

PUTTING PEOPLE AT THE HEART OF THE GREEN TRANSITION



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About WWF

WWF is one of the world's largest independent conservation organisations, active in nearly 100 countries. Our supporters – more than five million of them – are helping us restore nature and tackle some of the main causes of nature's decline, particularly the food system and climate change. We want a world with thriving habitats and species, and we want to change hearts and minds so it becomes unacceptable to overuse our planet's resources.

CONTENTS

INTRODUCTION

FOREWORD 4

VISION 8

ED MILIBAND, CAROLINE LUCAS
AND LAURA SANDYS 10

CHARLOTTE HARTLEY 12

BARONESS BROWN 14

INVESTING IN ECONOMIC PROSPERITY 16

MARIANNA MAZZUCATO 20

DIMITRI ZENGHELIS 22

ANN PETTIFOR 24

STEVE WAYGOOD 26

JON WILLIAMS 28

THE BENEFITS FOR PEOPLE 30

IMPROVING WELL-BEING AND QUALITY OF LIFE 32

COLIN HINES 34

FARHANA YAMIN 36

TONY JUNIPER 38

BUILDING THE BUSINESSES OF THE FUTURE 40

BETH FARHAT AND PAUL NOWAK 42

RICHARD UNSWORTH 44

IAN CHESHIRE 46

MINETTE BATTERS 48

EMPOWERING PLACES 50

SOPHIE HOWE 52

SADIQ KHAN 54

ANDY STREET 56

SOPHIE SLEAMAN AND AARON SMITH 58

CONCLUSION 60

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CAROLINE LUCAS
AND LAURA SANDYS**

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CAROLINE LUCAS



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ED MILIBAND

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Sadiq is the Mayor of London and former MP for Tooting.



IAN CHESHIRE

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COLIN HINES

Colin is the convenor of the original Green New Deal group founded in 2008. He was previously coordinator of Greenpeace International's Economics unit.



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As a Partner in Sustainability and Climate Change at PwC, Jon offers strategy and risk management related to climate change to clients. He also co-chairs a Carbon Markets and Investors Association working group.



CHARLOTTE HARTLEY

Charlotte works at Pale Blue Dot and is a member of the Just Transition Commission, advising on a Scottish net zero economy that is fair and equitable. She is also a Trustee of the Board at 2050 Climate Group, an organisation empowering young people to lead on climate change.



BARONESS BROWN

A crossbench member of the House of Lords, Baroness Brown is Chair of the Adaptation Sub-Committee in the Committee on Climate Change. She is present Chair of the Carbon Trust, a global organisation driving towards a low-carbon economy.



TONY JUNIPER

A member of the original Green New Deal group, Tony is the Chairman of Natural England, an advisory body to the UK Government on the health, enjoyment, sustainable use of nature and landscapes in England.



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**SOPHIE SLEEMAN
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WHAT IS NEEDED NOW IS A SIGNIFICANT POLICY RESPONSE AND THE REQUISITE RESOURCES, TO BEGIN TURNING THE TIDE ON THE CLIMATE AND ENVIRONMENTAL CRISES



FOREWORD

There is a growing political and public consensus on the need for rapid action, at scale, to tackle the climate and environmental crises. The UK parliament, the Scottish and Welsh governments and more than half of all local authorities across the UK¹ have declared climate emergencies. The UK, Scottish and Welsh governments have also committed to a net-zero emissions target as recommended by the Committee on Climate Change (CCC). The 25 Year Environment Plan committed this generation to becoming the first to leave the environment in a better state than it found it, and to reversing declines in nature in the UK. But targets and declarations, although welcome, are nothing without action: what is needed now is a significant policy response and the requisite resources to begin turning the tide. So far only Scotland is acting, launching a Green New Deal investment package of £3 billion to be delivered by the Scottish National Investment Bank.

As a result, there are an increasing number of advocates for a just transition with debate convening around the need for some kind of Green New Deal for the rest of the UK. While there is a wide spectrum of views about what this should involve, what is crucial is the explicit requirement to tackle environmental crises in a way that increases prosperity and reduces economic and social inequalities. In this collection, we don't seek to define the boundaries of a Green New Deal but instead to provide some different perspectives on how we could increase speed and scale of delivery, maximise the benefits for the UK, and galvanise broad public support.

Certainly, the terms 'Green New Deal' and 'just transition' are currently more associated with the left, but the UK's tradition of cross-party support for climate commitments and reversing declines in nature should mean proposals for delivering these environmental objectives fairly is of interest to all parties. This is especially true when we consider the investment and policy to deliver on our environmental commitments will no longer simply happen in the background through the decarbonisation of the energy sector, practically invisible to most of the public and consumers, but will instead mean changes that will affect people's everyday lives. There will be changes to industry, food, land use, transport, housing and planning, right across the policy agenda in a way all voters will see and feel.

It's important for any government to manage how those changes affect the people and the communities most impacted, but we shouldn't forget that, in aggregate, the benefits to greening our economy far outweigh the costs. We need to make sure all parts of the country and segments of society benefit from lower bills, improvements in health, better quality of life and access to new economic opportunities that will result from the investment and policy package proposed.

This collection is designed to bring two new things into the discussion about a just transition and a Green New Deal. First, it gives a platform to a varied set of voices from various political traditions, businesses, workers and young people who haven't

¹ www.climateemergency.uk/blog/half-of-uk-local-authorities-declare-a-climate-emergency-in-just-eight-months/

**DONE RIGHT,
CLIMATE ACTION
WILL HELP US
PRESERVE NATURE
AND RESTORING
NATURE WILL
HELP US MITIGATE
AND ADAPT TO
CLIMATE CHANGE**

entered the workforce yet, as well as the academics, politicians and institutions that spend their time developing and delivering policy on the environment but don't often focus on the social impact. We want this to be the start of a broader conversation about how we can make the transition to a green economy work for people.

Second, the collection surveys the areas where we'll need investment and policy across both climate and nature, because it is necessary to address the crisis in both at the same time. Done right, climate action will help us preserve nature, and restoring nature will help us mitigate and adapt to climate change – but importantly from a Green New Deal perspective discussing them together helps us work out how we deliver on both in a way that is fair and maximises benefits to people too.

Fairness, which is at the heart of this discussion, has a number of aspects. Firstly, and underlying all commitments on climate and nature, is international and intergenerational equity which requires everyone to take responsibility for their share of global environmental problems and ensure they pass on a beautiful, thriving and healthy planet to future generations. Second is ensuring the transition is a just one. That means ensuring that the necessary policy support is there for those people and communities who will be directly affected by the transition to a green economy, whether that involves workers in carbon-intensive industries or farmers adapting to changes in the way they manage land.

Fairness means ensuring investment and support reaches the people and places that need it most. That includes those communities that lack good jobs and opportunities and would be able to use investment in nature, green infrastructure and greening business to catalyse regeneration in their local areas. The EU referendum revealed economic dissatisfaction in many parts of the country, with leave votes particularly high in rural, coastal areas and former industrial towns that are struggling to find new economic purpose.²

Fairness also demands a fair distribution of cost and incentives: this is important when we're considering how to design fuel levies, carbon taxes and net gain policy, but it's equally relevant in setting up industry incentives for innovation, or schemes for citizens to upgrade their homes or to buy a new electric vehicle. Policy can't just be directed at incumbents and owners of assets, it has to consider new entrants and people who don't own their own home or car too. Finally, there's the issue of procedural fairness – the people affected by climate change and environmental breakdown, both at home and abroad, should be fully engaged in an inclusive democratic process that ensures policy isn't done *to* people but *with* them.

This collection sets out a number of examples of what a just transition and a Green New Deal could mean for different sectors of the economy and parts of the country and suggests how it could be delivered in a way that would secure widespread public support.

WWF and IPPR are working alongside many other environmental and civil society groups to develop policy proposals for investment in decarbonisation and the restoration of nature that maximise the benefits for the people and places most impacted by the transition as well as those in most need of a boost to their local economy. We will also be making the case for changes in the economic and financial system to ensure protecting and enhancing the environment is the default option for government, business and society. Please get in touch if you would like to support or work with us on this agenda.

Co-editors

Luke Murphy, Head of IPPR's Environmental Justice Commission
Angela Francis, Chief Advisor Economics and Economic Development, WWF

² Electoral Commission data quoted in Localis, The making of an industrial strategy: taking back control locally (2017)



VISION

What is a Green New Deal? It could be lots of things, but at its core it's an investment and policy package that puts the UK on a rapid path to zero carbon and a reversal of declines in nature, fairly sharing the opportunities and costs the transition will bring while tackling wider economic and social inequalities and promoting long term prosperity and wellbeing. To have maximum effect and catalyse investment by the private sector, it has to include changes to the economic and financial system so it consistently promotes action that protects and enhances the environment, rather than favouring a system which relies upon its exploitation and degradation.

A Green New Deal needs to help the UK generate good jobs that are built on skills in managing energy, water and resources, maximising the benefits of nature and minimising pollution and waste. This is the green industrial revolution that will cut across all sectors of the economy and determine how companies compete in the world. It will involve digital technology, data, good design and a better understanding of how ecosystems support us and how we can support and protect them.

Markets and regulation all over the world are increasingly demanding higher environmental standards. It's clear that any route to revitalise the UK's manufacturing heartlands and create opportunities in rural areas should include greener processes and business models. And that doesn't just mean improving production systems here. UK businesses are often part of long and integrated supply chains, and jobs based on unsustainable exploitation of nature and resources at home or overseas are not a real investment in the UK's economic future.

In truth, the issues of climate change and declines in nature are too often seen as marginal to the public's concerns. The prospect of a Green New Deal turns that notion on its head. As Ed Miliband, Caroline Lucas and Laura Sandys argue in their contribution it takes the debate away from technocratic arguments about technology and targets, and instead relates it to the concerns that people have in their daily lives. Doing so shifts the focus to the jobs that will be created as a result of a national housing energy efficiency programme, the health benefits from a cut in air pollution thanks to investment in sustainable public transport, and the considerable benefits of increasing access to nature.

Charlotte Hartley argues, for young people, part of the response to environmental crises is changing our measure of progress from economic growth and profits to wider measures of well-being, healthy lifestyles, good work-life balance, and better and safer jobs. Baroness Brown also highlights the importance of offering a holistic vision that is optimistic and positive, without shying away from the need to manage the impact of changes in our industrial structures, because although jobs are an important part of the transition the role of nature in maintaining and improving our quality of life should not be overlooked.

Ultimately, a Green New Deal is important for the UK for two reasons. First, the UK has set a goal to be a world leader in its response to the environmental crises, and the urgency of that challenge will require innovation in economic and social policy as well as in science and technology. The UK can't hope to influence the rest of the world if it's not delivering at home. Second, because any politician making the case for investment and policy to restore nature and transition to a zero-carbon economy has to show how it improves the prospects and quality of life of people frustrated that business as usual is not working for them. Delivering these improvements in people's lives is not only right in itself, but it's essential if the transition is going to be delivered at the speed and scale necessary to address the challenges we face.

IN TRUTH, THE ISSUE OF CLIMATE CHANGE AND DECLINES IN NATURE ARE TOO OFTEN SEEN AS MARGINAL TO THE PUBLIC'S CONCERNS. THE PROSPECT OF A GREEN NEW DEAL TURNS THAT NOTION ON ITS HEAD.

World Continents and Oceans



ESSAY 1:

ED MILIBAND, CAROLINE LUCAS
AND LAURA SANDYS

A Green New Deal offers hope for a better future – we need to set out a positive vision, say Ed Miliband, Caroline Lucas and Laura Sandys.



With climate emergencies declared across the UK and the adoption of net-zero emissions targets by the UK, Scottish and Welsh governments, there's an acceptance of the need to act. The challenge that lies before us now is to devise a plan which can provide the speed and scale required, and to win support for it.

Not only is time running out to address the impacts of climate change and wider environmental breakdown, but there's a lack of vision of what transformation to a modern, clean, decarbonised and environmentally rich economy could mean to people here and abroad. Too often debates on how to tackle climate change focus on the nightmare scenarios that lie ahead or retreat into technocratic discussions about technologies and targets, inviting fear or apathy, and sometimes both. We need to move beyond the nightmare and begin to paint the dream by setting out the positive vision of the future that this transformation can deliver.

A Green New Deal offers both the opportunity to deliver that much-needed optimistic vision, and crucially a clear pathway for action to address the climate emergency through a reformed and renewed economy and society that places people at the heart of a just and fair transformation. To succeed, we must situate climate change within the concerns that people have about their jobs, the fairness of society and the future for their kids and grandkids. This is not to obscure the scale of the challenge we face, but to show how with bold and inclusive action a better world can be created.

In order to achieve our ambition of a vibrant, healthy, forward-looking and innovative future, driven by the key principles of justice and equity, we'll need to transform our economic model so that democratically elected governments, not the 'invisible hand' of the market, drive decision-making, and the goal of wellbeing for people and planet replaces GDP growth as our primary aim. Fundamental changes to our democracy will be needed too, with more power devolved to communities, so they have a real say in the decisions that affect them. By focussing investment particularly in those areas and communities which have been failed most by business as usual, and by ensuring that workers are in the forefront of designing a just transition, we'll have the potential to build a broad and durable coalition that can sustain this ground-breaking transformation. It will also entail an unprecedented mobilisation of resources, delivered with the urgency that the crisis demands. Too often viewed as a cost, this endeavour should be considered an investment which will have significant benefits for our economy and society.

"WE NEED TO MOVE BEYOND THE NIGHTMARE AND BEGIN TO PAINT THE DREAM BY SETTING OUT THE POSITIVE VISION OF THE FUTURE THAT THIS TRANSFORMATION CAN DELIVER"

"POWER AND MONEY MUST BE DEVOLVED TO ENABLE LOCAL PLANS TO EMERGE, LIBERATING PEOPLE TO TAKE DECISIONS CLOSER TO HOME"

To deliver on the transition any programme must help support the industries of the future and the creation of high quality, skilled and well-paid jobs. At the heart of a Green New Deal must therefore be an industrial strategy seeking not just to mitigate climate change but to unlock new opportunities for investment and innovation, tackle inequality, improve quality of life and deliver an environmentally sustainable economy. A Green New Deal also offers us the opportunity to promote the wellbeing of all citizens. Retrofitting and insulating nearly 30 million homes across the country will cut energy bills, reduce emissions and create thousands of jobs to help deliver on this mammoth task. Investing in – and, as importantly, making accessible – sustainable forms of transport and zero-carbon vehicles as quickly as possible will prevent thousands of deaths from air pollution.

This transformation offers the opportunity not only to tackle economic and social inequalities but to transfer power to communities across the country too. Communities across the UK have varied and diverse needs and not all solutions can be developed centrally. Power and money must be devolved to enable local plans to emerge, liberating people to take decisions closer to home.

Crucially, any programme cannot be about tackling the climate crisis alone, but repairing our natural environment too. Restoring nature is beneficial in itself, helps tackle climate change and brings significant economic and social benefits, not least by improving physical and mental health. Naturally this will require a reshaping of land use and agriculture, providing both environmental and health benefits.

Some people have already argued that the UK should not act on these issues alone, or that what we do hardly matters in comparison to countries like China. We disagree. We believe there's economic and societal advantage, not detriment, in doing so. We also believe our leadership can make a difference. It was the moral authority from the world-leading cross-party Climate Change Act of 2008 that has allowed successive governments to have international influence, including on the ground-breaking Paris Agreement. With the UK hosting the UN COP climate change summit in 2020, we'll need to increase our ambition here at home, set out a clear plan and start making some challenging decisions now.

If the UK is to lead again, then implementing a Green New Deal is the best way to secure that leadership. And when people ask how we can bring the country together, we believe that the Green New Deal has the potential to help to do so. For some it will be the climate issue that motivates them, for others the economic and social justice gains that will be delivered. For many it will be all of these. We owe it to our country and its future to make this happen.



ESSAY 2:

CHARLOTTE HARTLEY

Charlotte Hartley argues that a focus on young people should be at the heart of an urgent just transition to a zero-carbon economy.



“ALTHOUGH THE CONCEPT WAS FIRST ENVISAGED IN 2008, NO COUNTRY YET HAS FORMALLY ADOPTED ITS OWN ITERATION OF A GREEN NEW DEAL. WHY IS THIS?”

In principle, there's little reason to not support a Green New Deal. It's a growing global movement designed to transform the way we live and drastically cut emissions. The Green New Deal offers to deliver the significant changes needed to meet our commitments under the Paris Agreement, while reducing inequality and striving to alleviate poverty. However, although the concept was first envisaged in 2008,¹ no country yet has formally adopted its own iteration of a Green New Deal. Why is this?

The Intergovernmental Panel on Climate Change has predicted that the global price-tag of climate change inaction will be around \$54 trillion by 2040.² In 2019, data showed that climate-related disasters have cost the world \$650 billion – of which the US has paid \$419 billion, or 0.66% of its GDP, over the last three years alone.³ For the US, the cost of future climate change damage is estimated to be about 1.2% of GDP per 1°C increase in average temperature.⁴

In the UK, the Committee on Climate Change has estimated that meeting the net-zero emissions target will cost the country around 1-2% of GDP by 2050.⁵ The Green Party, meanwhile, has estimated that funding the Green New Deal will require £50 billion a year,⁶ or 2.1% of UK GDP.

1 Green New Deal [New Economics Forum] <https://neweconomics.org/campaigns/green-new-deal> (accessed on 04/08/2019)

2 Global Warming of 1.5degC [Intergovernmental Panel on Climate Change] <https://www.ipcc.ch/sr15/> (accessed on 07/08/2019)

3 Climate disasters cost \$650 billion over 3 years [Morgan Stanley via CNBC News] <https://www.cnbc.com/2019/02/14/climate-disasters-cost-650-billion-over-3-years-morgan-stanley.html?linkId=63598601> (accessed on 06/08/2019)

4 <https://science.sciencemag.org/content/356/6345/1362>

5 Committee on Climate Change, Net-Zero The UK's contribution to stopping global warming, 2019

6 Britain needs its own Green Deal [Financial Times] <https://www.ft.com/content/79a7b226-8928-11e9-b861-54ee436f9768> (accessed on 06/08/2019)

“QUALITY OF LIFE IS AT THE CORE OF JUST TRANSITION PRINCIPLES, PARTICULARLY FOR YOUNG PEOPLE”

If on the other hand there is no mitigation, the cost of the current trajectory of global heating could increase to 3.6-6% of GDP by 2100, based on the UN's predictions.⁷

But investing in a zero-carbon economy is not just about saving costs: it brings other significant benefits, particularly increased quality of life. Quality of life is at the core of just transition principles, particularly for young people.

In 2018, 2050 Climate Group held a summit attended by 287 young people to gather opinions on what a just transition means for the young. As they're the ones who'll be impacted the most by any transition, it's imperative that they're represented in planning and delivering it.

2050 Climate Group's Just Vision⁸ and the Green New Deal both highlight the importance of a new more inclusive economic model. Both recognise a need to move away from a society measured by economic growth and profits to a society that promotes well-being, healthy lifestyles, good work-life balance, and better and safer working conditions.

2050 Climate Group also found that intergenerational climate justice is important for young people, particularly in building a future where no-one is left behind. This includes attractive employment and skills development opportunities, as well as decentralised jobs and industries providing opportunities for rural areas. The overarching vision is a cohesive society led by a shared vision and common goals.

The Green New Deal is a proposed suite of investments and reforms to deliver a more equal, climate-positive economy. But therein lies the problem: it's only 'proposed'. We're in a climate crisis – a state of emergency – and we urgently need to make significant investments and lifestyle changes. Proactive investment in climate change mitigation is a proactive investment in future generations: they need to know that a just transition to a zero-carbon economy will be completed in time. The Green New Deal can achieve this.

7 Global temperatures on track for 3-5 degree rise by 2100: U.N. [UK Reuters] <https://uk.reuters.com/article/us-climate-change-un/global-temperatures-on-track-for-3-5-degree-rise-by-2100-u-n-idUKKCN1NY186> (accessed on 07/08/2019)

8 2050 Climate Group, Scotland's Just Transition: Making it Just for Youth, May 2018



ESSAY 3:

BARONESS BROWN OF CAMBRIDGE

Making the change to zero carbon by 2050 is critical – but how we get there matters too. *Baroness Brown of Cambridge, DBE FRS* calls on the government to ensure a just transition for the UK.



The UK target of net zero is one we must meet, but our path to meeting it is also important. It must be a path that is fair; engaging with people and the environment. It must offer an optimistic and positive route to delivering this major transition.

We can afford the transition to net zero – it will cost 1-2% of GDP by 2050¹ – and we can plan for it. If we don't, the costs and impacts won't fall equitably across society and industry, and the transition will be increasingly divisive. Government has to take a leadership role.

Some traditional industries will decline or disappear, and new low-carbon industries will grow – but these will need different skills:

- The move away from fossil fuels will impact jobs, but meeting net zero will require at least a doubling in the size of our electricity system. More jobs will be created in new industries such as offshore wind and hydrogen: the Offshore Wind Sector Deal aims to increase jobs in the offshore wind industry from 7,200 today to 27,000 by 2030.
- The move to electric vehicles with fewer parts will make car assembly less labour-intensive, and the significant UK capacity for engine manufacture will decline.
- Retrofitting 29 million existing homes, as well as hospitals, offices, factories, shops and public buildings with energy efficiency measures and low-carbon heat will generate new types of highly-skilled jobs in the construction industry.

None of this will happen without leadership and coordination: government has a key role in ensuring that people have access to the right training and that regional policy addresses the issues of where jobs are needed and where new industries should be located.

“THE GOVERNMENT WILL NEED TO REBALANCE TAX AND INTRODUCE OTHER MEASURES TO ENSURE THE COSTS OF THE TRANSITION FALL FAIRLY”

“WHILE TECHNOLOGY, JOBS AND LIVING COSTS ARE ALL IMPORTANT ELEMENTS OF A JUST TRANSITION, MAINTAINING AND IMPROVING QUALITY OF LIFE IN A WORLD WHERE THE CLIMATE IS ALREADY CHANGING IS VITAL”

Decarbonisation of some parts of our lives will make them cheaper, while others will become more expensive:

- Onshore wind is already the cheapest way to generate electricity, and offshore wind is likely to be delivering reductions in the electricity price by the 2030s.
- Electric vehicles are cheaper to run and maintain and should become cheaper to buy than conventional vehicles in the 2020s.
- Insulation and low-carbon heat, especially retrofitting existing homes and using hydrogen, will be more expensive than the status quo, accounting for almost half of the cost of meeting the net zero goal.

So, with no intervention, motorists in new homes in the South East could see their living costs fall, while the elderly and those in fuel poverty would see rises. The government will need to rebalance tax and introduce other measures to ensure the costs of the transition fall fairly.

The UK's commitment to transition by 2050 means that carbon-intensive industries such as steel-making and ceramics could face undercutting on price from those transitioning later, potentially further offshoring our emissions. The government needs to ensure that we have the right support in place to retain jobs and industrial capability in competitive companies investing in zero-carbon operations.

But while technology, jobs and living costs are all important elements of a just transition, maintaining and improving quality of life in a world where the climate is already changing is vital. Working with nature to support adaptation and mitigation will make the UK a happier and healthier place to live despite the changing climate.

To give just one example, in our cities and urban areas where more than 90% of us now live, green space has been declining – from 63% in 2001 to 55% in 2018. Yet green space provides resilience to surface water flooding, especially when integrated with green sustainable urban drainage systems; reduces the urban heat island effect, helping make increasingly hot summers bearable for city dwellers; encourages walking, reducing emissions from vehicles; absorbs CO₂; and provides places for people to exercise and enjoy themselves. More investment in urban green space would accelerate behaviour change, reduce costs to the NHS, and be universally popular.

My 'must-haves' for a Green New Deal would include:

- Investment in education, training and retraining for people at all stages of their careers
- Regional support for zero-carbon industrial clusters
- Tax and incentive systems for people and companies to ensure the costs of transition are distributed equitably
- Investment in nature-based solutions both to reduce CO₂ emissions and to help us adapt to – and in some cases even take advantage of – the changes to the climate that are still to come
- Increased investment in research and innovation – because while we can deliver net zero with what we know today, we always need better solutions.

The transition to net zero presents risks and costs but also huge potential opportunities and benefits.

¹ Net Zero The UK's contribution to stopping global warming. The Committee on Climate Change, May 2019 www.theccc.org.uk

INVESTING IN ECONOMIC PROSPERITY

The overall effect of decarbonising the UK economy is positive. Analysis shows climate policies will add to UK jobs and benefit the wider economy,¹ and that is even before we account for the innovation boost they're likely to stimulate. An assessment of how biodiversity supports the global economy and the economic risks we'd face from continued nature loss is underway in the Dasgupta Review, sometimes referred to as the Stern Review for nature. But even before this is published we know that investments in UK nature – such as woodland planting, wetland restoration and biodiversity regulations in important habitats – yield positive returns, with social and economic benefit cost ratios of 4:1 to 9:1.² The restoration of nature is not yet supported by international agreements which drive action in the way we they do for climate, but there's a growing scientific consensus that climate and nature-related risks need to be addressed together as the two are interlinked and driven by the same damaging patterns of production, consumption and investment.³

Capturing the economic and societal benefits of delivering on the UK's environmental commitments requires a plan. This is not something that will be delivered if it is left to the market; we need clear policy direction and strategic planning. A coalition of environmental and civil society groups calculated that the next Spending Review needs to commit to invest around 2% of GDP or 5% of government spending, as well as use policy to stimulate further private sector investment, to put us on the right path to meet the UK's zero-carbon targets and reverse declines in nature.⁴

**THE MORE COORDINATED OUR RESPONSE
TO MANAGING A LOW-CARBON TRANSITION,
THE MORE COST-EFFECTIVE IT WILL BE**

¹ EC – employment and social development in Europe 2019
http://europa.eu/rapid/press-release_IP-19-3412_en.htm

² Natural Capital Committee, State of Nature Report, January 2015 and UK National Ecosystem Assessment, 2014, both cited in Government Investment for a greener and fairer economy, 2019

³ WWF, The Nature of Risk: A Framework for Understanding Nature-Related Risk to Business, 2019

⁴ CAFOD, Friends of the Earth, Green Alliance, Greenpeace, Islamic Relief, the National Federation of Women's Institutes, the RSPB and WWF, Government investment for a greener and fairer economy, 2019

As Dimitri Zenghelis argues, ‘the more coordinated our response to managing a low-carbon transition, the more cost-effective it will be’. As we’ve seen with offshore wind and solar, early investment and a policy framework to create a market for renewables has rapidly reduced the cost of the transition and need for government support. Given the potential for innovation and knowledge spillovers, Zenghelis argues there’s a ‘strong economic and commercial case for early mitigation action’. Zenghelis and Mariana Mazzucato both emphasise the need for consistent and credible policy and regulation to direct investment, build confidence and support the transition for affected workers.

Mazzucato also highlights the unique importance of ‘mission-orientated’ industrial strategy, and how its role in addressing the ‘grand challenges’ of our age – climate change and the promotion of well-being – is connected to our overarching need to find ways to generate sustainable and inclusive growth. In Mazzucato’s approach, industrial strategy for a green economy is not about identifying a few new green sectors, but rather about directing an economy-wide green transition which is cross-sectoral, innovation-led and uses the public sector to crowd in private sector investment. Are the large sums of public money needed to catalyse the transition to a green economy available? Ann Pettifor’s answer is yes. Investment is eminently affordable and, as Pettifor argues, this kind of strategy has already been proved effective by the success of Roosevelt’s original ‘New Deal’ programme in 1930s America which had to respond to the great depression that followed the Wall Street crash, and the ecological crisis of the time, the Dust Bowl.

INDUSTRIAL STRATEGY FOR A GREEN ECONOMY IS NOT ABOUT IDENTIFYING A FEW NEW GREEN SECTORS BUT RATHER AN ECONOMY WIDE DIRECTED GREEN TRANSITION WHICH IS CROSS-SECTORAL, INNOVATION-LED AND USES THE PUBLIC SECTOR TO LEVERAGE AND CROWD IN PRIVATE SECTOR INVESTMENT.

To stimulate investment from the private sector we need to change the balance of incentives to reward businesses and financial institutions that invest in the green transition and penalise those whose business and investment models impose environmental costs and risk on the rest of us. With the UK set to host the COP 26 in 2020, as Waygood highlights, ‘the UK has an historic opportunity to lead other member states toward a net-zero financing strategy’. Yet currently the London Stock Exchange is financing a potentially catastrophic temperature rise of 3.8°C. Waygood argues for a bold and global Green New Deal, which should include a Global Climate Capital Raising Plan, an International Panel on Climate Finance (IPCF), and a much greater focus on the cost of carbon. In the same vein, Jon Williams suggests that one way to accelerate the reallocation of private finance towards the green transition would be to make Climate-related Financial Disclosures mandatory for all UK-listed companies.



ESSAY 4:

MARIANA MAZZUCATO

A far-reaching cross-sectoral industrial strategy is needed to drive a Green New Deal says Mariana Mazzucato.



“THE CLIMATE CRISIS CAN BE BOTH A CARROT AND A STICK TO CREATE A NEW DIRECTION FOR THE GLOBAL ECONOMY”

The 21st century is increasingly being defined by the need to respond to major social, environmental and economic challenges. Sometimes referred to as ‘grand challenges’, these include climate change, demographic challenges, and promotion of health and wellbeing. Behind them lie the difficulties of generating sustainable and inclusive growth. These problems are ‘wicked’ in the sense that they are complex, systemic, interconnected and urgent; requiring insights from many perspectives. Poverty cannot be tackled without attention to the interconnections between nutrition, health, infrastructure and education, as well as redistributive tax policy. Grand-challenge-thinking is being applied across the world, with some of the most interesting experiments around sustainability being driven by the needs of emerging economies.¹

Innovation has not only a rate, but a direction. A ‘green’ directed transition must go beyond independent initiatives and discrete approaches, and be characterised by a new lens for economy-wide growth. The climate crisis can be both a carrot and a stick to create a new direction for the global economy. Change needs to be cross-sectoral, harnessing supply and demand, innovation and procurement, and public and private actors.² Across the world, the green transition is taking the form of a proposed ‘Green New Deal’ – a term that is not new, but which is now picking up traction. It requires a re-direction plan for the entire economy, across different sectors and actors.³

Industrial strategies, increasingly making a return to international policy discussions, are an important way to direct economy-wide innovation towards green growth, by grasping all the different policy levers a government can use. Rather than becoming a static list of sectors to support, industrial strategy must be about steering investment-led growth across different sectors towards solving problems that matter to citizens. This is what we call a ‘mission-oriented’ industrial strategy, focused on grand challenges, rather than sectorally siloed solutions.⁴

Mission-oriented policies are not just about throwing funds at problems, but about doing so in specific ways. Examples of such direction-setting policies abound,

“INDUSTRIAL STRATEGY MUST BE ABOUT STEERING INVESTMENT-LED GROWTH ACROSS DIFFERENT SECTORS TOWARDS SOLVING PROBLEMS THAT MATTER TO CITIZENS”

including different technology policy initiatives in the United States,⁵ France,⁶ the United Kingdom⁷ and Germany.⁸ A bold and ambitious industrial strategy can set a new relationship between the public and private sectors, working with the ‘willing’ rather than the ‘winners’ – those companies ready to commit to green growth.

In the UK, industrial strategy has seen a resurgence, attempting to address the substantial obstacles of sluggish growth and productivity, as well as leaving the European Union and potentially losing access to science funding and key innovation collaborations. UK industrial strategy has learnt lessons from the past and is structured around four bold Grand Challenges: clean growth, AI and data, the future of mobility, and ageing society. The UCL Institute for Innovation and Public Purpose (IIPP), which I direct and founded in 2018, hosts the Commission for Mission Oriented Innovation and Industrial Strategy (MOIIS), co-chaired by Lord David Willetts, which has been working with the government to ensure that from clean technologies to self-driving cars, innovation can help us live more sustainable, healthier and longer lives.

The MOIIS Commission has been looking across the four Grand Challenges, through a mission-oriented lens, identifying relevant cross-sectoral actors, bottom-up projects, and paths to delivery. In May 2019, the Commission launched a report on its findings, with eight key groups of recommendations and implementation steps for the UK government, and indeed any governments looking to implement mission-oriented industrial strategies, with a green direction or with other key missions.

The report sets out that a mission-oriented industrial strategy can:

1. Steer the direction of innovation-led economic growth
2. Drive the UK’s international competitiveness
3. Solve grand challenges through cross-sectoral missions
4. Support systematically the development of science, technology and the arts
5. Nurture sectoral capabilities and absorptive capacity
6. Invest in public sector capabilities and work across government
7. Connect with citizens, mobilising social and behavioural change
8. Leverage and crowd-in other forms of investment

It also provides recommendations on how to achieve this, from rethinking procurement policy and how we set regulations and standards to drive innovation, to how to design teams in government that can break down inter-departmental siloes.

Markets will not find the green direction on their own.⁹ Only when there is a stable and consistent direction for investment will regulation and innovation converge along a green trajectory. An industrial strategy is one of many ways to set this direction. The Green New Deal must have aspirations far beyond just mitigating climate change, and must be focused on new opportunities for investment and innovation – it must include finding clarity and courage in the policy arena, unlocking investment in the business sector, and supporting workers to acquire new skills.¹⁰ This new, inclusive green economy should be co-created rather than handed down from above – trade unions, workers’ collectives and community organisations must all be at the table from the beginning, shaping the green direction.¹¹

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ESSAY 5:

DIMITRI ZENGHELIS

UK growth and competitiveness depends on investing in the net-zero-carbon economy of tomorrow: clear and credible policies are needed, says *Dimitri Zenghelis*.



The UK is well placed to benefit from a low-carbon transition, provided policy credibly and consistently supports innovation and investment. The evidence for this is set out clearly in the [Report of the Advisory Group on Costs and Benefits of Net Zero](#)¹ for the Committee on Climate Change (CCC).

The report concludes that the costs of a transition are a function of the decisions we make today. The more coordinated our response to managing a low-carbon transition, the more cost-effective it will be. For example, policy can generate cost reductions and new economic benefits by avoiding locking in to high-carbon infrastructure, behaviours and institutions which will be expensive to subsequently retrofit or scrap, while at the same time promoting resource-efficient innovation.

It is precisely such support that has driven the remarkable cost reductions in renewable and other energy technologies. The cost of both solar photovoltaic generation and battery storage, necessary to address intermittency of supply, has [fallen tenfold over the past decade](#). Renewable energy is [now cheaper](#) than fossil fuel-based energy in many parts of the world. Within the next decade it will be cheaper almost everywhere. Whether you care about carbon or not, the world will have cheaper energy thanks to investment in renewables.

As a result, investment in renewable generation, excluding nuclear and hydroelectricity, [is now outstripping](#) investment in coal, gas and oil power; with renewables [on track to power the bulk of global electricity](#) in the second half of the century. Transformative cost reductions are also occurring in other key technologies such as fuel cells, electric vehicles and [even electric aviation](#).

As we find better ways of consuming, producing and living we're seeing complementary changes in behaviour, institutions and social norms.² The presence of low-cost alternatives to emitting greenhouse gases has enabled anti-fossil fuel campaigns to point to superior energy alternatives.³ [Changing expectations](#) accelerate the deployment of new technologies, which in turn [accelerates cost reductions](#) through learning-by-doing.

"THE MORE COORDINATED OUR RESPONSE TO MANAGING A LOW-CARBON TRANSITION, THE MORE COST-EFFECTIVE IT WILL BE"

"CENTRAL TO KEEPING COSTS LOW IS TO GUIDE EXPECTATIONS THROUGH CREDIBLE POLICY: THIS GIVES INVESTORS CONFIDENCE TO KICKSTART THE GREEN INNOVATION MACHINE"

This virtuous cycle explains why economists have [systematically underestimated the speed of the transition and the opportunities](#) from climate action. We now know that productivity-boosting knowledge spillovers from low-carbon innovation are substantially greater than from conventional technologies.⁴ These findings suggest low-carbon investment can 'crowd in' rather than 'crowd out' productive investment and generate growth.

Even in the short run, carefully planned decarbonisation can enhance growth. It is simply wrong, for example, to assume that [sprawling, congested, polluted, coal-powered cities](#), with leaky buildings and outmoded energy technologies, are better placed to generate innovative efficiencies and [drive productivity growth](#), let alone attract highly skilled workers. The [Global Commission on the Economy and Climate](#) found that between 50% and 90% of the global emissions reductions required to meet an ambitious climate target could generate net benefits to the economy.⁵

There has been no appreciable difference in economic growth rates between those countries that adopted emissions-reducing technologies early and those that have not. However, the countries who have acted are in a stronger position to benefit from a global transition to a net-zero-carbon economy in years to come.

But such change must be [steered](#). There's [no place for fatalism or complacency](#), for example by waiting for new technologies to emerge. Central to keeping costs low is [guiding expectations through credible policy](#): this gives investors confidence to [kickstart the green innovation machine](#). Mixed and muddled signals delay action and raise the policy risk premium attached to decarbonisation investments.

For an open economy like the UK, a clear policy steer can foster a comparative advantage in one of the world's fastest growing global markets. Given the existential risks from unabated climate change, there's [a strong economic and commercial case for early mitigation action](#). Markets are coming to recognise this and are [divesting from risky, high-carbon sectors](#).⁶ This is reflected in the fact that share prices for renewable goods and services have [outperformed those of carbon-intensive sectors](#).⁷

Rapid transformative change needs to be managed carefully. This requires ['enabling institutions'](#) to reskill, retool and compensate affected workers. But economic theory and history also suggests that economies that embrace change, and do not inhibit the flow of resources from declining, low-productivity sectors to new, more productive sectors are better able to manage structural adjustment.⁸

Investing in new networks and technologies is not risk-free. But there's a greater risk, when the rest of the world is decarbonising, in being a last rather than a first mover. This means government working in partnership with business in taking a strategic forward look to develop growth strategies that harness the potential for discovery, innovation and [directed technical change](#). This is the surest way to secure a thriving, productive and competitive UK economy in the low-carbon decades ahead.

4 Dechezlepretre, A., Martin, R. and Mohnen, M. 2014. Knowledge spillovers from clean and dirty technologies. Centre for Economic Performance, London School of Economics and Political Science.

5 <https://newclimateeconomy.report/2014/>

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2 Boyd, R., Green, F. and Stern N. 2015. The road to Paris and beyond. Centre for Climate Change Economics and Policy and Grantham Research Institute on Climate Change and the Environment

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ESSAY 6:

ANN PETTIFOR

**How do we pay for a Green New Deal?
By implementing tried and tested fiscal
and monetary policies, says *Ann Pettifor*.**



**“HIGH LEVELS OF
EMPLOYMENT
WILL GENERATE
THE TAX REVENUES
NEEDED BY
GOVERNMENT
TO BALANCE
THE BOOKS”**

To avoid a climate and earth systems breakdown, a Green New Deal Chancellor must mobilize large sums from both the public and private sectors to finance the transformation of the British economy away from its dependence on fossil fuels.

Can those sums be afforded? Yes. An economy blessed with a sound monetary system can never suffer a shortage of finance. The “breathtaking” (to quote Mervyn King) £1,000 billion bailout of the banking system in 2009 is evidence of the resilience of monetary institutions.

To be successful in raising finance while at the same time ensuring the stability of the public finances, monetary and fiscal institutions must work in tandem, with neither one dominant. Under today’s system of ‘monetary radicalism and fiscal conservatism’ monetary and fiscal policy work against each other. Belatedly, and after more than a decade of economic failure, mainstream economists now recognise the damage monetary dominance has wrought on the global economy. Those like Blackrock that espouse ‘Green QE’, i.e. the central bank’s direct financing of economic activity, are simply upholding the neoliberal dogma of ‘monetary dominance’.

With monetary and fiscal policy mutually supportive, we can assume there will be two sources of finance: credit (or loan-finance) and savings. Credit is created at a high level by the Bank of England, mainly in support of the banking and wider financial system. However, the bulk of credit is created at a ‘micro’ level by commercial banks when customers apply for loans. During World War II, commercial banks provided government with low-cost loans, defined as ‘Treasury Deposit Receipts’. There is no reason they could not do so again.

Deposits and savings exist as a consequence of credit creation. Similarly, and contrary to popular belief, taxation is not a source of finance but a consequence of public and private spending on new projects – and, in particular, employment. The Green New Deal economy will be labour-intensive, with labour effectively substituting for carbon. High levels of employment will generate the tax revenues needed by government to balance the books. That’s why Bernie Sanders is right to argue that his plan for a Green New Deal that will create 20 million jobs “will pay for itself within 15 years.”¹



**“BERNIE SANDERS
IS RIGHT TO ARGUE
THAT HIS PLAN
FOR A GREEN NEW
DEAL THAT WILL
CREATE 20 MILLION
JOBS ‘WILL PAY
FOR ITSELF WITHIN
15 YEARS”**

Loan-finance can be raised by the Treasury or a national investment bank issuing bonds. The Bank of England’s role will be to support government bond issuance, so that the yield on government bonds remains low, to ensure sustainability of repayment. To keep rates low on the full spectrum of lending (short- and long-term loans, safe and risky loans, and relative to inflation) the Treasury could work with the Debt Management Office to issue bonds that meet the full range of investor demand for assets that can a) be converted quickly into cash; b) provide long-term future security; and c) generate capital gains and satisfy the speculative motive. By this means the government can manage and keep interest rates low across the economy’s spectrum of borrowing.

The great risk a Green New Deal Chancellor will face is this: can finance be safely and affordably mobilized and invested in both public and private activity without reprisals from actors in globalized capital markets?

It is not unlike the risk faced by the architect of the New Deal in 1933. As outlined in my new book, *The Case for the Green New Deal*, Roosevelt’s very first act as president – on the night of his 1933 inauguration – was to dismantle the globalized and deflationary financial system (the gold standard) that had inflicted austerity on the US economy. From there on, it was the health of the US economy, not bars of gold, which served to value the exchange rate. That act led to the transformation of the international financial system and ensured that a government – not Wall Street – was in the economic driving seat. Thereafter a democratically elected government – not private bankers – called the shots when it came to managing cross-border capital mobility, the exchange rate and fiscal policy.

These are the tried and tested ways in which finance was raised to tackle and end the US’s catastrophic economic failure of the 1930s – and also its ecological crisis, the Dust Bowl. The same policies could be used again now in a Green New Deal to help prevent the catastrophic failure of the Earth’s life support systems.

¹ Reuters: Bernie Sanders Meets Fire Victims, lays out Green New Deal. 22 August, 2019.

ESSAY 7:

STEVE WAYGOOD

Steve Waygood highlights why it's so urgent that we mobilise a global Green New Deal, and outlines the compelling case for treating the economy and environment as one.



"BRITAIN HAS BEEN AT THE FOREFRONT OF GLOBAL WARMING MITIGATION POLICIES AND IS WELL POSITIONED TO MOBILISE A GREEN NEW DEAL"

The world is on track to warm by 3°C by 2100, doubling the limit of 1.5°C agreed in the Paris Agreement.¹ For any one nation such as the UK, it may be tempting to depend on larger polluters like the US or China to take the lead, especially given pressing domestic political issues.

That would be a grave mistake. Britain has been at the forefront of global warming mitigation policies and is well positioned to mobilise a Green New Deal that integrates resources from various parts of society, including government agencies, financial institutions and individuals. Legislation to commit to a net-zero target by 2050 made the UK the first major world economy to enact laws aimed at ending its contribution to global warming. But now comes the hard work.

A good place to start is in finance, in which the UK is a global leader – despite the threat of Brexit to that position. The International Energy Agency (IEA) estimates we need US\$1 trillion each year to move the economy onto a net-zero carbon basis. What does this mean in practice?

This year, Aviva's own Task Force in Climate Related-Financial Disclosure (TCFD) were informed that the London Stock Exchange is financing a 3.8°C shift in temperature, with Aviva's own portfolios at a lower carbon intensity than the market, but still on average around 3.5°C.

Recent years have seen huge progress in the thinking in this area. The UK Treasury's first ever Green Finance Strategy (GFS), launched in July, usefully clarified the government's expectation that all listed firms and large asset owners disclose climate-related financial risks in-line with TCFD requirements. It also includes a commitment that climate-related issues must be a mandated aspect of regulators' objectives and duties.

"IF WE DO NOT TAKE URGENT ACTION TO LIMIT GLOBAL TEMPERATURE INCREASES THE IMPACTS UPON THE ECONOMY, SOCIETY AND OUR BUSINESS WILL BE NOTHING SHORT OF DEVASTATING"

But the GFS (and equivalents) is not the destination: a bold and global Green New Deal is needed. These are a few modest and practical suggestions for what might be required:

- **Create a Global Climate Capital Raising Plan:** This plan should coordinate national Capital Raising Plans, which include a view on the infrastructure required, the capital involved, and the financing that can be raised via infrastructure investment, project finance, corporate debt, foreign direct investment and equity investment, as well as sovereign and multilateral development bank debt.
- **Create an International Panel on Climate Finance (IPCF):** This would be a capital market-focussed equivalent to the International Panel on Climate Change. It would assess market-based analysis on the impact of climate policy. It should report annually and serve as a market test of policy effectiveness.
- **More focus on the cost of carbon:** Carbon pricing internalises the externality that is climate change. The EU Emissions Trading Scheme is now trading at only around 10% of what is needed to reallocate capital at a macro level and at the scale required. A trajectory for a forward carbon price cost curve must be formulated to help manage the transition to a lower carbon economy.
- **Central banks** could help support the production of sector-specific reference climate risk scenarios for corporate boards – particularly banks, insurers and investors – to see as input and base their own scenario plans upon. This would significantly help the process of scenario planning within financial institutions and assist the comparability of the scenario plan outputs by regulators.
- **Public league tables:** governments should also back public league tables ranking the actual TCFD disclosure reports, sector by sector. For our part, we helped set up and then finance the World Benchmarking Alliance to work with a group of allies including the Carbon Disclosure Project to build climate change benchmarks.
- **Education:** governments and non-governmental organisations (NGOs) could jointly undertake sustainable finance education initiatives that teach people about the climate impact of their investments.
- **NGOs** could run capital market campaigns that help correct climate change market failures in a way that ensures companies in general and financial services in particular are presented with the actual market prices that reflect the real costs paid by people and the planet.
- **Individuals:** every pensioner can act, today. We propose three actions: voice, vote, and full disclosure:
 - (i) Tell your fund managers to voice your concern about the Paris Agreement and ask all the companies you own to nominate a board member to be responsible for climate change impact and to require them to publish TCFD impact reports.
 - (ii) Tell your fund to vote against the pay, re-election of board members and report & accounts at those companies that don't respond positively.
 - (iv) Tell your fund manager to use the World Benchmarking Alliance (WBA), thereby disclosing to you the climate change impact your funds have had.

If we do not take urgent action to limit global temperature increases the impacts upon the economy, society and our business will be nothing short of devastating. With the UK likely to host COP 26 in 2020, and definitely hosting the G7 in 2021, the nation has an historic opportunity to lead other member states toward a net-zero financing strategy.

¹ Matt McGrath, 'Climate change: 12 years to save the planet? Make that 18 months', BBC, 24 July 2019. www.bbc.co.uk/news/science-environment-48964736

ESSAY 8:

JON WILLIAMS

Jon Williams explains how the Task Force on Climate-related Financial Disclosures can be a catalyst to finance a Green New Deal for the UK.



“HAVING THE RIGHT INFORMATION ALLOWS BUSINESSES TO MAKE INFORMED STRATEGIC DECISIONS, TAKING CLIMATE RISKS AND OPPORTUNITIES INTO CONSIDERATION”

A Green New Deal and a transition that delivers for climate, nature and people will require finance to be invested on an unprecedented scale into new solutions for a green economy. Governments, companies and financial institutions do not have the balance sheets to finance what’s needed; it will take public-private partnerships and the capital markets to get us there.

The Task Force on Climate-related Financial Disclosures (TCFD) is a market-driven initiative, supported by the Financial Stability Board and the G20 Finance Ministers & Central Bank Governors, to address concerns around insufficient disclosure of climate-related risks and opportunities for businesses.

The TCFD has set out recommendations that encourage companies to better understand and manage their climate risks and opportunities, and integrate them into their business, strategic and financial planning. Having the right information allows businesses to make informed strategic decisions, taking climate risks and opportunities into consideration. This will help drive the innovation (and job creation) that’s needed to create a more sustainable economy, compatible with the vision of the Green New Deal. Furthermore, better disclosure provides investors with the information they need to mobilise private sector capital towards companies and assets that have a lower exposure to climate-related risk.

The TCFD has already catalysed action to enable the UK to transition to a net-zero carbon future, which is an essential pillar of delivering a Green New Deal. It’s doing this by:

- 1. Shifting the short-term mindset towards thinking long term** – by encouraging business and investment decision-making with a long-term view, beyond the current business cycle.
- 2. Uncovering commercial opportunities** – by encouraging businesses to identify, assess and manage climate-related risks, it’s enabling them to think about commercial opportunities in low-carbon solutions.
- 3. Going beyond corporate responsibility** – by framing climate change as a fundamental strategic and financial issue, business leaders are recognising their need to act, which is a critical element in bringing about private sector action on climate.¹

¹ World Economic Forum, 2019: How to Set Up Effective Climate Governance on Corporate Boards Guiding principles and questions. www3.weforum.org/docs/WEF_Creating_effective_climate_governance_on_corporate_boards.pdf

“TO HAVE ANY CHANCE OF MEETING OUR NATIONAL OBLIGATIONS UNDER THE PARIS AGREEMENT, WE NEED TO URGENTLY ACCELERATE THE REALLOCATION OF FINANCE TOWARDS THE LOW-CARBON TRANSITION”

The Green New Deal cannot be successful without the involvement of the private sector, particularly private sector finance. With this in mind, the TCFD is accelerating private sector mobilisation and the efficient reallocation of capital towards the Green New Deal’s vision of a sustainable, climate-resilient future.

The UK is in fact already leading the charge in this area. The Bank of England has been advocating on these issues for some time, and the UK’s Prudential Regulation Authority was the first worldwide to issue a Supervisory Statement on climate change.² The UK’s Green Finance Strategy, published earlier this year, also sets out its support for TCFD-based reporting to become commonplace by 2022.³ This comes at a time when the UK is redefining its role on the global stage post-Brexit: it presents a time-bound window of opportunity to embed leadership in climate resilience and, more widely, the Green New Deal into the UK’s new identity.

The UK is well placed to lead a global movement. The clout of the UK’s financial services sector means that it will play a large part in setting the global standard for climate-related disclosure. With the financial services sector contributing £132 billion to the UK economy,⁴ better understanding of climate risk management, improved resilience to climate change and diverting investment away from assets that have the potential to become stranded due to climate change, are critical for our future economic stability.

To have any chance of meeting our national obligations under the Paris Agreement, we need to urgently accelerate the reallocation of finance towards the low-carbon transition.⁵ The Governor of the Bank of England has suggested one way to expedite this in the UK economy is to make TCFD reporting mandatory for UK-listed companies.⁶ While voluntary disclosure has been partially effective, making disclosure mandatory on a ‘comply or explain’ basis would level the playing field and generate robust, comparable information about how publicly-listed companies are managing climate risks and opportunities. In turn investors could use this information to make better informed investment decisions. This would accelerate the reallocation of capital towards those companies that are aligned with the Green New Deal and send a clear strong policy signal that the UK is committed to leading the global transition to a low-carbon economy.

Thanks to Andrea McCormick and Kathryn Oldfield, PwC for their contributions to this essay.

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³ HM Government, 2019: Green Finance Strategy https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/820284/190716_BEIS_Green_Finance_Strategy_Accessible_Final.pdf

⁴ UK Parliament, 2018: <https://researchbriefings.parliament.uk/ResearchBriefing/Summary/SN06193>

⁵ PwC Low Carbon Economy Index, 2018: the PwC Low Carbon Economy Index tracks the rate of the low carbon transition in each of the G20 economies and compares this with their national targets. www.pwc.co.uk/services/sustainability-climate-change/insights/low-carbon-economy-index.html

⁶ Mark Carney, 2019: Enable, Empower, Ensure: A New Finance for the New Economy. “In order to achieve a carbon neutral economy, disclosure must become mandatory” www.bankofengland.co.uk/-/media/boe/files/speech/2019/enable-empower-ensure-a-new-finance-for-the-new-economy-speech-by-mark-carney

BENEFITS FOR PEOPLE

THIS IS NOT COOL



IMPROVING WELL-BEING AND QUALITY OF LIFE

As the following essays set out, a Green New Deal could ensure people really benefit in terms of improvements in their quality of life, their jobs and businesses; especially in those sectors most exposed to change.

The transition to a net-zero economy will see all parts of the economy affected: it will involve significant public investment in homes, public transport and green infrastructure, providing the opportunity to radically cut carbon emissions and to improve the quality of life of people across the UK. But a Green New Deal that didn't include investment in the UK's natural infrastructure, delivering sustainable green spaces and promoting biodiversity from city to coast, would be a missed opportunity.

Good quality housing can have a positive impact on people and the environment. A Green New Deal is an opportunity to give everyone access to high quality, well-insulated and energy-efficient homes. Doing so would reduce carbon emissions and will also lower energy bills, reduce fuel poverty and improve health and well-being. As Colin Hines points out in his contribution, a programme to retrofit the UK's housing stock would be very labour-intensive and therefore a huge job creator. But a home is more than just the bricks and mortar: it's also the area that surrounds it, and the creation of more green places can reinforce the link between human habitats and the natural environment, creating a space that promotes healthy living and biodiversity.

Investment in public transport and active travel facilities for walking and cycling can also provide many benefits. They represent the most accessible, cost-effective and efficient ways for people to move around while also generating much lower climate and environmental impacts. Additional benefits include improved health outcomes as a result of more walking and cycling, lower noise levels and traffic congestion, and better air quality. Increased investment in public transport infrastructure also provides opportunities to design-in space for habitats and wildlife, including along train tracks and cycle paths.

Investment in nature beyond that related to housing and transport is essential too. As Tony Juniper argues, the restoration of our natural environment can help combat climate change, protect key habitats and unlock significant social and economic value. Access to high quality natural areas improves public health, while vital economic sectors depend on a thriving natural environment – from wild-caught seafood relying on a healthy marine ecosystem to healthy soils ensuring a secure food supply. Farhana Yamin's essay argues that poverty is compounded by environmental inequalities, with evidence mounting that lack of access to nutritious food and green space has real impacts on our mental and physical health.

The role of the government, through a Green New Deal, therefore could be to prioritise the protection and enhancement of natural habitats which serve society simultaneously as carbon sinks, key habitats, and sources of health and mental wellbeing. But as Tony Juniper points out in his essay, for this to work, there is a need to move from a 'position where our economic calculations assume the protection and recovery of nature is primarily a cost, to one where it is more widely appreciated that the recovery of the natural environment is one of the soundest investments that society can make.'

THE GREEN NEW DEAL MUST GIVE EVERYONE ACCESS TO HIGH QUALITY, WELL-INSULATED AND ENERGY EFFICIENT HOMES. DOING SO WILL REDUCE CARBON EMISSIONS BUT ALSO LOWER ENERGY BILLS, REDUCE FUEL POVERTY AND IMPROVE HEALTH AND WELL-BEING.

ESSAY 9:

COLIN HINES

Colin Hines explains how the UK Green New Deal Group plans to create ‘jobs in every constituency’.



“THE UK GREEN NEW DEAL GROUP HAS FOR OVER A DECADE CAMPAIGNED FOR ENERGY EFFICIENCY IN ALL BUILDINGS AND THE INCREASED USE OF RENEWABLES IN CONSTRUCTING AND REFURBISHING EVERY UK BUILDING”

The Green New Deal is a much talked about proposal and has been the subject of countless articles and reports. However for it to gain widespread support from the general public its actual policies must provide a sense of hope for the future and economic security for the majority. It’s unlikely to gain real political traction if it just appeals to those for whom the environment is already their top concern.

Key to developing such policies is the understanding that there are only really two major labour-intensive sources of local jobs: face-to-face caring in the public and private sectors, and infrastructure provision and improvement. Such work has the additional advantage of being hard to automate and impossible to relocate abroad. With this in mind, it’s imperative that politicians embrace a Green New Deal infrastructure programme that results in ‘jobs in every constituency’.

This is why the UK Green New Deal Group has for over a decade campaigned for energy efficiency in all buildings and the increased use of renewables in constructing and refurbishing every UK building.¹ This approach would provide secure well-paid jobs, create business and investment opportunities in every community, and tackle fuel poverty.

It’s a politically attractive proposition: the majority of this work has to be done locally and so will benefit every city, town, village and hamlet in the UK. It also bridges the two perspectives encapsulated in the jibe of the French gilets jaunes: “Our elites are talking about the end of world when we are talking about the end of the month.”² The programme will require a wide range of activities and skills, and projects are likely to last for decades as they’ll require frequent upgrading as technology improves.

The Green New Deal Group is now channelling growing public interest and calling for a ‘30 by 30’ campaign – an initiative to make 30 million UK buildings energy efficient by 2030.³

¹ www.greennewdealgroup.org/

² www.ft.com/content/79d1d422-f3e4-11e8-9623-d7f9881e729f

³ <https://braveneweuropa.com/colin-hines-uk-could-galvanise-europe-with-a-northern-green-new-deal-powerhouse>

“GIVEN THAT ADDRESSING THE CLIMATE EMERGENCY IS NOW AN UNAVOIDABLE POLITICAL PRIORITY, THIS SHOULD BECOME A CENTRAL DEMAND IN ALL ELECTION MANIFESTOS”

It would, of course, require firm political commitment and a detailed programme to transform around 28 million dwellings⁴ and 2 million commercial and public sector buildings⁵ in that timescale. Nevertheless, in the UK there’s increasing political urgency for such a comprehensive approach to be considered. The growing possibility of an Autumn election has prompted opposition parties to consider forming alliances to discuss a common platform, reaching beyond the European question to include investment in public services and ambitious decarbonisation targets.⁶ The latter could be centred on a 30 by 30 approach.

Some of the groundwork for this was done last year when our demand for a ‘jobs in every constituency’ Green New Deal gained the support of opposition leaders.⁷ Given that addressing the climate emergency is now an unavoidable political priority, this should become a central demand in all election manifestos.

In terms of funding, it has been estimated that nearly £500 billion of investment in new low-carbon infrastructure is required over the next 10 years to transform the UK economy, of which £230 billion will be required for energy efficiency alone.⁸ This money could be used to fund a realistically timetabled, carefully costed (and hence non-inflationary) nationwide initiative to train and employ a fairly paid ‘carbon army’ to tackle the enormous job in hand.

A report from the Energy Efficiency Infrastructure Group and E3G – *Affordable Warmth. Clean Growth*⁹ – calls for a comprehensive buildings energy infrastructure programme and dedicated delivery agency to achieve major energy savings and decarbonise the UK heating supply. It sets out an action plan to make all homes energy-efficient within 20 years, although this timeline is in fact in the process of being shortened for an update to the report. Achieving this goal will require the adoption of high quality standards for retrofitting and constructing homes, area-based schemes led by local authorities, additional funding sources that won’t raise energy bills, and financial incentives to encourage households to take up energy-saving measures.

The Green New Deal is of course an ambitious and expensive programme, yet there’s a timely precedent for such a transformational achievement. Fifty years ago the US put a man on the moon within a decade of President Kennedy’s original call to do so: this time round the aim is to save the planet, not to leave it.

⁴ https://webarchive.nationalarchives.gov.uk/20160109144125/http://www.ons.gov.uk/ons/dcp171766_373513.pdf

⁵ www.fgould.com/uk-europe/articles/uk-building-stock-carbon-reduction-commitments/

⁶ www.theguardian.com/commentisfree/2019/aug/13/brexit-new-political-alliance-remainers-boris-johnson

⁷ www.theguardian.com/environment/2018/sep/09/our-jobs-plan-for-a-green-and-pleasant-land

⁸ www.e3g.org/docs/Accelerating_the_transition_to_a_low_carbon_economy_The_case_for_a_Green_Infrastructure_Bank.pdf

⁹ www.e3g.org/news/media-room/call-to-government-to-back-infrastructure-plan-to-de-carbonise-uk-buildings

ESSAY 10:

FARHANA YAMIN

The health of the planet and the health of human societies are inextricably linked. A nature-based Green New Deal is the key to fixing both, says *Farhana Yamin*.



From wildfires raging in the Amazon to coral die-back in the tropics and deadly hurricanes battering small islands in the Caribbean, the signs are crystal clear. Human impacts on the environment have reached a critical stage, potentially eroding the conditions for human life on Earth.

The good news is there are millions of people mobilising to stop humanity falling off a cliff. They recognise that the time for tinkering is over. A Green New Deal is the only way we can really dismantle the toxic systems that have given rise to these gargantuan problems.

At its core, the vision underlying the Green New Deal is the creation of kinder, regenerative, climate-resilient societies based on the restoration of nature. Ending domination over nature goes hand in hand with tackling all forms of domination and hierarchy (men over women, old over young, one ethnicity or religion over another, binary forms of sexuality etc) which have prevented people from flourishing.

A Green New Deal also means reconfiguring our democratic institutions and fundamental values – such as our relationship to food, land and oceans – so that together we can decarbonise lifestyles, check consumerism and protect vulnerable communities from criminal extractive industries and deforestation-based agribusiness.

A Green New Deal could achieve better human health through more nutritious diets for all, largely eliminating under-nutrition in most parts of the world and halving the diseases related to consuming too many calories and unhealthy food.¹ Physical inactivity could be costing the UK economy alone £10 billion a year in healthcare costs, premature deaths and absences due to sickness.² Physical environments that promote good health could play an important role in reducing socioeconomic health inequalities:³ a recent University of Glasgow study found that people living closer to green space had lower death rates and less heart disease.⁴ Among lower income groups, 1,300 extra deaths occurred each year in areas where the provision of green space was poor.⁵

“THE VISION UNDERLYING THE GREEN NEW DEAL IS THE CREATION OF KINDER, REGENERATIVE, CLIMATE-RESILIENT SOCIETIES BASED ON THE RESTORATION OF NATURE”

1 Growing Better: Ten Critical Transitions to Transform Food and Land Use, The Global Consultation Report of the Food and Land Use Coalition, The Food and Land Use Coalition, September 2019

2 Natural Health Service, Four Key Facts for Health Commissioners, available at: <https://naturalhealthservice.org.uk/wordpress/wp-content/uploads/2016/06/Natural-Health-Service-four-key-facts.pdf>

3 Mitchell R, Popham F., 2008 'Effect of exposure to natural environment on health inequalities: an observational population study.' Lancet. 372,

4 Mitchell R, Popham F., 2008 'Effect of exposure to natural environment on health inequalities: an observational population study.' Lancet. 372,

5 Ibid.

“CHANGING OUR DEMAND FOR FOOD IS THE MOST SIGNIFICANT THING WE CAN DO TO SUPPORT INDIGENOUS PEOPLE AND ACTIVISTS IN TROPICAL FORESTED COUNTRIES”

Simply living near trees impacts mental health. A London study has shown that areas with greater numbers of street trees have the lowest rates of antidepressant prescriptions, even when factors like age and socioeconomic status are taken into account.⁶ So-called 'forest bathing' is based on hard science: Japanese researchers have found that hiking in the forest, and even a one-day trip to a suburban park, boosts natural killer immune cells and anti-cancer proteins.⁷

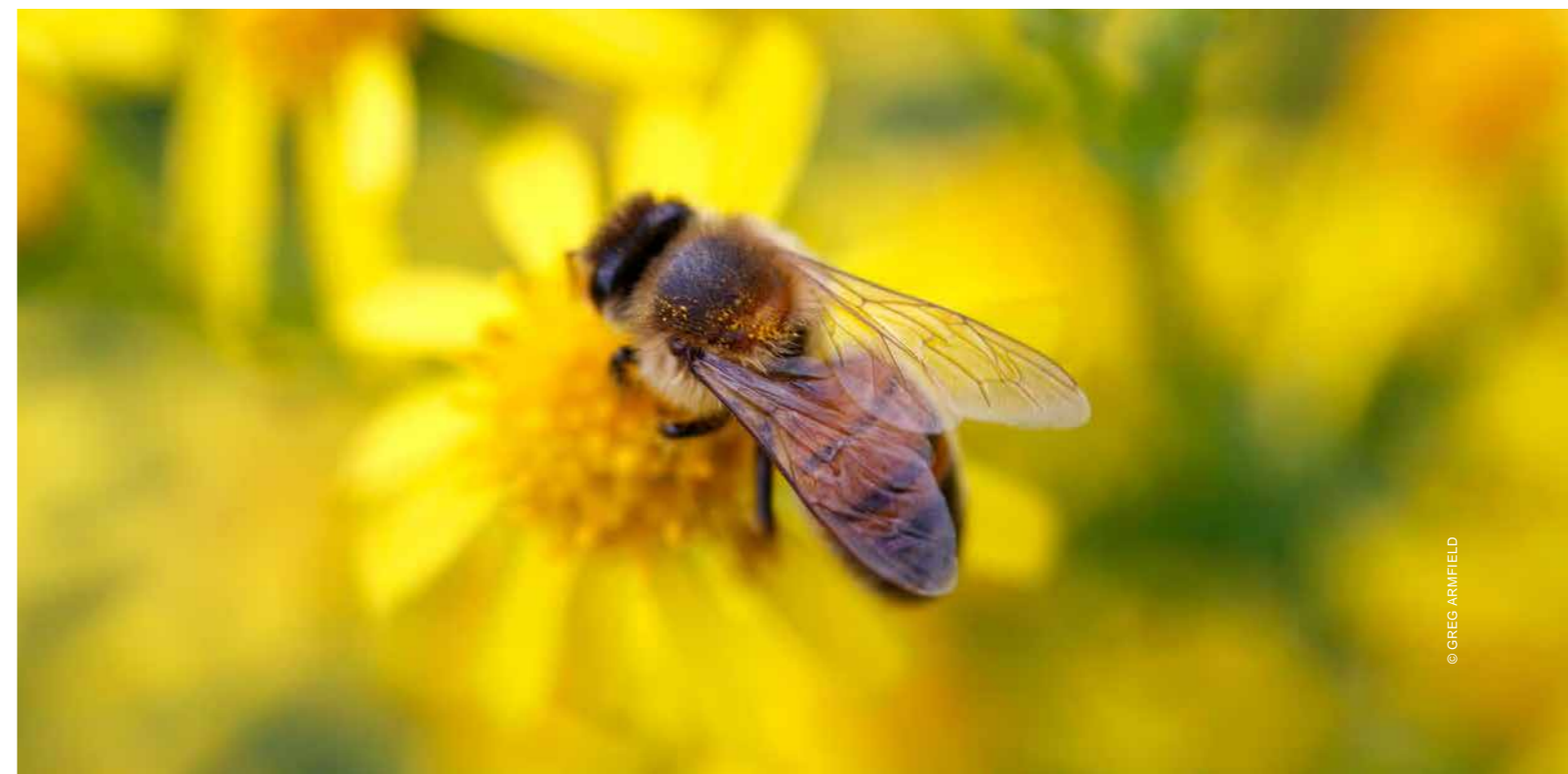
The Green New Deal gives us a remarkable opportunity to transform food and land use systems over the next 10 years to improve planetary and human health. By reimagining our relationship to food and shifting to plant-based diets and sustainable fisheries, we free up land for leisure and wildlife as well as help remove the perverse incentives causing the Amazonian fires and deforestation in countries like Indonesia. Changing our demand for food is the most significant thing we can do to support indigenous people and activists in tropical forested countries who are paying a heavy price for defending nature: there are reports of four to seven murders each week.

It's vital to shine a light on the lived experience of climate and ecological breakdown, challenge imperialism and colonialism in all its forms, and take action here in the UK to confront the devastation caused by neo-liberal economics and business-as-usual politics. Yes, it's too late to prevent the negative impacts we've seen so far, but nature can recover if we reclaim our capacity to nurture, and our capacity to act fairly and responsibly.

The Green New Deal enables us to redesign human societies based on kindness, justice and planetary boundaries so we can learn to respect, enjoy and restore nature together.

6 Mark S. Taylor et al. 2015: Urban street tree density and antidepressant prescription rates - a cross-sectional study in London, UK, Landscape and Urban Planning

7 Ibid.



ESSAY 11:

TONY JUNIPER

There are huge social and economic benefits to putting nature at the heart of the UK's Green New Deal, says *Tony Juniper*.



“COMPREHENSIVE STUDIES UNIVERSALLY CONCLUDE THAT FUNCTIONING NATURAL AND SEMI-NATURAL ECOSYSTEMS CONFER VAST VALUE TO SOCIETY AND THE ECONOMY”

In the UK today there's a growing appreciation that strategies to cut climate-changing emissions from energy and transport have the potential to simultaneously achieve against objectives for economic renewal, technology development, job creation and energy security. This set of joined outcomes is to an extent being realised via wind and solar power proliferation, steps toward greater energy efficiency, and the electrification of transport.

There has, however, hitherto been limited policy attention toward parallel opportunities arising from ecological restoration. Considering the twin challenges posed by climate change and ecological degradation, it's important to rebalance the discussion and to include within Green New Deal proposals a far stronger emphasis on the natural environment.

The degradation of nature has been widely documented, both globally and, in many countries, nationally too.^{1,2} In parallel there have been increasingly intense efforts to understand the dependence of human societies on healthy natural systems. Comprehensive studies universally conclude that functioning natural and semi-natural ecosystems confer vast value to society and the economy.^{3,4,5,6} These benefits remain, however, largely unmeasured in mainstream economics.

In common with other countries, the UK thus has opportunities to unlock huge social and economic value via the restoration of its natural environment. The potential benefits can be seen through a series of increasingly well understood headings. One relates to public health.

“NOT ONLY DO WE HAVE AN INCREASINGLY CLEAR BUSINESS CASE FOR REDOUBLING EFFORTS TO PROTECT AND RESTORE THE NATURAL ENVIRONMENT, BUT WE ALSO HAVE THE TOOLS TO DO IT”

A raft of studies⁷ reveal the fundamental psychological and physical health benefits arising from access to high-quality natural areas, such as natural rivers, wild coasts, woodlands and other tranquil and wildlife-rich green spaces.⁸ Actions to realise that value, including in ways that might reduce growth in demands on the National Health Service, evidently exist, especially through greater access to natural areas close to population centres.

It's also increasingly clear that vital economic sectors depend on a healthy natural environment. Most prominent are food and water. Nearly all our food production depends on services provided by nature. These include pollination by wild insects, wild-caught seafood produced by functioning marine ecosystems, natural pest control, healthy soils recycling nutrients, and the replenishment of freshwater. Freshwater security in turn relies on soils, forests and wetlands for cost-effective and secure supply.

And when water is temporarily abundant following extreme weather – which is now more frequent due to the effects of climate change – then flood risk is in some places reduced by healthy natural features including woodlands, scrub and healthy wetlands, that slow the flow of water across land and waterways. Those same natural systems can help to reduce the impact of droughts, which are also becoming more frequent and severe, by storing water on the land.⁹

It's not only the effects of climate change that can be softened through protecting and restoring natural systems, but also the causes. Vast quantities of carbon are stored in forests and soils, especially peat soils, and these carbon stores and pumps can be protected and rebuilt to avoid greenhouse gas releases while also removing significant quantities of carbon already released.

Not only do we have an increasingly clear business case for redoubling efforts to protect and restore the natural environment, but we also have the tools to do it. Here in the UK, governments have adopted a series of new targets and plans to meet them are in development.

For example, the 25 Year Environment Plan launched by the Prime Minister in 2018 sets out an agenda to restore nature through a new farming policy that will reward farmers for providing public goods (such as clean water and carbon capture). There's also the aim of achieving net gain from infrastructure and development (such as new housing) through directing financial resources from such projects to invest in natural environment improvements. This could, for example, be targeted at creating wildlife-rich areas in greenbelts, thereby bringing nature within walking and cycling distance of millions of urban dwellers.

Central to the new ambition is a Nature Recovery Network. Natural England is presently looking at how best to take forward this ground-breaking idea, not only in order to reverse the fortunes of declining wildlife, but to realise the wide array of social and economic benefits set out above.

For this to work, however, we'll need a mindset shift, whereby as a country we move from a position where our economic calculations assume the protection and recovery of nature is primarily a cost to one where it's more widely appreciated that the recovery of the natural environment is one of the soundest investments that society can make.

1 IPBES, (2019). Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. IPBES

2 RSPB and others, (2016). State of Nature. RSPB. www.rspb.org.uk/globalassets/downloads/documents/conservation-projects/state-of-nature/state-of-nature-uk-report-2016.pdf

3 Sukhdev, P. et al. (2010). The Economics of Ecosystems and Biodiversity – Synthesis Report. TEEB. www.teebweb.org/our-publications/teeb-study-reports/synthesis-report/

4 Costanza, R. et al. (2014). Changes in the global value of ecosystem services. *Global Environmental Change* 26 (2014) 152–158. community-wealth.org/sites/clone.community-wealth.org/files/downloads/article-costanza-et-al.pdf

5 Juniper, T (2013). *What has Nature ever done for us?* Profile Books, London.

6 UK National Ecosystem Assessment (2011). *The UK National Ecosystem Assessment: Synthesis of the Key Findings*. UNEP-WCMC, Cambridge. <http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx>

7 Bragg, R. et al. (2016) Wellbeing benefits from natural environments rich in wildlife: A literature review for The Wildlife Trusts. Wildlife Trusts, Newark. www.wildlifetrusts.org/sites/default/files/2018-05/r1_literature_review_wellbeing_benefits_of_wild_places_lres.pdf

8 Natural England (2018) Monitor of Engagement with the Natural Environment. The National Survey on People and the Natural Environment. Natural England. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/738891/MonitorofEngagementwiththeNaturalEnvironmentHeadlineReport_March_2016to_February_2018.pdf

9 Juniper, T. (2015). *What Nature does for Britain*. Profile Books, London.

BUILDING THE BUSINESSES OF THE FUTURE

The rapid decarbonisation of sectors from farming to heavy industry is essential if we are to tackle the climate and ecological emergencies and restore nature effectively. The approach will need to vary across different sectors. In the extractive industries the focus might be on providing support to create green jobs in new low-carbon sectors for existing workers, while in farming it could be to ensure the industry can transition to a model that delivers wider environmental benefits beyond food provision.



We urgently need to reduce our dependence on fossil fuels, yet the UK's current policy on oil and gas is to 'maximise economic recovery'.¹ A rapid transition away from fossil fuels is not only essential to meet our stated climate commitments and policy goals and mitigate against the effects of climate change, it will also unlock environmental and other benefits, removing the threat of oil spills and chemical leaks, and lowering air pollution through the uptake of electric vehicles. However, many jobs and communities still rely on these industries. To support affected workers and communities, Paul Nowak and Beth Farhat of the TUC argue for new institutions, policy support, investment, and – crucially – a voice for workers affected by the transition. It is important that the transition to a low-carbon future is well managed and built on trust – trust that investment in new economic opportunities will be focused on the places that need it most.

Shifts in diets and changes to the wider food system to improve access to healthy and nutritious food, reduce waste and are essential elements of the policy response to the environmental challenges we face. All of those will need to be supported by big changes in agriculture, where diversified farming businesses properly rewarded for the environmental benefits they provide could go much further in helping us restore nature, reduce carbon emissions, and adapt to climate change. The new environmental land management scheme being designed to replace the Common Agricultural Policy (CAP) needs to ensure that support for farmers delivers economic, social and environmental benefits.

Ian Cheshire argues that we have an opportunity to change the way in which food is produced. He emphasises the benefits of moving to an agroecological system which works with and enhances natural systems in a way that makes farming regenerative and more resilient. Incentives for agriculture – as in many industries – need to change, so farmers are rewarded for providing public goods (such as clean air, water and improved soil quality, biodiversity, climate mitigation, and public access to increase enjoyment of the countryside). But he argues that incentives are not enough: peer-to-peer support is required, and an institution such as a dedicated agricultural investment bank could be established to finance the transition.

Minette Batters agrees that agriculture is at the frontline of climate impacts and has a major role in looking after our natural environments. She sets out the NFU's ambition for a net-zero contribution to climate change across the whole of agricultural production by 2040; and calls for a Green New Deal to support the UK farming industry to reach this ambitious target in a way that avoids the risk of us simply offshoring our emissions through increased food imports and stifling the development of zero-carbon farming at home to help reverse declines in nature. To make the zero-carbon transition Batters prioritises policy measures to boost productivity across all farm sectors, carbon pricing to drive carbon storage in soils and vegetation, and the development of a strong domestic bio-energy chain.

Beyond agriculture, restoring and creating coastal habits can also have a multitude of benefits. In his contribution, Unsworth recommends investment in local coastal community partnerships to restore the degraded but vital marine habitat of seagrass at scale to help transform coastal economies. The creation of new coastal habitat could create new jobs in natural construction, aquatic plant propagation and improved fisheries. Our UK coastal towns are often areas of economic and social deprivation, where employment opportunities are limited and social and geographic mobility are restricted. By promoting coastal habitat restoration and creation, Unsworth argues that a Green New Deal could support economic regeneration and tackle the wider issues of poverty and social inequality.

WE NEED TO ENSURE THAT THE TRANSITION TO A LOW-CARBON FUTURE IS WELL MANAGED AND BUILT ON TRUST

¹ Oil Change International, Global Witness, and Friends of the Earth Scotland, Sea Change: Climate Emergency, Jobs and Managing the Phase-Out of UK Oil and Gas Extraction, 2019

ESSAY 12:

BETH FARHAT & PAUL NOWAK

Beth Farhat and Paul Nowak speak up for the workers, highlighting union priorities for ensuring a just transition to a new low-carbon economy.



The TUC is a strong supporter of radical action to tackle climate change and decarbonise our economy. We are also, of course, the voice of working people, which gives us a particular responsibility to champion the cause of a just transition to a new low-carbon economy. What then does this mean in practice?

In July we published our report, *A just transition to a greener, fairer economy*.¹ In it, we set out a clear, practical policy framework for securing a just transition. Crucially, the report was informed by conversations we had in workplaces around the country with workers on the front line – those in the power stations and energy companies who, as we move towards a net zero economy, can expect to see their industries undergo significant change.

So how do we bring about a just transition? We set out four recommendations.

First, we need a clear and funded path to a low-carbon economy. UK unions have long supported a balanced energy policy and an affordable energy supply for the whole country. In the context of a move to a low-carbon economy, we're calling for a cross party commission on long-term energy use, involving affected workers, unions, industries and consumers. As part of its remit, this commission should carry out a study of the social impacts of such a transition, its regional impacts and necessary mitigation measures. We need government investment, delivered through progressive taxation, to deliver new forms of energy. We also need government investment in infrastructure and to support transition in sectors including automotive, aerospace, steel and construction, as well as household energy efficiency programmes and better public transport.

Second, and crucially, workers and communities across the UK who are most affected by the shift to decarbonise our economy must have a central voice in how this is brought about. If our just transition roadshow highlighted one thing, it was this: workers' attitudes to change are very different if it is something done *with* them, rather than to them. The most obvious way to engage with workers is through their trade unions. It's the workers themselves who are likely to have the knowledge and knowhow to help companies adopt cleaner technologies and adapt processes. Companies should put in place Transition Agreements – agreed with unions – covering issues such as numbers of jobs, pay and conditions, job security, training and skills, health and safety, and equal opportunities. Just transition arrangements should also be covered in bargaining at sectoral level.

“IT'S THE WORKERS THEMSELVES WHO ARE LIKELY TO HAVE THE KNOWLEDGE AND KNOWHOW TO HELP COMPANIES ADOPT CLEANER TECHNOLOGIES AND ADAPT PROCESSES”

¹ www.tuc.org.uk/sites/default/files/A_Just_Transition_To_A_Greener_Fairer_Economy.pdf



“EVERY NEW JOB CREATED BY THE MOVE TO A LOW-CARBON ECONOMY SHOULD BE JUST AS GOOD, IF NOT BETTER, THAN THOSE WHICH IT WILL REPLACE”

Third, in light of the fact that decarbonising our economy will create, threaten and transform millions of jobs, it's vital that workers get the support they need to develop and adapt throughout their working lives. This will require employers and government to step up their investment in skills. A good start would be for the government to reverse the 45% cuts made to adult education since 2009-10, as reported by the Institute for Fiscal Studies last year.² The government should establish lifelong learning accounts for all adults so that everyone has a personalised budget for training, as well as a right to regular career reviews and face-to-face guidance and support on training. And we need to invest in and reconfigure our social security system to allow workers to train for new roles and take on new opportunities.

Fourth, new green jobs must also be good jobs. Every new job created by the move to a low-carbon economy should be just as good, if not better, than those which it will replace. That means trade union recognition, decent pay, terms and conditions, high standards of health and safety, and a fair pension. Anything less does not meet the test of a just transition. Government has a role to play too. When ministers invest taxpayers' money in new infrastructure, they should use their procurement powers to ensure that jobs generated benefit workers in the local community and throughout the supply chain. A robust industrial strategy must focus on creating jobs where they're needed most, in all the regions and nations of the UK. The UK must retain a strong manufacturing base and must not simply export carbon-intensive jobs overseas.

This is a challenging agenda, but it is a challenge we must be determined to meet. Perhaps most important of all, we must recognise that economic, social and environmental justice must be achieved together. In 2019, to address one without the other two makes little sense. The next generation, whose voice is so clear and so welcome on this issue, will not forgive us if we fail.

² www.ifs.org.uk/publications/13307

ESSAY 13:

RICHARD UNSWORTH

Large-scale restoration of seagrass meadows under a Green New Deal would improve UK fisheries, boost depressed coastal economies and provide a vital carbon store – Richard Unsworth explains how.



“SEAGRASS RESTORATION HAS THE POTENTIAL TO FORM PART OF A PACKAGE THAT CAN TRANSFORM COASTAL ECONOMIES”

Our UK coastal towns are hotspots of economic and social deprivation, where employment opportunities are limited and social and geographic mobility are restricted. However, through the promotion of coastal habitat restoration and creation, a Green New Deal could provide the means to respond to the root causes of poverty and social injustice. Sustainably enhancing the productivity of our coastal fisheries offers a valuable opportunity to reduce the corrosive inequality that exists around our coastal towns and cities.

One major opportunity is to invest in local coastal community partnerships to restore seagrass at scale, a key fisheries habitat. A fifth of the world's biggest fisheries, including Atlantic cod, are supported by seagrass meadows, which promote biodiversity and help to nurture baby fish. But cod in the North Sea remain at critically low levels, and the poor status of this and other fisheries around the UK limits our ability to maintain profitable businesses from these natural resources.

Although historic and current overfishing are major drivers of fisheries decline, coastal habitat destruction is also significant. The UK has lost an area of seagrass the size of 47,000 football pitches, resulting in coastal environments that are often lifeless. These degraded environments provide insufficient food and shelter for young fish. They also become a source rather than a sink for carbon, and fail to protect our coastline from flooding and erosion.

In the UK we've decimated our coastal seas through pollution, development and overexploitation, and in doing so we've degraded the fisheries resources which could support coastal communities and their capacity to remain resilient in the face of a changing climate.

A Green New Deal could provide opportunities to enhance coastal fisheries through large-scale habitat restoration, while also rebuilding historically important carbon stores in our coastal seas. The coast is on the frontline of climate change, where communities and infrastructure face the consequences of rising sea level and intensifying storms. These threats are of national importance, and require a response from government that leads to enhanced community resilience.

Seagrass restoration has the potential to form part of a package that can transform coastal economies, but for this to be a success a clear and legally mandated target is required. I propose a 30 by 30 target for seagrass restoration (30km² of by 2030). This would help increase community resilience, improve coastal infrastructure and enhance socio-economic well-being.

“WE NEED TO THINK HOLISTICALLY ABOUT THE RESTORATION OF OUR COASTS AND CATCHMENTS USING A RANGE OF EXPERTISE FROM BIOENGINEERS TO GENETICISTS AND SOCIO-ECONOMISTS”

The creation of new coastal habitat would provide new jobs in natural construction and aquatic plant propagation, and would improve fisheries. By stimulating this restoration, government funding can catalyse further investment and improved yields through carbon trading, the creation of high specification environmental certifications for fisheries (sustainable meadow to fork), and novel nutrient trading schemes to help solve catchment problems too.

Seagrass Ocean Rescue is an example of the innovative new projects I believe should be scaled up. Pioneered by Swansea University, Sky Ocean Rescue and WWF in collaboration with local communities and government, it aims to restore 20,000m² of seagrass in west Wales near Dale, enabling coastal communities to become custodians of the created habitat. This would bring localised benefits for fishers, and provide new opportunities for local tourism ventures and education institutes.

Government is waking up to the scale of seagrass loss and its value as a nature-based solution to a number of environmental problems, but there's still a lack of knowledge on how to successfully restore this productive habitat. The project will provide government with a model for how to cost-effectively restore seagrass at scale in partnership with communities and other stakeholders.

Scaling up seagrass restoration far and fast enough to restore 30km² over a 10-year period will require government regulators to transform environmental policy to include a vision for restoration, the use of major aquatic facilities, and further targeted applied research.

Under a Green New Deal we need to think holistically about the restoration of our coasts and catchments using a range of expertise from bioengineers to geneticists and socio-economists. Such multi-disciplinary approaches to problem-solving would make the UK a world leader in coastal restoration and create new large-scale carbon storage mechanisms, vital for cutting our carbon emissions.



ESSAY 14:

IAN CHESHIRE

Sir Ian Cheshire considers how a Green New Deal can best support the changes we need to see in the UK's food and farming system.



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As part of the urgent challenge to respond to climate change and recover and regenerate nature, the food and farming sector needs to make a fundamental transition to a truly sustainable system.

In our recent RSA Commission, *Our Future Our Land*,¹ we've provided detailed suggestions for how we move to putting health at the heart of food, revolutionising agriculture to make it sustainable and ensuring the countryside can provide work and community value for all. The biggest challenge in my view is how we help the farming community transition from an unsustainable, intensive model to one which seeks to build natural capital at a farm-by-farm level over the next 10 years.

The most important thing that the government can do is to switch the farm payments system away from the EU production subsidies and instead reward farmers for adding to their natural capital, with payments based on indicators such as soil quality, biodiversity and reduced levels of fertilisers and herbicides/insecticides. At the same time, it should pursue the polluter pays principle and ensure that the true costs of all the externalities are charged to industry.

With a clear financial incentive to switch models, I'm sure most farmers would want to change over – but in order to support this change it's clear that farmers will need technical help and advice as well. Through its research, the Commission found that training and supporting farmer mentors could boost the availability and uptake of peer-to-peer support. Not only could this offer a development and diversification opportunity for farmers, but it could also be a trusted and cost-effective way of meeting their technical, business and social support needs at a time of enormous change in the industry.

The principles of agroecology encapsulate how farming will need to change in the future – it will have to learn from, work with and enhance our natural systems in order to optimise the interaction between plants, animals, humans and the environment. This includes practices such as integrated pest management, organic farming, regenerative agriculture and agroforestry using technology and innovation to move towards circular and whole-farm system solutions that are resilient and respect animal welfare. Countries that already prioritise this approach rank higher on food sustainability: France is ranked number one and the Nordics are in the top 10, while the UK currently is at number 24.²

“WITH A CLEAR FINANCIAL INCENTIVE TO SWITCH MODELS, I'M SURE MOST FARMERS WOULD WANT TO CHANGE OVER”

“WITHOUT ROOT AND BRANCH REFORMS TO THE FINANCIAL INCENTIVES IN FARMING WE CAN'T EXPECT REAL CHANGE”

Many farms are locked into their current system following years of investment, and they can't be expected to write off their previous expenditure. Along with subsidies shifting, the Commission believes we need to create a national agroecology development bank (NADB) to ensure finance is available to farmers who want to make this long-term shift. Currently, farmers struggle to find the necessary funding to implement changes to their systems or business models. To finance a sustainable transition in food and farming, the NADB should be established as a publicly-owned bank drawing on specialist knowledge from a diverse mix of local banking partners who have a close connection to and knowledge of local markets and conditions.

The Commission also highlights the need to create the right conditions for new, fulfilling jobs to attract new talent and the next generation into the industry and build a socially as well as environmentally regenerative economy. This is often a challenge within agriculture, as new entrants can find it difficult to get started and make progress. In the rural economy, self-employment and small businesses are prominent, and we need to create the conditions for them to thrive. Encouragingly, our research indicates that most young people (16-24) in the countryside want to live and work there – we should act on this and ensure that there are opportunities for our future generations to earn a decent and fulfilling living in the countryside.

Time and again in our review we heard great stories of innovation and change, and farmers spoke of their willingness to be part of the solution – but they need our support to make it happen at scale. As with all industries I've worked in, the leaders understand this and want the right level playing field to ensure the transition happens correctly. Without root and branch reforms to the financial incentives in farming we can't expect real change or a reversal of decades of degradation of soils and wildlife.

¹ www.thersa.org/discover/publications-and-articles/reports/future-land

² The Economist Intelligence Unit Food Sustainability Index 2019

ESSAY 15:

MINETTE BATTERS

The UK farming sector has a huge role to play in reaching net-zero. NFU President *Minette Batters* is optimistic, provided the right support and policies are put in place.



“WE’LL NEED TO WORK IN PARTNERSHIP WITH GOVERNMENT AND OTHER STAKEHOLDERS TO ENABLE UK FARMING TO MEET OUR NET-ZERO ASPIRATION”

Our vision is to show how agriculture will contribute to eradicating Britain’s contribution to climate change by the middle of the century, meeting the NFU’s ambition for a net-zero contribution to climate change across the whole of UK agricultural production by 2040.

We want to meet ‘net zero’ by reducing agricultural production emissions and delivering negative emissions in the UK rather than by exporting food production, and the associated greenhouse gas emissions, to other countries. We propose a combination of policies and practices focused on three key areas:

- Improving farming’s productive efficiency (including the health and vitality of animals and plants)
- Targeting measures to increase and manage carbon storage on UK farms
- Boosting production of land-based renewable energy, including bioenergy for processes linked to carbon capture, storage and utilisation, to generate credits for GHG emissions avoided and GHG removal.

We aim to build some redundancy into our aspirations, recognising that some measures may not deliver their planned emissions reductions in full: a ‘portfolio’ of complementary measures is the best approach.

Now is the right time to set challenging goals, consistent with the high standards of British production, welfare and environmental stewardship, as farmers and growers adjust to a new domestic agricultural policy. There are clear environmental and economic imperatives for action.

The pace of decarbonisation of the entire UK economy is going to quicken towards net zero over the next few decades. As an industry, we must respond to the scientific evidence of the impacts of climate change, and the first-hand experience of our farmers and growers who have weathered extremes of cold, drought and flood in recent years.

The IPCC’s report on Climate Change and Land highlights that food security has already been affected:¹ agriculture is on the front line of climate change impacts, as well as potentially contributing part of the solution. We therefore need a convincing set of actions for the 2020s, as well as in the longer term, to demonstrate that we mean what we say.

¹ https://www.ipcc.ch/site/assets/uploads/2019/08/4.-SPM_Approved_Microsite_FINAL.pdf



“EVERY FARMER WILL START THIS JOURNEY FROM A DIFFERENT PLACE WITH A UNIQUE ACTION PLAN, BUT NO FARMER SHOULD BE LEFT BEHIND”

We’ll need to work in partnership with government and other stakeholders to enable UK farming to meet our net-zero aspiration. For the NFU, any Green New Deal will need to address a number of key points:

- Boosting productivity across all farm sectors will require policy measures not just from Defra, but also BEIS, HM Treasury and other government departments
- Enhancing carbon storage in soils and vegetation requires both the agriculture industry and the environmental NGO community to advocate for carbon pricing to drive multiple agri-environmental benefits
- Britain must also develop a strong domestic bio-energy chain in order to have the longer-term potential for future GHG removal, as carbon storage and through a variety of bio-based products.

This is a national aspiration, not an expectation that every farm will be able to reach net zero. Every farmer will start this journey from a different place with a unique action plan, but no farmer should be left behind. On my own farm the most likely source of emissions are beef cattle and pasture, so my personal journey towards net zero will start by benchmarking the performance of my livestock, improving the health status of my cattle, growing and extending my hedgerows, and managing my grassland to increase carbon storage.

A productive, profitable agricultural sector has wider public benefits. British farmers and growers are an important part of rural economies, providing jobs and driving growth in diversified industries.

Farm businesses have an irreplaceable role in looking after our cherished natural environment. They have a unique perspective on the farmed environment because they see and manage the whole picture. Last year I hosted the inaugural NFU Farm Nature Discovery event, where a group of wildlife recorders spent time surveying my farm. The sheer number of different species of plants and wildlife recorded was a revelation to me and to others.

Now is the right time. We want to leave our farms and the farmed environment in a better condition for the next generation of farmers and consumers. Our journey towards climate neutrality must be made together. If we work together, learn from each other and share our ideas I truly believe we can reach our net-zero aspiration, and show the world that it can be done.

EMPOWERING PLACES

The UK has the unenviable distinction of having the widest regional disparities in the economic performance of any country in the OECD.¹ The benefits of the economy are concentrated in London and the South East, and other parts of the country are left behind. The UK also has one of the most centralised governance systems in the developed world – and these things are connected.² No matter what you think about the UK's future relationship with the EU, the vote to leave has usefully focused Westminster's attention on those parts of the country that have suffered from deindustrialisation and hollowed out city centres, and where too many of the jobs available are low wage and have limited prospects.³

As the contributors in this collection set out, a Green New Deal has the potential to distribute resources across the whole of the country, ensuring investment and support reaches the people and places that need it most. Sophie Howe argues that action in Wales provides a model for what could be included in a Green New Deal, including the Future Generations Act and the Environment Act which have respectively ensured that the needs of the present are met without compromising the ability of future generations to meet their own needs, and started to steer policymakers away from 'outdated models of growth'.

Andy Street, the West Midlands mayor, argues for a devolved investment and policy package which could support the building of the country's first gigafactory to transition the region's crucial automotive industry to a state-of-the-art electric car manufacturing cluster. He also calls for additional support for a mass expansion of the West Midlands Wildlife Ways to increase foot and cycle paths and improve the habitat value of parks and open spaces across the region.

In his essay, Sadiq Khan sets out his plan for 'the creation of a Green New Deal for London', highlighting that everyone must come together to play their part. While London is wealthier than other parts of the country, the capital still suffers from higher levels of poverty after housing costs than the England average.⁴ Khan argues that the government should hand power and resources to London so that he can get on with the job of tackling the capital's climate emergency by upgrading millions of homes, investing in green industries and creating the green jobs of the future.

Sophie Sleeman and Aaron Smith want a Green New Deal to help renew our democracy and devolve power to people. They call for Citizens' Assemblies to be permanently integrated into our political system, allowing local people to shape a Green New Deal for their communities. In doing so, they provide a strong reminder that the transition should be something that's done *with* people, not *to* them.

¹ OECD, Reducing regional disparities in productivity in the United Kingdom (2018)

² McCann P (2016) The UK regional-national economic problem: Geography, globalisation and governance, Routledge.

³ Shafique A, Brexit was driven by places 'left behind', The RSA, 2016

⁴ Trust for London, London's Poverty Profile, 2017

THE GREEN NEW DEAL MUST DEVOLVE POWER TO PLACES AND PEOPLE NOT ONLY BECAUSE IT IS RIGHT IN ITSELF BUT BECAUSE IT WILL LEAD TO BETTER POLICYMAKING AND FASTER PROGRESS TOWARD DECARBONISING THE ECONOMY.

ESSAY 16:

SOPHIE HOWE

Sophie Howe reports on Wales' bold new approach to managing prosperity and the well-being of future generations – and how the Green New Deal will play an essential part.



It's been over a decade since the UK first flirted with the notion of a Green New Deal. During that time, we've had 10 years of austerity, worsening inequalities, the existential nightmare that is Brexit, and several damning reports from the IPCC on our global epoch-defining set of environmental crises.

No longer confined to policy documents and think-pieces, the demands for a fully-fledged response to climate change and nature's collapse are front and centre of the public consciousness. And they need action, today.

Here in Wales, something else has happened since those first proposals for a Green New Deal. In 2015, the National Assembly for Wales passed the Well-being of Future Generations Act (Wales); a ground-breaking piece of sustainable development legislation.

It places a duty on public bodies in Wales, including the Welsh government, to ensure that in meeting the needs of the present they're not compromising the ability of future generations to meet their own needs.

In driving sustainable development, public bodies in Wales must be able to demonstrate the ways in which they're improving our economic, social, environmental and cultural well-being. Crucially, no one dimension of well-being is more important than another. By law, the environment can no longer be treated as a poor relation to the economy.

Coupled with our Environment Act, Wales has a strong mandate to bring about the kind of changes needed to respond to the climate emergency, to reverse biodiversity loss and to solve many of the societal issues we still face. The Welsh approach clearly lends itself to the principles of a Green New Deal, putting people and planet first and working holistically to address these interconnected emergencies together.

One of the unique features of the legislation is the statutory definition of what 'a prosperous Wales' looks like:

"An innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change); and which develops a skilled and well-educated population in an economy which generates wealth and provides employment opportunities, allowing people to take advantage of the wealth generated through securing decent work."¹

"THE WELSH APPROACH CLEARLY LENDS ITSELF TO THE PRINCIPLES OF A GREEN NEW DEAL, PUTTING PEOPLE AND PLANET FIRST AND WORKING HOLISTICALLY TO ADDRESS THESE INTERCONNECTED EMERGENCIES TOGETHER"

"BY CEASING TO VIEW THE ENVIRONMENT AND THE ECONOMY AS POLAR OPPOSITES, TWO SIDES OF A DICHOTOMOUS COIN, OR EVEN MUTUALLY EXCLUSIVE, A GREEN NEW DEAL BECOMES NOT JUST AN ATTRACTIVE PROSPECT BUT THE ONLY VIABLE OPTION"

Nowhere in that definition are we laden with outdated models of growth. The focus is on 'decent work', 'using resources efficiently and proportionately' and – most crucially – a society which is low-carbon. The statutory definition offers a template for how a Green New Deal could be structured.

Since 2016, it has been an interesting period of implementation as the Welsh public sector attempts to make the vision of this legislation a reality. I've recently published guidance² on how Wales can become more resilient, as well as being a globally responsible nation, exploring how we can 'maintain and enhance the natural environment through managing land appropriately to create healthy functioning ecosystems' as well as 'making the right financial decisions now, to enable future generations to thrive'.

In declaring a climate emergency, Wales nailed its low-carbon colours to the mast, and the proof was seemingly in the pudding when the First Minister announced his decision to abandon plans for a proposed M4 expansion because of its impact on the environment – its approval would have sounded the death knell for the Gwent levels.

Since being in post I've also questioned whether using all of Wales' borrowing powers to spend £1.5 billion on a road is truly in the best interests of our future generations, publishing a paper calling for greater public transport investment and suggesting opportunities for alternatives.³ The public inquiry and discourse around this road have been heated; a culmination of generations of traditional economic modelling versus calls for greater environmental protection and the need to protect future generations.

That's not to say we've got this all figured out, which is why I recently published a 10-point plan on how the Welsh government should be funding the climate emergency. In previous and current budgets, the Welsh government spend on decarbonisation has been around 1%, lagging considerably behind other countries across the world and indeed the UK in key areas such as investment in public transport, active travel, energy and re-greening our land. The plan estimates that £991 million will need to be invested in these areas if we're to meet the demands of the task ahead of us.

By ceasing to view the environment and the economy as polar opposites, two sides of a dichotomous coin, or even mutually exclusive, a Green New Deal becomes not just an attractive prospect but the only viable option. The UK must now consider how to make it happen.

With just over a decade to prevent irreversible climate change and environmental devastation, it's not about whether our governments can afford to do this, it's about whether we can afford not to when it comes to the well-being of our future generations.

² <https://futuregenerations.wales/>

³ https://futuregenerations.wales/resources_posts/transport-fit-for-future-generations-report/

¹ <https://futuregenerations.wales/aotp/prosperity/>

ESSAY 17:

SADIQ KHAN

Sadiq Khan argues that London should be empowered to lead from the front with its own Green New Deal.



“IF WE GET THIS RIGHT IN LONDON THEN WE CAN EXPORT OUR SOLUTIONS AND TECHNOLOGY ALL OVER THE WORLD”

This year has highlighted the growing consequences of climate change due to human activity. We’ve had record temperatures, devastating flooding here and across the world, and the Amazon rainforest fires – all stark signs of the mounting impact of the climate emergency we face.

There’s no doubt climate change will be catastrophic for humanity if we don’t take bold and urgent action now. This will require tough decisions by politicians across the globe. But I’m confident that if the right choices are made, we can avert disaster at the same time as delivering greener homes that are warmer in the winter and cooler in the summer, cleaner transport, and products that use less of our planet’s resources.

In London, we’re already taking action. We’re building new zero-carbon homes. We’ve built over 160km of new cycle lanes, and we’re investing to get more people walking and cycling. We’ve stopped licensing new diesel taxis and we now have more than 2,000 electric taxis on our streets. We’re cleaning up our bus fleet and supporting thousands of Londoners to cut their energy use through better home insulation and boilers. And we have plans to launch our own energy supplier to provide Londoners with green energy from renewable sources.

But it’s clear more needs to happen. One way London can ramp up what we’re doing is through the creation of a Green New Deal for London. This must not be a gimmick, or a bit of spin on existing activity. It should be a call to arms for everyone to play their part, set demanding targets for reducing carbon emissions and include clear policies that would lead to a cleaner, greener city.

It should also mean the installation of thousands of rapid charging points to support the shift to electric vehicles, and lead to the creation of new jobs in green growth industries, such as companies that install insulation and new heating technology to make homes more efficient. London is gaining more control of the adult skills system, which could help us provide a way to ensure Londoners have the skills they need to reap the benefits of a green revolution.

If we get this right in London then we can export our solutions and technology all over the world, creating even more green jobs, both here and abroad.

A Green New Deal would also be about social justice. We know that the most damaging consequences of climate change – such as floods and extreme weather – fall on those with lower incomes. That’s why the benefits of better homes and access to more efficient and cleaner transport must reach all Londoners, regardless of wealth.



“WITHOUT THE FULL WEIGHT AND RESOURCES OF THE NATIONAL GOVERNMENT THROWN BEHIND TACKLING CLIMATE CHANGE, WE’LL FAIL TO MAKE THE CRITICAL PROGRESS WE NEED”

For a Green New Deal to be effective, we’ll need the full resources of central government to swing into action. We also can’t expect hard-pressed Londoners, many battered by a decade of austerity and the rising cost of living, to foot the bill.

Back in December 2018, I declared a climate emergency in London. At the same time, I launched new analysis showing what would be needed for London to meet the Paris Climate Agreement. Most strikingly, it showed that there’s a limit to what we can do alone. Without the full weight and resources of the national government thrown behind tackling climate change, we’ll fail to make the critical progress we need.

If the Prime Minister is unwilling or unable to help due to the distractions of Brexit, then he should hand powers and resources to cities like London, where we’re desperate to meet the challenge of climate change.

With the necessary additional powers, London would be able to set new and better standards for housing, making houses warmer in winter, less draughty and damp, and supplied with new, state-of-the-art clean-heating technology. We’re already mandating this for new homes in London, but we’ll only make inroads if we improve the standards of more than 3 million existing homes, over half of which were built before the Second World War. London is open to working with the government to pilot how a mass retrofit of domestic properties could work.

Next May, Londoners will vote in the Mayoral election. One of the things I’ll be standing on is my environmental record – from tackling air pollution and delivering more water fountains, to reducing single-use plastics and greening the city. But I want to do even more to rise to the massive challenge of climate change, which is why I’m working on including a Green New Deal for London in my manifesto.

This will include proposing meaningful solutions, adopting tough city-wide objectives on carbon reduction for the public and private sector, and helping some of the poorest communities hit hardest by the effects of climate change secure climate justice. This would also allow us to simultaneously create new jobs and business opportunities.

By showing this real leadership in London to tackle climate change, I believe we can force the government to provide the crucial funding and powers we need. We can also help inspire other cities around the world and share what we know to ensure we can tackle the climate emergency we face.

ESSAY 18:

ANDY STREET

Given the right government funding, the West Midlands can build on its industrial past to tackle the climate emergency and create a low-carbon future. Andy Street makes the case for a new investment and policy package for the UK's devolved regions.



“LOW-CARBON TECHNOLOGY IS THE SINGLE MOST PRODUCTIVE SECTOR IN THE REGION: IT’S WORTH AROUND £9 BILLION, HAS A GVA PER EMPLOYEE THAT OUTSTRIPS THE NATIONAL AVERAGE, AND IS STILL GROWING”

Here in the West Midlands we're immensely proud of our industrial past. From coalfields and glass factories to foundries and steelworks, we were the home of the industrial revolution.

But our changing of the world came at a cost, as we were the ones who began the rapid increase in global carbon emissions. This is why now, more than 250 years later, I believe the West Midlands has a moral responsibility to tackle the climate emergency.

We've made a positive start, with a reduction in carbon emissions of more than 20% since 2010, while our economy has grown by more than 23% – the best performance of any Combined Authority region in the country.

We're already experiencing the benefits of a new low-carbon landscape. Our Local Industrial Strategy identified that low-carbon technology is the single most productive sector in the region: it's worth around £9 billion, has a GVA per employee that outstrips the national average, and is still growing.

But we could be doing more, and doing it faster.

For example, an investment and policy package from government, which some have dubbed a 'Green New Deal', could enable the UK to decarbonise more rapidly so that we can tackle climate change more effectively.

In the West Midlands there are obvious areas where a Green New Deal could make a tangible difference.

Firstly there is the automotive industry. From Austins at Longbridge to Rovers in Solihull, the West Midlands is steeped in car-making history – and that history is still being written. JLR is building its new all-electric XJ at its plant in Castle Bromwich, the home of the Spitfire. Not only will the car be built in the heart of Birmingham, but the engines will be supplied from Wolverhampton and the batteries from a new state-of-the-art facility at Hams Hall in Warwickshire. Add to this the £100 million UK Battery Industrialisation Centre in Coventry, and it's clear that the West Midlands now hosts a state-of-the-art electric car manufacturing cluster. But that cluster is missing one crucial component – a gigafactory.

If the UK is to take on California, China and Germany, we'll need huge battery production capacity. The battery cells are heavy to move, and car companies need the plants close to their electric car factories. The government's Faraday Institution has forecast that, by 2040, we could need up to 13 battery gigafactories in the UK. With the help of a government funding package, we could build the first. The automotive sector in the West Midlands already employs around 46,500 people, but with the addition of a gigafactory and a Green New Deal this figure could rise significantly.



“BECOMING CARBON NEUTRAL IS NOT ONLY IMPERATIVE TO SAFEGUARD THE FUTURE OF OUR YOUNGER GENERATIONS, BUT IT ALSO PRESENTS A GOLDEN ECONOMIC OPPORTUNITY”

Addressing industry is key, but we must not forget that there are other areas that require significant decarbonisation.

One West Midlands project of which I'm particularly proud is Wildlife Ways. Around £17 million is being spent on building 23km of new footways and improving 69km of existing foot and cycle paths. The project will also improve the habitat value of 56 hectares of parks and open spaces, benefitting not just people but our precious wildlife as well. The environmental benefit of the scheme is clear, as the more people we have using two wheels or two feet the sooner we'll be able to beat the climate emergency. But so far this three-year project is only being run in Solihull. Funding from a Green New Deal would allow us to roll the scheme out across all seven of the West Midlands' metropolitan areas.

A green new deal would apply to all aspects of our decarbonisation, not just a few areas. But the principle is clear – back us and we can scale and speed up our plans, ensuring the West Midlands becomes carbon neutral far sooner than 2041.

Becoming carbon neutral is not only imperative to safeguard the future of our younger generations, but it also presents a golden economic opportunity. By 2050, the UK market for low-carbon goods and services is expected to reach £1,400 billion: the West Midlands intends to fully capitalise on it.

To achieve our goals, regions can set clear targets and make plans for hitting them, but the government must provide the funding needed. Thanks to the success seen in the West Midlands, London and Greater Manchester, we've proved that devolution works. The Green New Deal is the perfect catalyst for the next stage of devolution.

There are two important aspects to the government's role in making such a deal happen: leadership and trust. Firstly ministers need to take ownership of the climate change issue, as had begun to happen under Theresa May, and set out ambitious and creative plans for how the country is going to become carbon-neutral. Then they need to trust the UK regions to deliver change. The evidence that this will work is there, and there could be no greater sign of trust than a significant devolved funding package.

Together, with the help of a Green New Deal, we can tackle the climate emergency.

ESSAY 19:

SOPHIE SLEAMAN
AND AARON SMITH

On behalf of the next generation, *Sophie Sleeman* and *Aaron Smith* call for fresh decision-making models to empower individuals and communities under a Green New Deal.



“WE KNOW THE SCIENCE, WE HAVE THE TECHNOLOGICAL SOLUTIONS, SO THE CLIMATE CRISIS IS A CRISIS IN POLITICS”

We're growing up in an uncertain world. One in which climate breakdown creates a new crisis every day, while threatening the democracies of the future. We're told that changing our toothbrush will solve a global crisis, yet most people feel they have no power at all over decision-making in the UK. We know the science, we have the technological solutions, so the climate crisis is a crisis in politics – in democracy.

A Green New Deal could be driven by people, if the political structures to enable this transition are put in place now. Citizens' assemblies have already been used to allow people to discuss divisive issues beyond the distorted world of fake news and corporate media. But in order for them to become truly effective, they must be permanently integrated into our political system, giving citizens a direct tool in which they can shape a Green New Deal for their community.

These assemblies don't have to conform to one model. They can be specific, like a community energy group who know exactly which public housing blocks are trapped in fuel poverty; or broad, such as a land trust formed to rewild common land. If they're given access to tax money collected by local banks, powered by strong local currencies, these new structures could restore local councils – which, from our experience as youth strikers, are painfully stuck in the past.

By encouraging discussion and consensus decision-making, participatory democracies will wear away the harsh polarisation which has fractured our communities and prevented the strong cooperation needed to mobilise behind decarbonisation.

However, a Green New Deal will not just empower citizens by shifting who governs who. Open source digital systems could be combined with strong public ownership and shorter working weeks to allow people to spend time on shared gardens, care work and local politics. Inside such a system, anyone – from farmers to former gas workers – could develop local solutions to our unsustainable models of consumption, that can then be shared and adapted on global platforms. A Green New Deal will require top-down changes in infrastructure in order for it to be implemented by people in local contexts.

We can give people the feeling that they – not the corporations who profit off collective neglect – are responsible for their community. So, a just transition must shift our systems of governance as well as economics. It must let the vulnerable as well as the wealthy shape our zero-carbon future, otherwise what might be a safety net for the planet will be full of gaping holes.

“A GREEN NEW DEAL IS AN OPPORTUNITY TO REMIND OURSELVES THAT POLICY IS MADE FOR THE BENEFIT OF THE PEOPLE IT SERVES”

For too long people have been separated from the decision-making that controls their lives, leading to neglectful policies that ignore marginalised voices. A Green New Deal is an opportunity to remind ourselves that policy is made for the benefit of the people it serves. We should empower communities to decide where their renewable energy comes from, what jobs they'll have and where our investment goes – supported, not dictated, by central government.

Climate justice requires an overhaul of our current political system, one that recognises the failings of the traditional order. To do this we need real devolution of powers to regions, communities, cooperatives, councils and citizens' assemblies to prevent their advice being brushed aside and ignored. People must be given the power to produce real changes, especially those who have fresh insight into how to solve the crisis in a way that is socially just. From government this will require a change of attitude, to be radical in the face of the climate emergency for the good of us all.

This isn't the time for shoulds and shouldn'ts, these are things we must do. The government must follow the guidelines set out by the Green New Deal Group:

1. Totally decarbonise the economy of the United Kingdom in a way that works to eliminate social and economic inequality.
2. Create millions of new well-paid, secure, unionised jobs across the country.
3. Transform our economy to place human and ecological well-being and prosperity at the centre; enable democratic participation, accountability and common ownership.
4. Protect and restore vital habitats and carbon sinks, including forests and wild areas.
5. Promote global justice by supporting all peoples and countries to decarbonise quickly and fairly, in line with timeframes set out by science, including through transfers of resources, finance and technology from historic emitters in the Global North to the Global South.

When people are empowered to protect their future, decisions will be made that help us all.

It's time to participate.

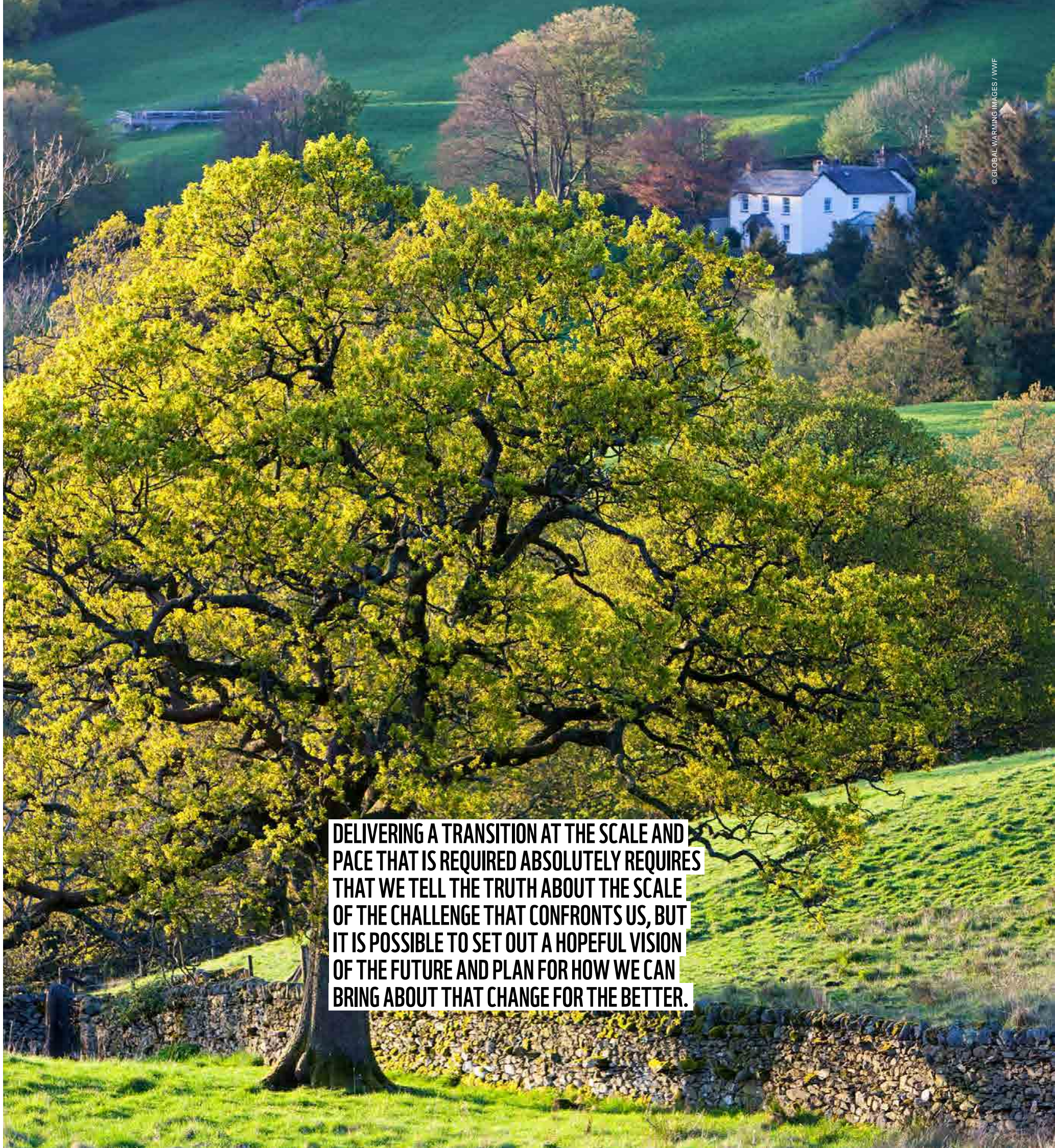


CONCLUSION

The essays in this collection demonstrate that a successful Green New Deal will leave few areas of the economy untouched. Tackling climate change, reversing the declines in nature and securing an environmentally sustainable economy require a new direction. They'll also necessitate an unprecedented mobilisation and deployment of resources. But as argued by many of our authors, the costs of doing so will be outweighed by the economic and social benefits – and we need to ensure that those benefits reach those that need it most by engaging communities, workers and businesses in delivering well-being, a better quality of life, and new and better jobs across the country.

After the declaration of emergencies from governments at all levels and commitments to net-zero targets, what is needed now is a plan. A plan which is commensurate with the unprecedented challenges we face. One which helps us seize the economic opportunities which transitioning to a zero-carbon society offers. That guarantees that we deliver the transition in a just way, whether in how we pay for it or how we support those people and communities who will be most affected by it. One that involves people so that the transition is something which is done with people, not to them. And one that seeks to tackle climate change and restore nature together, because that is what is necessary and what will deliver the most benefit for all.

Delivering a transition at the scale and pace required makes it essential that we tell the truth about the scale of the challenge that confronts us, but it is possible to set out an exciting vision of the future and plan for how we can bring about that change for the better. The essays in this collection provide some of the building blocks for a Green New Deal that could offer just such a plan.

A large, leafy tree with vibrant yellow-green foliage stands in the foreground of a lush green landscape. In the background, a white house with a dark roof is nestled among trees on a hillside. The scene is bathed in bright, natural light, suggesting a sunny day. A stone wall runs across the bottom of the frame, partially obscured by the tree's shadow.

DELIVERING A TRANSITION AT THE SCALE AND PACE THAT IS REQUIRED ABSOLUTELY REQUIRES THAT WE TELL THE TRUTH ABOUT THE SCALE OF THE CHALLENGE THAT CONFRONTS US, BUT IT IS POSSIBLE TO SET OUT A HOPEFUL VISION OF THE FUTURE AND PLAN FOR HOW WE CAN BRING ABOUT THAT CHANGE FOR THE BETTER.



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