

TRUST IN TRANSITION

CLIMATE BREAKDOWN AND
HIGH CARBON WORKERS

CONTENTS

SUMMARY	2
1. A CRISIS OF TRUST	4
2. THE JUST TRANSITION CHALLENGE	6
2.1 Defining a just transition	6
2.2 The scale of transition	6
2.3 Dimensions of transition	7
2.4 Regional implications	9
2.5 Learning from transitions elsewhere	10
3. EMPATHY	11
3.1 The worker perspective	11
4. CO-DESIGNING POLICY	13
4.1 Worker voice	13
4.2 National leadership	14
4.3 Changing the rules nationally	14
5. LOCALISING TRANSITION	16
5.1 Local industrial strategy	16
5.2 New Regional Authorities	17
6. RECOMMENDATIONS	19
7. CONCLUSION	21
ENDNOTES	22

SUMMARY

Britain has a terrible track record of managing deep industrial change in a just way. Decades of free market economic policy have undermined the prosperity of workers and communities. It is not surprising that we have ended up with a profound lack of trust: millions of people lack trust in elites; industrial heartlands lack trust in the direction of industrial change; and trade unions and workers lack trust in government promises that ‘this time will be different’. The rebuilding of trust in transition to a zero-carbon economy is perhaps the central political challenge facing the UK as it decarbonises.

Increased climate ambition is just one of the forces set to reshape UK industry, whether driven by increased policy action at home or as markets are reshaped by the leadership of others. The Committee on Climate Change (CCC) has warned that the government’s policy actions are not up to scratch even before the UK’s new commitment to net-zero emissions by 2050 – a date that must be brought forward. The potential for job creation from clean industries and new business models is well established, but job creation in some sectors (such as energy) could be offset by job losses elsewhere – not necessarily in the same parts of the country, or among workers with similar skills profiles.

Accelerating decarbonisation must be a shared national project, but in a democracy, no change of the scale required can be forced onto people, particularly those whose way of life could be significantly disrupted. A UK *gilets jaunes* response would be a certainty.

Many workers and trade unions do not feel included in the conversation about decarbonisation, which is too often framed in terms that do not respect the shared identity, heritage, and lived experiences of people and communities whose hard work has underpinned much of the economic benefits of the fossil fuel age.

Areas of the country that are likely to be particularly affected do not have the resources, the flexibility, or the time that they need to shape meaningful transition plans. While the climate transition will affect the whole country, it will affect some regions acutely. Areas of the country with lower gross value added (GVA) per capita, including those that have already suffered the most from decades of deindustrialisation, are disproportionately reliant on clusters of high-carbon industry – oil, coal, or gas production or generation – or other forms of economic activity that are likely to be most directly affected by the climate transition. Some regions of the UK, such as the East and West Midlands, Yorkshire and the Humber, and Aberdeen, are particularly exposed; in more than 40 local authorities, jobs in sectors that may be acutely affected by the climate transition make up more than 30% of all employment.

A just transition for people and places is essential. It has been a central demand of trade unions for decades, and a core commitment under the Paris Agreement on Climate Change. The just transition is principally a process, not a fixed outcome. It involves changing the priorities for industrial planning so that it ensures a fair deal for directly affected workers and communities – giving them a meaningful voice over how the transition evolves, and ensuring people and places are not left on the scrap heap as climate policy and global market forces unfold and interact.

The lack of progress in delivering a just transition to date is a core function of how our economy is run. Without the principles of a just transition process guiding industrial strategy, workers in high-carbon industries would be justified in distrusting that these changes will be to their benefit. Nor are there any guarantees that the jobs that are created will be good jobs, i.e., secure, well-paid, unionised, and with decent terms and conditions.

Done right, transitions – or transformations – are an opportunity to reshape how policy is made, and for whom. Business as usual is not an option in the face of global trends and the climate crisis. A new model is needed that seeks to localise industrial strategy around the distinct aspirations and needs of communities. The only kind of industrial policy that makes sense in the years ahead is one that responds to our economic, environmental, and social crises together.

DELIVERING TRUST IN TRANSITION

Trust, the currency of transition, is in short supply. Rebuilding it has three essential elements:

1. Committing to government leadership and a Green New Deal.

A national plan, such as a **Green New Deal**, is needed to deliver a just transition in practice and set a clear mandate for industrial planning, delivering social justice and rapid decarbonisation together. More **ambitious deadlines** for economy-wide and sectoral decarbonisation are needed to ensure UK industry is not left behind as global markets change. Institutions, in particular the **Treasury, should be given a clear mission** to deliver the just transition via a Green New Deal. A new **Just Transition Fund** should be established, including by redirecting current economic support for fossil fuels.

2. Making sure workers are empowered to play an active role.

Trade union legislation must be revised so that unions can play an active role in setting national priorities for the just transition and co-designing industrial strategy, and to enable union members to **organise and take legitimate industrial action** if they feel that their workplace is at risk of being left behind as the country decarbonises. Workers should be supported to **reskill and to take part in industry-wide transition planning** by the government topping up wages, via a localised Just Transition Fund, to enable reductions in core working hours.

3. Localising transition planning.

National carbon budgets should be mapped against the needs of regions or localities in a way that reflects the different carbon reduction trajectories of different parts of the UK. This would provide a focus for co-designed **localised industrial strategies** supported by the Just Transition Fund. These strategies must centre the just transition. This will require **new combined city and county regional authorities** and new **local economic partnerships (LEPs) with a broader mandate and more democratic membership than existing ones.**

1. A CRISIS OF TRUST

The UK has a terrible track record of managing deep industrial change in a just way. Over the last 40 years, there has been a lack of planning for industrial change, and the deliberate shifting of power from organised labour to global capital. Decades of free market economic policy have undermined the prosperity of workers and communities, with little respect for any proud heritage of working industry,¹ most viscerally seen through the processes by which coal mines were closed in the 1980s. The people and places at the sharp end of our broken economic system have been largely powerless in its face.

It is not surprising that we have ended up with a profound lack of trust: millions of people lack trust in elites; industrial heartlands lack trust in the direction of industrial change; and trade unions and workers lack trust in government promises that ‘this time will be different’. The rebuilding of trust is perhaps the central political challenge facing the UK as it decarbonises.

Trust in transition to a zero-carbon economy is essential for a national mission to respond proactively and fairly to the climate and ecological crisis.² Scientists have warned that the world has a handful of years to radically reduce greenhouse gas (GHG) emissions.³ The UK government has legislated for net-zero carbon emissions by 2050, a date that is already criticised as too far away. But policies to deliver this are not up to scratch, as the Committee on Climate Change (CCC) made clear earlier this year.⁴ State economic support for the continuing production, consumption, and use of fossil fuels is extensive: The European Commission estimates that UK state economic support for fossil fuels amounted to £10.5 billion in 2016.⁵ Other estimates are higher, depending on definitions; the International Monetary Fund (IMF) estimated a figure of £26 billion in 2015.⁶ What matters is not definition, but intent.⁷

The world is responding to the climate transition as just one of a suite of macro trends, including increasing financialisation, automation, and globalisation, and the reconsolidation of global supply chains around emerging markets. These are already affecting industry in the UK, as can be seen with the rapid growth in the electric vehicle (EV) market in China.

Change is inevitable for many hundreds of thousands of workers in UK industry, whether driven by increased policy action at home or as markets are reshaped by the leadership of others. What is not inevitable is how we deal with it.

A just transition is needed which does not leave industry, workers, or communities on the scrap heap as climate policy and global market forces unfold. In a democracy, delivering a just transition is perhaps the central issue for the politics, economics, and the viability of the UK’s acceleration towards zero carbon as well as its rebuilding of the country’s divided economy and disillusioned democracy.

The only kind of industrial policy that makes sense in the years ahead is one that responds to our economic, environmental, and social crises together. A Green New Deal, originally co-designed in 2007/8 by the New Economics Foundation (NEF),⁸ would embed a new mission for government to create a generation of green jobs around the country as we retool the UK for a zero-carbon economy, particularly in the places that need it most. The UK faces not only a climate transition challenge, but also a profound inequality challenge both within and between regions.

As NEF has recently shown, many in the UK have not experienced an increase in their living standards since the financial crisis more than a decade ago.⁹ And as we illustrate in this report, many of the regions of the UK that have gained the least in these past 10 years remain the most carbon intensive. While millions of workers across the economy stand to benefit in the long run, the short-term future for high-carbon or energy-intensive industry is less certain.

In this report, we argue to the importance of thinking of the just transition as a *process*, not as a defined outcome, an approach to embedding social justice and the rebuilding of community power and worker voice into industrial strategy and delivery. Those who are most affected on the ground must have a real and meaningful voice in delivering a sustainable economic future. To this end, we argue that dialogue is essential. A degree of consensus, or at least the willing co-management of inevitable change, must be actively sought.

Many of the issues discussed in this report link to deeper and more systemic challenges facing the UK as a result of decades of market-first neoliberal economics. Done right, transitions – or transformations – are an opportunity to change how policy is made more broadly. This reveals the need for a new model for industrial strategy that seeks to localise it around the distinct aspirations and needs of communities and those directly affected by change.

The just transition has many dimensions, as we explore in the next chapter. However this is a report that focuses on delivering a just transition specifically for those workers in high-carbon industries who face an uncertain future in a rapidly decarbonising UK and global economy.

2. THE JUST TRANSITION CHALLENGE

2.1 DEFINING A JUST TRANSITION

What is a just transition? The International Trade Union Confederation (ITUC) defines a just transition as ‘decent work, social inclusion, and poverty eradication’ while reducing emissions in line with global commitments on tackling climate breakdown.¹⁰ This broad definition reveals the different potential impacts of the transition to a zero-carbon economy on workers, localities, industries, and nations.

It is certainly the case that building a zero-carbon economy is a profound matter of social justice: who pays, who benefits, and to what extent the UK plays its part in averting the humanitarian crises that climate breakdown is already causing and will continue to cause. The UK, after all, bears a particularly high historical responsibility for carbon emissions.¹¹

In the UK context, however, the just transition is principally understood as relating to work and industry. The term itself was first coined by unions in North America to mean support for workers who lost their jobs as a result of policies introduced to protect the environment.¹² This is the framing used within the preamble to the Paris Agreement on Climate Change which includes a specific reference to ‘taking into account the imperatives of a just transition of the workforce and the creation of decent work and quality jobs’.¹³ Other literature, such as the 2019 Trades Union Congress (TUC) pamphlet ‘A just transition to a greener, fairer economy’,¹⁴ centres the importance of giving workers directly affected by industrial change a sense of voice and control.

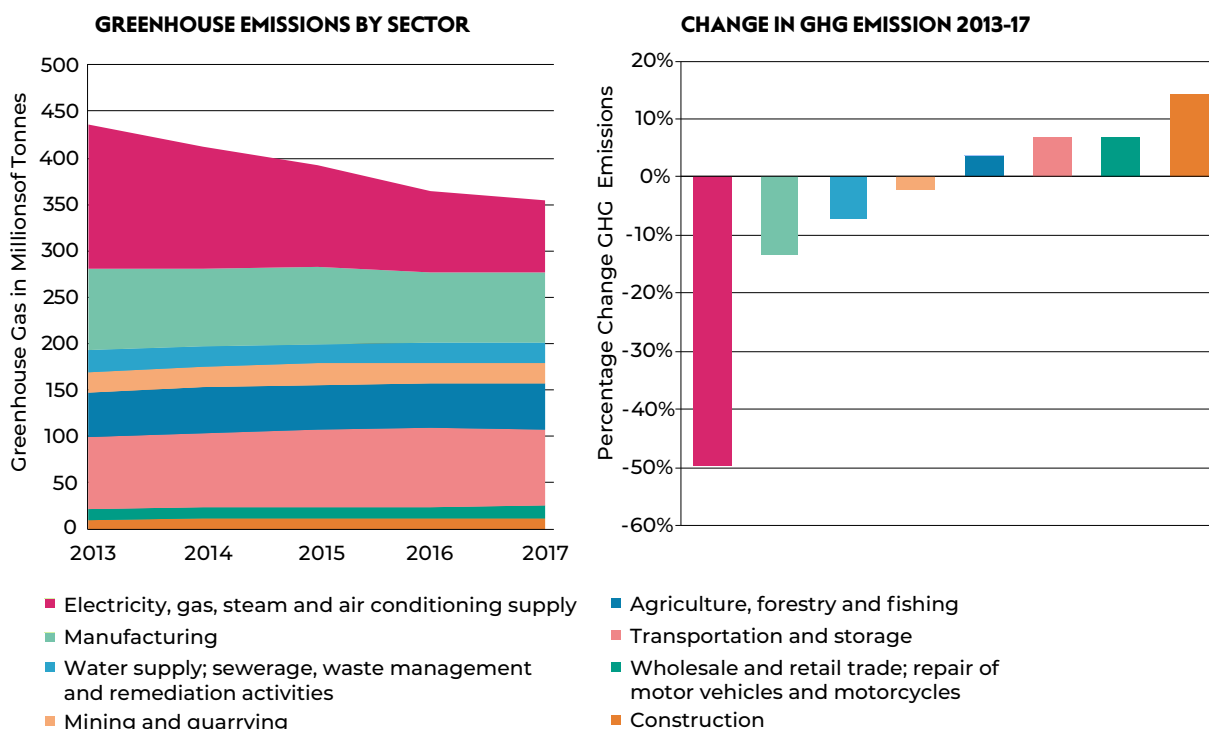
If change that affects people must be designed with the needs of those people uppermost in mind, trade unions will have a central role in shaping local and national policy on the transition, and in the building of trust that all parties are serious about economic transformation to deliver genuinely radical, socially just reductions in emissions.

2.2 THE SCALE OF TRANSITION

A transition to a zero-carbon economy will be an economy-shaping transformation with far-reaching consequences for ‘business as usual’. Properly embraced, this could create hundreds of thousands of new jobs around the country and trigger innovation in the development of new business models.¹⁵ It will come with significant change, however, and create substantial risks that must be properly managed.

NEF’s analysis of GHG emissions by economic sector demonstrates that the sectors directly responsible for first-order GHG emissions are electricity and gas, agriculture, manufacturing, and transport and storage (Figure 1). Over the last decade, the bulk of emissions reductions have taken place in the electricity and gas sector (which managed to reduce emissions by almost 50% from 2013 to 2017, due primarily to coal plant closures), while emissions from agriculture and transport have gone up (Figure 1). It is sectors of the economy other than energy generation, therefore, that are likely to see the biggest changes in future. The United Nations has described the necessary reductions in emissions as ‘critical’ to climate stability, but they also have implications (both positive and negative) for jobs and livelihoods across communities.¹⁶

The Committee on Climate Change’s net-zero report (May 2019) spells out the scale of what this might mean for UK industry and jobs.¹⁷ Between now and the target net-zero date of 2050 – a date considered to be too far away by many campaigners¹⁸ – the CCC predicts a large shift in employment:

FIGURE 1: UK GREENHOUSE GAS EMISSIONS BY ECONOMIC SECTOR, AND CHANGE IN EMISSIONS 2013-17Source: Eurostat (2019)¹⁹

‘The transition will necessitate a shift in employment, away from some inherently high emitting activities (e.g. fossil fuel supply) to highly-skilled jobs to deliver the emissions reductions required. A strategy will be needed to ensure a just transition across society, with vulnerable workers and consumers protected.’²⁰

The theoretical potential for job creation from the climate response is well established and is at the heart of proposals for a Green New Deal. One estimate is that low-carbon industries could grow from around 2% of UK GDP in 2015 to 8% in 2030 and 13% by 2050.²¹ Insulating all homes to Energy Performance Certificate C, as called for by the National Infrastructure Commission,²² could create hundreds of thousands of new jobs;²³ in principle, the move to EVs could lead to the creation of up to 19,000 jobs.²⁴ But such figures only tell a small part of the story. Job creation in some sectors may be offset by job losses; for example, while jobs in offshore wind are expected to quadruple to 27,000 by 2030,²⁵ all coal-fired power plants are to close by 2025.²⁶ The Grantham Research Institute at the London School of Economics suggests:

‘Looking at the broad implications for workers, we estimate that around one-fifth of current jobs (21%) in the UK have skills for which demand could grow in the green economy or which could require reskilling. This is equivalent to more than 6 million people. Around 10% of workers have skills that could be in more demand, while 10% are more likely to need reskilling. Importantly, this does not mean these jobs will be lost; rather that this is where particular attention will be needed. Construction (30%), transport (26%) and manufacturing (17%) are the sectors that could require greatest reskilling.’²⁷

2.3 DIMENSIONS OF TRANSITION

There will be immediate physical risks to industry from climate change itself. Weather events such as droughts, floods, and storms that could have a profound impact on the economy, like the year’s lost production by the CEMEX cement works in South Ferriby following a December 2013 tidal surge.²⁸ While various sectors and supply chains of the UK economy will be under threat of extreme climate-related weather events, it is the agricultural

and forestry sectors that are most vulnerable to first-order physical risks,²⁹ for example from changes in patterns of rainfall, decreased availability of water for irrigation, increased flooding, and drier soil conditions. Coastal industries and communities will be particularly exposed to sea-level rise.³⁰ More broadly, climate change will affect supply chains and resource availability.

In addition to physical risks, dynamic risks reflect the interacting implications of policy, technology, and societal changes on industry and workers. The policy, technological, and societal responses, seen so far in Britain and around the world, are already starting to impact business models and patterns of investment in the UK. It is realistic to expect this to increase over the coming months and years, with the depth of policy response, speed of technological innovation, and the fervour of social pressure interacting dynamically to produce a range of risks:

Policy risks: Policies such as increased prices on carbon, the reversal of economic support for fossil fuels, and mechanisms such as a Frequent Flyer Levy³¹ are increasingly likely to form a central part of any coherent government response to cutting carbon emissions. Workers and communities that are directly dependent on carbon-intensive industries for their livelihood risk being significantly affected either directly through job losses, or through knock-on changes to the economic fabric of towns and regions.

Technology risks: The climate policy response will encourage rapid innovation and technological change, alongside other drivers. This is already happening in battery storage and renewable energy. This could be a major source of new employment but could also contribute to entire factories and industries being closed down or relocated. These are international forces and the UK risks falling behind rapidly changing markets. As the Green Alliance notes with regard to the example of the global consolidation of the automation industry around hybrid and electric vehicles, 'it's not as if the UK can afford to wait.'³²

Societal risks: 2019 has seen a wave of new activism around the world, characterised by Extinction Rebellion and the youth climate strikers. Concern about climate breakdown is at record

levels.³³ As awareness increases, the preferences and expectations of investors, consumers, and society at large are subject to change.

It is not a given that jobs that can be reskilled, will be; or that employment that can be preserved, will be. Unions believe that too many green jobs are already going overseas, and not enough is being done to intervene.³⁴ Global markets and other countries are moving fast, particularly in the area of transport,³⁵ where breakthroughs in battery technology, large infrastructure investment programmes, and the policy response to air pollution are already triggering a rapid transformation of the industry. In 2019 alone it was announced that two major UK car factories are under threat – Honda's Swindon plant,³⁶ and Ford's in Bridgend³⁷ – for a nexus of reasons thought to include Brexit uncertainty but more significantly the consolidation of what are global supply chains, as both firms invest in electric and hybrid technology. The UK's lack of industrial strategy, its underinvestment in research and development (R&D), and in particular its lack of support for building a domestic EV supply chain for manufacturers, are thought to be major contributors to these decisions.³⁸

There is no guarantee that any jobs created in the UK will be good jobs, i.e., secure, well-paid, unionised, and with decent terms and conditions. Since 1981, the proportion of the workforce that are members of trade unions has halved,³⁹ as the power of unions has been deliberately curtailed by successive governments. This has been a major contributor to the UK's underlying economic weakness. NEF research has shown that individual and collective power in the workplace is a vital means of securing other 'good job' characteristics which are vital for improving wellbeing, reducing income inequality, and ensuring the protection and health of workers.⁴⁰ Greater democratic ownership by employees and a larger stake in the governance of firms – as proposed in NEF's Inclusive Ownership Fund⁴¹ – are central parts of the economic rebalancing that is essential for the UK's long-term prosperity. Economies where decision-making is not tilted towards the interests of corporate lobbies tend to be less unequal and more productive.⁴²

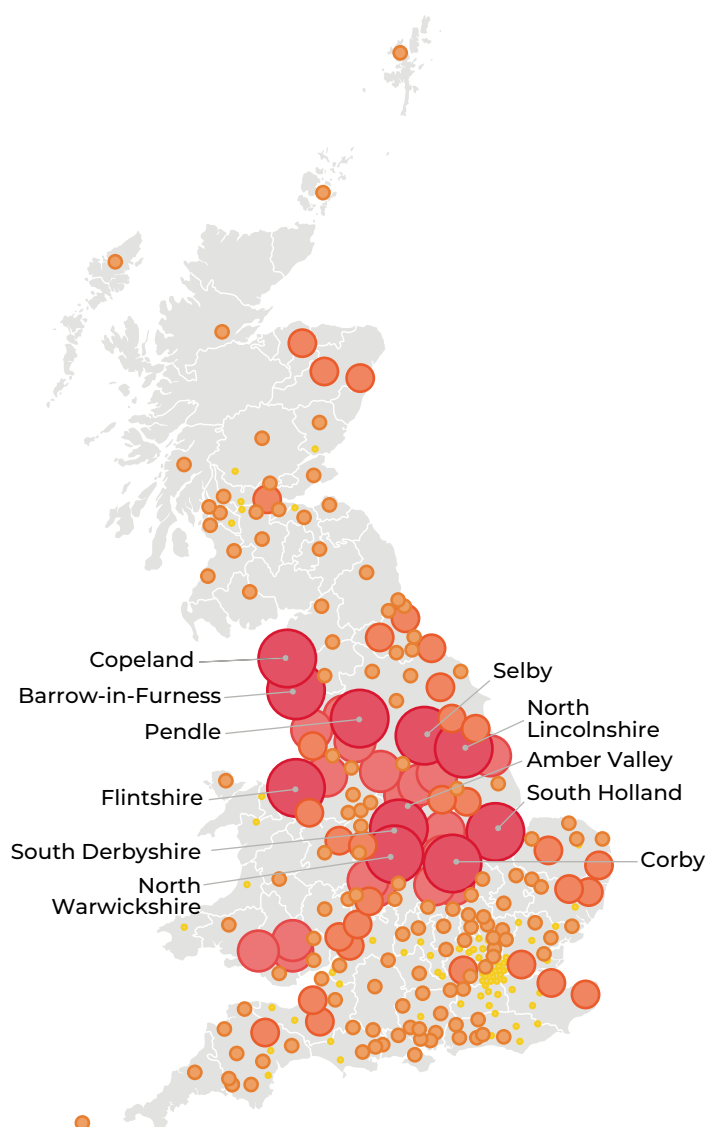
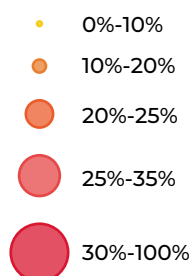
2.4 REGIONAL IMPLICATIONS

According to recent data from the Centre for Global Environmental Research,⁴³ in 2017 the UK was one of the countries with strongest fossil fuel emission clusters. The density of these clusters broadly suggest that distinct geographic areas of the UK economy could be particularly vulnerable to the dynamic and physical risks outlined so far.

To gain a heightened understanding of the areas and particular jobs at risk, we analysed and mapped the proportion of jobs in the climate critical sectors (Chapter 2.2) across the UK economy, based on data from the Office for National Statistics (ONS).ⁱ Figure 2 demonstrates the extent to which different parts of the country are disproportionately directly reliant on high-carbon-emitting sectors for employment.

FIGURE 2: REGIONAL RELIANCE ON HIGH-CARBON EMPLOYMENT IN THE UK

Proportion of Jobs



Source: NEF analysis based on data from Business Register and Employment Survey, made available by Nomis (2019).⁴⁴

ⁱ Based on ONS data made available from Nomis, we aggregated the employment of climate critical sectors for local district (note: we removed transport employment from airports as this ultimately skewed the graphic). We then calculated the proportion of climate critical sectors of total employment of the local district. Using opensource GIS software, we then plotted these results to acquire a spatial distribution of the proportion of employment of these sectors in different areas.

In total, there are roughly 4 million UK jobs in sectors directly ‘critical to climate stability’.ⁱⁱ These are not evenly dispersed geographically. There are more than 40 local authorities where 25% of all employment comes from climate critical sectors. Just over 10 local authorities are particularly affected, where climate critical jobs account for more than 30% of all employment. As Figure 2 illustrates, the vast majority of these jobs are highly concentrated in specific areas, primarily in the East Midlands, West Midlands, and Yorkshire and the Humber. The majority of employment in these areas comes from either manufacturing (e.g. Copeland: 36% of all jobs) or transportation (e.g. Bromsgrove: 25% of all jobs), or a mix of transportation and manufacturing (e.g. 30%: North Warwickshire). These three regions of England have the highest proportions of jobs that could be most at risk from the transition.⁴⁵ The North of England – home to the majority of English coal and power stations – could see approximately 28,000 direct job losses by 2030.⁴⁶ With over 26,000 people employed in the mining and quarrying sector alone, a number of jobs in Aberdeen City and Aberdeenshire could also be affected.

Looking at just one region, Yorkshire and the Humber, gives an illustration of the extent of clustering. It contains major power plants like Drax, as well as steel, cement, and chemical works, glass manufacturers, and heavy energy users in brewing and food manufacture. Approximately 28,000 people work in these major plants, and three or four times as many in their supply chains.⁴⁷ Yorkshire and the Humber TUC has established a Low Carbon Task Force to develop a low carbon transition plan.⁴⁸

The UK’s spatial imbalances and its uneven decarbonisation challenges are intimately linked. Higher carbon industries are disproportionately located in the parts of the country that have relatively low GVA per capita,⁴⁹ i.e., those that have been most held back by the UK’s London-first economic model. Delivering a just transition is therefore principally about addressing distinct challenges posed for particular places, regions, and industrial clusters.

It also implies that the UK’s shrinking national carbon budgets must be applied through policy in a way that reflects the different economic realities for different parts of the UK. Any decision to ‘spend’ large proportions of the carbon budget in the south-east – for example, by expanding Heathrow⁵⁰ – necessarily transfers pressure onto places disproportionately dependent on high-carbon industry and where mitigation pathways are not straightforward, like Yorkshire and the Humber.

2.5 LEARNING FROM TRANSITIONS ELSEWHERE

A strategic and planned approach is needed. Case-study analysis by NEF for the TUC points to experiences from places that have undergone notable, planned transitions in areas other than decarbonisation – Iceland, and the cities of Eindhoven and Bilbao – to look at what can be learned.⁵¹ Three critical success factors emerge to deliver well-managed industrial transformation:

1. **A strong connection to place** is of high importance, creating genuine opportunities for participation in decision-making, with devolved powers and localised processes of industrial strategy.
2. **A strong and active state** that provides a realistic sense of long-term opportunity and commitment, and social mobility in an area.
3. **A sense of trust, a shared purpose, and an approach to dialogue**, not confrontation, underpinning all of the above.

It is important to contrast these factors with the failings of the UK’s current economic model, which has been set up to do things in exactly the opposite way.

ⁱⁱ It should be noted that our analysis considers direct employment, but impacts could reverberate throughout the economy.

3. EMPATHY

‘Unless the transition to a clean energy economy is based on unifying politics, this next iteration will also prove another adventure in pyrrhic rhetoric.’ – David Foster, former Director of the BlueGreen Alliance of American trade unions and environmental organisations, 2019⁵²

Trust will be the currency for a successful just transition. In UK industrial relations, it is in very short supply. This distrust is justified, and it is hardly surprising that workers, communities and unions are – in the words of one trade union official – ‘once bitten, twice shy’.⁵³ There are very few examples of just (climate) transition happening in practice in the UK. As Trade Unions for Energy Democracy argues:

‘Those in charge of the transition to a resilient, low-carbon future [in the UK] have failed. What we have witnessed is more than two decades of talk with nothing like the sort of action necessary to back it up. This is not a problem of “political will”; it is a problem of the capitalist political economy and the imperatives of perpetual expansion on which it is based.’⁵⁴

Given the urgency of both the climate crisis and the economic forces operating on UK industry, only a shared national mission will do if we are to embed a just transition into our politics in a meaningful way. For this to happen, it is important to build a joined environmental and labour movement around a shared and respectful dialogue and narrative. Consensus must be built and actively sought. Any suspicion of pitting – or appearing to pit – jobs against environment must end. For too long, advocates of rapid carbon reduction have appeared almost to speak a different language to those of trade unions. As US organiser Jane McAlevey argued in 2012,

‘Despite the amount of airtime given to “green jobs,” neither labor nor environmentalists have committed themselves to a meaningful green jobs agenda. Instead, environmentalists slap the word “job” onto anything they hope to win labor’s support for, and unions affix the word “green” with equally low standards.’⁵⁵

The climate transition means real change for the lives of many thousands of people. Empathy is key to trust and should be at the core of any consensus building and successful dialogue.⁵⁶

3.1 THE WORKER PERSPECTIVE

Research by Climate Outreach⁵⁷ into worker and trade union concerns about the reality of the just transition has identified the following key themes:

- **Identity may trump climate concerns.**
Environmental rhetoric often fails to recognise that much of a person’s identity is derived from the work they do and the people they work with. In a study exploring the narratives of oil workers in Alberta, Climate Outreach found that workers expressed a strong sense of shared identity and solidarity, placing great emphasis on supporting each other and pulling together. It is this sense of shared identity, more than ideology of political orientation, that leads them to defend the oil industry out of a sense of loyalty to their wider community. This points to the importance of policy and economic planning that starts from the reality of place and work and seeks to respect – not denigrate – work.
- **The just transition is seen principally as an environmentalist agenda,** rather than something over which workers and the unions that represent them have control. As explored earlier, a just transition with meaning is emphatically not just a phrase to be affixed to technocratic climate policy; it has real meaning, and implies a centring of the rights, needs, and voices of workers in policy design. Narratives that highlight ‘rapid’ or ‘unprecedented change’ or ‘disruption’ will evoke distrust and a sense of a process being *done to* rather than *with*, or even *for*, those who are affected.

- **Respect is critical** for the people and communities whose hard work has underpinned much of the economic benefits of the fossil fuel age – often under dangerous and dirty conditions. For all the talk of a new industrial revolution, what the just transition demands is more akin to an evolution: new employment that builds on the heritage, identity, and vibrancy of existing people, places, and industry, rather than appearing to jettison or belittle it.

Identity; voice and control; the unique heritage of places; and respectful, pragmatic dialogue between affected parties – these are the principles that must guide the setting of decarbonising the UK. The practice should centre the importance of meaningful co-design of plans at a sufficiently local level to be able to respond to the diversity of the UK's transition needs.

4. CO-DESIGNING POLICY

No UK trade union downplays the urgency of the climate crisis. As the General Secretary of the TUC, Frances O'Grady, noted in response to the CCC's May 2019 net-zero report: 'Trade unions stand ready to do our part.'⁵⁸

But the enduring memory and living reality for communities and trade unions alike of a UK 'energy transition' is the process and aftermath of the closure of the coal mines in the 1980s. These closures were themselves the vanguard of the broader political programme of trade union disempowerment that has helped shape today's confrontational landscape of industrial relations. Many communities to this day have not recovered from the closure of the coal mines, and the jobs that followed were certainly not widely equivalent to those that were destroyed. Despite the difficult working conditions, nothing has truly replaced the cohesion, pride and sense of collective identity that the mines provided; a study of ex-miners in Selby, North Yorkshire, finds long lasting unemployment and/or a legacy of limited support and poor-quality alternative work.⁵⁹

The UK's so-called 'post-industrial' places – which map closely onto those facing the largest transition risks from decarbonisation (Chapter 2) – would be entitled to be suspicious of what 'transition' has in store.⁶⁰

4.1 WORKER VOICE

The UK needs to rebuild its broken processes of social dialogue defined by the International Labour Organization as processes and commitments to achieve collective bargaining on change, as part of an ongoing expectation that social partners such as trade unions will be actively consulted and have meaningful structural influence on the direction of the economy.⁶¹ But this needs to go further, with a real commitment to what some have instead called 'social power': it needs to go beyond consultation to true co-design.

The Just Transition Centre suggests that social dialogue must be central to delivering the just transition:

'Social dialogue will bring the policy coherence we need to ensure that climate action also means job creation and community renewal. It allows us to bring together industrial strategy, innovation, deployment of clean technologies and investment in green infrastructure, along with the measures we need to smooth out the transition: social protection, skills training, redeployment, labor market policies and community development and renewal.'⁶²

Social dialogue, in essence, is about embedding the importance of different voices, particularly of those directly affected by policy, into that policymaking. It is an ongoing, expected cultural and governance process for the management of trade-offs, the very essence of the just transition.

The UK's processes of social dialogue, however, are very weak – at least where unions are concerned. Governments have spent much of the last 40 years actively locking in dialogue with business, including restructuring an approach to regulation that privileges reducing the costs to business of new regulations as an end in itself,⁶³ alongside ongoing restrictions on the activity of trade unions.

Unions have had precious little recent opportunity for engagement with government either on industrial strategy or decarbonisation. The Coalition government ended the Forum for a Just Transition that was created in 2009 by the Labour government,⁶⁴ which had previously been the main avenue for extensive and constructive union engagement. In its place it established the now moribund Green Economy Council, on which the TUC sat but which was otherwise dominated by industry.⁶⁵ The government's Clean Growth Strategy – which by itself contains much to provide investor confidence in the government's commitment to clean energy – contains neither the phrase 'just transition' nor reassurances that worker and union engagement and social dialogue are a priority.⁶⁶ These are not accidents, but the structural essence of neoliberal economics.

Delivering a just transition means privileging the voices of the people and places that are most affected. That certainly requires social dialogue, at the very least. But given the extent to which countries like the UK have tipped the balance of power away from unions, social dialogue is too meek a frame to capture the extent of transformation needed. Trade Unions for Energy Democracy call instead for new forms of social power:

‘The Social Power approach is guided by the belief that a just transition cannot be accomplished without a deep restructuring of the global political economy. It is guided by the belief that current power relations must be challenged and changed. If this does not occur, then the vast majority of the world’s working people will never see anything vaguely representing a just transition... put simply, if union representation and collective bargaining are both shrinking, then just transition in workplaces or across sectors will be more difficult either to create or replicate.’⁶⁷

4.2 NATIONAL LEADERSHIP

At the heart of the crisis of trust and the UK’s lack of social dialogue is a sense that the experiences of workers are not properly represented in policy and that trade unions do not have the levers to influence how the just transition will happen in practice. It is for these reasons that trade unions are generally supportive of greater public ownership of key parts of the energy economy, as indeed are the public at large.⁶⁸ As one union official told us, ‘You can’t influence what you don’t control.’

A touchstone example of the failings of the just transition in the UK is the ongoing travails of the workers at the Burntisland Fabrications (BiFab) manufacturing yards in Fife, Scotland.⁶⁹ In 2017, workers agreed to work without pay to complete a contract for the Beatrice wind farm, due to the financial difficulties of the then owners – after which the Scottish government took an equity stake in the company. In 2019, despite assurances that the yards would be used to build wind turbine jackets (steel mountings) for the forthcoming Neart Na Gaoithe wind farm 15 miles off the Fife coast, the owners of the wind farm, EDF Energy, appear set to ship the jackets from Indonesia.

BiFab workers drew national attention to the crisis at the plant when they first occupied the site to complete its order for the Beatrice wind farm project, and then later marched on Edinburgh to demand a future for the yards. This demonstrates the strength of feeling amongst workers to be part of a clean energy future, but drastic measures should not need to be taken to ensure workforces can be equipped with the skills and order books they need. It should be noted that at present, unions are not allowed to take industrial action over the carbon intensity or future ‘stranded asset’ nature of their site.

Engagement by workers over the future of their transition-exposed industries, and reskilling for the clean economy, should not be something that is done in their spare time. National funding via a new Just Transition Fund (Chapter 5) could in part ‘buy out’ the time of workers to enable them to reskill and take part in planning for the future of their workplaces. This is based on the German ‘short-time work compensation schemes’ where employers are supported with public funds to avoid unnecessary redundancies by temporarily reducing working hours to meet reduced output requirements, with wages maintained.⁷⁰ Germany’s largest union, IG Metall, is currently campaigning for the policy to be extended to cover the time of workforces at risk of technology unemployment to re-skill and work alongside new technology.

4.3 CHANGING THE RULES NATIONALLY

That there are UK yards that could be making parts for UK renewables – and which have fought hard to secure an ongoing future despite economic policy headwind – points to the gap between rhetoric and reality. And it underlines the lack of trust in government to make it happen. Tim Roache, the General Secretary of the GMB – a union with extensive representation of workers in high-carbon and energy-intensive industries – summarises his union’s position:

‘Rather than fearing the move to decarbonisation, UK workers and unions would embrace it if the opportunities associated with it were realised, but when you look at the state of the sector and the lack of government action now, as an energy worker would you be willing to take a leap of faith on a just transition based on the promises of politicians? Union members will be sceptical of any change until it looks like a real plan for jobs, livelihoods and communities.’⁷¹

There are limits to what the workers at BiFab can do to secure renewables jobs in the context of national policy that does not prioritise good green jobs at home. Government must do far more to use its power to bring domestic contracts for clean energy to UK industry, as part of a Green New Deal. In the case of BiFab, Scottish ministers are actively considering how to use their devolved powers over the Crown Estate – which consents the sea bed for offshore wind farms – to require, not just hope for, greater local content in supply chains.⁷² It is, after all, the public sector that consents to and licenses renewables and provides them with contracts for subsidy, paid via UK energy bills.

At the national level, direct intervention is needed to turn the rhetoric of a just transition into a reality. Ministers must have a duty to embed a just transition as a guiding principle across government policy, procurement, and strategies. This would explicitly require building a just transition into the mandate of key departments such as HM Treasury, whose active conversion to the cause is essential for delivering a Green New Deal⁷³ and ensuring that budgets prioritise it. Government may also need to provide transitional ownership support for industry during the transition as part of enabling new business models – such as worker ownership or cooperatives – to take over in the longer term.

The Labour Party has already set out plans to renationalise the UK’s transmission and distribution networks as a key part of mandating decarbonisation across the country.⁷⁴ The union UNISON proposes nationalising retail energy companies to protect the terms and conditions of frontline workers who will be needed to retrofit homes and boilers as part of moving to a net-zero economy.⁷⁵ The Public and Commercial Services Union (PCS) has proposed that ‘all energy, including fossil fuels, [is] reclaimed into public ownership as we transition to a zero carbon economy’.⁷⁶

It is certainly the case that the UK’s stuttering performance on carbon reduction will require far more ambition and direction, as the CCC has pointed out. As one senior union official noted: ‘Just transition works best as a phrase when it is focused on the “how” to transition to an end point that is largely set by external forces, rather than allowing it to be a debate over “whether” to transition.’

5. LOCALISING TRANSITION

The UK only looks like it does because of oil, gas, and coal. Many of the places that have already suffered the most from decades of deindustrialisation⁷⁷ are disproportionately reliant on high-carbon industry, including the production and generation of oil, coal, or gas, or other forms of economic activity that are likely to be most directly affected by the climate transition. The UK's modern economy has grown symbiotically with fossil fuels⁷⁸; entire towns and cities have been built on the riches they provided. Some communities, towns, and even cities only exist in their modern form because of high-carbon jobs; the oil price crash of 2014, for example, saw Aberdeen's population fall by 15,000.⁷⁹ The economies of entire towns, such as Scunthorpe and Port Talbot, depend heavily on the future for energy-intensive industries such as steelworks.

The precision of the just transition can only be delivered and shaped locally. While there will be a fundamental role for national policy in setting frameworks, deadlines, and incentives for transition, in practice, whether it happens well or at all, will depend on what the future holds not just for individual sites and industrial clusters, but on local economic and community resilience. NEF's work with coastal communities around the UK, which have been facing economic downturn for decades as a result of the loss or decline of their fishing industry, underlines the importance of the relationship between cultural heritage, regeneration, spatial planning, and effective industrial transformation.⁸⁰

In communities where young people face an uncertain future, and with traditional industries in decline, a new plan is needed. In 2018, a landmark deal was struck between the Spanish government and trade unions for a financial compensation package for coal miners facing the closure of Spain's privately owned pits,⁸¹ which includes the ability for miners to opt for early retirement packages alongside a programme of re-skilling and the upgrading of infrastructure in mining communities. While welcomed by some unions,⁸² it is important to note that financial compensation for the loss of work is a very poor substitute for an active industrial strategy to create new, enduring, and decent work to provide an economic future for generations to come. The preservation and evolution of the proud heritage of industrial places depends on the retention of young people and sustained employment.

5.1 LOCAL INDUSTRIAL STRATEGY

Industrial strategy only makes sense for how it plays out on the ground. As part of a rethinking of municipal democracy, a more localised approach to industrial strategy should be

- guided by a clear national mission and deadlines, and supportive national finance.
- built around genuine social dialogue, including trade unions and community groups.
- built around assets, i.e., people, identity, infrastructure, heritage, and aspirations.
- able to iterate as plans unfold to guard against unexpected local economic impacts.

Yet as NEF and others have long argued, a major weak spot in the UK's industrial policy is a lack of a full focus on the importance of locality.⁸³ Andy Haldane, Chief Economist of the Bank of England and chair of the UK Industrial Strategy Council, recently argued that at root, 'all economics is local':

'[...] other things equal, the greater are the differences in the economic characteristics of an area, the stronger is the case for recognizing these differences in the setting of economic policy. These economic characteristics include... structural features of the economy, such as industrial composition.'⁸⁴

Industrial transformation done well requires representation and where possible participation of those that rely on at-risk industries. There are obviously commonalities nationwide, but the reality of these experiences will be unique to the demographics, identity, and needs of different places. If the just transition is principally about adding an ethical and social dimension to an otherwise green industrial strategy, then it should also ensure that strategy is truly grounded in the reality of different people and places.

Local Economic Partnerships (LEPs) – the 38 voluntary partnerships⁸⁵ between local authorities and businesses set up in 2011 by the Department for Business, Innovation, and Skills – are tasked with establishing Local Industrial Strategies that set out a long-term economic vision for their area based on local consultation.^{86, 87} These strategies generally have not embedded responding to climate breakdown as a priority, nor are they focused on delivering a just transition. This is for the following reasons:

- They have relatively narrow mandates that require them to focus on increasing productivity growth. This by definition encourages a tendency towards increasing the quantity of high-productivity sectors in an area as rapidly as possible (e.g. financial services, R&D, the knowledge economy, or high-end technology).⁸⁸ Changing emphasis to support the just transition means that rather than focusing solely on GVA, a wider suite of measures should be used that reflect environmental and social priorities set both nationally and locally.
- They do not comprise sufficient diversity of local stakeholders. This must change, with the establishment of appropriately diverse, mandated, and resourced regional forums (whether boards, partnerships, agencies, commissions) that give more voice to unions and community organisations in generating local industrial strategies to respond to climate breakdown. In the area of the future of work, it is appropriate that local institutions, citizens, and in particular trade unions are in the driving seat on how local skills development funding and transition support measures are spent – for example, working with workers and unions in plants at risk of decline or closure to assess

options including securing funding from the government to reduce working hours for reskilling.

- LEPs are not given the power and resources by HM Treasury to allow them to lead truly meaningful transformation plans.⁸⁹ There should be far greater devolution of powers to localities, and far greater geographical distribution of investment and infrastructure development.

Increased appetite among many local authorities for local innovation in inclusive economic development strategies and a focus on building and distributing community wealth, provides some useful indication of what alternative approaches to the development and content of local industrial strategy could look like. For example, the Sheffield City Partnership's 'Framework for an Inclusive and Sustainable Economy'⁹⁰ sets out a comprehensive approach to economic development priorities that foregrounds social and environmental outcomes. Leeds City Council's Inclusive Growth Strategy⁹¹ likewise attempts to directly tackle questions of social equality, although less so on environmental challenges.

5.2 NEW REGIONAL AUTHORITIES

LEPs in their current form are not fit for purpose to deliver a just transition. Local government lacks both the mandate and the resources and capacity to bring about a deeper devolution of voice, vision, and influence from the community, unions, and business sector. Instead, NEF proposes:

- **Establishing regional combined authorities**, with meaningfully devolved powers over local finance, local economic strategy, and the shaping of national economic strategy.
- **Replacing current LEPs** by establishing new Local Economic Partnerships with a reviewed membership and mandate, to lead the just transition process at the local level. Membership would be drawn from a diversity of sectors, particularly including trade unions, the community and professionalised voluntary sector, and large employers, alongside representatives from the new regional authorities. They would be tasked with ensuring

that relevant interest groups across the region have a meaningful influence over both the priorities of economic strategy, and the decisions made about how to support the economic infrastructure to achieve those priorities. They would work alongside local government in the form of combined regional authorities.

They would be the vehicle through which a new Just Transition Fund for regions would be channelled. The Fund would support the processes of locally led reskilling, trade union and civil society engagement with economic planning, local authority capacity building, mapping of transition needs, and the construction of investment plans. It should be weighted towards those regions and localities facing the largest transition risk and include paid time off for workers to retrain, for education, and to take part in the just transition process (Chapter 4).

6. RECOMMENDATIONS

The currency of consensual and rapid transition is trust. It is in woefully short supply in the UK. Trust will be built by concrete action:

- A firm framework from government for deep investment in and the direct creation of a new generation of good jobs.
- The rebuilding of worker influence in the direction of national and local industrial strategy.
- The devolution of significant parts of a national green jobs and reskilling programme to regions and localities, with the funds and powers to match.

We recommend that the government do the following:

- **Bring forward the target date for net-zeroⁱⁱⁱ emissions as part of an economy-wide plan or Green New Deal.**

A significantly more ambitious net-zero target date than 2050 is needed to provide the impetus for transition planning, reskilling, and investment that has to start now. The Labour Party and the Green Party both support a date of 2030. The most critical thing is that the date is part of a galvanising of urgent short-term action, having a transformative and unignorable effect on the day-to-day of government decision making, and thus economic planning for the economy as a whole. Sectoral- and industry-specific targets will be needed below this to ensure that key parts of the UK's industrial landscape are focused on rapid and fair transition – for example, bringing forward to 2030 the phase-out of petrol and diesel cars, and committing to no new oil and gas exploration in the UK after 2022.

- **Align the whole of government, in particular the Treasury, around delivering a rapid and just transition.**

Institutional alignment is critical to delivering on the just transition. A Green New Deal just transition strategy must be jointly led by Treasury, the Ministry of Housing, Communities and Local Government, and the Department for Business, Energy and Industrial Strategy, but with delivery requirements for the whole of government, Whitehall, and regulators. In particular, the Treasury's role is central: every budget for the next decade must be an explicitly green budget.

- **Disaggregate the UK's carbon budget(s) to reflect regional and local need.**

Tighter carbon budgets at the national level must be implemented in a way that reflects that the path to net zero carries relatively greater implications for those places where a large proportion of employment depends on high-carbon or energy-intensive work. Decisions on expanding Heathrow airport, for example, may have a direct impact on the ability of other parts of the country – usually less economically prosperous than London and the South East – to deliver a just transition for high-carbon workers.⁹²

- **End all existing economic support for high-carbon energy, redirecting funding where possible to support the just transition.**

The Treasury should launch a full review of how it will reverse all deliberate economic support for continuing the UK's economic reliance on fossil fuels by 2025 at the absolute latest, with the phase-out for each guided by the principles of the just transition and support redirected to clean energy and a Just Transition Fund.

ⁱⁱⁱ While the current UK target is expressed as net zero, this does not currently rule out the use of overseas offsets to balance out UK emissions that prove hard to eliminate domestically. NEF does not support this position and notes that the CCC urges against the use of international offsets. Therefore, our assumption is that the netting out of remaining emissions will only be the by-product of efforts to rewild and restore other ecosystems and must only take place within the UK.

- **Overhaul trade union legislation to enable the full participation of unions in the shaping of national and local just transition industrial planning.**

A legal framework should also be created so that union members can organise and take legitimate industrial action, if necessary, to secure the environmental sustainability of their workplace; for example, if their workplace is at risk of being left behind as the country decarbonises.

- **Establish a Just Transition Fund for local and regional use to support essential non-capital measures.**

There is a critical financial and capacity gap at the local level in being able to properly plan for the Just Transition. Distinct from the major programmes of capital infrastructural investment, we need support for locally led reskilling, trade union and civil society engagement with economic planning, local authority capacity building, mapping of transition needs, and the construction of investment plans. It should be weighted towards those regions and localities facing the largest transition risk and include paid time off for workers to retrain, for education, and to take part in the just transition process.

- **Establish new local economic partnerships and new combined City and County Regional Authorities to lead the just transition process at the local level.**

Combined regional authorities would have meaningfully devolved powers over local finance, local economic strategy, and the shaping of national economic strategy. Current LEPs would be replaced with new Local Economic Partnerships with a reviewed membership and mandate, to lead the just transition process at the local level. They would work with a new set of Local Economic Partnerships in each region that would include unions, community and voluntary sector, small and medium enterprise (SME), and other business sector representation, and be the vehicle for engaging meaningfully with affected communities, trade unions, and workers as well as firms and elected representatives. New Local Economic Partnerships would have a duty to develop a Green New Deal economic plan and to establish Just Transition Commissions to implement these fairly, being the conduit for the disaggregated Just Transition Fund. Union recognition agreements would be a condition for any state-led investments or procurement contracts under regional Green New Deal programmes.

7. CONCLUSION

Change is inevitable. As carbon reduction accelerates, a pre-emptive, ambitious, managed response is imperative for the UK, not just to reduce emissions in and of themselves but because the alternative is to stand back and watch as our economy becomes obsolete, and jobs and livelihoods that could form the bedrock of a zero-carbon economy go elsewhere. Irrespective of whether the UK moves quickly to actively guide the transition of its industry on its own terms, the transition itself is inevitable and the actions of other countries will end up doing it for us. The UK's 2040 ban on the sale of petrol and diesel cars, for example, appears ever more unambitious.

Transition is inevitable. Without an active industrial policy that has the concepts and practices of just transition at its heart, many of our already economically marginal geographical areas, communities, and businesses face an uncertain future, even if ambitious climate policy was not essential, which it of course is. The risk is that increased efforts to meet or exceed our carbon aspirations will further entrench the huge spatial imbalance in the UK economy and with it our toxic politics.

The UK's historic failure to manage industrial transitions is not an accident; it is core to an ideology and an economic system that prioritises the rights of capital over those of communities, and market forces over decent and sustainable work. But the political facts on the ground have changed. The Brexit vote has exposed the severe lack of trust in institutions and policymakers and in the sincerity of the government to ensure that acting on climate breakdown will not exacerbate the UK's yawning regional inequality and further worsen living standards.

Delivering a just transition will not happen at scale without challenging some of the fundamentals of our failing economic system. What we really need is not so much a just 'transition' as a just 'transformation' of our industry and economy, and just as importantly, of the power relationships and priorities that govern them.⁹³ Trust is the currency of transition, and it is in woefully short supply in the UK.

ENDNOTES

- 1 Shaw, K. (2012). *Mining the Meaning: Cultural Representations of the 1984-5 Miners' Strike*. Retrieved from <http://eprints.brighton.ac.uk/7069/>
- 2 IPPR. (2019). *This is a crisis: Facing up to the age of environmental breakdown*. Retrieved from <https://www.ippr.org/research/publications/age-of-environmental-breakdown>
- 3 Watts, J. (2018, October 8). We have 12 years to limit climate change catastrophe, warns UN. *Guardian*. Retrieved from <https://www.theguardian.com/environment/2018/oct/08/global-warming-must-not-exceed-15c-warns-landmark-un-report>
- 4 Committee on Climate Change. (2019). Reducing UK emissions – 2019 Progress Report to Parliament. Retrieved from <https://www.theccc.org.uk/publication/reducing-uk-emissions-2019-progress-report-to-parliament/>
- 5 Carrington, D. (2019, January 23). UK has biggest fossil fuel subsidies in the EU, finds commission. *Guardian*. Retrieved from <https://www.theguardian.com/environment/2019/jan/23/uk-has-biggest-fossil-fuel-subsidies-in-the-eu-finds-commission>
- 6 Ward, B. (2015). Figures published by the IMF in 2015 show the UK provides more subsidies for fossil fuels than renewables. London School of Economics and Political Science [Blog]. Retrieved from <https://blogs.lse.ac.uk/politicsandpolicy/new-figures-published-by-the-imf-show-the-uk-provides-more-subsidies-for-fossil-fuels-than-renewables/>
- 7 Powell, D. (2016). *The looking glass world of fossil fuel subsidies*. London: NEF. Retrieved from <https://neweconomics.org/2016/07/the-looking-glass-world-of-fossil-fuel-subsidies>
- 8 New Economics Foundation. (2019). Green New Deal. London: NEF. Retrieved from <https://neweconomics.org/campaigns/green-new-deal>
- 9 Stirling, A. (2019). GDP per head today is still £128 below 2008 levels. London: NEF. Retrieved from <https://neweconomics.org/2019/09/when-adjusted-for-the-lived-experience-of-inflation-gdp-per-head-today-is-still-128-below-2008-levels>
- 10 Just Transition Centre. (2017). Just Transition – A report for the OECD. Retrieved from <https://www.oecd.org/environment/cc/g20-climate/collapsecontents/Just-Transition-Centre-report-just-transition.pdf>
- 11 Climate Home News. (2014, January 17). UK has made largest contribution to global warming says study. *Climate Change News*. Retrieved from <https://www.climatechangenews.com/2014/01/17/uk-has-made-largest-contribution-to-global-warming-says-study/>
- 12 Labor Network for Sustainability & Strategic Practice: Grassroots Policy Project. (2016). *Just Transition – Just what is it? An analysis of language, strategies, and projects*. Retrieved from https://www.labor4sustainability.org/files/Just_Transition_Just_What_Is_It.pdf (pg 6)
- 13 UN. (2018). The Paris Agreement. Retrieved from <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>
- 14 TUC. (2019). *A just transition to a greener, fairer economy*. Retrieved from https://www.tuc.org.uk/sites/default/files/A_Just_Transition_To_A_Greener_Fairer_Economy.pdf
- 15 UN. (2019). Green economy could create 24 million new jobs. Retrieved from <https://www.un.org/sustainabledevelopment/blog/2019/04/green-economy-could-create-24-million-new-jobs/>
- 16 UN. (2016). Just transition of the workforce, and the creation of decent work and quality jobs. Retrieved from <https://unfccc.int/resource/docs/2016/tp/07.pdf>
- 17 Committee on Climate Change. (2019). Net Zero – The UK's contribution to stopping global warming. Retrieved from <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>
- 18 Mortimer, J. (2019, June 12). *Left Foot Forward*. Extinction Rebellion brand Theresa May's new zero-carbon target a 'death sentence'. Retrieved from <https://leftfootforward.org/2019/06/extinction-rebellion-brand-2050-zero-carbon-target-a-death-sentence/>
- 19 Eurostat APPSSO. (2019). Air emissions accounts by NACE. Retrieved from http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env_ac_ainah_r2&lang=en
- 20 Committee on Climate Change. (2019). UK credibility on climate change rests on Government action over next 18 months. Retrieved from <https://www.theccc.org.uk/2019/07/10/uk-credibility-on-climate-change-rests-on-government-action-over-next-18-months/>
- 21 Energy and Climate Intelligence Unit. (n.d.) 'Net Zero: Why' and associated briefings. Retrieved from <https://eciu.net/briefings/net-zero/net-zero-why>
- 22 E3G. (2018). UK Infrastructure Commission calls for major boost to energy efficiency investment in homes. Retrieved from <https://www.e3g.org/news/media-room/uk-infrastructure-commission-calls-for-major-boost-to-energy-efficiency-inv>
- 23 E3G. (2012). Jobs, growth and warmer homes – *Evaluating the economic stimulus of investing in energy efficiency measures in fuel poor homes*. Retrieved from https://www.e3g.org/docs/Jobs-growth-and-warmer-homes_Executive_Summary.pdf
- 24 Energy and Climate Intelligence Unit (n.d.). 'Net Zero: Why' and associated briefings. Retrieved from <https://eciu.net/briefings/net-zero/net-zero-why>
- 25 UK Government. (2019). Green collar jobs in offshore wind set to triple by 2030. Retrieved from <https://www.gov.uk/government/news/green-collar-jobs-in-offshore-wind-set-to-triple-by-2030>
- 26 Power Stations of the UK. (n.d.). Coal countdown. Retrieved from <http://www.powerstations.uk/coal-countdown/>

- 27 Robins, N., *et al.* (2019). *Investing in a just transition in the UK: How investors can integrate social impact and place-based financing into climate strategies*. London: Grantham Research Institute on Climate Change and the Environment. Retrieved from http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2019/02/Investing-in-a-just-transition-in-the-UK_policy-brief_8pp-1.pdf
- 28 Whitfield, A., *et al.* (2015). *Lessons learned from the coastal flooding of process industry sites on Teesside and Humberside by the storm surge on 5-6 December 2013*. Retrieved from <https://www.icheme.org/media/8517/xxv-paper-45.pdf>
- 29 van Lerven, F., & Ryan-Collins, R. (2017). *Central banks, climate change & the transition to a low carbon economy*. London: NEF. Retrieved from https://neweconomics.org/uploads/files/NEF_BRIEFING_CENTRAL-BANKS-CLIMATE_E.pdf
- 30 Balata, F., & Vardakoulis, O. (2016). *Turning back to the sea*. London: NEF. Retrieved from <https://neweconomics.org/2016/11/turning-back-to-the-sea>
- 31 Devlin, S. (2015). *A fairer way to fly*. London: NEF. Retrieved from <https://neweconomics.org/2015/06/a-fairer-way-to-fly>
- 32 Kumar, C. (2018, June 12). The unfrozen moment for the car industry. Green Alliance [Blog]. Retrieved from <https://greenallianceblog.org.uk/2018/06/12/the-unfrozen-moment-for-the-car-industry/>
- 33 Carrington, D. (2019, June 5). Public concern over environment reaches record high in the UK. *Guardian*. Retrieved from <https://www.theguardian.com/environment/2019/jun/05/greta-thunberg-effect-public-concern-over-environment-reaches-record-high>
- 34 Scottish TUC. (2019). Trade unions back radical action on climate and jobs. Retrieved from http://www.stuc.org.uk/files/Policy/Research_Briefings/Broken%20promises%20and%20offshored%20jobs%20report.pdf
- 35 Kumar, C. (2018, June 12). The unfrozen moment for the car industry. Green Alliance [Blog]. Retrieved from <https://greenallianceblog.org.uk/2018/06/12/the-unfrozen-moment-for-the-car-industry/>
- 36 Carrington, D. (2019, May 13). Honda says it will close Swindon plant in 2021, ending workers' hopes'. *Guardian*. Retrieved from <https://www.theguardian.com/business/2019/may/13/honda-close-swindon-plant-ending-workers-hopes>
- 37 BBC News. (2019, July 8). Ford Bridgend: Brexit not a factor in closing plant, says Ford Europe boss. *BBC News*. Retrieved from <https://www.bbc.co.uk/news/uk-wales-politics-48914809>
- 38 Private correspondence with union official.
- 39 Onaram, O., *et al.* (2014). *Working for the economy: the economic case for trade unions*. London: NEF. Retrieved from <https://neweconomics.org/2014/09/working-for-the-economy>
- 40 Jeffrey, K., *et al.* (2014). *Well-being at work: a review of the literature*. London: NEF. Retrieved from https://b3cdn.net/nefoundation/71c1bb59a2ce151df7_8am6bqr2q.pdf
- 41 Pendleton, A. (2018). *Inclusive Ownership Funds will build better business*. London: NEF. Retrieved from <https://neweconomics.org/2018/09/inclusive-ownership-funds-will-build-better-businesses>
- 42 Bua, A. (2019). *Why workers' rights are good for the economy*. London: NEF. Retrieved from <https://neweconomics.org/2018/01/workers-rights-good-economy/>
- 43 ODIAC. (2019). ODIAC Fossil fuel emission dataset. Retrieved from <http://db.cger.nies.go.jp/dataset/ODIAC>
- 44 Nomis. (n.d.) Nomis portal of labour statistics. Retrieved from www.nomisweb.co.uk
- 45 Robins, N., *et al.* (2019). *Investing in a just transition in the UK: How investors can integrate social impact and place-based financing into climate strategies*. London: Grantham Research Institute on Climate Change and the Environment. Retrieved from <http://www.lse.ac.uk/GranthamInstitute/publication/investing-in-a-just-transition-in-the-uk/>
- 46 Emden, J., & Murphy, L. (2018). *Risk or reward? Securing a just transition in the north of England*. London: IPPR. Retrieved from <https://www.ippr.org/research/publications/risk-or-reward>
- 47 TUC Unionlearn. (2018). Jobs, skills and training for a Just Transition to a low carbon economy. Retrieved from <https://www.unionlearn.org.uk/news/jobs-skills-and-training-just-transition-low-carbon-economy>
- 48 TUC. (2018). Low Carbon Task Force in Yorkshire and Humber. Retrieved from <https://www.tuc.org.uk/yorkshire-and-the-humber/news/low-carbon-task-force-yorkshire-and-humber>
- 49 Office for National Statistics. (n.d.). Regional economic activity by gross value added (balanced), UK 1998 to 2017. Retrieved from <https://www.ons.gov.uk/economy/grossvalueaddedgva/bulletins/regionalgrossvalueaddedbalanceduk/1998to2017>
- 50 Chapman, A. *et al.* (In press). *Baggage claim*. London: NEF. Unpublished report.
- 51 TUC. (2019). How industrial change can be managed to deliver better jobs. Retrieved from <https://www.tuc.org.uk/sites/default/files/IndustrialTransformationinPractice.pdf>
- 52 <https://thehill.com/opinion/energy-environment/429319-what-we-learned-from-the-first-green-new-deal>
- 53 Senior trade union leader speaking at joint New Economics Foundation/Friedrich Ebert Stiftung event, 'Working Together for a just transition', November 2018.
- 54 Earle, E. (ed). (2018). *Trade Unions and Just Transition*. Retrieved from <http://unionsforenergydemocracy.org/wp-content/uploads/2018/04/TUED-Working-Paper-11.pdf>
- 55 McAleve, J. (2012). The Nation: Building a Real Blue-Green Alliance. Jance McAleve [Blog]. Retrieved from <https://janemcaleve.com/writing/building-a-real-blue-green-alliance/>
- 56 NEON, NEF, Frameworks Institute and PIRC. (2018). *Framing the Economy*. London: NEF. Retrieved from <https://neweconomics.org/2018/02/framing-the-economy-2>

- 57 Climate Outreach. (2019). Broadening engagement with Just Transition. Retrieved from <https://climateoutreach.org/resources/global-narratives-alberta-narratives-project/>
- 58 TUC. (2019). Trade unions will help achieve just transition to low carbon economy, says TUC. Retrieved from <https://www.tuc.org.uk/news/trade-unions-will-help-achieve-just-transition-low-carbon-economy-says-tuc>
- 59 Thursfield, D., & Henderson, R. (2004). Participation in lifelong learning: reality or myth? issues arising from a United Kingdom coalfield closure. *Journal of Vocational Education and Training*, 56(1), 117–136. Retrieved from <https://www.tandfonline.com/doi/pdf/10.1080/13636820400200249>
- 60 Meadway, J. (2019, May 16). Labour has started to show it takes climate change seriously – but can it bring the working class along with it? *The Independent*. Retrieved from <https://www.independent.co.uk/voices/labour-party-climate-change-environment-green-new-deal-industrial-revolution-a8916481.html>
- 61 International Labour Office. (2018). *Social Dialogue: Finding a common voice*. Retrieved from <https://www.ilo.org/public/english/dialogue/download/brochure.pdf>
- 62 Smith, S. (2017). *Just Transition: a report for the OECD*. <https://www.oecd.org/environment/cc/g20-climate/collapsecontents/Just-Transition-Centre-report-just-transition.pdf>
- 63 Powell, D. (2018). The curious case of the apologetic deregulators. New Economics Foundation [Blog]. Retrieved from <https://neweconomics.org/2018/10/apologetic-deregulators>
- 64 Pearson, P. (2009, November 16). Green tilt to balance of power. [Blog] TUC Touchstone. Retrieved from <https://touchstoneblog.org.uk/2009/11/green-tilt-to-balance-of-power/>
- 65 UK Government. (n.d.). Green Economy Council. Retrieved from <https://www.gov.uk/government/groups/green-economy-council>
- 66 TUC. (2017). Ministers are ignoring the workers who will create clean growth, says TUC. Retrieved from <https://www.tuc.org.uk/news/ministers-are-ignoring-workers-who-will-create-clean-growth-says-tuc>
- 67 Trade Unions for Energy Democracy. (2018). TUED Working Paper #11: Trade Unions and Just Transition. Retrieved from <http://unionsforenergydemocracy.org/resources/tued-publications/tued-working-paper-11-trade-unions-and-just-transition/>
- 68 YouGov. (2017). Nationalisation vs privatisation: the public view. Retrieved from <https://yougov.co.uk/topics/politics/articles-reports/2017/05/19/nationalisation-vs-privatisation-public-view>
- 69 Scottish TUC. (2019). 'Fife 'Ready for Renewal' campaign swings into action. Retrieved from <https://scottishtuc.blog/2019/06/13/fife-is-ready-for-renewal/>
- 70 European Foundation for the Improvement of Living and Working Conditions. (2010). Germany: short-term working allowance. Retrieved from https://www.eurofound.europa.eu/sites/default/files/ef_publication/field_ef_document/ef1063en2_7.pdf
- 71 Roache, T. (2019, April 19). Britain's workers deserve their own Green New Deal. *The Huffington Post*. Retrieved from https://www.huffingtonpost.co.uk/entry/green-new-deal-uk_uk_5cb88ab0e4b09dc528ceea11
- 72 New Economics Foundation. (forthcoming). *Re-energising manufacturing: Industrial policy for renewables manufacturing in Scotland*. London: NEF.
- 73 Meadway, J. (2019). Greening the Green Book. *Common Wealth*. Retrieved from <https://common-wealth.co.uk/greening-the-green-book.html>
- 74 The Labour Party. (2019). Bringing Energy Home. Retrieved from <https://www.labour.org.uk/wp-content/uploads/2019/03/Bringing-Energy-Home-2019.pdf>
- 75 UNISON. (2019). Power to the people. Retrieved from <https://www.unison.org.uk/content/uploads/2019/06/UNISONenergypublicownershipreport0619.pdf>
- 76 Mason, S., et al. (2017). *Just transition and energy democracy*. London: PCS. Retrieved from <https://tinyurl.com/ybr23tnq>
- 77 Vona, F. (2018). *Job losses and the political acceptability of climate policies: An amplified collective action problem?* Paris: OfCE. Retrieved from <https://www.ofce.sciences-po.fr/pdf/pbrief/2018/OFCEpbrief35.pdf>
- 78 Pirani, S. (2018). *Burning Up: A Global History of Fossil Fuel Consumption*. London: Pluto Press.
- 79 Geoghegan, P. (2016, August 8). Aberdeen's oil curse. Retrieved from <https://www.politico.eu/article/aberdeen-scotland-oil-industry-prices-local-economy/>
- 80 Balata, F., & Vardakoulias, O. (2016). *Turning back to the sea*. London: NEF. Retrieved from <https://neweconomics.org/2016/11/turning-back-to-the-sea>
- 81 Nelsen, A. (2018, October 26). Spain to close most coalmines in EUR250m deal. *Guardian*. Retrieved from <https://www.theguardian.com/environment/2018/oct/26/spain-to-close-most-coal-mines-after-striking-250m-deal>

- 82 Industri-ALL Global Union. (2018). Spanish coal unions win landmark Just Transition deal. Retrieved from <http://www.industriall-union.org/spanish-coal-unions-win-landmark-just-transition-deal>
- 83 Vardakoulis, O., Coote, A., & Pendleton, A. (2017). *People and places first*. London: NEF. Retrieved from <https://neweconomics.org/2017/11/people-places-first>
- 84 Haldane, A. (2019) Is all economics local? [Speech]. Retrieved from <https://www.bankofengland.co.uk/-/media/boe/files/speech/2019/is-all-economics-local-speech-by-andy-haldane.pdf>
- 85 LEP network. (n.d.). Location Map. Retrieved from <https://www.lepnetwork.net/about-leps/location-map/>
- 86 HM Government. (2018). Strengthened Local Enterprise Partnerships. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/728058/Strengthened_Local_Enterprise_Partnerships.pdf
- 87 HM Government. (2018). Local Industrial Strategies to drive growth across the country. Retrieved from <https://www.gov.uk/government/news/local-industrial-strategies-to-drive-growth-across-the-country> 4
- 88 Local Growth – Realising Every Place’s Potential, the October 2010 White Paper establishing LEPs, is structured entirely around a discussion of how to increase local growth, specifying many times that the intention of the strategy more broadly (e.g. the expectation of local authorities and emerging mayoral regions) as well as specifically of LEPs is to drive forward private sector led growth aimed at increasing productivity. For example: ‘2.6 Local enterprise partnerships will provide the clear vision and strategic leadership to drive sustainable private sector-led growth and job creation in their area.’ p. 13. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/32076/cm7961-local-growth-white-paper.pdf
- 89 Emden, J., & Murphy, L. (2018). *Risk or reward? Securing a just transition in the north of England*. London: IPPR. Retrieved from <https://www.ippr.org/research/publications/risk-or-reward>
- 90 Sheffield City Partnership. (2018). *A Partnership Framework for an inclusive & sustainable economy*. Retrieved from <https://www.sheffieldcitypartnership.org/inclusive-economy/2018/10/10/a-partnership-framework-for-an-inclusive-amp-sustainable-economy>
- 91 Leeds Growth Strategy. (n.d.). Leeds Growth Strategy. Retrieved from <http://www.leedsgrowthstrategy.co.uk>
- 92 Chapman, A. *et al.* (In press). *Baggage claim*. London: NEF. Unpublished report.
- 93 Trade Unions for Energy Democracy, op cit.

WWW.NEWECONOMICS.ORG

info@neweconomics.org
+44 (0)20 7820 6300 @NEF
Registered charity number 1055254

PUBLISHED:

December 2019

NEF is a charitable think tank. We are wholly independent of political parties and committed to being transparent about how we are funded.

WRITTEN BY:

Written by David Powell, Fernanda Balata, Frank van Lerven, Margaret Welsh.

COVER IMAGE BY:

iStock.com/branex

ACKNOWLEDGEMENTS:

The authors would like to thank Miatta Fahnbulleh, Aidan Harper, Rachel Laurence, Alice Martin, Sam Mason, Luke Murphy, Philip Pearson, Andrew Pendleton, Chris Shaw, Alfie Stirling, Robin Webster and Rebecca Winson; and all those who have contributed their time or thoughts to the shaping of this report.

We are grateful to the European Climate Foundation and the Samworth Foundation for supporting this work.