decision to support construction of a gigafactory will lead to short-term construction jobs in building the gigafactory and associated supply chain jobs, e.g. providing construction materials and machinery. This is the employment represented above - not the ongoing future jobs in manufacturing EV batteries in the gigafactory. Similarly, this analysis considers the jobs in building and upgrading rail lines and planting forests - not in operating rail lines or managing forests. Longer-term job creation estimates are available from Transition Economics, but not included in this report.