

Transforming Scotland's Economy to Deliver a Just Transition:

Framing paper

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DECARBONISE / DEMOCRATISE / DECOMMODIFY

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EXECUTIVE SUMMARY

The Scottish Government has set out a bold ambition to deliver a just transition to net zero by 2045. Over the next two years, Future Economy Scotland will undertake a major research project that aims to develop bold but credible policies to achieve this goal. As the first output in the project, this paper outlines the challenges and opportunities associated with delivering a just transition in Scotland, and sets out the scope of work we will undertake over the next two years.

The paper is structured in three parts. In part 1, we provide an overview of the major challenges Scotland faces. We firstly explore key economic challenges, and find that:

- The recent rise of inflation has placed a further squeeze on living standards, with lower income households most impacted by rising prices. After falling by 5% in 2022, real average earnings for full-time employees are now lower than they were in 2010, and are projected to fall further in the years ahead.
- Low pay and UK Government cuts to welfare spending have contributed to increases in relative poverty over the past decade, which reduced throughout much of the 1990s and 2000s.
- Scotland has narrowed the productivity gap with the UK as a whole in recent decades, and now has the third highest productivity among all regions and nations, behind only London and the South East. However, Scotland's economy remains less productive than comparable Northern European countries.
- Despite having a large financial sector and high levels of Foreign Direct Investment, Scotland has long suffered from low levels of public, private and R&D investment relative to other advanced economies.
- The Scottish Government's budget is expected to come under increasing pressure in the coming years, with resource spending and capital spending expected to outstrip projected funding. Delivering a just transition will likely require identifying new sources of funding to increase public spending and investment.
- Although Scotland has successfully scaled up renewable energy generation in recent years, this has not translated into significant domestic job creation. Maximising the job-creating opportunities of decarbonisation will require proactive steps to strengthen capabilities in manufacturing and scale up domestic supply chains.
- The UK's embrace of privatisation and liberalisation has led to a rise of extractive business models, enabling owners of scarce assets to generate economic rents at the expense of others in the economy. This poses challenges for a just transition, particularly in sectors such as energy, land and housing.

We then explore different dimensions of inequality in Scotland, and find that:

- Income inequality remains high in an international context, reflecting steep rises that occurred during the 1980s and early 1990s.
- Wealth inequality is more severe than income inequality. Rising asset prices have contributed to a growing gap between those who have wealth, and those who do not.
- Regional disparities between different parts of Scotland remain large, and in some instances have grown wider. Geographic economic disparities are also closely linked to inequalities in health outcomes.

Finally, we explore Scotland's environmental challenges and find that:

- Progress in reducing carbon emissions to date has been mixed across different sectors. Strong progress in the energy sector has dominated, with smaller reductions in other sectors. Meeting net zero targets will require an accelerated pace of decarbonisation – particularly in sectors such as transport, industry and buildings.
- Delivering a just transition will involve a major restructuring of Scotland's labour market, shifting employment from carbon intensive sectors to low carbon industries. Managed effectively, the transition to net zero has the potential to create more new jobs than will be lost. However, this will require proactive policies to reskill, retrain and transition workers.
- Although Scotland has increased significantly woodland creation and peatland restoration, progress

has fallen behind targets in recent years. The recent rise of private investment in carbon offsetting risks exacerbating inequalities, and reinforcing Scotland's highly concentrated pattern of land ownership.

- Like many countries, Scotland has experienced a decline in biodiversity abundance in recent decades. Along with the UK as a whole, Scotland ranks in the bottom 25% of nations and territories for biodiversity intactness.

In part 2, we explore the opportunities associated with delivering a just transition in Scotland. We set out a high-level vision for what Scotland's economy could look like following the successful delivery of a just transition by 2045. We then set out the definition of just transition that we will use for our project as follows:

A coordinated plan to decarbonise Scotland's economy and tackle the nature crisis while:

- Creating well-paid, secure, unionised, green jobs throughout urban and rural Scotland alike
- Supporting the reskilling and retraining of workers as part of a managed decline of carbon-intensive industries
- Actively reducing social, economic and regional inequalities, alleviating poverty, and increasing living standards – particularly for low-and-middle income households.
- Ensuring that impacted communities, trade unions, workers and businesses are given a meaningful stake and say over decisions that affect them.
- Fairly sharing the costs and benefits of decarbonisation, including by embracing more democratic forms of ownership and governance.
- Ensuring that Scotland, as a high historic and current emitter, recognises global imbalances created by climate and environmental breakdown and builds a reparative approach.

The paper concludes by outlining the scope of work that Future Economy Scotland will undertake over the next two years. In practice, delivering a just transition will require action at multiple levels of governance, including at the global, UK, Scottish and local level. However, our two-year project will publish research and analysis to build the evidence base for bold but credible policies that can be implemented by the Scottish Parliament. The project does not aim to set out a comprehensive policy agenda for delivering a just transition in Scotland, but will focus on strengthening the evidence base across seven key areas of the economy:

- **Transforming energy:** Transitioning away from carbon-intensive energy, including scaling up renewable energy, ensuring that more of the economic benefits are captured and retained in Scotland, and delivering a thriving future for oil and gas communities.
- **Green industrial strategy and Fair Work:** Developing an ambitious green industrial strategy to align Scotland's industrial base and labour market with a just transition, and enhancing the Scottish Government's Fair Work agenda.
- **Delivering green, affordable, secure homes:** Upgrading Scotland's housing stock to improve energy efficiency and reduce emissions, while tackling the urban and rural housing affordability crisis.
- **Harnessing a just approach to land, nature and biodiversity:** Transforming the ownership and use of land to support a just transition and deliver well-paid, secure jobs in nature restoration and biodiversity protection.
- **Greening Scotland's transport system:** Decarbonising Scotland's transport system by establishing a green, integrated, affordable and accessible public transport system; curbing emissions from aviation; and addressing the rural-urban public transport divide.
- **Decarbonising local economies:** Harnessing the five pillars of community wealth building to accelerate a just transition at a local level.
- **Paying for a just transition:** Utilising Scotland's devolved fiscal powers to raise public revenue, mobilise public investment and ensure that the costs of a just transition are shared fairly.

INTRODUCTION

The Scottish Government's commitment to cut greenhouse gas emissions to net zero by 2045 represents an important step in the fight against climate and environmental breakdown. With legally binding targets now in place, attention must now turn to the more difficult task of transforming the economy to meet these goals.

Decarbonising Scotland's economy as quickly as possible is vital. But how we do so – and who benefits – matters. Today Scotland continues to bear the scars of poorly managed industrial transitions of the past. Scotland's rapid deindustrialisation devastated communities across Scotland, most notably in former coal mining and steel areas. As Scotland prepares to embark on another industrial transformation, it is vital that we do not repeat the mistakes of the past.

In recent years the concept of 'just transition' has gained traction in many countries around the world. Having arisen in the context of the 1970s labour movement, the term has grown to prominence in global, national and local policy debates. While specific definitions vary, most emphasise the importance of reducing emissions in a way that delivers fairness, tackles inequality and injustice, and centres the voice of the workers and communities most impacted. In other words: climate justice and economic justice are not mutually exclusive goals, but must be delivered hand in hand.

In Scotland, the principles of a just transition were embedded in the Climate Change (Scotland) Act 2019. The Scottish Government's commitment to a just transition has also been reflected in the creation of a ministerial post for Net Zero and Just Transition, and the appointment of a Just Transition Commission to provide scrutiny and advice, undertake engagement and publish annual reports reflecting progress.

Despite these important steps, Scotland's economy remains deeply unequal and heavily reliant on carbon-intensive industries. While emissions have fallen in some parts of the economy, Scotland's economy continues to operate beyond ecological limits. As the Climate Change Committee has highlighted, Scotland has failed to achieve seven out of eleven net zero targets to date, and "the trend of failure will continue without urgent and strong action to deliver emissions reductions, starting now."¹ At the same time, there is growing concern that progress made towards reducing emissions will exacerbate rather than reduce existing economic and social inequalities – both within Scotland and globally. As a country, Scotland has contributed disproportionately to rising global temperatures through fossil-fuel extraction, the impacts of which have mainly been felt in the Global South. Plans to fairly decarbonise at home must therefore avoid 'offshoring' emissions to other countries, and be accompanied by efforts to support a global just transition.

For the Scottish Government, the task of delivering a just transition represents an enormous challenge. It means tackling the systemic problems embedded in the current economic model, and hardwiring climate justice into every aspect of Scotland's economy. This in turn will require a wholesale transformation of Scotland's economy across multiple different sectors, and a fundamentally different approach to economic policy. Delivering a just transition will of course have a cost, and it is essential to demonstrate how it can be paid for. But it is clear that the cost of delaying action will far outweigh the costs of immediate action. Alongside the obvious human cost, global heating will cause serious damage to the economy, from resource scarcity to the challenges of predicting catastrophic events and the devastating economic implications of increased instances of extreme weather.²

While delivering a just transition poses huge challenges, it also presents enormous opportunities. Delivered effectively, it has the potential to create a new generation of well paid green jobs, raise living standards, reduce poverty, tackle deep-rooted inequalities. With an abundance of natural resources and a highly skilled workforce, Scotland is well placed to prosper from decarbonisation. However, this cannot be achieved by making minor tweaks to the status quo, or by simply ameliorating the worst excesses of a broken model. Instead, Scotland must embrace bold new ideas to transform the economy.

As such, Future Economy Scotland is undertaking a two-year project that aims to develop bold but credible policies to help accelerate a just transition in Scotland. The project will cover many different aspects of policy, from energy and land to industrial strategy and transport. Our work will focus on policies that can be implemented under the existing devolution settlement, and paid for using existing fiscal powers. Throughout the project we aim to work in partnership with civil society, trade unions, academics and impacted communities to ensure our proposals are informed by – and useful to – wider movements.

As the first output in our just transition project, this paper aims to provide an overview of the challenges and opportunities associated with delivering a just transition in Scotland. It sets out what delivering a just transition means in practice, and outlines the scope of work we will undertake over the next two years. The rest of the paper proceeds as follows.

In part 1, we provide an overview of the major challenges Scotland faces. We firstly explore key economic challenges, such as squeezed living standards; rising poverty and insecurity; low productivity and investment; a weak industrial base; an ageing population; and rentierism and wealth extraction. We then explore different dimensions of inequality in Scotland, including those relating to income, wealth, gender and geography. Finally, we explore Scotland's environmental challenges, including those relating to carbon emissions, nature and biodiversity loss.

In part 2, we explore the opportunities associated with delivering a just transition in Scotland. We firstly define what we mean by a 'just transition', with reference to the concept's history origins. We then set out a high-level vision for what Scotland's economy could look like following the successful delivery of a just transition by 2045.

In part 3, we outline the research that Future Economy Scotland plans to undertake over the next two years to help Scotland overcome its challenges and deliver a just transition.

1. THE CHALLENGE: SCOTLAND AT A CROSSROADS

Scotland is in a time of crucial transition. The 2008 financial crisis exposed key weaknesses in Scotland's economic model, and these weaknesses were compounded by the UK Government's post-crisis turn towards austerity. The Covid-19 pandemic further exposed deep fault lines in the economy, triggering the deepest recession on record and causing profound disruption in the labour market.³ As with many crises before it, the impact of the pandemic fell unevenly.⁴ Of the communities in Scotland most economically impacted by the pandemic, working class communities, women, minority ethnic households and young and disabled people were hit particularly hard.⁵ With inflation stubbornly high at 8.7% in May 2023, Scotland now faces a cost of living emergency that has left many struggling to meet basic needs.⁶ Meanwhile, an escalating climate and environmental crises continues to threaten the foundations upon which civilisation depends.

At this critical juncture, maintaining the status quo would not be a neutral act – it would be an active decision to deepen our multiple crises. But if Scotland is to overcome these challenges and deliver a just transition, we must first understand the nature of the challenges we face.

1.1 Economic challenges

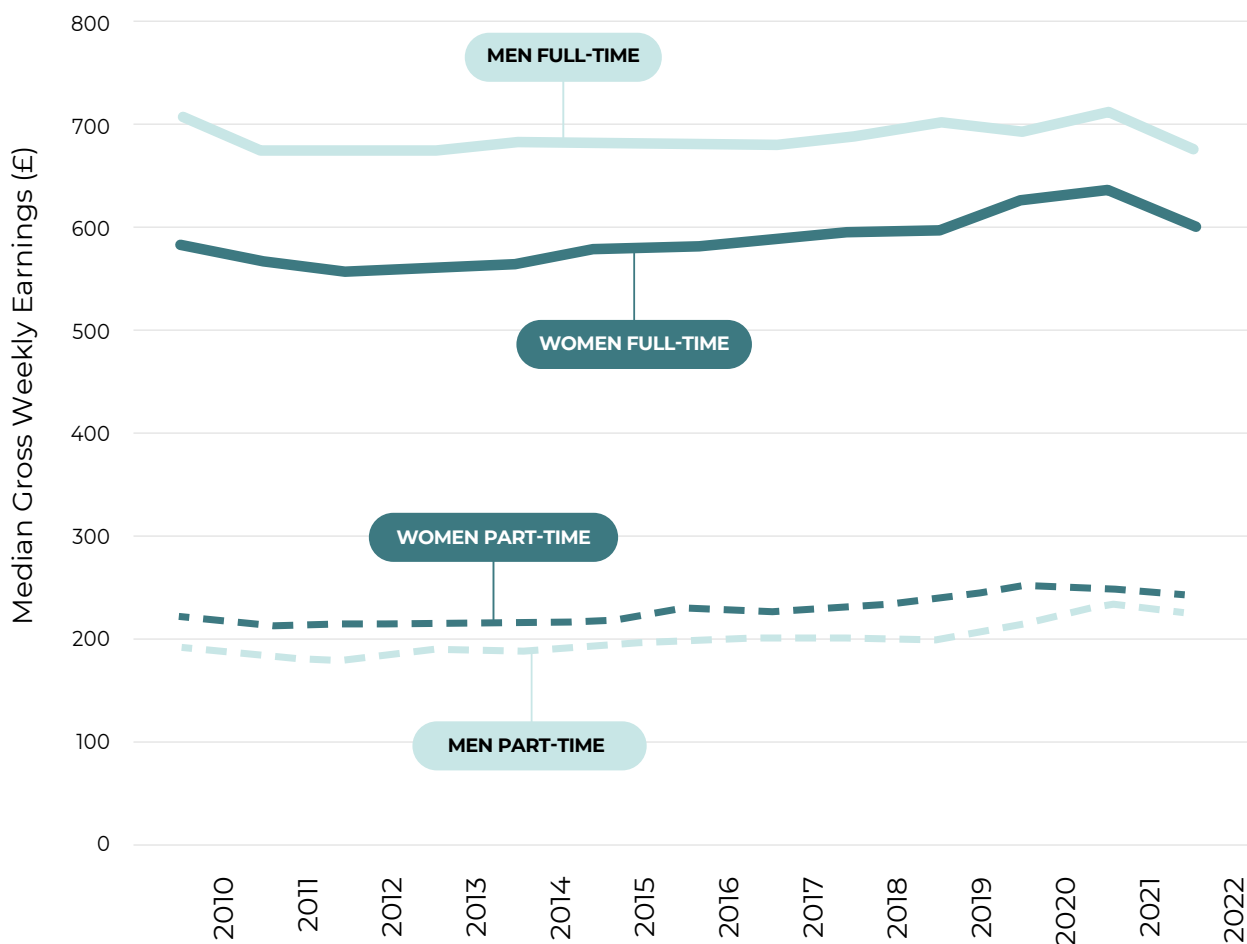
Scotland's economy has many strengths. These include a world-leading universities sector and highly educated workforce; an abundance of natural resources; and international advantages in sectors such as energy, food and drink, services and life sciences. At the same time however, Scotland's economy faces multiple systemic challenges. Some of these relate to longstanding structural issues, while others relate to new and emerging issues.

Squeezed living standards

Over the past decade Scotland, like the rest of the UK, has experienced an unprecedented squeeze on living standards. Following the global financial crisis in 2008, real weekly earnings (earning after adjusting for inflation) fell sharply. Although real weekly earnings started to recover slightly from 2015 to 2021, they never recovered to the level they were before the financial crisis. In 2022, real earnings for full-time employees declined sharply once again by 5%, representing the largest decline in real weekly earnings in Scotland since the global financial crisis.⁷ As shown in the chart below, real median weekly earnings for females in full-time employment are now just £20 higher than they were in 2010, and remain £29 lower for men.

Figure 3: Earnings have been relatively stagnant over the past decade after accounting for inflation

Real median gross weekly earnings by sex, Scotland, 2010-2022



Source: Annual Survey for Hours and Earnings (ASHE)⁸

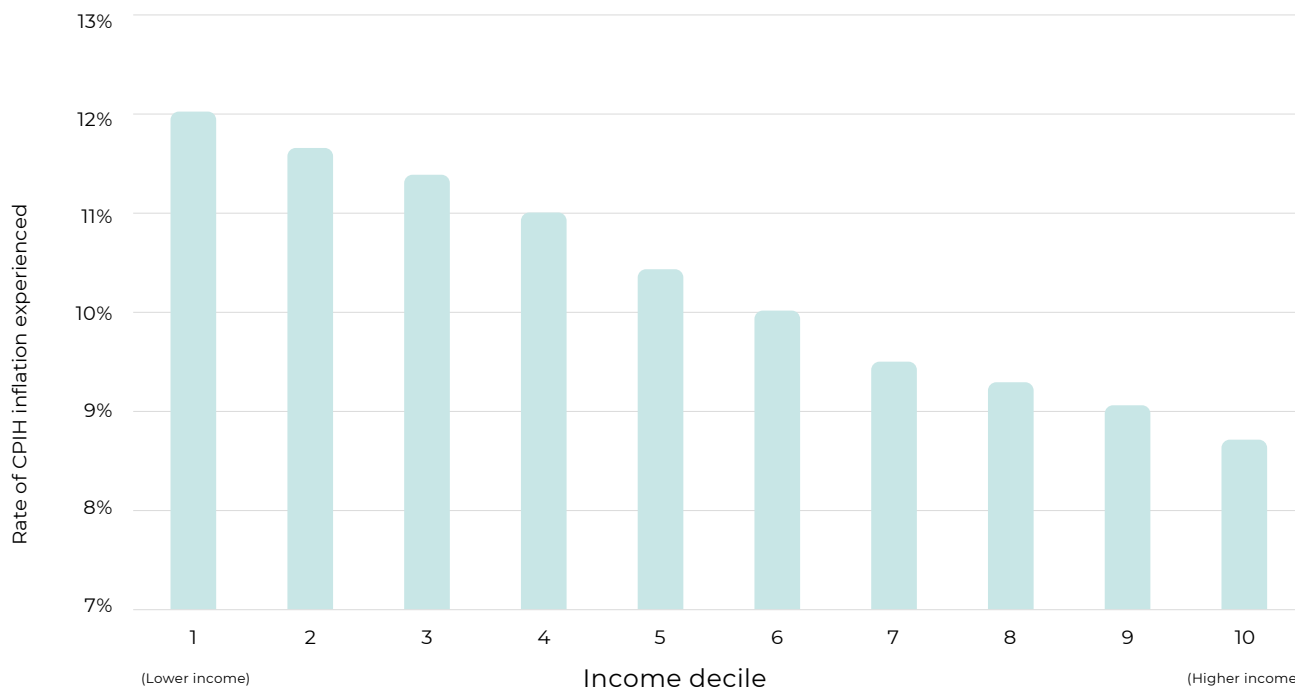
Note: Real earnings have been adjusted for inflation (2022 prices) using CPIH

The sharp fall in real earnings over the past year has been caused by a spike in inflation, which peaked at 11.1% in October 2022, marking a 41-year high.⁹ The surge of inflation, caused primarily by rising cost of energy, food and fuel, has further eroded living standards. However, the effects of rising inflation have not been felt equally across all households.

The Office for National Statistics' (ONS) headline inflation figure – the Consumer Price Index including owner occupiers' housing costs (CPIH) – is a weighted average of price changes across a 'representative' basket of approximately 700 goods and services. Because households have different spending patterns, the impact of inflation on living standards can vary widely. Over the past year, the largest contributors to inflation have been rising energy, food and fuel costs. Because lower-income households typically spend a higher proportion of their income on these goods than higher-income households, they have been most impacted by rising prices. A recent study by the Office for National Statistics (ONS) found that while the headline rate of CPIH inflation was 9.2% in the year to December 2022, it was significantly higher (12%) for households in the lowest income decile, and lower (8.7%) for households in the highest income decile.¹⁰ As a result, the cost-of-living crisis has disproportionately impacted low-income households, while the highest income households have been comparatively insulated.

Figure 2: Rising inflation has hit low-income households the hardest

Rate of CPIH inflation experienced by income decile, 2022



Source: ONS

Note: CPIH-consistent inflation rate estimates for UK household groups.

Looking ahead, the outlook for living standards in Scotland remains stark. The latest Scottish Fiscal Commission forecast predicts real disposable incomes per person will fall by 4% by the end of 2023-24 – Scotland’s highest fall in living standards on record. It also projects that living standards will take until 2026-27 to recover to their 2021-22 level.¹¹ Delivering a just transition to net zero in the context of falling living standards poses significant challenges. A key priority must therefore be to raise incomes – particularly for low and middle income households.

Poverty and insecurity

After falling throughout much of the 1990s and 2000s, over the past decade poverty in Scotland has started to rise again. Today one in five people in Scotland live in relative poverty after taking account of housing costs. This figure has risen from 18% in 2011-13 to 21% in 2019-22.^{12 13} ‘Deep poverty’, defined as a household with less than 50% of the median income, has also been rising steadily since around 2010. As of 2021 14% of people in Scotland are estimated to be in deep poverty – a similar level to 20 years ago.¹⁴

Poverty Measurements

Individuals are defined as being in poverty if their equivalised net disposable household income is below the poverty line. Different poverty measures have different poverty lines. The main measures of policy used in Scotland are as follows:¹⁵

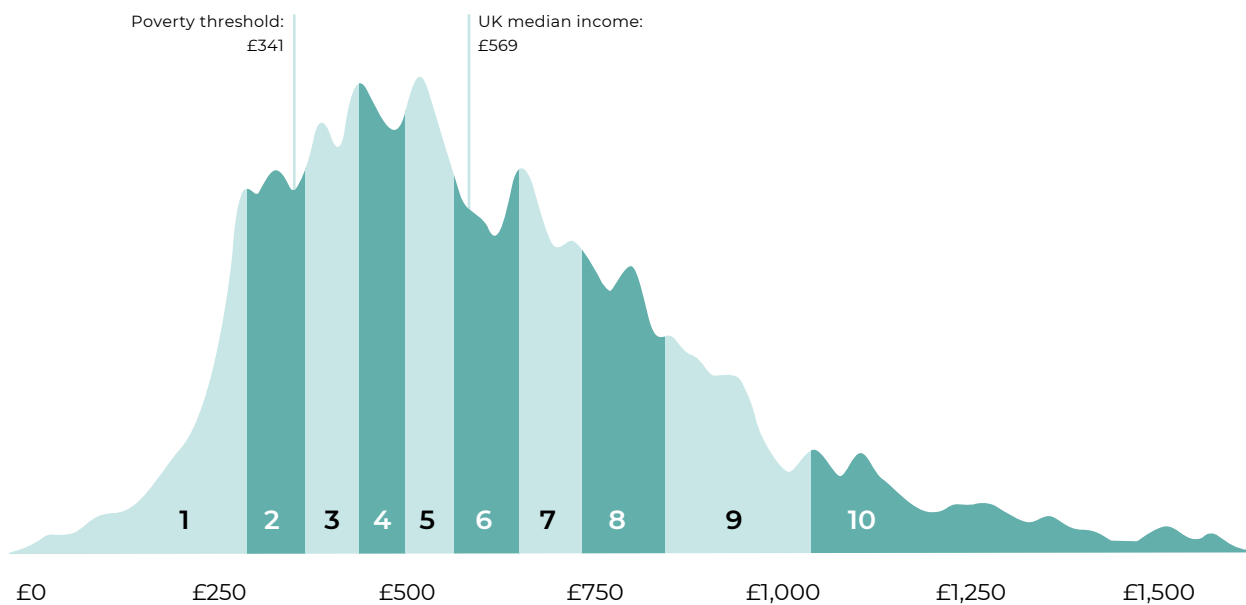
- **Relative poverty:** Relative poverty is the most commonly used poverty measure. The relative poverty line is 60% of the UK median income in the same year. People are in relative poverty if they live in a household whose equivalised income is below this amount. Relative poverty is a measure of whether those in the lowest income households are keeping pace with the growth of incomes in the economy as a whole.
- **Absolute poverty:** The absolute poverty line is 60% of the inflation-adjusted UK median income in 2010/11. People are in absolute poverty if they live in a household whose equivalised income is below this amount. Absolute poverty is a measure of whether those in the lowest income households are seeing their incomes rise in real terms.
- **Severe poverty:** The severe poverty line is 50% of the UK median income in the same year. People are in severe poverty if they live in a household whose equivalised income is below this amount. Severe poverty is a measure of whether those in the very lowest income households are keeping pace with the growth of incomes in the economy as a whole.

While poverty can affect everyone, vulnerable and structurally marginalised groups are more likely to experience poverty than others. In 2019-22, it is estimated that almost one in four children (250,000 children each year) in Scotland were living in relative poverty after housing costs.¹⁶ Single adults, and especially single parent families, are at a particularly high risk of poverty. Single women with children experience the highest levels of relative poverty, at 36% (or 40,000 single mothers each year), alongside single childless men.¹⁷ The relative poverty rate for people in minority ethnic families is also more than double that of people in white families. For Asian and Asian British ethnic groups, for instance, the relative poverty rate was 49%.¹⁸

In 2019-22, it is estimated that 17% of the population were living in absolute poverty after housing costs. This equivalent figure is 10% for pensioners, and 21% for children, although this figure jumps to 34% for children in minority ethnic households and 24% where there is a disabled household member / disabled household members.¹⁹

The causes of poverty are multifaceted, but two factors play the biggest role. The first relates to low pay. While historically poverty was primarily associated with unemployment, today paid work often no longer offers a reliable route out of poverty. Despite the rate of employment in Scotland being relatively high, poverty continues to rise.²⁰ In 2019-22, 57% of working-age adults in relative poverty after housing costs were living in a household where someone was in paid work and it is estimated that 69% of children in relative poverty after housing costs were living in working households.²¹ A key reason for this is that many people in employment do not earn enough to make ends meet. Low pay is particularly prevalent in certain service sectors of Scotland's economy, such as retail, hospitality and social care. It is estimated that one in ten workers in Scotland still earn less than the Real Living wage – and this rises to one in five workers in some rural areas.²² Intersectional factors also contribute to in-work poverty. For instance, alongside the gender pay gap, there is a higher proportion of women in part-time work compared to men, which is in part due to factors such as the lack of flexible working opportunities that can be reconciled with unpaid work and the lack of affordable childcare services.²³

Figure 3: Many people in Scotland have incomes below or just above the poverty line
 Equivalised weekly household income distribution before housing costs, Scotland 2019-22



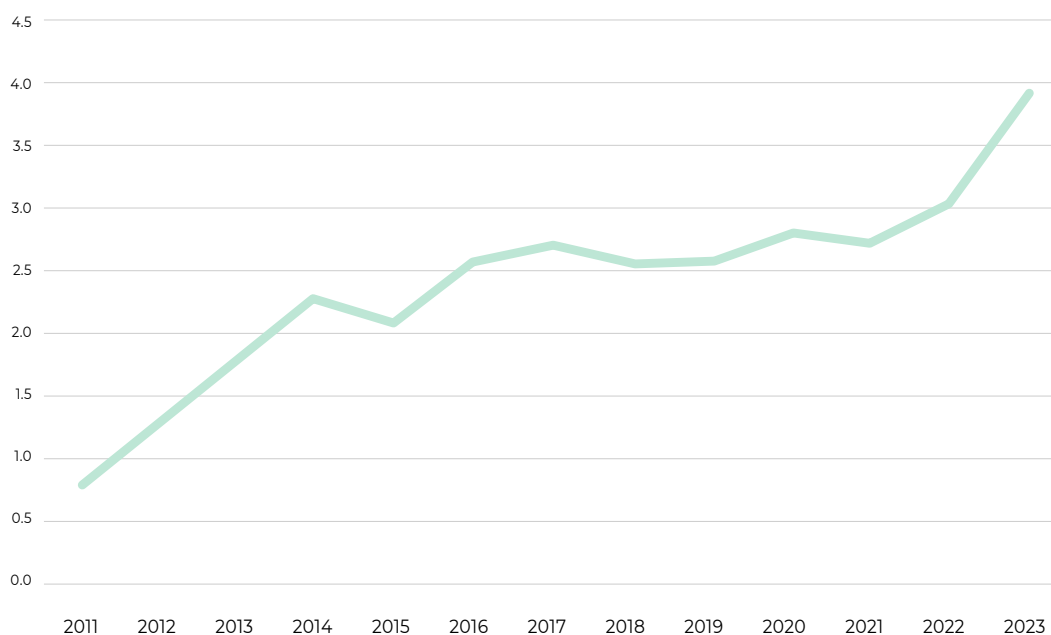
Source: Family Resources Survey

Recent shifts in the nature of the labour market, and in particular the growth of insecure work such as ‘zero-hour contracts’ (ZHC), have also played a role. While less than 1% of people in employment in Scotland had ZHCs between 2000 and 2012, this increased sharply to over 2% in 2013 and has continued to rise to an estimated 3.9% of today.^{24 24} Historically women in Scotland have been significantly more likely to be employed on ZHCs than men.²⁶

The growth of ZHCs and other forms of atypical contracts has been cited as a key reason why unemployment has fallen since 2010, despite Scotland’s wider economic performance. According to UK data from the Labour Force Survey, ZHC workers are more than three times more likely to want more hours in their current role than non-ZHC workers, and nearly seven times more likely to want a replacement job with more hours.²⁷ In addition, a recent study by the Trades Union Congress (TUC) and the equality organisation Race on the Agenda (Rota) found that Black and minority ethnic (BME) women across the UK are almost twice as likely to be on zero-hours contracts as white men.²⁸

Figure 4: The number of people employed on zero-hours contracts has increased sharply over the past decade

Percentage of people aged 16 and over in employment on a zero-hours contract



Source: Office for National Statistics²⁹

The second major contributor to rising poverty is cuts to welfare spending. Since 2012, welfare reforms introduced by the UK Government have cut social security payments, which in turn has placed a further squeeze on household incomes. Today around 420,000 households claim Universal Credit in Scotland, compared to 240,000 before the onset of the Covid-19 pandemic.^{30 31} For the lowest income households in Scotland, security payments make up nearly 50% of household income.³²

However, successive benefits freezes mean that the real-terms value of some benefits have fallen substantially, in some cases falling to the lowest value since the UK welfare system was introduced.³³ A recent study found that 70,000 people in Scotland, including 30,000 children, would be lifted out of poverty by 2024 if UK Government welfare reforms were reversed in 2023-24.³⁴ Evidence also shows that changes to working-age social security since 2010 have been linked to increased prevalence of anxiety and other mental health issues.³⁵

In recent years the Scottish Government has taken important steps to tackle poverty. In 2016, a framework was established that devolves 11 existing social security benefits to Scotland, as well as powers to top up reserved benefits and create new benefits in certain devolved areas.³⁶ In September 2018, Social Security Scotland was established to administer Scotland's devolved social security benefits. Since then, the Scottish Government has introduced seven new benefits, including the Scottish Child Payment, which supports a national mission to eradicate child poverty, and a number of disability related payments.³⁷ Estimates suggest the Scottish Child Payment could reduce the relative child poverty rate after housing costs by an estimated 5 percentage points in 2023-24, lifting 50,000 children out of relative poverty.³⁸ Other steps the Scottish Government has taken to reduce poverty include doubling the Bridging Payments for school age children from low-income households; using devolved powers to mitigate the UK Government Benefit Cap; introducing a new Winter Heating Payment; and doubling investment in the Fuel Insecurity Fund. The Scottish Government estimates that around 90,000 fewer children are expected to live in relative and absolute poverty as a result of Scottish Government policies.³⁹

Despite this progress, the combined impact of low pay, austerity, real-terms pay cuts, and rising prices have left many households facing financial hardship. According to the Joseph Rowntree Foundation (JRF), 23% of people in Scotland say they feel their household financial situation is very insecure, and one in five households are already behind with a bill.⁴⁰ Around one-third of all people have either no savings or under £250, and this rises to nearly two-thirds for households who are unemployed and 70% for single parents.⁴¹

Low productivity

Productivity, as measured by output per hour worked, is a key determinant of long-run living standards.⁴² In 1999, when the Scottish Parliament was established, Scotland's productivity was 8% lower than the UK average. Since then however, the gap has narrowed to around 2%.⁴³ In 2020, Scotland had the third highest productivity among all regions and nations of the UK, behind only London and the South East.⁴⁴ However productivity growth has slowed since the financial crisis, which has been cited as a key reason for the stagnation of living standards. In addition, compared with many of our Northern European neighbours however, productivity in Scotland and across the UK remains relatively low.⁴⁵ In 2020, Scotland's economy was around 20% less productive than Denmark, Belgium, Norway, France, Switzerland and Austria, and more than 10% less productive than Sweden, the Netherlands, and Germany.⁴⁶

Importantly however, productivity growth should not be viewed as an end in itself, or simply as a means of growing gross domestic product (GDP). In the context of delivering a just transition, productivity growth is important for several reasons. Firstly, productivity growth can help to raise living standards. Within Scotland, sectors that have higher productivity have higher earnings, and this relationship is also observed internationally.⁴⁷ In nearly every OECD country where productivity is above that of Scotland's productivity, annual average wages are also higher.⁴⁸ In addition, if Scotland's productivity matched that of the OECD top quartile, annual wages could be almost £3,850 or 10% higher.⁴⁹

However, while rising productivity can help to increase living standards, it does not guarantee it. How the rewards of productivity growth are shared between workers and shareholders depends on a wide variety of factors, including their relative bargaining power.⁵⁰ A recent paper published by the London School of Economics found that between 1981 and 2019, productivity in the UK rose by 87% but median employee wages only rose by 62%.⁵¹ This "decoupling" between productivity growth and wage growth has been observed in many other advanced economies. An important reason cited for this has been rising inequality, which has seen productivity gains captured by asset owners rather than widely shared in the form of higher wages. As will be explored further in Part 3, it is therefore critical that plans for a just transition include mechanisms to share risks and rewards between different actors in the economy in a way that is fair and just.

Second, productivity growth can help to create a better work-life balance for workers. Traditionally the labour movement has sought to capture productivity gains by demanding higher pay for working the same number of hours. However, in recent years there has also been growing interest in using productivity gains to reduce working hours, for example by transitioning to a four day work week with no loss of pay. The Scottish Government has also shown interest in moving to a four-day working week, and recently committed funding to help companies pilot the scheme.⁵² As well as helping to improve workers' wellbeing and work-life balance, evidence shows that moving to a four day week could also help to cut carbon emissions and meet net zero targets.^{53 54}

Finally, a more productive economy can help to raise tax revenue and therefore increase funding on public services and welfare. As discussed further in Part 3, raising more revenue for public services will be vital for delivering a just transition.

A wellbeing economy

Recent years have seen a growing understanding of the limitations and potential harms stemming from the pursuit of a narrow set of economic goals to the detriment of, for example, ecological sustainability, fair and just work, and inequality reduction. This has predominantly focussed on the constraints of GDP growth being pursued at the expense of wider sustainability and society goals. In Scotland, this has been championed by the Wellbeing Economy Alliance Scotland, a network organisation supporting the prioritisation of policies that meet fundamental human needs.

The Scottish Government has also set out a vision for a wellbeing economy, which it defines as “a society that is thriving across economic, social and environmental dimensions, and that delivers prosperity for all Scotland’s people and places, within environmental limits”. Scotland is also a member of the Wellbeing Economy Governments network (WEGo), which also includes the governments of New Zealand, Iceland, Finland, Wales and Canada. In 2022 the Scottish Government published its first wellbeing economy monitor, which brings together a range of indicators to provide a baseline for assessing progress towards the development of a wellbeing economy in Scotland.

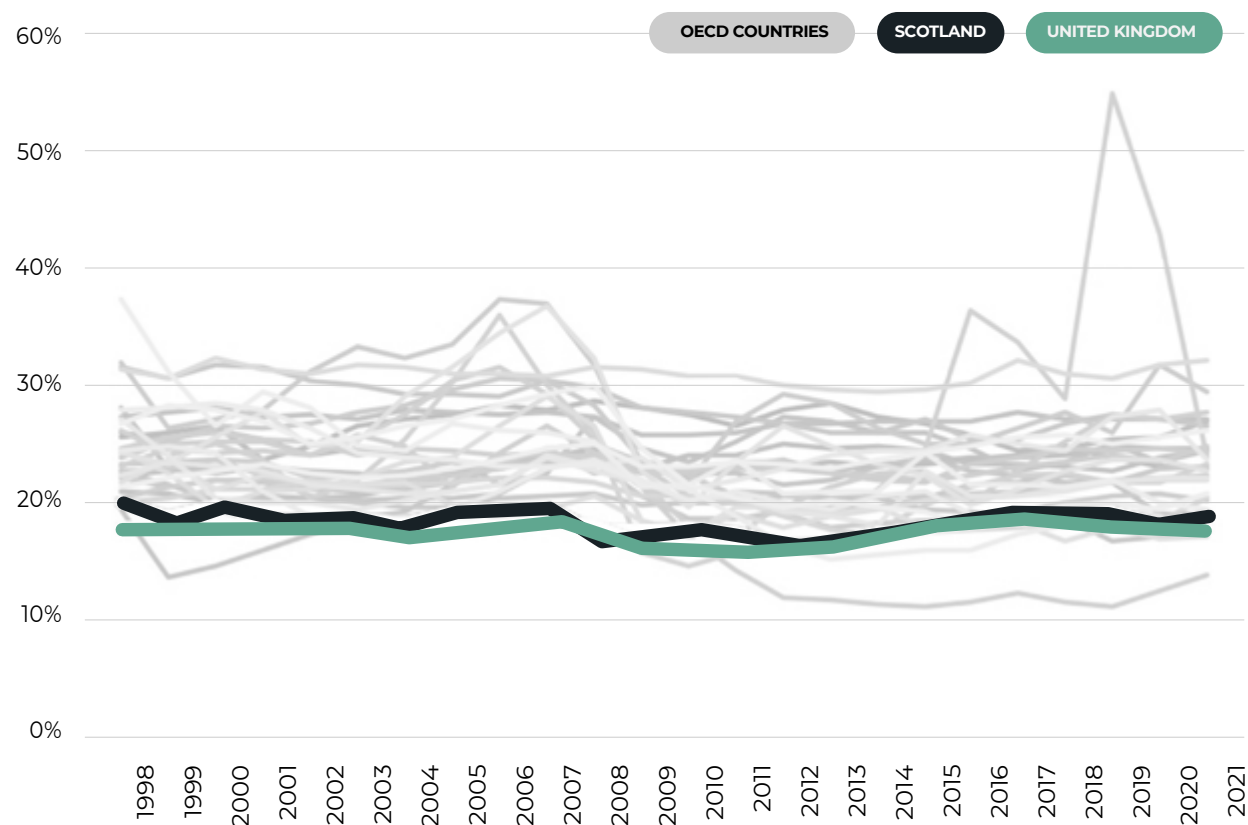
Low investment

Inherently linked to the problem of low productivity is low investment. Investment (both from the public and private sectors) is essential to maintain and enhance a nation’s productive capital stock, and which in turn helps to drive productivity growth and living standards.

But despite having a large and sophisticated financial sector, and comparatively high levels of Foreign Direct Investment (FDI) (see box below), Scotland has long suffered from chronically low levels of investment relative to other advanced economies.⁵⁸ Figure 5 shows an international comparison of investment in Scotland, the UK and OECD countries. The data shows that investment in Scotland and across the UK has consistently been among the lowest among advanced economies. In 2021, the most recent year when comparable data is available, investment in Scotland and the UK was only around 18% of GDP.⁵⁹ Among OECD countries only Greece had a lower level of investment, which was forced to cut investment substantially following the Eurozone crisis and the subsequent austerity programme.

Figure 5: Scotland has one of the lowest rates of investment in the OECD

Gross fixed capital formation as a % of GDP, 1998-2021



Source: World Bank⁶⁰, Scottish Government⁶¹

Total investment includes both investment undertaken by the government (public investment), and investment undertaken by the private sector (business investment). Both will play a vital role in accelerating a just transition to net zero. Businesses will need to invest to decarbonise their operations and invest in new production processes, products, and supply chains. But at less than 10% of GDP, the level of business investment in Scotland is among the lowest in the OECD.⁶²⁻⁶³ Many causes of Scotland's low business investment are longstanding and multifaceted, including a banking sector that has retreated from funding the real economy and corporate short-termism.⁶⁴ However, uncertainties and trade frictions resulting from Brexit have also exacerbated the issue in recent years.⁶⁵ In November 2020 the Scottish Government established a Scottish National Investment Bank that aims to catalyse private investment to support three missions, including delivering a just transition to net zero by 2045.⁶⁶

While mobilising private investment is crucial, alone it will not be sufficient to deliver a just transition. The reasons for this are twofold. The first relates to the urgency and scale of the challenge. Only governments have the resources and capacity to deliver a large and, crucially, coordinated programme of investment in the timeframe required. As was shown during the Global the Covid-19 pandemics, governments – unlike individual businesses – have the fiscal resources to transform the economy at scale and pace, where there is the will to do so.

The second reason relates to fairness. Alongside urgency, social and economic fairness must be a guiding principle of a just transition. Investment will be needed not just in the places where private markets can make financial returns, but also in areas that yield the highest social and environmental returns. Many investments required to deliver a just transition have essential public good characteristics that can be more effectively and fairly achieved through direct fiscal spending. Scaling up public investment is not only critical to ensure that the transition happens on the timeframe required – but also to ensure that costs and risks are shared in a just manner.

In recent decades however, public investment in Scotland and the UK has been significantly lower than many other advanced economies. According to the OBR, public investment as a share of GDP across the UK has consistently been in the bottom quartile among OECD countries.⁶⁷ It is clear that both the Scottish Government and local authorities will need to significantly scale up public investment to deliver a just transition. The immediate challenge is to assess how this can be most effectively financed under the existing fiscal framework, as will be discussed further below.

The final type of investment that is crucial for a just transition relates to innovation. Developing and deploying new green technologies will be essential to accelerating the net zero transition to ensure Scotland can prosper in the 21st century, as well as enabling low-income countries to capture more value of shared green technologies, recognising the trade limits of devolution.⁶⁸ In 2019, Scotland invested 1.7% of GDP in R&D, significantly below the average in the UK, (1.74%) EU (2.10%) and the OECD (2.47%).⁶⁹ In leading countries such as Sweden, Germany and Denmark, GERD investment regularly exceeds 3% of GDP.⁷⁰ In addition, many countries across Europe, North America and Asia have recently pledged to dramatically increase R&D spending to accelerate the transition to net zero, and gain a first mover advantage in new technologies.⁷¹

What is investment?

In economics, the term ‘investment’ refers to ‘gross fixed capital formation’. This relates to investment in new long-term assets (such as new buildings, wind farms or machinery) which help produce more output in future. This investment will likely create new jobs and help to increase output and productivity.

This definition differs from how the term ‘investment’ is often used in other contexts. In finance, for example, ‘investment’ has a much broader definition, relating to the acquisition of any asset – regardless of whether they are new or not. While there is some overlap, there are important differences between these definitions. In particular, investment in finance can often relate to the purchase of an existing financial or physical asset (e.g. shares in a company or a physical property), rather than the production of a new asset.

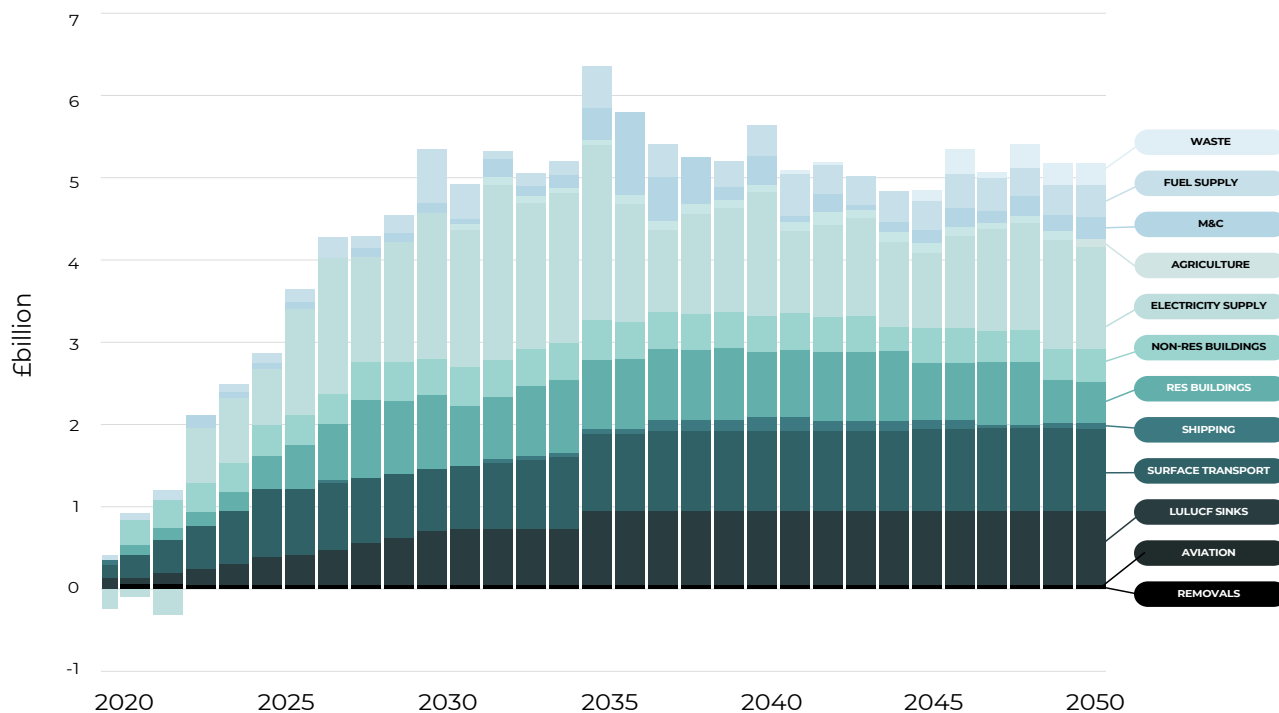
While these transactions may be mutually beneficial, they do not typically generate any new economic value, as the asset in question already existed. Instead, the transaction represents a change in ownership of an existing asset, rather than the production of a new asset. As a result, it does not increase investment (gross fixed capital formation) in the economy, as it does not increase the country’s productive capital stock. In recent decades across the UK have shifted away from financing productive investment towards lending for real estate and financial assets. This is a key reason why Scotland and the UK have comparatively large financial sectors, but low levels of investment.

In recent years the Scottish Government has also put a strong emphasis on attracting more Foreign Direct Investment (FDI) (sometimes referred to as ‘inward investment’). FDI occurs when a company or institution headquartered outside of Scotland invests within Scotland.^{72 73} While FDI can be used to finance fixed capital formation, it does not automatically lead to more investment in the economy. This is because FDI is also often used to acquire existing financial assets (e.g. shares, bonds) and physical assets (e.g. real estate). The evidence on the benefits of FDI is mixed, and a recent study concluded that whilst FDI is a prominent source of capital flows, its contribution to total factor productivity was not observed.⁷⁴

The total amount of investment required to deliver a just transition to net zero in Scotland is difficult to quantify. However, the Climate Change Committee estimates that annual low-carbon capital investment will need to increase fivefold – rising from less than £1bn per year today to £5-6bn per year by 2030⁷⁵. Key priorities include investing to decarbonise electricity supply, housing and commercial buildings, surface transport, fuel supply and land use change. How this investment is delivered – and who bears the risks and rewards – will be key in determining whether the transition to net zero is fair and just.

Figure 6: Scotland must increase low-carbon investment five-fold to meet its net zero target

Additional capital investment required to meet net zero target (Scotland)



Source: Committee on Climate Change⁷⁶

Fiscal challenges

In 2021-22, around 63% of total spending for the benefit of the people of Scotland was spent by the Scottish Government and Scottish local government, compared to 37% from the UK government bodies.⁷⁷ The Scottish Government's funding for resource spending (day-to-day spending required to run public services) comes from five main sources:⁷⁸

- **The Block Grant:** this is the single largest source of funding for the Scottish Government. The Barnett Formula determines the Block Grant and annual growth is dependent on the UK Government's overall fiscal plans and its spending priorities.
- **Devolved taxes:** the Scottish Government receives the revenue from these taxes, the largest of which is Scottish Income Tax. The Scottish Budget is then reduced based on how quickly revenues of the corresponding tax have grown in the rest of the UK (rUK) on a per head basis.
- **Non-domestic rates (NDR):** this revenue is raised by Local Authorities on non-domestic properties. All revenue raised is ultimately returned to Local Government via the Local Government Settlement.
- **Social Security Block Grant Adjustments:** this is funding provided by the UK Government for devolved social security payments, based on the growth in expenditure on the corresponding payment in rUK on a per head basis.
- **Other income and expenses:** other revenue and costs including resource borrowing and associated costs as well as revenues from the Scottish Crown Estate.

Recent projections indicate that the Scottish Government's budget will come under increasing pressure in the coming years. The Scottish Government's recent Medium Term Financial Strategy projects that resource spending (day-to-day spending required to run public services in Scotland) will outstrip the funds available by 2% (£1 billion) in 2024-25, increasing to 4% (£1.9 billion) in 2027-28.⁷⁹

The outlook is similarly challenging for the Scottish Government’s capital budget, which supports investment in long-term assets such as infrastructure, hospitals, and research and development. The largest source of funding for capital spending is the Capital Block Grant, which is driven by the UK Government’s spending priorities and overall fiscal plans and determined through the Barnett Formula. However, under the Fiscal Framework, the Scottish Government can borrow additional capital up to a maximum of £450 million per annum and £3 billion in total.⁸⁰ The Medium Term Financial Strategy projects that capital funding is expected to fall by around 7% in real terms between 2023-24 and 2027-28.⁸¹ This means that the trajectory of capital spending is more than the capital funding available, with an estimated 16% gap in 2025-26.

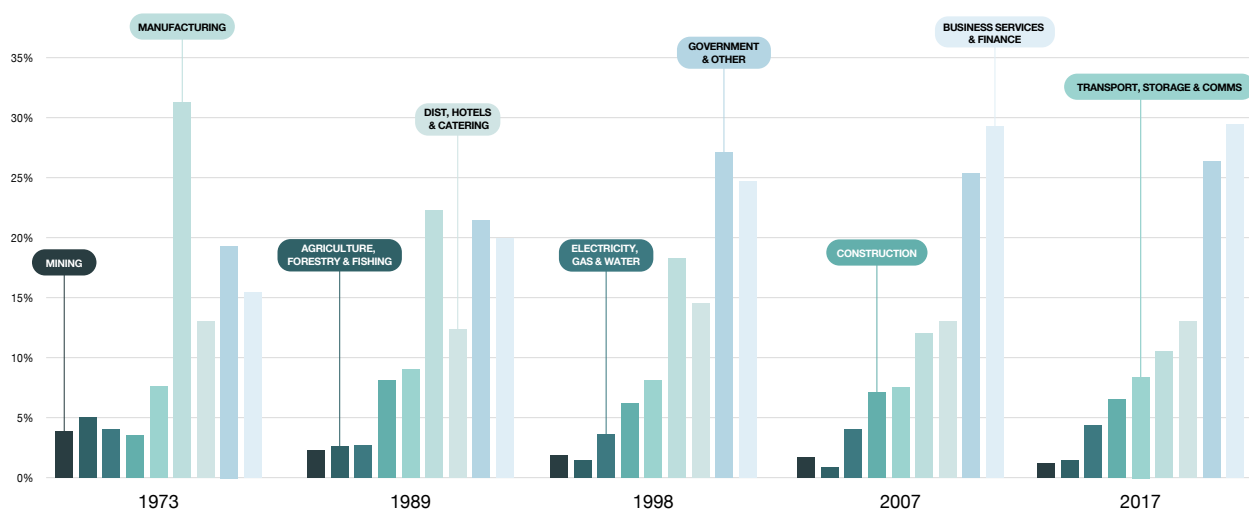
Given that the Scottish Government has to present a balanced budget, it is unable to run a fiscal deficit or borrow beyond the limits set out in the fiscal framework. In recent years the Scottish Government has utilised devolved tax powers to increase public revenue, most notably income tax. However, unless more funding is provided by the UK Government, it is likely that the Scottish Government will need to take additional steps to address this fiscal gap, either by raising public revenue (e.g. through devolved taxation) or cutting planned expenditure.

Importantly however, the projections cited above are based on the Scottish Government’s existing plans for public spending. As discussed in the previous section however, it is likely that delivering a just transition will require increases to public spending and investment. As a result, a key challenge for delivering a just transition relates to enhancing the Scottish Government’s fiscal capacity to spend and invest. As will be discussed further in section 3, Future Economy Scotland will be undertaking detailed work to explore how a just transition can be paid for in a way that is fair and just.

Weak industrial base

In recent decades the economies of both Scotland and the UK have seen a marked change in structure. As shown in the chart below, in the 1970s Scotland’s economy was heavily based on manufacturing, which accounted for over 30% of total output. Since the 1990s however, manufacturing output across the UK has shrunk faster than in other advanced economies, and now makes up just 10% of GVA.⁸²

Figure 7: The structure of Scotland’s economy has changed dramatically in recent decades
Gross value added (GVA) as a proportion of total, Scotland, 1973-2017



Source: Scottish Government⁸³

Today Scotland is predominantly a services-based economy, with services accounting for 87% of employment and 77% of output.^{84 85} The largest sector in Scotland is ‘financial and business services’, and many employed in this sector enjoy well-paid, secure jobs. However, other services sectors such as retail, hospitality and social care are often associated with low pay and insecure work, as discussed above.

Outside the services sector, however, Scotland’s economy is heavily reliant on high-emitting sectors for employment, including oil and gas. However, as will be discussed further in section 1.3, these sectors will need to be carefully phased out, meaning that employment in these sectors will inevitably fall over time as part of a planned transition to a green economy.

While transitioning to a net zero economy will require large amounts of investment to scale up renewable energy and roll out green infrastructure, it cannot be assumed that this investment will automatically create new jobs. On the basis of current trends, there is a significant risk that Scotland’s path towards net zero does not result in significant domestic job creation, and leads to significant disruption in the labour market.

Scotland’s offshore wind industry provides an illustrative example. In 2010 the Scottish Government projected that 28,000 workers would be employed in the offshore wind sector by 2020.⁸⁶ However, figures from the Office for National Statistics show that only 3,100 workers were employed in the sector in 2021 – just 11% of the total that was projected.⁸⁷ Between 2014 and 2021 total offshore turnover has risen by over 2,700%, rising from £95m to £2.4bn. During this time however, the number of jobs employed in the sector has only risen by four and a half times – rising from 700 in 2014 to 3,100 in 2021. Whereas in 2014 every £1m of income made by offshore wind farms translated into seven jobs for workers – this figure has fallen to just one job per £1m of turnover in 2021.⁸⁸

Although Scotland has successfully scaled up offshore energy generation, to date it is yet to maximise the associated benefits in terms of employment. Much of the work has been carried out by overseas companies, from across Europe and beyond. Many of these companies are either publicly owned, or have benefited from extensive state support from their national governments. Due to the capital intensity of renewable energy and the limited operating costs, the greatest potential for job creation in renewables lies during the manufacturing and construction phase. However, to date Scotland has not yet scaled domestic supply chains to meet the demand. Instead, turbine blades, nacelles, onshore and offshore substations, foundation jackets and submarine cables have largely been sourced from abroad. The recent ScotWind offshore leasing round attempted to incentivise investment in domestic supply chains through conditionalities, however these incentives are not yet maximising the benefits for workers, relevant industries, communities and Scotland’s economy. Of the £51.2bn that project developers have committed to investing in manufacturing, only around a quarter (28%) is expected to be invested in Scotland. Around £20bn will be invested in the EU, while another £7.5bn will be invested internationally.⁸⁹

Scotland’s failure to translate the growth of green energy industries into an expansion of domestic job-creation in parallel reflects a myriad of longstanding problems in the national approach to economic policy, including the absence of a coherent industrial strategy and underinvestment. In contrast, countries such as Denmark, France and Taiwan appeared to have been more successful at scaling up renewable energy while creating local jobs.⁹⁰ Key to the success of these countries have been deliberate industrial strategies, including greater public investment and local content rules. According to analysis by the STUC, an ambitious roll-out of renewable energy has the potential to create up to 70,000 Scottish jobs, or as little as 9,000 jobs, depending on the policy decisions that are taken.⁹¹ In addition, on current trajectories there is a risk that existing Scottish manufacturing jobs begin to move offshore, as companies seek to relocate to countries with a more supportive policy environment. A recent study found that up to 16,700 manufacturing jobs in Scotland are at risk of being lost to countries that offer superior green infrastructure and greater support for the decarbonisation of industry.⁹² While policy measures are needed at a Scottish level to address this, the step change in investment needed to achieve this will require UK Government action. TUC analysis in 2021 found that, scaled by population, the UK’s green recovery investment is just a quarter of France, a fifth of Canada, and 6% of the USA.⁹³

To date the Scottish Government has taken some steps to support domestic manufacturers, however to date this has had limited success. In 2017-18 the Scottish Government invested £52m of loans and equity into the renewables manufacturing company Burntisland Fabrication Limited (BiFab).⁹⁴ However, the company struggled to win contracts, and entered administration in 2020. Although some BiFab yards have since been bought out of administration, the Scottish Government is not expected to recover its £52m investment.⁹⁵

Returning to the manufacturing economy of the 1970s is neither feasible nor desirable. However, it is clear that if Scotland is to maximise the job-creating opportunities of decarbonisation the Scottish Government must take proactive steps to strengthen capabilities in manufacturing and scale up domestic supply chains. Key to achieving this will require a robust, proactive industrial strategy – learning both from successful examples elsewhere, as well as the failures surrounding BiFab.

Rentierism and wealth extraction

Scotland's shift from a manufacturing-based economy to a services-based economy has also been accompanied by a wider shift in its economic model. Beginning in the 1980s, many key sectors of the economy were privatised, including electricity networks, coal, gas, telecommunications, rail, steel and many more. Much of the council housing stock was also sold off under the Conservatives' 'Right to Buy' policy, and large swathes of public land was also privatised. Overall it has been estimated that the UK accounted for 40% of the total value of all assets privatised across the OECD between 1980 and 1996.⁹⁷

Privatisation of key sectors was accompanied by deregulation of the financial sector, cuts to income and corporation tax, the weakening of trade union power, and the rise of the shareholder primacy model of corporate governance. The result of these changes was a profound shift in power away from labour towards capital, which in turn triggered a steep increase in inequality (as will be explored further in section 1.2). However, another consequence of this has been the rise of so-called 'rentierism', and the extraction of 'economic rent'.

What does economic rent mean?

In common parlance, 'rent' refers to a payment made by one party to another for the temporary use of something. In economics, however, rent (or 'economic rent') has a related but different meaning. It refers to "income derived from the ownership, possession or control of scarce assets under conditions of limited or no competition".⁹⁸ The early political economists referred to economic rents as 'unearned income', because it reflects income derived not from work or effort – but from simply owning scarce assets.^{99,100}

In modern economies, economic rents take many forms. Assets that are prone to rent extraction include those that are naturally scarce (e.g. land, oil and other natural resources); assets that have been made scarce by government decree (e.g. through intellectual property rights); or assets that have natural monopoly characteristics (e.g. water and energy networks). Owners of these assets are able to generate returns far in excess of what it would reasonably cost to bring them into production. Importantly, these excess returns come at the expense of others in the economy, who have to bear the costs in the form of paying higher prices for key goods (e.g. energy, housing, water, etc). As a result, rentiers get wealthier not by creating new wealth, but by making others poorer. As the Nobel Prize winning economist Joseph Stiglitz and Linda Blimes put it, extracting economic rent means "getting a larger share of the pie rather than increasing the size of the pie".¹⁰¹

In recent years scholars have highlighted how the UK's embrace of privatisation and liberalisation has left it particularly susceptible to rent extraction.^{102,103} As the political economist Brett Christophers notes: "The UK economy has been transformed into one in which control of exclusive assets is ever more critical... In the UK today, the leading corporations are largely rentiers, and the biggest sectors of the economy are largely characterised by rentier dynamics."¹⁰⁴

Mapping the full extent of rent extraction in Scotland's economy is beyond the scope of this paper.¹⁰⁵ However, two examples are particularly pertinent to a just transition. The first relates to land ownership. Because land is fixed in supply and has no cost of production, economists have long considered returns earned from the ownership of land to be economic rents.¹⁰⁶ As the economy grows over time, landowners are able to extract higher rents from households and businesses, despite not contributing productivity to the economy. Today Scotland has one of the most concentrated patterns of land ownership in the world, and rent extraction from rural land continues to be a significant problem for many communities across the country. As will be explored further in the next section, this has been exacerbated in recent years as the rise of carbon offsetting has created a surge in investor demand for rural land in Scotland.¹⁰⁷

Transformations in the housing market that have also resulted in a dramatic rise in rent extraction from land. Since 1980 house prices in Scotland have soared by 1,125% - far outstripping growth in incomes.¹⁰⁸ The soaring cost of housing is linked to a series of reforms introduced in the 1980s and 1990s, which sought to promote homeownership and buy-to-let landlordism.¹⁰⁹ Importantly however, it is not the buildings that have become more valuable over time, but the land that sits underneath them.¹¹⁰ Across the UK, the market value of residential land has quadrupled since 1995 – rising from £1 trillion over £4.5 trillion.¹¹¹ Rising land values have accounted for more than half of all household wealth accumulated since 1995. This has contributed to a widening gap between those who own property, and those who do not. When property prices or rents go up, this increases the wealth of landowners. But it also has a corresponding cost that is borne by those who do not own property, who face higher rents and property prices. As a result, much of the wealth accumulated through the land and property market in recent decades has come at the expense of those who do not own property.^{112 113}

Another example of rent extraction in Scotland's economy can be found in the energy sector. Following the exploration of oil and gas in the North Sea in the 1970s, the UK economy became increasingly reliant on natural gas for its energy supply.¹¹⁴ Like land, oil and gas is a free gift of nature and fixed in supply, and is an example of a natural resource rent. Granting companies exclusive licences to extract oil in a defined area assigns substantial power and the opportunity for significant rentier income. Some countries have used resource rents to develop sovereign wealth funds that support high levels of public welfare.¹¹⁵ The Norwegian sovereign wealth fund, for example, is currently worth around \$1.4 trillion.¹¹⁶ In the UK however, the majority of oil and gas rents have accrued to private shareholders. Despite extracting similar amounts of fossil fuels, it has been estimated that Norway has generated more than three times the amount of public revenue from oil and gas than the UK, due to higher taxation and government equity stakes.¹¹⁷ Over the past year, soaring natural gas prices have caused household energy bills to skyrocket. At the same time however, fossil fuel companies such as Shell and BP reported record profits.^{118 119} As with land ownership, the windfall profits made by fossil fuel companies have come at the expense of households and businesses, who have seen more of their income eaten up by energy bills.

Compared to the rest of the UK, Scotland has taken some meaningful steps to limit rent extraction. For example, whereas the water sector in England and Wales was privatised in 1989, today Scottish Water remains publicly owned. Between 1991 and 2019 water companies in England paid £57bn of dividends to shareholders, while bills increased by more than 40% in real terms.¹²⁰ Similarly, whereas Right to Buy continues to undermine social house building and facilitate rent extraction in the housing market in England, it was abolished in Scotland in 2014. More recently, in 2022 the Scottish Government introduced a temporary cap on in-tenancy rent increases, and has pledged to introduce permanent rent controls by the end of this parliament.¹²¹ The Scottish Government has also taken the ScotRail franchise into public ownership, stating an intention to ensure rail services are run in the interests of customers “rather than shareholders”.¹²²

However, as with the UK as a whole, it is clear that rentierism continues to be a dominant feature of Scotland's economy. This in turn poses a number of challenges for a just transition. As will be discussed further in Part 3, a key aim of a just transition is to reduce inequalities. Given that rent extraction has been a key driver of rising inequality in Scotland and across the UK, substantially reducing or eliminating economic rents must be a key priority. In addition, in order for the transition to net zero to be fair and just, it will be vital that the rewards from decarbonising the economy are shared fairly. As will be explored further in the next section, delivering a just transition will require a careful transition away from fossil fuels towards clean energy. In scaling up renewable energy, it is crucial that Scotland avoids replicating the rentier dynamics of Scotland's fossil fuel sector, which has seen multinational corporations make record profits at the expense of the wider economy. This can be achieved by prioritising ownership models that ensure that profits are shared or reinvested, such as community or public ownership, and using taxation to socialise economic rents for public benefit.

Economic rents are not only unfair however, they are also inefficient. Opportunities for rent extraction promotes the misallocation of capital, as investors are incentivised to acquire existing assets (e.g. real estate) to extract rents rather than investing in productive new activity.¹²³ As discussed above, delivering a just transition will require large amounts of investment, including from the private sector. It is therefore critical that opportunities for rent extraction are limited to ensure that investment can be mobilised on the scale required to deliver a just transition.

Demographic challenges

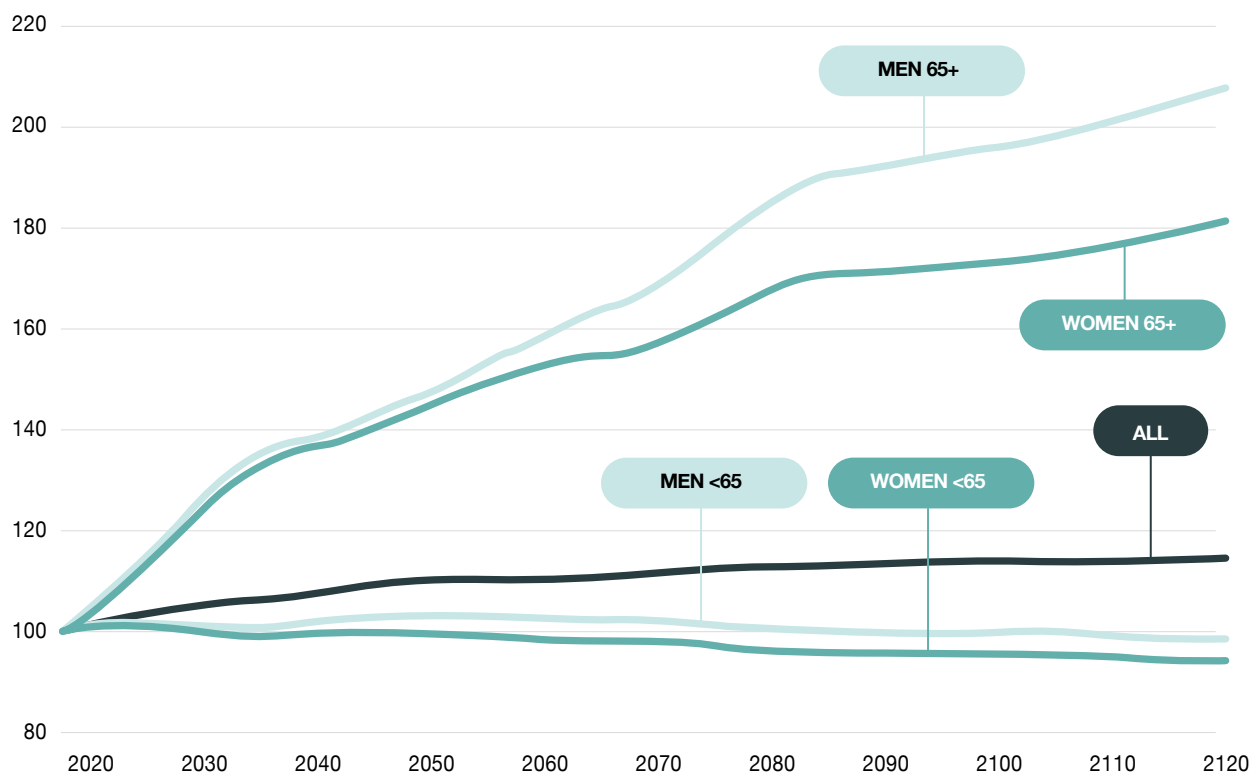
Like many advanced economies, Scotland's population is getting older. Life expectancy has increased in recent decades, while the birth rate has been declining. This means that by 2050, the numbers of older people are expected to have risen dramatically as a proportion of our population. By mid-2043, it is projected that 22.9% of the population will be of pensionable age, compared to 19.0% in mid-2018.

This raises a series of challenges for delivering a just transition. Firstly, an ageing population has significant implications on public revenue and spending. A significant proportion of the government's budget (around 30%) comes from the income tax paid by people living and working in Scotland. Fewer working age individuals will mean a reduction in income from taxes, while an ageing population is likely to increase spending on health and social care.

There are also important local and regional challenges. At the moment however some parts of Scotland are experiencing rapid population growth, causing increased pressure on services, while other areas are experiencing population decline. This is especially the case for some rural areas, where growing numbers of people have moved to larger towns and cities for employment and education opportunities.

Figure 8: Scotland's population is getting older

Scotland's population projections (2010 = 100)



Source: National Records for Scotland¹²⁵

1.2 Inequalities

Inequality in Scotland has several dimensions, including relating to income, wealth, gender, race, and geography. In this section we provide an overview of key areas of inequalities in Scotland, doing so through an intersectional lens where data permits.

Income inequalities

Income inequality in Scotland, as measured by the Gini coefficient and Palma ratio, has remained relatively stable over the past decade.¹²⁶ However, income inequality in Scotland remains high in an international context. This reflects the steep rise in income inequality that occurred during the 1980s and early 1990s. In 1980, Scotland's Gini coefficient was around 25%, but by the mid 1990s it had spiked to 33% – around the same level it is today. The sharp rise in inequality during this time has been attributed to the reduction of income taxes, erosion of trade union power, the liberalisation of the financial sector, and the cutting of welfare benefits.

To better understand the driving forces behind income inequality, it is useful to compare pre-tax market incomes (incomes before taxes and benefits) and net incomes (incomes after redistributive taxes and benefits have been paid). The former reflects the ex-ante distribution of income before ex-post redistribution takes place, while the latter also incorporates the impact of redistributive government policies.

The Gini coefficient of pre-tax market income in Scotland is around 49% - two percentage points lower than it is for the UK as a whole. This is relatively high compared to other advanced economies, although similar to other countries such as Germany (49%), Finland (50%), and slightly below France (52%).¹²⁷ However, whereas taxes and benefits reduce the Gini coefficient by 21% in Germany, 23% in France and 24% in Finland – they only reduce it by 17% in Scotland. As a result, income inequality is significantly higher in Scotland than it is in these countries, even though the distribution of pre-tax market incomes was roughly similar. In other countries, however, income inequality is lower than in Scotland because pre-tax incomes are more equally distributed. Countries in this category include Norway, Sweden, Denmark and Switzerland. Although these countries still have progressive tax and welfare systems, it is because their economies do not produce such unequal outcomes in the first instance that levels of income inequality are low.

Income inequality in Scotland is therefore comparatively high for two separate reasons. Firstly, because the structure of Scotland's economy delivers a highly unequal distribution of income before government redistribution takes place. And secondly, because Scotland's tax and benefit system is not as redistributive as it is in these countries.¹²⁸ This indicates that both ex-ante predistributive measures (e.g. structural interventions) and ex-post redistributive policies (e.g. progressive tax and benefits) can play an important role tackling inequalities in the context of a just transition. We explore this further in Part 3.

Another important measure of income inequality relates to the gender pay gap. In Scotland the Scottish Government measures the gender pay gap by comparing the median hourly earnings (excluding overtime) of men and women. After narrowing between 2014 and 2020, the gender pay gap has increased again in recent years – rising to 11.6% in 2021 and 12.2% in 2022.¹²⁹ However, the gender pay gap also varies widely across the income distribution and in different occupations and age groups. The gender pay gap is also significantly higher in senior managerial roles and among older age groups, and the highest female earners continue to earn substantially less than their male counterparts.

There remains a lack of intersectional data relating to gender pay gaps to fully illustrate differences. Data relating to disability, gender and pay are only available at a UK-level.¹³⁰ There is also limited data relating to the ethnicity pay gap, which measures the difference in average hourly pay between different ethnic groups. Collecting this data should be a key priority going forward for the Scottish Government going forward. In addition to the gender pay gap, while the overall employment gap between men and women narrowed in recent years, there remains a significant gap among women from ethnic minority groups, at 22% below that of white women.¹³¹

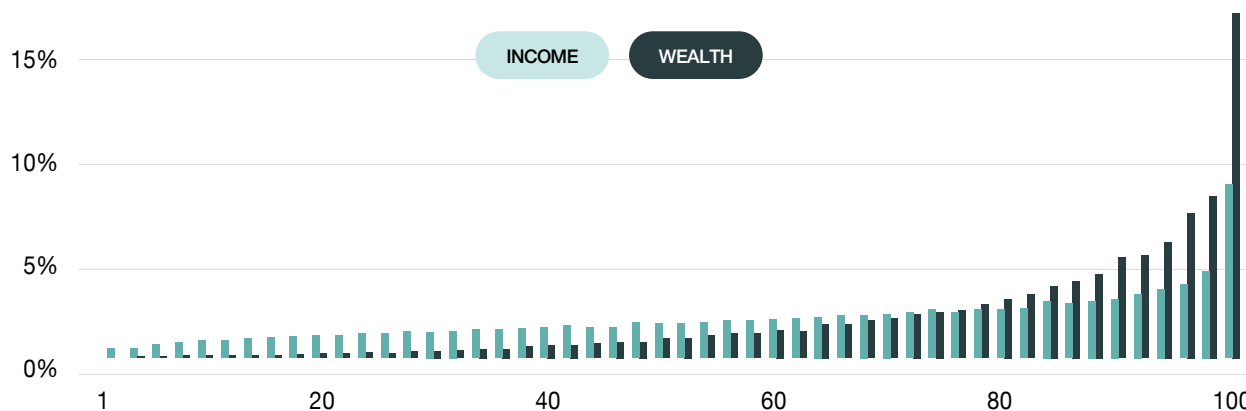
Wealth inequality

According to the latest data from just before the pandemic, the wealthiest 10% of households have £1.7 million of wealth on average, and together hold 45% of all wealth in Scotland. In contrast, the least wealthy 10% of households have just £7,600 on average, and many in this group have zero or negative wealth.¹³² As shown in Figure 8 below, wealth inequality is more severe than income inequality. Whereas the highest earning 2% of households account for 9% of all income, the wealthiest 2% of households own 18% of all wealth.

Higher income households, pensioner couples, and home-owners are on average wealthier than other groups. In contrast, households with below average wealth tend to be low income households, lone parent and single working-age adult households, and those who lived in rented housing. The average wealth of men and women in Scotland is now broadly the same, however minority ethnic adults have significantly less wealth on average than white British adults. In 2018-2020, a typical minority ethnic adult had £57,000 in total wealth, compared to £132,700 for a typical white British adult.¹³³

Figure 9: Wealth in Scotland is more unequally distributed than income

Share of total wealth and of total household income in each 2% wealth / income band, 2018-20



Source: *Wealth and Assets Survey and Family Resources Survey*¹³⁴

As discussed above, in recent decades the primary driver of wealth accumulation in Scotland has been asset price inflation, and in particular spiralling house prices.¹³⁵ As house prices have continued to rise, the gap between house prices and earnings has grown larger. For those who own property, this has generated unearned windfall gains which has substantially increased net wealth. However, those who do not own property have missed out on this windfall, and instead have faced escalating private rents, which in turn have squeezed living standards.

An increasingly important dividing line in Scotland is therefore between those who own assets, and those who do not. These dynamics will be further reinforced in future by the process of inheritance. In the absence of policy intervention, it is likely that wealth inequality will become more pronounced in future.

Regional inequalities

Tackling regional economic disparities has been a priority of successive Scottish governments since the creation of the Scottish Parliament. Despite this, disparities between different regions across Scotland remain large, and in some instances have grown wider.

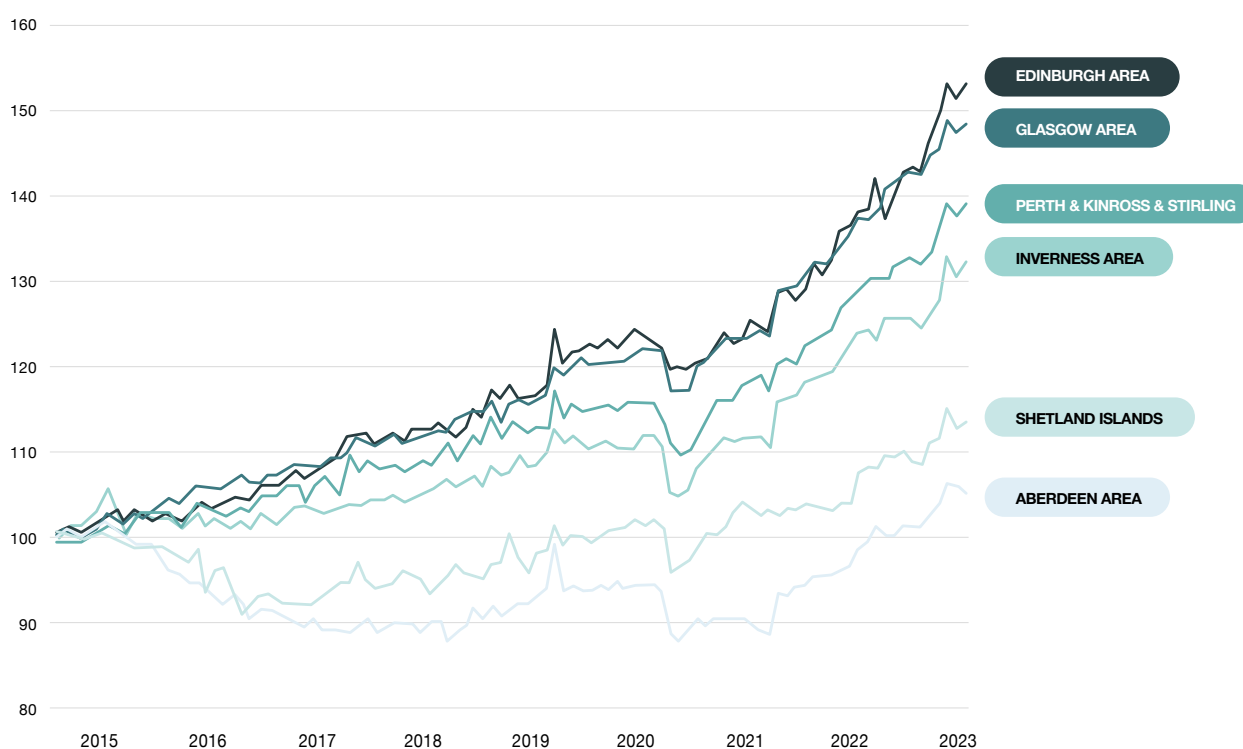
One way of measuring regional disparities is by comparing gross value added (GVA) per head in different areas. On this measure there is a large and growing disparity between major cities such as Glasgow and Edinburgh on the one hand, and post-industrial areas and rural and island communities on the other. For example, GVA per head in Edinburgh is nearly 2.5 times higher than in East and North Ayrshire. This gap has widened over time, with GVA per head in the capital nearly doubling since devolution, while it has increased at around half that rate in East and North Ayrshire around half that rate.¹³⁶

Another way to assess regional disparities is by examining the evolution of total pay in different parts of the nation.¹³⁷ This provides an indication of how the overall size of the economy in different places is changing over time. Figure 9 shows total payroll in each of the NUTS3 regions of Scotland – generally equivalent to council areas – since 2014. This shows that the prosperity of areas such as Edinburgh, Glasgow and East Lothian has increased much faster than it has in other areas of the country.

This chart also highlights the challenges facing areas of Scotland that have historically relied on North Sea oil and gas. While the economies of Aberdeen and Shetland grew faster than Scotland’s economy as a whole in the decade leading up to 2014, both areas have since seen a slowdown in economic activity in comparison to the rest of the country.¹³⁸ Unless Scotland’s transition is carefully planned, there is a risk that parts of the country that currently rely on the oil and gas sector could continue to see economic decline.

Figure 10: Aggregate pay growth has been slower in Scotland’s oil and gas regions

Aggregate pay growth by NUTS3 regions (July 2014 = 100)



Source: Office for National Statistics, HMRC real-time information

Geographic economic disparities are also closely linked to inequalities in health outcomes. People living in Scotland’s most deprived areas have higher rates of death from all causes. According to the recent ‘Health Inequalities in Scotland’ report, babies born in Scotland’s least deprived neighbourhoods are forecast to live 24 years longer in good health than those in the most deprived areas.¹³⁹ The impact of socio-economic inequalities is also apparent in Scotland’s rising drug deaths. The overall rate of drug deaths increased from 6.2 per 100,000 in 2001 to 25.1 per 100,000 in 2020. Deaths in the most deprived areas were 68.2 deaths per 100,000 people in 2020 – 18 times as high in the least deprived areas.¹⁴⁰

These inequalities were also sharply exposed during the Covid-19 pandemic. Age-standardised Covid-19 mortality rates were over twice as high amongst people living in the most deprived fifth of neighbourhoods compared to those living in the least deprived fifth of neighbourhoods.¹⁴¹ Furthermore, deaths amongst people in the South Asian ethnic group were almost twice as likely to involve Covid-19 compared to deaths in the White ethnic group.¹⁴²

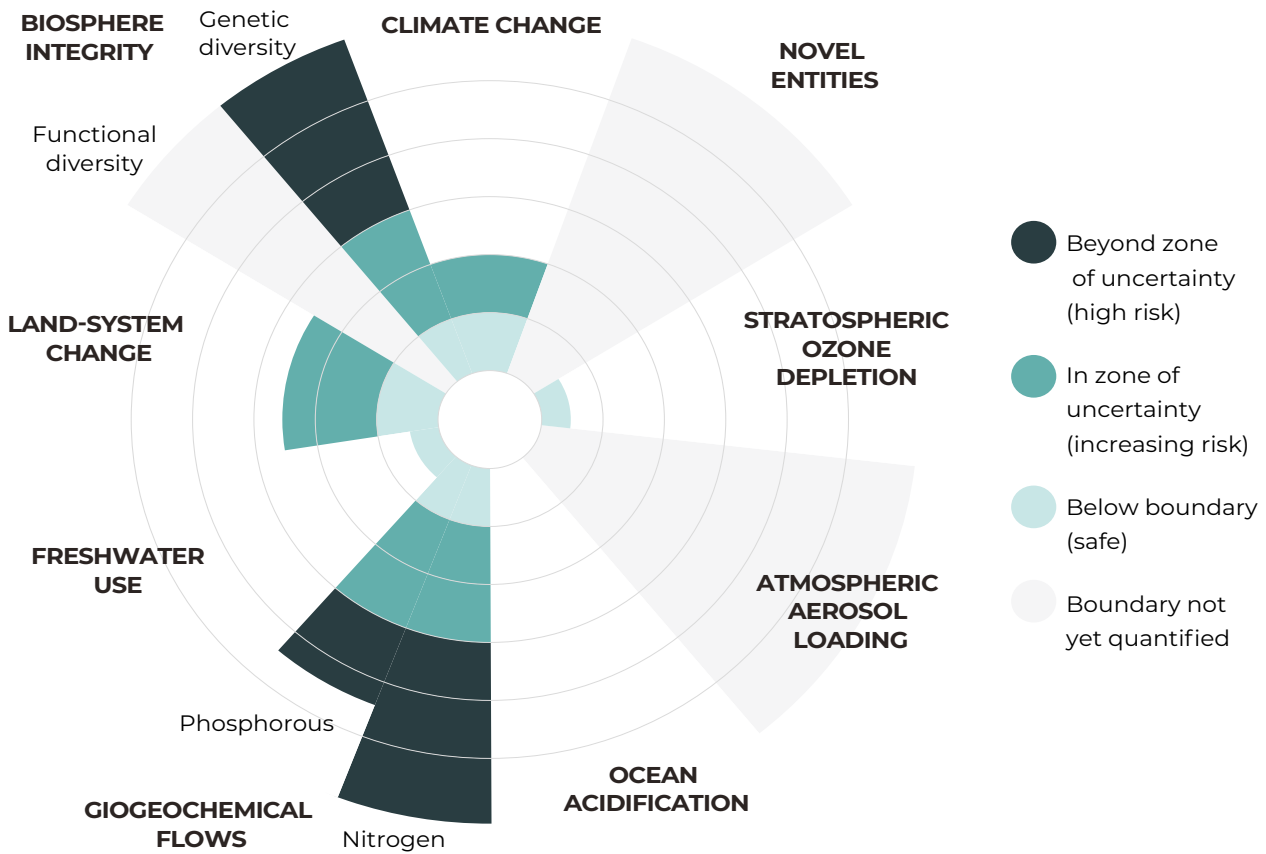
Overall, it is clear that tackling the disparities between the most and least deprived areas will be key to ensuring the transition to net zero is fair and just.

1.3 Environmental challenges

Across the world human impacts on the environment have reached a critical stage, threatening the foundations upon which society depends. Our fossil fuel-based economic system has pushed our natural environment beyond safe operating zones, driving a complex, dynamic process of environmental breakdown that has reached dangerous levels.

At a global level, the impact of human activities on the planet can be assessed through the concept of planetary boundaries. Pioneered by the Stockholm Resilience Centre, the framework identifies nine ‘planetary life support systems’ that define the safe operating space for humanity.¹⁴³ Research shows that five of these limits have already been breached, and pushed into unsafe operating spaces. The high interdependence of natural systems means that rapid changes in one system can disrupt others, potentially triggering large-scale environmental change at a regional or global level. As the authors of the framework note: “Transgressing one or more planetary boundaries may be deleterious or even catastrophic due to the risk of crossing thresholds that will trigger non-linear, abrupt environmental change within continental- to planetary-scale system.”¹⁴⁴

Figure 11: Five of the world’s nine ‘planetary boundaries’ have already been exceeded



Source: Steffen et al (2015)¹⁴⁵

Note: The light blue shaded area represents the safe operating space

As an advanced economy that has benefited from fossil fuel extraction, Scotland’s economy has a disproportionate impact on humanity’s environmental footprint. In this section we provide an overview of the key environmental challenges facing Scotland, and explore how they must be addressed as part of a just transition.

Carbon emissions

Eight years on from the Paris Agreement, the world remains perilously off-track to meet the ‘well below’ 2-degree limit set by the accord. Even if states were on track to meet their current Paris Agreement obligations, the world would remain on course for 3.2 degrees of warming relative to pre-industrial levels by 2100.¹⁴⁶ Scientists recently warned that the world will almost certainly experience new record temperatures by 2027, and temperatures are likely to rise by more than 1.5 degrees above pre-industrial levels.¹⁴⁷

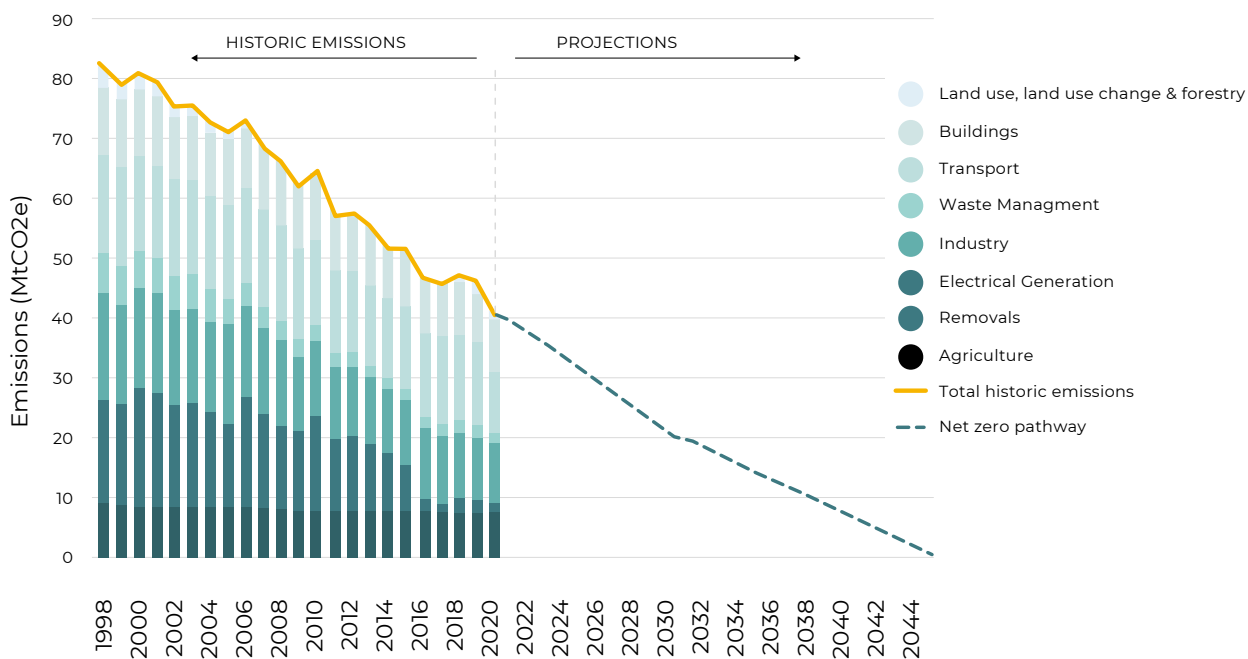
Scotland is thought to be the largest producer of oil and the second largest producer of gas in Europe and is a significant historic oil and gas producer, and as such has contributed disproportionately to rising global temperatures, the impacts of which have mainly been felt in the Global South. An estimated 1 in 5 deaths every year globally can be attributed to fossil fuel pollution, and a Oxfam report found that 55 of the most climate-vulnerable countries have suffered climate-induced economic losses totalling over half a trillion dollars during the first two decades of this century.^{148 149} There is therefore an enhanced onus on Scotland to lead by example, while supporting a global just transition.

The Scottish Government has committed to becoming net zero by 2045 – five years ahead of the UK Government. It also aims to reduce emissions by 75 percent by 2030. Since 1990 greenhouse gas emissions in Scotland have fallen by 49.9%, a trend which compares favourably to reductions for the whole of the UK.¹⁵⁰

Figure 11 shows Scotland’s historical emissions (1998-2020) by sector alongside the Scottish Government’s pathway to achieve its 2045 net zero target. To date, progress in reducing emissions has been mixed across different sectors. Strong progress in the energy sector has dominated, with smaller reductions in some sectors such as buildings and agriculture, and increases in others such as land use. Going forward, the Scottish Government will need to take bold steps to accelerate decarbonisation across the economy. The Climate Change Committee’s 2022 progress report noted that Scotland has failed to achieve seven out of eleven of its targets to date, and that “the trend of failure will continue without urgent and strong action to deliver emissions reductions, starting now.”¹⁵¹ It also noted that a clear delivery plan on how they will be achieved is “still missing.” In order to meet the 2045 net zero target, as well as the interim 2030 target, there will need to be an accelerated pace of decarbonisation in some sectors – particularly transport, industry and buildings.

Figure 12: Indicative rates of decarbonisation required to achieve net zero emissions by 2045 in Scotland

Scotland’s historical emissions (2008-2020) by sector compared to the Scottish Government’s net zero pathway



Source: Committee on Climate Change¹⁵²

Although transport emissions fell during the pandemic, it remains the highest-emitting sector in Scotland. Decarbonising the transport sector will require policy to drive rapid uptake of zero-emission vehicles, and to enable people to reduce their use of high carbon modes of transport. It will also require new measures to curb emissions from aviation. Today people in the UK take among the most international flights in the world, however these emissions are not spread equally among the population. Across the UK, 70% of flights are taken by 15% of the population, while 57% do not fly abroad at all.¹⁵³ The Scotland Act 2016 devolved the taxation of passengers leaving Scottish airports to the Scottish Parliament. In 2017, the Scottish Government introduced legislation to replace Air Passenger Duty with a new Air Departure Tax (ADT). This proposed to reduce the rate of tax by 50%, before abolishing it completely. However, in 2019 the Scottish Government abandoned its plans to cut Air Departure Tax as the proposals were no longer considered compatible with Scotland's climate change targets.¹⁵⁴ To date a replacement has not been introduced, and Air Passenger Duty has continued to apply for airports in Scotland.

Industry is Scotland's second-highest emitting sector, and will need to rapidly decrease in the next decade. To date, the Scottish Government has chosen to place a heavy reliance on engineered removal to meet its targets. However, technology based solutions have not been deployed effectively at scale and remain relatively unproven.^{155 156} As the UN's Intergovernmental Panel on Climate Change (IPCC) has highlighted: "Carbon Dioxide Removal (CDR) deployed at scale is unproven, and reliance on such technology is a major risk in the ability to limit warming to 1.5°C."¹⁵⁷

Decarbonising buildings remains an urgent priority, and a major challenge. Decarbonising Scotland's 2.6 million dwellings, 20,000 public buildings, and 180,000 other buildings will require significant investment in energy efficiency measures such as loft insulation, double glazing, wall insulation, boiler replacement and improved heating efficiency schemes. While the Scottish Government seeks to do this gradually, reducing emissions from the sector over time, others such as the STUC have suggested that delivering a large-scale household energy efficiency retrofit programme in a rapid, coordinated fashion could be more effective.¹⁵⁸ However, a key challenge relates to skills and labour supply. Scotland is currently facing a shortage in skills in parts of the construction sector, and energy efficiency retrofits require a significant growth in the number of qualified installers, plumbers and other tradespeople.¹⁵⁹

Another challenge relates to the oil and gas sector. As discussed in section 1.2, Scotland's economy remains heavily reliant on oil and gas for employment. Scotland's oil and gas output is equivalent to an additional 180.3 MtCO_{2e} when used, more than four times greater than Scotland's own greenhouse gas emissions.¹⁶⁰ While the Scottish and UK Governments have not yet set clear targets to reduce oil and gas output, a managed phase-out will be required to meet decarbonisation goals and accommodate shrinking demand. The Royal Society of Edinburgh's enquiry Scotland's Energy Future found that "Continuing to burn substantial quantities of gas will exacerbate the problem faced by climate change and runs counter to the goal of reducing carbon emissions."¹⁶¹ A major challenge for a just transition in Scotland therefore relates to the fate of the 71,000 jobs that are reliant on the oil and gas sector, as well as the economy of the North East of Scotland where many of these jobs are based.¹⁶²

Overall it is clear that delivering a just transition will involve a major restructuring of Scotland's labour market, shifting employment from carbon intensive sectors to low carbon industries. Left to market forces however, this process could result in significant economic dislocation, skills mismatches, unemployment and regional decline. Managed effectively, the transition to net zero has the potential to create more new jobs than will be lost. A recent study by the Climate Change Committee found that across the UK, between 135,000 and 725,000 net new jobs could be created by 2030 in low-carbon sectors, such as buildings retrofit, renewable energy generation and the manufacture of electric vehicles.¹⁶³ However, the report warned that this is not guaranteed, and will require proactive policies to reskill and upskill workers.

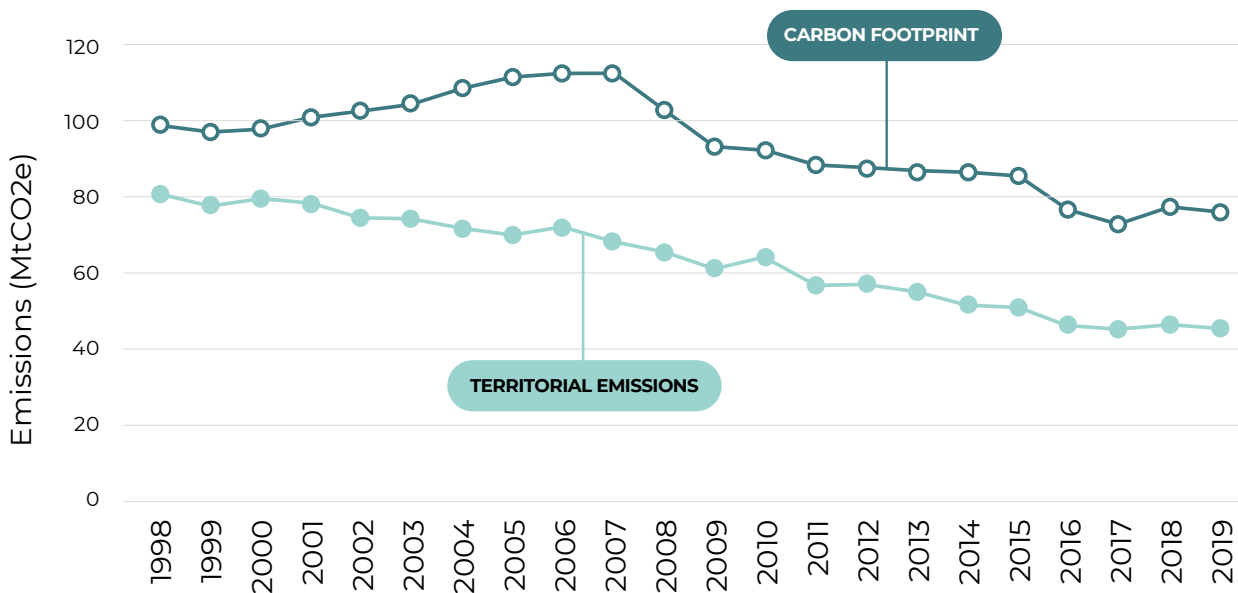
At the time of writing, the Scottish Government is in the process of preparing a number of detailed sectoral transition plans. The 2019 Climate Change (Scotland) Act places an obligation on the Scottish Government to consider the impact of its Climate Change Plan for each of the sectors of the economy, including any specific implications for employment and the workforce by region. It must show how decarbonisation will satisfy the just transition principles of environmentally and socially sustainable jobs, and decent, fair and high-value work, as defined in the Act.

As well as ensuring decarbonisation delivers justice at home, the Scottish Government must also ensure that this does not come at the expense of other countries. Both within Scotland and globally, the consequences of climate change fall hardest on communities and countries who are both least responsible for the problem, and

least prepared for its increasingly severe effects. However, Scotland’s net zero target only covers territorial (or domestic) emissions, meaning emissions that occur within Scotland’s borders. The net zero target does not cover emissions created overseas that are embedded in the goods and services which we import - known as our consumption emissions, or total carbon footprint.¹⁶⁴ Because Scotland consumes lots of goods produced overseas, the gap between territorial emissions and consumption emissions is large. Between 1998 and 2019 emissions on a territorial basis fell by 43.8%, while consumption emissions only fell by 23.6% over the same time period.¹⁶⁵ This gap may increase as Scotland pursues decarbonisation, as the roll out of renewable energy in Scotland relies on the mining of rare earth metals in emerging economies.

The Climate Change (Scotland) Act 2009 requires the Scottish Government to publicly report its consumption emissions as well as its territorial emissions. To avoid a scenario where Scotland reaches its net zero target by offshoring emissions to other countries, it is therefore critical that the Scottish Government does not focus solely on reducing territorial emissions – but also seeks to reduce consumption-based emissions.

Figure 13: Scotland risks meeting its net zero target by ‘offshoring’ emissions to other countries
Comparison of Scotland’s total carbon footprint with its territorial greenhouse gas emissions



Source: Scottish Government¹⁶⁶

Land and nature

While reducing carbon emissions is critical, a just transition must also seek to restore Scotland’s natural environment. Tackling the climate crisis and restoring nature are inherently interconnected. Globally, ocean and land ecosystems remove around 50% of human-made carbon dioxide emissions each year.¹⁶⁷ Protecting and restoring nature can accelerate the transition to net zero through carbon reduction and sequestration, while also delivering a wide range of socio-economic benefits.

One way this can be achieved is through woodland creation. It is estimated that some 10,000 years ago, around half of the land in Scotland was woodland, reaching its peak 5,000 years later, covering 80 percent of land.¹⁶⁸ Subsequent demands placed on woodlands dramatically reduced tree coverage, and by the early 20th century, Scotland’s forest cover was around just 5%. Over the last century, forest and woodland cover in Scotland has grown from roughly 5% to 18.5%.¹⁶⁹ Because trees absorb CO2 from the air, woodland creation is an example of carbon *sequestration*.

In 2020, the Scottish Government updated its Climate Change Plan in response to the climate emergency, with targets for land use featuring heavily in the revised plan. The government has now committed to increasing woodland creation to 18,000 hectares in 2024/25, with the aim of “ensuring that forestry and woodlands play

an important role in cutting emissions and sequestering carbon.”¹⁷⁰ In 2021/22 however, 10,480 hectares of new woodland were created in Scotland – 3,000 hectares less than targeted for the year.¹⁷¹

The restoration of Scotland’s peatlands, which constitute over 20% of the country’s land cover, can also play an important role in meeting Scotland’s net zero targets. In good condition, peatlands can store significant amounts of carbon, and deliver additional benefits like flood mitigation and biodiversity and habitat preservation and restoration. Despite storing around 1,600 million tonnes of carbon, around 80% of Scotland’s peatlands are degraded, meaning that they are net emitters of CO₂ emissions.¹⁷² Scotland’s Soil estimates that if Scotland lost all the carbon stored in peat soils as CO₂, “it would be the equivalent of more than 120 times our annual GHG emissions.”¹⁷³ Because peatland restoration helps to avoid or reduce carbon emissions that would have otherwise been emitted, it is an example of carbon *reduction*.

In 2020 the Scottish Government set a goal of restoring 250,000 hectares of degraded peat by 2030, with an annual target of 20,000 hectares.¹⁷⁴ To date, however, progress on peatland restoration to date has fallen behind targets. Over the past three years, only around 6,000 hectares of degraded peatland were restored annually – far short of the 20,000 hectare target.^{175 176}

Meeting Scotland’s climate targets will therefore require steps to scale up woodland creation and peatland restoration in the coming years. Delivered effectively, this also has the potential to create well-paid, green jobs in rural communities. However, a key barrier to this relates to the ownership and use of land. Today Scotland still has one of the most concentrated land ownership patterns in the world – just 432 people own half of Scotland’s land.¹⁷⁷ A significant proportion of the land that would be suitable for woodlands or forests are currently managed as part of private estates.

At the same time however, Scotland’s rural land market has experienced profound changes in recent years. Foremost among these relates to a surge in investor demand for rural land for carbon offsetting and other ‘natural capital’ purposes. Although different forms of emissions trading have been around for over three decades, today the accelerated drive towards net zero is generating a boom in voluntary carbon markets. Scotland – with its large rural land mass, concentrated pattern of land ownership, lightly regulated land market, and favourable tax and subsidy regime – has quickly become one of the most attractive destinations for investors seeking to purchase land for carbon offsetting capital purposes.¹⁷⁸ This, combined with buoyant timber prices, has led to soaring demand for rural land.

In 2021 a record £247m was invested in the purchase of Scottish estates. This was up by 119% from £113m in 2020, which was also a record high, and a 333% increase over the four-year period from 2018 when £57m was invested. The average price of estates increased by 87% – from £4.7m to £8.8m, while the total number of estates sold increased by just 14%. Nearly two thirds of the estates were sold privately, without ever coming to the open market – double the proportion of the previous year and reaching a record high. Rural land prices in Scotland increased again in 2022, and are expected to continue rising in 2023.¹⁷⁹

The phenomenon of large investors purchasing land in Scotland is not new. But the rise of carbon offsetting poses a number of challenges to a just transition. Firstly, growing interest from corporate and institutional buyers risks exacerbating Scotland’s highly concentrated pattern of land ownership. As land prices continue to rise, there is a risk that local individuals and communities will be increasingly unable to acquire the land they need. Such an outcome is clearly at odds with the goal of a just transition. In addition, many investors acquiring land for carbon offsetting purposes plant non-native tree species such as Sitka spruce. While this species is effective at carbon sequestration, some environmental campaigners have argued the large-scale planting of non-native species harms native trees and risks aggravating a biodiversity crisis.¹⁸⁰

There is also a risk that governments and companies turn to carbon offsetting as an alternative to the more challenging – but more urgent – task of reducing direct emissions. By enabling polluters to offset some emissions while continuing to profit from carbon intensive activities, critics have labelled the growth of offsetting by large polluters as little more than an exercise in greenwashing – essentially providing a licence to pollute. The oil and gas sector, for example, is expected to invest heavily in carbon offsetting over the coming years, and the sale of carbon offsets to third parties could potentially generate a viable revenue stream for heavily polluting firms.

The emerging value associated with Scotland’s natural capital potential also raises vital questions about how Scotland’s natural assets should be owned and managed; how nature restoration activities should be financed; and how the associated economic benefits should be distributed. The rise of carbon offsetting reflects the

broader growth of the ‘natural capital’ agenda, both in Scotland and across the world. This approach involves monetising natural capital ‘assets’ such as forests in order to attract private finance into nature restoration. In doing so, the approach turns nature into an investable asset class for private institutional investors.¹⁸¹

In 2022 the Scottish Government published its Interim Principles for Responsible Investment in Natural Capital, which committed to a “values-led, high integrity market for responsible private investment in natural capital”.¹⁸² In March 2023 NatureScot, Scotland’s nature agency, partnered with private investors to ‘unlock’ £2 billion of investment to restore native woodland and sequester carbon from the atmosphere.¹⁸³

However, it remains unclear whether this private finance-led approach is consistent with the principles of a just transition. While the costs associated with woodland creation and peatland restoration are subsidised (through the Forestry Grant Scheme and Peatland Action Fund), the financial rewards from carbon offsetting are captured exclusively by landowners and investors. Few benefits flow to local communities, who may also be negatively impacted by rising land values and a more concentrated land market.¹⁸⁴ On current trajectories, there is therefore a risk that the private finance-led approach to natural capital will exacerbate inequalities. Such an outcome would appear to be at odds with the goals of a just transition. As the Just Transition Commission recently noted:¹⁸⁵

“Part of ensuring a just transition must be about making sure the benefits of investment in carbon sequestration are felt as widely as possible. Without careful design and meaningful engagement there is a risk that benefits may flow mainly to large landowners and opportunities for community benefit will be missed.”

As will be discussed in Section 3, Future Economy Scotland will be undertaking work to explore how Scotland’s land and natural capital can be managed in a way that is consistent with a just transition.

Biodiversity

Inherently linked to the climate and nature crises is biodiversity loss. According to the WWF’s 2022 Living Planet Report, there has been a 69% decline in global populations of mammals, fish, birds, reptiles, and amphibians since 1970.¹⁸⁶ The 2019 landmark Global Assessment Report by the Intergovernmental Platform on Biodiversity and Ecosystem Services reported 1 million animal and plant species are now threatened with extinction – the highest number in human history.¹⁸⁷

Today Scotland is home to an estimated 90,000 animal, plant and microbe species, including a number of protected species.¹⁸⁸ It is also home to a number of internationally important habitats, many of which are protected areas. However, evidence indicates that Scotland’s biodiversity has deteriorated in recent decades. A recent report by the Natural History Museum and the RSPB used an indicator called the ‘Biodiversity Intactness Index’ (BII) to compare biodiversity intactness in the UK with other nations and territories. The BII indicates the proportion of nature that remains following human activities on land, and is expressed as a percentage, where 100% indicates that nature is ‘fully intact’.¹⁸⁹ The report found that the UK’s biodiversity intactness is 50%, meaning it has retained half of its historic land-based biodiversity. This compares to 65% for France, 67% for Germany, and 89% for Canada. Scotland’s BII was found to be slightly higher than the UK overall at 56%, making it the highest scoring country in the UK, with England the lowest at 47%. However, both the UK and Scotland rank in the bottom 25% of nations and territories for biodiversity intactness, and the lowest in the G7 group of nations.¹⁹⁰

Scotland’s declining biodiversity is further confirmed by the 2019 State of Nature report. It found that there has been a 24% decline in the average abundance of 352 terrestrial and freshwater species since 1994, and 12% over the past 10 years. Of the 6,413 species found in Scotland that have been assessed, 11% have been classified as threatened with extinction from Britain.^{192 193}

Importantly, however, these measures do not show the full impact of Scotland’s economy on biodiversity loss. This is because they do not reflect the impact of biodiversity loss overseas that results from the production of goods that are consumed in Scotland. Because Scotland consumes lots of goods produced overseas via imports, Scotland’s contribution to biodiversity loss therefore extends beyond the impact domestically, however this is difficult to quantify. As with carbon emissions, it is therefore important that the Scottish Government does not focus solely on averting biodiversity loss at home – but also considers the impact of domestic consumption patterns internationally.

Scotland’s biodiversity crisis is inherently linked to an extractive economic system that degrades the natural

environment. Key drivers of biodiversity loss include key economic activities such as intensifying industrial agriculture, unsustainable logging, over fishing and urban development.¹⁹⁴ Pollution generated from forms of agriculture and industrial activities is also accelerating biodiversity loss both on land and in our oceans. Climate change – which as noted above is also driven by our economic system – is also accelerating biodiversity loss, as rising temperatures and more extreme weather events degrade habitats and accelerate species loss. A recent study exploring likely extinction rates under future climate change suggests that 5.2%, or 1 in 20 species, could face extinction under a global temperature rise of 2 degrees celsius.¹⁹⁵ This study also highlighted that even for species not directly threatened with extinction, climate change may lead to substantial changes in their abundance and distribution. In turn, destruction of ecosystems undermines nature’s ability to regulate greenhouse gas emissions and protect against extreme weather, thus accelerating climate change and increasing vulnerability to it. As such, the climate and biodiversity crisis are inherently linked, and must be tackled simultaneously through coordinated approach.

In 2022 the Scottish Government published its draft Biodiversity Strategy.¹⁹⁶ The strategy sets out 26 Priority Actions that aim to accelerate restoration and regeneration; expand and connect protected areas and improve their condition; support nature-friendly farming, fishing and forestry; recover and protect vulnerable and important species; and generate the investment needed to support nature recovery. The Biodiversity Strategy will sit alongside Scotland’s Climate Change Plan. A key challenge therefore relates to how these priorities will be delivered in practice while meeting the wider objectives of delivering a just transition.

2. THE OPPORTUNITY: A JUST TRANSITION BY 2045

The challenges facing Scotland are stark: rising poverty and insecurity, falling living standards, a rural and urban housing crisis, unacceptably high inequality, a cost of living crisis pushing households to the brink, and the devastating impacts of climate breakdown and biodiversity loss.^{197 198 199} These crises do not sit in isolation from one another. Instead they are intrinsically interwoven, and share a common root cause: an extractive and unjust economic system. At this critical juncture, maintaining business-as-usual is not an option, and the time for making minor tweaks to the status quo has been and gone. Instead, we need to build a new economy that delivers climate justice and economic justice at the same time, creating a sustainable, democratic and just future.

2.1 Defining a just transition

While various movements throughout history have sought to achieve both economic justice with environmental sustainability, the modern concept of a just transition was developed by North American trade unions in the 1970s and 1980s.²⁰⁰ While initial focus was centred on supporting workers made redundant due to environmental protection policies, its meaning has deepened and developed over time, growing to prominence at global, national and local levels, directly linking a just transition to proactive climate action.²⁰¹

Today, it is used to provide a framework for the bridge required to take us from where we are today to where we want to be, centred on a wide range of social and economic interventions required to secure livelihoods through a seismic shift in the industrial base towards climate-resilient economies where all workers and communities thrive. Interpretations of a just transition vary within policy circles, campaigns and social movements, spanning from local to global transitions. For instance, some focus on the creation of good green jobs in the transition to a climate-resilient economy, while others view this as a component of a systemic transition from an economic model driving asymmetries in power and wealth to a reparative approach that heals global imbalances and alleviates intersectional inequalities through climate action.²⁰²

While formal definitions of a just transition also vary, most share a common goal of reducing carbon emissions in a way that alleviates inequalities, and that this should involve the voices of the workers and communities most impacted.

The International Labour Organisation (ILO) defines a just transition as “greening the economy in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind.” Doing so, the ILO states, means maximising opportunities of climate action and managing challenges “including through effective social dialogue among all groups impacted, and respect for fundamental labour principles and rights”, and including all countries, sectors, and urban and rural areas alike.²⁰³

Representing 200 million workers globally, International Trade Union Congress (ITUC) describes a just transition as securing “the future and livelihoods of workers and their communities in the transition to a low-carbon economy.” The transition is based on social dialogue between workers and their unions, employers, and government, and consultation with communities and civil society”, which involves guaranteeing “better and decent jobs, social protection, more training opportunities and greater job security for all workers affected by global warming and climate change policies.”²⁰⁴ Among other demands, ITUC notes a just transition pathway involves measures such as collective bargaining with workers and their unions and the monitoring of agreements which are public and legally enforceable; guaranteeing essential social protection and human rights; and the involvement of workers in the sectoral plans.²⁰⁵

Other literature, such as the 2019 Trades Union Congress (TUC) pamphlet ‘A just transition to a greener, fairer economy’, centres the importance of giving workers directly affected by industrial change a sense of voice and control.²⁰⁶ A just transition, the TUC stipulates, should focus on delivering the following criteria: a clear and funded path to a low-carbon economy, that workers are at the heart of delivering these plans, that every worker has access to funding to improve their skills, and that new jobs must be good jobs.²⁰⁷

The Scottish Government defines a just transition as both the outcome of a “fairer, greener future for all” and the process of getting there through partnerships with those impacted by the transition to net zero, which should be “co-designed and co-delivered by communities, businesses, unions and workers, and all society.”²⁰⁸ The goal is to end Scotland’s contribution to climate change in a way that is fair and leaves no one behind.²⁰⁹

The 2009 Climate Change (Scotland) Act was amended in 2019 with the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, with the primary aim of elevating the ambition of reaching the 2045 net zero target.²¹⁰ The Act sets out “just transition principles” to reduce net Scottish emissions of greenhouse gases which:²¹¹

- supports environmentally and socially sustainable jobs;
- supports low-carbon investment and infrastructure;
- develops and maintains social consensus through engagement with workers, trade unions, communities, non-governmental organisations, representatives of the interests of business and industry and such other persons as the Scottish Ministers consider appropriate;
- creates decent, fair and high-value work in a way which does not negatively affect the current workforce and overall economy; and
- contributes to resource efficient and sustainable economic approaches which help to address inequality and poverty.

Further, the Just Transition Commission was established in early 2019 with the remit of putting forward recommendations to Scottish Ministers that provide a roadmap for a just transition to net zero by 2045.²¹² The Commission’s working definition of a just transition is as follows: “Governments design policies in a way that ensures the benefits of climate change action are shared widely, while the costs do not unfairly burden those least able to pay, or whose livelihoods are directly or indirectly at risk as the economy shifts and changes.” This involves avoiding outcomes whereby the transition creates injustices and inequalities through fairly sharing benefits and burdens and considering adaptation interventions and climate impacts.²¹³

Throughout the two-year project, Future Economy Scotland will define a just transition as a coordinated plan to decarbonise Scotland’s economy and tackle the nature crisis while:

- Creating well-paid, secure, unionised, green jobs throughout urban and rural Scotland alike.
- Supporting the reskilling and retraining of workers as part of a managed decline of carbon-intensive industries.
- Actively reducing social, economic and regional inequalities, alleviating poverty, and increasing living standards – particularly for low and middle income households.
- Ensuring that impacted communities, trade unions, workers and businesses are given a meaningful stake and say over decisions that affect them.
- Fairly sharing the costs and benefits of decarbonisation, including by embracing more democratic forms of ownership and governance.
- Ensuring that Scotland, as a high historic and current emitter, recognises global imbalances created by climate and environmental breakdown and builds a reparative approach.

There is already a great deal of work being done by campaigners, organisers, coalitions, and trade unions on a just transition in Scotland, from Living Rent’s work on retrofitting homes, to Scottish Trade Union Congress (STUC) demands for a coherent low-carbon industrial strategy, and Friends of the Earth Scotland championing offshore workers’ priorities being put at the heart of the transition.^{215 215 216} This project aims to strengthen the evidence base for a just transition through rigorous policy analysis and proposals that complement work carried out in the wider new economy and climate movement.

2.2 A vision for a just transition by 2045

The definition outlined in the previous section seeks to ensure that Scotland's transition to net zero is fair and just. But what would the successful delivery of a just transition look like in practice? This section sets out a headline vision for what Scotland could look like in 2045 following the successful delivery of a just transition centred on decarbonising, democratising and decommodifying the economy.

Clean, affordable energy

By 2045, Scotland will have a flourishing green energy system that delivers affordable, resilient and clean energy supplies for Scotland's households, communities and businesses.

A rapid expansion of wind, solar, tidal and wave power will have replaced the need for fossil fuels, helping Scotland to achieve its net zero target.

This renewable energy infrastructure will be owned and governed more democratically, providing local communities with a greater say over decision-making, and a greater share in the rewards from energy generation. This more democratic energy system will include the creation of a public energy company, and a seismic growth in council and community owned renewable energy, and public equity stakes in offshore wind developments to maximise shared rewards. By unlocking Scotland's extraordinary renewables potential as part of a net zero industrial strategy, the benefits are not just limited to clean, affordable, reliable energy. The creation of new domestic supply chains will mean that the expansion of renewables will be accompanied by the creation of thousands of well-paid, secure jobs in manufacturing and construction. As well as providing low-cost, reliable energy at home, a thriving renewables sector will help Scotland become a major exporter of green energy.

Affordable, warm homes

By 2045, Scotland's housing stock will be well insulated and energy efficient through an upgraded retrofitting programme, rapidly reducing household emissions, creating green jobs throughout the country and reducing energy bills, thus making meaningful reductions to rural and urban fuel poverty. The greening of homes will be accompanied by measures to ensure that housing is genuinely affordable. This will include scaling up the stock of social housing; tackling the unprecedented rise in second and holiday home ownership; and the introduction of rent controls, modelled on international best practices, to alleviate the hardship of dramatic rental increases.

A thriving natural environment

By 2045, Scotland will have restored and regenerated biodiversity across land, freshwater and seas. Scotland's natural environment, habitats, ecosystems and species will be diverse, thriving, resilient and adapting to climate change. Peatlands will be a restored carbon sink, and Scotland will be on a path to rehabilitating native woodlands, wetlands, and grasslands. Scotland's land will be owned and managed sustainably, with a more diversified pattern of land ownership, including a dramatic rise in community ownership, ensuring benefits, like well paid, secure local job creation in nature restoration and biodiversity protection, flow to local communities.

Sustainable transport for all

By 2045, Scotland's transport system will be fully decarbonised. This will reflect investment in developing a thriving green, integrated, affordable, accessible public transport system, including expanded affordable rail services; a network of sustainable, cost-effective lifeline public ferries serving island communities, and a rise in publicly owned electric bus services. Following the phase out of petrol and diesel vehicles, electric vehicles will be more affordable accompanied by widely available public charging infrastructure. Emissions from aviation will have fallen substantially following the introduction of measures to curb demand for air travel. Walking and cycling infrastructure will be upgraded to make sustainable forms of transport a safe and appealing option.

Green, well paid jobs

By 2045, the state will have shifted from intervening when industries or businesses fail to a proactive role for the state to steward a green industrial strategy. This will entail harnessing policy levers to accelerate decarbonisation and create a fairer and more democratic economy, protecting the livelihoods of those impacted through active labour market policies. Jobs lost in carbon intensive sectors will be replaced by new employment opportunities in low carbon industries such as buildings retrofit, renewable energy, manufacturing, and nature restoration. However, green jobs will also extend beyond traditional export-led industries to include social work that is currently undervalued, such care work. These new jobs will be well-paid, secure and unionised – delivering rising living standards for low and middle income households. An enhanced Fair Work agenda will ensure that insecure forms of employment, such as zero hours contracts, will no longer be widely used.

Flourishing local economies

By 2045, successful community wealth building strategies will have accelerated a just transition at a local level. This will include greater community ownership of assets such as land and renewable energy, and an expansion of more democratic forms of enterprise such as co-operatives, worker owned firms, and social enterprises. The establishment of more democratic forms of finance – such as community development finance institutions, community banks, and community shares – will increase flows of green investment, enabling communities to create and retain more wealth locally. Meanwhile, the use of progressive procurement strategies by local authorities and anchor institutions will have fostered new local supply chains, creating well-paid, secure employment opportunities.

A fairer, more equal society

By 2045, relative poverty in Scotland will be eradicated, including through targeted interventions to tackle child poverty and pensioner poverty. Inequalities of income and wealth will have substantially fallen, and the gender and ethnicity pay gap will have been closed. The steep income and wealth inequalities between different regions in Scotland will have been tackled, and the decades of underinvestment will have been reversed, with a particular emphasis on former industrial and oil and gas communities.

3. FROM HERE TO THERE: PILLARS OF THE JUST TRANSITION PROJECT

Meeting the Scottish Government's target of delivering a just transition to net zero by 2045 represents an enormous challenge. Despite steps in the right direction, Scotland's economy remains deeply unequal and heavily reliant on carbon-intensive industries and jobs, and climate and environmental crises necessitate bold and rapid transformation of Scotland's key sectors and future industries. On current trajectories, there is a risk that Scotland is not on track to meet its net zero target, and that progress made towards reducing emissions could exacerbate rather than reduce existing economic, social and regional inequalities.

To address the disconnect between the current trajectory and the Scottish Government's stated policy objectives, it is clear that the Scottish Government needs to tackle systemic problems embedded in the current economic model, and implement ambitious yet credible policies that hardwire climate justice into every aspect of Scotland's economy. In doing so, a clear plan must be established to protect the livelihoods of impacted workers and communities in Scotland.

As such, Future Economy Scotland is undertaking a two-year project that aims to help accelerate the delivery of a just transition in Scotland. In practice, delivering a just transition will require action at multiple levels of governance, including at the global, UK, Scottish and local level. However, this project will publish research and analysis to build the evidence base for bold but credible policies that can be implemented by the Scottish Parliament. The project does not aim to set out a comprehensive policy agenda for delivering a just transition in Scotland, but will focus on strengthening the evidence base across seven key pillars of the economy:

- **Transforming energy:** As outlined in section 1.3, Scotland is one of Europe's largest oil and gas producers, but it is clear that continuing to extract oil and gas from the North Sea is not consistent with a zero-carbon future. At the same time however, Scotland is well placed to offset the inevitable decline in oil and gas with a rapid expansion in the production of renewable electricity, which could generate thousands of well paid jobs and provide significant opportunities to export surplus clean energy. This work will develop a comprehensive strategy for transitioning away from carbon-intensive energy and scaling up renewable energy, ensuring that more of the economic benefits are captured and retained in Scotland and delivering a thriving future for oil and gas communities.
- **Green industrial strategy and Fair Work:** As outlined in section 1.1, ensuring that Scotland can prosper from decarbonisation and deliver well paid, green jobs will require a major restructuring of Scotland's industrial base and labour market. This in turn will require a more proactive role for the state in shaping Scotland's economy. This work will focus on developing a green industrial strategy for Scotland that is tailored to Scotland's specific circumstances and needs, rooted in democratic ownership, direct investment towards green technologies, generating green supply chains, and enhancing the Scottish Government's Fair Work agenda.
- **Delivering green, affordable, secure homes:** While some progress has been made towards decarbonising the housing stock and non-domestic buildings in recent years, it is far behind what is needed to meet Scotland's climate targets. Scotland is also suffering from an acute urban and rural housing crisis, as housing costs have continued to rise faster than incomes. This work will set out a plan upgrading all of Scotland's homes and non-domestic buildings to high energy efficiency standards, and mobilising investment in measures such as loft insulation, double glazing, wall insulation and boiler replacement. It will also involve developing plans to tackle the housing affordability crisis, including scaling up the supply of affordable housing and enhancing security and affordability in the private rented sector.
- **Harnessing a just approach to land, nature and biodiversity:** Transforming how Scotland's land is owned, managed and used will be key to delivering a just transition. However, despite the progress made by multiple waves of land-reform legislation, Scotland still has one of the most concentrated land ownership patterns in the world. At the same time, the rise of carbon offsetting as a solution to

the climate crisis poses a significant threat to a just transition in Scotland. There is a significant risk that governments and companies turn to carbon offsetting as an alternative to the more challenging but more urgent task of rapidly reducing direct emissions. This work will set out plans for ensuring that land ownership and use supports a just transition, including addressing Scotland's highly concentrated land ownership, regulating carbon markets to prevent greenwashing, and delivering secure, well paid, unionised jobs in nature restoration and biodiversity protection.

- **Greening Scotland's transport system:** As outlined in section 2, transport is now the highest-emitting sector in Scotland. This reflects the fact that transport is one of the most difficult sectors to decarbonise, with limited alternatives to fossil fuel use in sectors such as aviation. Despite attempts to incentivise people to drive less, over the past decade there has been no significant behavioural shift away from cars towards public transport, walking and cycling in Scotland. At the same time, emissions from aviation have been growing in recent years, despite falling during the pandemic. This work will therefore develop plans to decarbonise Scotland's transport system by establishing a green, integrated, affordable and accessible public transport system; curbing emissions from aviation; and addressing the rural-urban public transport divide.
- **Decarbonising local economies:** Community Wealth Building is an approach to economic development which seeks to redirect wealth back into the local economy, and place control and benefits into the hands of local people. It is increasingly being recognised that scaling up Community Wealth Building can be a powerful catalyst for delivering a just transition to net zero at a local level by ensuring that the wealth created by the transition to net is retained and re-circulated locally. The Scottish Government has pledged to introduce the world's first Community Wealth Building Act during this parliament, and a number of local authorities across Scotland have also embraced Community Wealth Building. This work will therefore focus on how to most effectively harness the five pillars of Community Wealth Building to accelerate a just transition at a local level.
- **Paying for a just transition:** Delivering a just transition in the timescale required will require a large amount of public spending and investment. While some key taxes remain reserved to Westminster, significant new tax powers have been devolved in recent years. Given Scotland's limited fiscal capacity and borrowing powers, it is essential to demonstrate how a just transition can be paid for. This work will focus on harnessing the Scottish Government's fiscal powers to spread the cost of delivering a just transition in a way that is fair and just, including borrowing to finance public investment; raising public revenue through progressive taxation; and mobilising the Scottish National Investment Bank.

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