WAYS TO SAVE THE WORLD

Fresh Solutions to the Climate Crisis

Edited by Mhairi Tordoff, Isaac Turner and Mark Whittaker

Forewords by Danielle Rowley MP, Shadow Minister for Climate Justice and Green Jobs, and Alan Whitehead MP, Shadow Minister for Energy and Climate Change
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Foreword

Alan Whitehead MP

This summer, after much Labour prompting, the Government finally adopted ‘net zero’. Parliament then placed into law a target representing the UK’s contribution to the world wide effort that will be needed. As reported by the International Panel on Climate Change this will give us all a reasonable chance of maintaining global warming at liveable levels, a no more than 1.5°C increase in global temperatures.

Currently, only one sector in the UK economy is coming anywhere near the trajectory of reduction necessary. As the Committee on Climate Change reported recently, 75% of all emissions reduction since 2009 has occurred in just one sector, energy. Even then only the electricity part of that broad sector has seriously decarbonised. Very little progress in decarbonising heat has occurred. And in other sectors such as transport, the built environment, land use and agriculture the graph is flat – we really are making no progress at all.

Labour has in place a green industrial revolution including policies for, among other things, the complete decarbonisation of the energy sector and rapid decarbonisation of other areas; undertaking a massive national campaign to insulate and make more energy efficient millions of poorly insulated homes; planting literally billions of trees to provide negative carbon sinks to offset outstanding carbon emissions and moving forward the wholesale adoption of electric vehicles.

These policies can, I believe, give a serious outline of how we reach our net zero emissions target across the whole economy. But that is what they are, outlines, and we are equally clear that a huge amount of work remains to be done in thinking out how the green revolution in our economy can really sustain itself across the piece.

And this is where this timely collection of essays by the bright minds of the Young Fabians really scores: they are thinking through some of the detailed processes by which we make every sector of the economy sustainable. Not just the well-attended big ticket items, but the myriad of detailed recalibrations of processes throughout our society that will have to work in synchrony if the targets are to be reached and sustained.

One thing that has frustrated and disappointed me in the climate change debate so far is how little attention has been paid to these details, and how lacking present government policy documents such as the Clean Growth Plan are in the detail of making airy ambitions actually work. We have not just got to get the big picture right, we have to get the whole picture right if we are to establish a low carbon economy that works. Here in these pages are a series of sound and practical measures to do just that.

Danielle Rowley MP

Young people have shown that they are key political actors in the urgent fight against climate destruction and environmental degradation. Once again, just as they have been during many other points in our history, young people are at the forefront of a movement for change. They are highlighting what should be a priority of those in positions of power; those who have failed to protect us over recent decades. Sometimes this failure has been despite best efforts, but mostly it has been driven by global leaders serving their own self-interest. Their time is up.

The broad ranging contributions in this collection are another reminder of the intellect and insight of young people, of what you have to offer our political process. A big first step in addressing the current disconnect would be to extend the franchise to 16- and 17-year olds in all elections. The activism and leadership being shown by young people on the climate emergency is without doubt shaping the political response, and in return, will shape all of our futures.

Labour’s plans for a green industrial revolution address many of the issues so comprehensively covered in this collection. From a radical transformation of our energy and transport systems and a mass retrofitting programme for housing; to redirecting international climate finance to make it more accountable to countries in the Global South, we are determined to take the bold and urgent action needed on global heating and environmental degradation. The challenge will be approached as the opportunity it is to build a more equal society, with a key focus on developing quality, unionised, green jobs. Our plans for a Green Industrial Revolution are centred on justice – for working people, for young people who have inherited the emergency from previous generations, for people who already are and will be hit hardest by the effects of climate change.

But of course, there is always more to be done and there are some great ideas discussed in this collection that should push us forward. In building our policy proposals, contributions from diverse voices, especially those of people underrepresented in our current political processes – such as young people – are essential.

The challenge before us is enormous but with the right ideas, imagination and energy – so well displayed in this paper – we’re in with a fighting chance. Just as the first industrial revolution unleashed local innovation, creating jobs and opportunities, and changing the world forever, so too can a Green Industrial Revolution – this time respecting planetary boundaries and the rights of the workers who will make it happen.

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Danielle Rowley is MP for Midlothian, and is Shadow Minister for Climate Justice and Green Jobs.
Executive Summary
Mhairi Tordoff, Isaac Turner, and Mark Whittaker

By the time most Young Fabians today are 40 years old, the Earth’s climate could have reached the 1.5°C warming tipping point.

Climate change and environmental degradation will be the defining social, economic and political challenge of our generation. And yet what we inherit is entirely dependent on the actions of government, industry and civil society today.

Ways to Save the World was born because we wanted to give a voice to our generation. A voice not just in protest but in solutions.

The Young Fabians is a unique collective of early career professionals, students and political activists all interested in the future of thinking of the left. Each essay in this pamphlet has been written by a Young Fabian member, or a young guest contributor on the left, and each chapter proposes one solution to the climate crisis.

The pamphlet was produced by the Young Fabian Environment Network, which was founded in 2019.

Our contributors’ Ways to Save the World are:

1. Introduce a radical Green New Deal to address the twin challenges of climate change and economic inequality in the UK and internationally
2. Consider electoral reform for a more long-termist, transformative, and consensus-based politics to tackle climate change
3. Reform UK construction, so that the sector uses the most innovative methods to produce sustainable buildings
4. Introduce a bold programme to encourage retrofitting for existing homes, including tax incentives for those who improve the environment for everyone by making their homes more energy-efficient
5. Create a Carbon Offset Fund, to be stewarded by the new National Development Bank proposed by Labour. This could turbo-charge investment into offsetting programmes, whilst making sure the impact of CO₂ is priced into economic decision-making
6. Support the growth of community renewable energy projects through investment, local authority partnerships and planning reform
7. Re-energise nuclear generation, through measures to make the sector safer, more effective and more democratic, to dramatically reduce the carbon footprint of the UK energy sector
8. Build cost-effective cycling infrastructure to make our towns and cities cleaner and healthier
9. Develop an inclusive National Afforestation Programme to improve health and wellbeing in urban and rural communities, and mitigate the impacts of climate change
10. Encourage neo-wilding in urban environments, in order to increase biodiversity and deliver better air quality – particularly in communities which have been hit hardest by pollution
11. Expand the cultural and environmental roles of our peatlands as carbon sinks, ecosystems, and spaces for community action
12. Promote transparency, accountability and public awareness of sustainability in fashion supply chains, to strengthen environmental sustainability and workers’ rights in the UK and internationally
13. Implement Deposit Return Schemes for a quick jump towards local circular economies
14. Move beyond plastic waste by working with businesses and the public to find immediate solutions, funding research into alternatives, and banning single-use plastics.

This is by no means a comprehensive list of solutions to the climate crisis. Instead it’s the start of a toolkit for today’s leaders and citizens to create a more environmentally and socially just future for our generation. We hope it inspires you to take action.

Mhairi Tordoff, Chair, Young Fabian Environment Network
Isaac Turner, Regional Membership Officer, Young Fabian Environment Network
Mark Whittaker, Vice-Chair, Young Fabian Environment Network
F or four decades, we have endured under an economic model that increasingly fails a majority of people throughout the world. The prevailing consensus has maintained that governments must leave the market unencumbered and the finance sector unconstrained, whether by borders or regulatory obstacles, in its pursuit of quick returns. Following years of deregulation, freewheeling finance has proven its destructive capacity time and again.

It has driven asset inflation and financial crises; deepened inequality by concentrating wealth as borrowers are saddled with unmanageable debt; and fuelled climate change with easy credit that has fostered unsustainable extraction of the Earth’s finite resources and is now locking the global South into a high carbon future by funnelling money into fossil fuel projects.

This economic dogma has propelled us into an existential climate crisis as well as a crisis of worldwide inequality, both within and between countries. To tackle challenges of this scale will require more than tinkering at the margins of the economic system that has created them; instead, we need a radical, transformative vision for a new economy and society. We need a Green New Deal.

Change the system, not the climate

The central innovation of the Green New Deal is its recognition that the climate crisis and the inequality crisis are symptoms of the same illness. Crucially, the Green New Deal prescribes both a treatment for these symptoms and, in the course of remedying them, a cure for the illness itself. Generally (and correctly), this ‘illness’ is diagnosed as capitalism. However, this conception alone is not precise enough to be truly useful. Capitalism can operate according to different logics, some more destructive than others. To fully define our economic system requires us to identify three further features: globalisation, financialisation, and neoliberalism. The first two reflect the defining properties of the current economic arrangement, while the latter can be understood as the rules of the game.

In practice, this toxic triad has produced a host of problems. The tireless march of financialisation has meant that over the past several decades, on average the financial sector has experienced tremendous growth that far outpaces the economy as a whole. The productive industries of the so-called ‘real economy’ have also become financialised, with corporate profits increasingly going to shareholders and executives through financial instruments like share buybacks and dividends rather than to productive reinvestment, improved services or higher incomes for workers. Capital is free to move throughout the world, both crippling the productive in their search for quick returns, and public transport systems, driven by investment in domestic industry and manufacturing.

The Green New Deal provides a framework for rapid decarbonisation that is fundamentally rooted in social and economic justice. Though there are many variations of the Green New Deal in the public sphere – most notably, the resolution set forth by Rep. Alexandria Ocasio-Cortez in the United States – most share the same central principles. The framework put forward by Labour for a Green New Deal advocates the following:

• Large-scale, state-led investment in decarbonisation and green re-industrialisation including the complete decarbonisation of our energy and public transport systems, driven by investment in domestic industry and manufacturing.

• The provision of universal basic services including but not limited to health and social care, energy, education, and affordable, high-quality green housing.

• The radical expansion of public ownership and democratic control of industry and services to restore the management of public goods in the
public interest, rather than for profit.
• The prioritisation of the working class and global poor, with a central commitment to international solidarity and justice rooted in the recognition that those who will be hardest hit by the climate crisis have done the least to cause it. Domestically, this entails defending and expanding workers’ rights and their participation in the just transition. At the international level, this means not only transfers of finance and technology, but also support for migrants and measures that address the ‘right to stay’ for people on the front lines of climate change.

Each of the principles above are equally necessary to confronting the twin crises of inequality and climate change. Detractors of the Green New Deal often decry it as simply too broad and ambitious – a ‘pie in the sky’ collection of ideals that aims to solve far too wide an array of seemingly discrete problems. However, the reality is that none of these problems are distinct, and only a far-reaching and radical policy framework that provides a solution for all of them will be effective in solving any one of them for the long term. Every element of the framework comprises an essential part of the unifying strategy of the Green New Deal: the transformation of our economy and society through the radical redistribution of wealth and power to the many from the few.

With a Green New Deal, the decarbonisation of our economy will be done with and in support of workers, ensuring a just transition by investing in green domestic manufacturing and industry and assuring high quality jobs for all those who want one, particularly in affected carbon intensive industries.

Universal basic services will be similarly essential to a just transition, ensuring that every person is secure while offering education and re-training from cradle to grave to empower all communities to participate in the transformation of our economy. The provision of universal basic services is also intimately linked with the expansion of public ownership and democratic control of industry and services - a program that will be vital to delivering public services that represent the interests of those who need, use and contribute to them, rather than private profit.

The expansion of democratic ownership also represents a more fundamental task in the project of transforming the rules according to which our economy operates. As Mathew Lawrence of think tank Common Wealth notes, though neoliberalism manifests in many ways, at its core it is a project to dislocate the economy from the reach of democracy. Any effort to counter neoliberalism must therefore be founded in democratic ownership, tackling its agenda of privatisation and wealth extraction with democratic accountability, participatory collective decision-making, and shared public wealth.

Finally, a commitment to international justice and solidarity is foundational to the Green New Deal. The UK’s outsized contribution to both current and past global emissions, as well as its colonial history, mean a commitment to internationalism is not just a moral imperative – it is essential to the transformation of our economic system, which demands the dismantling of the structures of exploitation and extractivism that have contributed enormously to the UK’s wealth as a country.

Indeed, the Green New Deal recognises it is simply not enough to engage in a radical, redistributive project of decarbonisation domestically - not least because neither climate change nor mobile capital respects borders. Rather, neoliberal capitalism is a globalised system that has created a global crisis, and must therefore be countered with internationalist solutions.

This means that we must, therefore, call for direct redistribution through the transfer of finance, technology and resources. But it also means committing to actions that recognise the ‘right to stay’ for those who are and will continue to be most affected by climate change despite having done the least to cause it, as well as the radical redesign of our international institutions.

### Building a Better Future

The neoliberal project is driven by the need to protect the market from the demands of democracy, organised labour and equality. In its quest to do so, it has fostered wealth extraction, privatisation, immense inequality and cycles of punitive extractivism and consumption that are driving the natural world to its limits. Only a policy solution which offers a radical alternative to the underlying imperatives of our current economic system will be sufficient to counter the crises it has created. In offering a plan for decarbonisation founded in the empowerment of workers and the marginalised; in the shift from private wealth to public luxury; and in the restoration of democratic control and accountability, the Green New Deal provides the framework for doing so.

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Until recently, interest in electoral reform was reserved for political anoraks. Around election time, some party activists grumbled about the unfairness of the system, but there were few serious attempts to change it. In that sense, 2015 is the year when electoral reform went mainstream.

The 2015 General Election was the most disproportionate in British history. Three parties - UKIP, the Liberal Democrats and the Greens - received 24.5% of the vote but won only 1.5% of MPs. Meanwhile, the SNP won 56 MPs with less than 5% of votes. Millions of people felt unrepresented, and over half a million signed petitions calling for a voting system which ensures that seats match votes. In the aftermath of the election, Make Votes Matter formed to campaign single-mindedly for Proportional Representation (PR) in the House of Commons.

PR, put simply, is any system of electing MPs which ensures that votes broadly match seats. Under PR, if a political party gets 10% of votes, they should get approximately 10% of seats. This stands in stark contrast to the current First Past the Post (FPTP) system, in which each local area has a single MP but representation in Parliament is not closely linked to popular support.

So, what does this have to do with climate policy?

How our political system entrenches climate change

Since 2015, Make Votes Matter has expanded hugely, encompassing thousands of activists. It has committed itself to ensuring that PR is not a fringe issue, or one which interests only the politically engaged. To this end, it has drawn on the work of academics to argue that the electoral system has a huge impact on policy outcomes - linking PR to so-called ‘bread-and-butter’ issues. The campaign argues that switching to PR is key to taking action on crucial issues - including the climate crisis.

It is a bold claim, that PR would help us tackle climate change, but it is gaining traction amongst electoral reformers, backed up by political scientists. By looking at evidence from around the world, we can paint a picture of the radically different policies that voting systems produce.

Salomon Orellana of the University of Michigan compared ‘proportionality’ (how closely seats match votes) with the percentage change in CO2 emissions per capita between 1990 and 2007. He found that countries with a pure PR system could expect to have their percentage change in CO2 emissions decrease by 11% more than countries with voting systems like the UK’s. He also looked at the Environmental Performance Index (EPI), an independent scorecard which ranks countries on 24 indicators across ten issue categories covering environmental health and ecosystem vitality, and found that PR countries could expect a 4.5% higher EPI score. Similarly, University of California’s Arend Lijphart found that ‘consensus democracies’ – of which PR is a key feature – have an average 6% higher EPI scores than ‘majoritarian’ democracies².

Economist Vincenzo Verardi takes a different approach, looking at international agreements to tackle climate change³. He found that even when controlling for regime type, economic development and geographic region, countries which use PR are significantly more likely to be members of intergovernmental environmental organisations and treaties.

There is clear evidence of a correlation between a more proportional electoral system and better performance on climate issues - even when taking other variables into consideration. So what is driving this relationship?

One key factor in climate policy is thinking in the long-term. Because the effects of climate change may not be fully felt until it is too late, taking a long-term approach is vital. PR voting systems allow politicians to take this long-term view, rather than forcing through legislation along partisan lines and rapidly changing policy directions.

Lijphart argues that whilst single-party majority government leads to ‘fast’ decision making, this does not lead to ‘wise’ policies⁴. Without proper debate, countries with single-party governments tend to have poorly thought-through policies which frequently have to be reversed, because they have not been subject to proper scrutiny. LSE’s Patrick Dunleavy argues that this is exactly what happens in the UK, with politicians more interested in supporting their party than properly scrutinising legislation⁵. He argues that FPTP produces politicians who are incentivised to score points and governments that can dominate the legislature, rather than engage constructively with policy-making.

Building coalitions for sustainability

Coalitions can also make policy-making more consistent between different governments. In two-party systems the alternation of governments leads to frequent changes in policy direction. Once in power, single parties can easily reverse the policies of the previous government, leading to sharp changes in direction. Under PR, by contrast, policies must be backed by parties that around 50% of the population voted for, allowing them to be more deeply embedded and harder to reverse. A more consensual political system, using PR, means policies are more successful in the long-term. This means more sustained action on issues such as environmental regulation or biodiversity, where long-termism is key.
Finland, for example, has had uninterrupted multi-party government since 1972, with its PR system ensuring that parties have to work together to form a government. There, a number of innovative methods have been adopted to ensure long-termism: a termly ‘Government Report on the Future’, which is debated publicly; the government-funded Finnish Environment Institute; a national panel on climate change, comprised of independent experts; and the unique Parliamentary Committee on the Future.

Some political scientists go further, arguing that proportional electoral systems are better at representing climate issues in particular. Climate action can be categorised as being backed by ‘diffuse interests’ - with a large and disparate number of benefactors and contributors. The opponents of green policies, on the other hand, tend to be concentrated into particular groups, such as certain environmentally harmful industries or specific local areas. Because proportional electoral systems tend to lead to governments supported by a greater share of voters and political parties, policies which have broader support are more likely to be adopted than those which satisfy special interests. On the other hand, under FPTP with single-member districts, legislators are more likely to feel the pressures of lobbyists and ‘pork barrel politics’.

Promoting a diversity of voices for climate action

Across the UK as a whole, or any country, the majority of people would benefit from taking action on climate change. However, because the supporters of environmental policies are diffuse whilst the opponents are concentrated, there are many more constituencies where opposing environmental protection is a critical electoral issue, meaning more MPs with an incentive to oppose. Multi-member districts under PR mean a broader range of interests represented in the constituency, rather than candidates solely chasing the small number of swing voters who could win them the seat.

Political parties are acutely aware of this. By following the same logic as above, on a national scale, there are far more votes to be won in ‘marginal’ seats by pursuing policies which support local interests, even if those are damaging for the environment.

Of course, under any political system, climate action depends on public support, but there is also evidence that electoral systems can influence public attitudes. Far from solely being a way of choosing MPs, Orellana argues that electoral systems alter the flow of political information and can therefore influence public attitudes. He finds that countries with purely proportional systems could expect to have 9% higher support for environmental protections than those which use FPTP.

Proportional electoral systems lead to a broader range of parties contesting elections, leading to a broader political discourse. This allows controversial issues and policies to be put forward, becoming mainstream earlier than in countries with strict two-party systems. Although environmental protection tends to be well-supported, it may be too controversial for either party to support. Whilst there is no third party to argue the case for higher gas tax, the elite consensus reinforces public opinion and no alternative is discussed. The two main parties in the USA restrict political information and prevent public acceptance of the cost of protecting the environment.

Orellana points to the United States as an example. Democrats and Republicans frequently accuse each other of planning to raise taxes on gasoline, attacking the proposal despite the environmental cost of car use. Raising the gas tax is too controversial for either party to support. Whilst there is no third party to argue the case for higher gas tax, the elite consensus reinforces public opinion and no alternative is discussed. The two main parties in the USA restrict political information and prevent public acceptance of the cost of protecting the environment.

To put this into practice, consider MPs in the UK. Many MPs represent constituencies which include major employers in environmentally harmful industries. From an electoral perspective, these MPs are incentivised to support policies which protect these industries. Take the 2017 by-election in Copeland, triggered by the resignation of the local Labour MP. During the campaign, Conservative leaflets hammered Labour leader Jeremy Corbyn for being opposed to new nuclear power plants, because Copeland is heavily reliant on the nuclear industry. Whilst building new nuclear power plants may or may not be the right thing to do nationwide, opposition or perceived opposition to nuclear power can impose a heavy electoral cost at a local level. Labour learnt this lesson the hard way, with the Conservatives winning the seat.

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3 Vincenzo Verardi, “Comparative Politics and Environmental Commitments” (December 2004).
4 Patrick Dunleavy, “Policy Disasters: Explaining the UK’s Record”, Public Policy and Administration, Vol.10(2), (June 1995), pp. 52–70.
Construction is the process by which we modify the natural world into an environment more suited to our modern needs. We expect to live and work in comfortable buildings, be serviced by supermarkets and warehouses and have them all connected with a vast network of roads and power cables. Yet our demand for cities inevitably involves turning land once full of carbon absorbing trees into a heat-emitting jungle of steel and concrete.

The construction process, including materials used, accounts for over 5% of the UK’s carbon footprint. Even more critically, when you add in core operational energy needs such as heating, the built environment accounts for a considerable 22% of our countries’ emissions in CO2 equivalent. It’s important to appreciate that a new building designed today will continue to be used for many decades to come. If we want to live in a low-carbon future, then we must rethink the way we design and build today.

What is Sustainable Construction?

The most common way to rate the sustainability of buildings is with the Building Research Establishment Environmental Assessment Method (BREEAM). BREEAM rates buildings across criteria including energy efficiency, water use, embedded carbon in construction materials, pollution and waste and then rejects the building with a non-compliance or an approval from ‘pass’ to ‘outstanding’.

BREEAM certified new buildings are estimated to have an average carbon impact 22% lower than average, yet the scheme is optional for private developers, and many buildings are built non-compliant, leaving a legacy of higher emissions that will operate until the latter half of this century.

The UK Government’s Buying Standards for new-build construction requires an ‘Excellent’ or ‘Outstanding’ BREEAM rating on new buildings where public money is used, as well as a lower ‘Very Good’ rating on renovations. However, this requirement is caveated with the phrase ‘unless site constraints or project objectives means that this requirement conflicts with the obligation to achieve value for money’, a loophole that doubtless leads to further construction of unsustainable buildings.

In the mission to build more sustainable buildings, there are convenient-ly a plethora of emerging tools, materials and methods that offer hope.

Artificial Intelligence for Building Design

For example, the rapid advances of digital simulation have led to generative design, an iterative process that enables architects to test out thousands of design options. For example, let’s imagine the NHS requires a new hospital. The energy efficiency of the hospital will be determined by a long list of variables, from the thickness of the walls to the type of glass in the windows. A taller, thinner building may be more difficult to heat in winter, but easier to cool in summer. The direction in which the windows face related to the sun’s path through the sky will influence the heat absorbed through the day. Even the body heat of the people walking through the building will influence its energy efficiency. The list goes on. Each of these variables has a knock-on impact on the amount of fossil fuel needed to be burnt to heat or cool down the building through the year.

The design of the building also influences the amount of material required. The architect must consider how the different design options for the hospital will impact the amount of carbon-intensive steel, concrete and plastic needed. A human designer, spoilt for choice, can only simulate the impact of so many design choices before the pressures of time require a stamp to land on the final building design, and the hospital is constructed.

Bring in the computer. Emerging software can be trained to test thousands of design iterations, comparing each combination of variables to identify exactly which one has the lowest environmental impact over its lifetime. Instead of a final decision being made after comparing only a handful of design options, now the most sustainable option can be selected from a list of thousands of designs, each one unique because of a minor amendment in material selection or building shape.

Despite the potential of advanced generative design, it’s very rarely used. Setting up the software to perform the necessary calculations is a time and cost consuming exercise that is often shoved aside, and architects will only dedicate the staff and resources into doing it if their client, such as the NHS or a private developer, requests it.

Innovation in Constructability

A major barrier to green buildings is the materials themselves. Just one material, concrete, is responsible for around 5% of global carbon dioxide emissions. Think about that – for every twenty tonnes of carbon emitted by mankind, one tonne is from a single material type in the construction process.

While several companies have emerged with forms of concrete that are less carbon intensive, none have found widescale adoption, often due to an inability to scale up and compete with the mass-manufacturing tech-
niques of the established concrete manufacturers. In 2007 a spinoff from Imperial College London named Novacem developed a form of cement that absorbed carbon instead of emitting it, a solution that could have reduced carbon emissions by two billion tonnes a year. Once considered one of Britain’s most promising green firms it failed to get enough financial support to scale up, and instead became insolvent.

Meanwhile, the construction industry is facing one of its biggest disruptive technologies in its history. Prefabrication, otherwise known as modular construction, is the process of assembling large chunks of the building in factory environments and then connecting them together at the construction site, as opposed to attaching each individual component one at a time. It works particularly well when the building design includes lots of repeated elements, for example a hotel with dozens or even hundreds of the same room layout. It would also be well suited for school classrooms, hospital wards or even prison cells. In its most advanced form, entire rooms can be manufactured, even with furniture already installed, and the rooms simply slotted into place.

Prefabrication enables incredibly quick construction – a Chinese firm built a 57-storey skyscraper in just 19 days – but it’s also more environmentally friendly. In a factory environment there is less material waste and it’s easier to recycle what’s left. Less materials used means less greenhouse gases emitted. The great thing about prefabrication is that designs could feasibly be replicated across projects. The design of a school in the future may well consist of selecting pre-designed, super-sustainable modules of classrooms, gyms, halls and corridors and then having a computer optimize the layout of the modules to fit the land available.

**Dismantling the Barriers to Sustainable Construction**

Between innovation in design, materials and building methods, what’s stopping us from ensuring every new building is BREEAM ‘Excellent’, or even their highest accolade, ‘Outstanding’? Unfortunately, the construction sector operates on incredibly small profit margins and difficult cash flows. If just a handful of projects are delivered inefficiently, once major firms can suddenly be on the verge of bankruptcy – such as the collapse of Carillion last year, costing UK taxpayers £1.48bn.

This high level of operating risk leaves the construction sector with little wiggle room to invest in innovation or take additional risks on new technology or processes. In 2016 for example, construction related business invested just £211m in Research & Development, a seemingly large number until you consider that it accounts for just 0.9% of total UK business R&D, and compare it to £3.3bn in automotive industries and £1.9bn in aerospace.

So, what could the Government do? Beyond the obvious legislation to enforce incrementally higher standards of BREEAM across all new builds, we can also drive change directly through public procurement. In the period 2008-2017, just over 25% of the value of new work in UK construction was commissioned by the public sector, ranging from major national infrastructure projects to smaller projects funded by councils. In each of these contracts, the client can request higher BREEAM standards, the use of generative design, more sustainable materials or the use of prefabrication where appropriate. While this will likely cause a marginal increase in costs during the design and planning stage as industry learns to work with the new technologies, the medium and long term savings are undeniable – not just in reducing energy bills, but also through establishing a more efficient construction sector, and of course through reducing the cost of adapting to a warmer world. Once the construction sector has been encouraged to innovate through public sector procurement, the efficiencies would also spread to the rest of the sector.

Government should also explore ways in which best practice in design can be approached on a national scale, instead of design starting from scratch on each individual project. This would enable modular methods to be ramped up, with factories distributing assembly halls to new schools, hospitals and high-rise residential construction projects across the country. Again, this will require some short-term funding, but would have a major return on investment.

If our grandparents hadn’t invested in those black and white televisions of the past that only had one channel, then we wouldn’t have our cheap flat screen devices today. If our parents didn’t buy those brick-shaped mobile phones that didn’t even send texts, then we wouldn’t have smartphones in our pockets. Likewise, if we don’t demand more R&D spend in construction today, then we will burden ourselves and future generations with inefficient buildings and infrastructure for decades to come: and a zero-carbon Britain will be much further from reality.

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O
ver the past couple of years, the UK’s response to
climate change has rapidly risen up the public pol-
icy agenda. A ComRes poll following the Extinction
Rebellion protests in April found that 54% of British adults now
believe ‘climate change threatens our extinction as a species’.

In June, the Climate Change Act 2008 was amended to make the UK
the first G7 country to legislate for net zero emissions. More recently John
McDonnell has mooted an even more ambitious timeline – to cut the
deadline by two decades and aim for net zero emissions by 2030.

If we are to achieve these aims the UK needs a comprehensive strategy
to green our housing stock. Often it’s hard to think of ways that we as citi-
zens can make a contribution to reducing the country’s carbon emissions.
We use more energy efficient lightbulbs, turn the lights off when we leave
a room and recycle everything we can. These things often don’t feel like
they add up to much. However, making the UK’s homes more energy effi-
cient will make a big contribution to our targets. The challenge is to make
it a cost-effective and compelling choice for consumers to make.

Re-fitting Britain: our challenge

Although expensive for developers, building new homes to high
standards of energy efficiency is already possible, as Jack Parker points
out in his chapter on sustainable construction. Advancements in Modern
Methods of Construction mean that airtightness can be easily improved
and insulation can be designed into the build phase rather than having to
fill up a cavity wall down the line. If we were to go for the highest energy
efficiency standards – known as Passivhaus, which is more common in
other Northern European countries - energy use for heating new homes
could be reduced by around 90%.

We have of course already been down this road. Labour set out plans
for Zero Carbon Homes back in 2006. By progressively tightening the
Building Regulations, the plan was for all new-build homes to reach Level
6 of the Code for Sustainable Homes by 2016. The policy was later
adopted by the coalition government in 2011, and finally scrapped by the
Conservatives.

The decision taken by Cameron’s Conservative Government to scrap
the Zero Carbon Homes Standard is estimated to have cost the UK
around £2 billion in wasted energy. Labour has committed to reinstat-
ing the Standard as soon as possible. Yet in the intervening years, the
climate crisis has become far more pressing and it now makes sense to
look at how new homes could actually be carbon positive, i.e. by putting
more clean energy back into the grid through solar generation and other
sources, than they take out.

Following the net zero commitment, the Government has already
begun to legislate on new homes. Gas boilers will be banned from 2025,
requiring more homes to be connected to heat networks, or fitted with
heat pumps and hydrogen heating systems. This commitment alone is go-
ing to require a huge amount of consumer education and training in order
to move away from the mind-set of just turning on the boiler whenever we
feel a bit cold.

Even more challenging than raising standards on new-build, is the
question of how to improve the energy efficiency of the tens of millions
of homes we already have. The UK has one of the oldest stocks of housing
in the developed world and one of the lowest rates of housing replace-
ment, making it unsurprising that homes currently account for 15% of
our emissions. With changes needed to rebalance the whole economy
towards green and sustainable growth, the urgency of retrofitting our
homes is high up the agenda.

How to retrofit Britain’s homes

The Government has policy levers to be able to improve social housing
stock as shown by Labour’s introduction of the Decent Homes Standard in
2000. Through regulation, they have also been able to lean on landlords
to improve homes in the private rented sector, with plans to ratchet these
requirements up over the 2020s. However, owner-occupied homes ac-
count for around 64% of the total stock and will be more difficult to deal
with. To a large extent energy efficiency improvements will continue to happen
‘naturally’ with advancements in technology such as better boilers,
adoption of solar panels and the increased use of heat pumps and heat
networks. The 2017-18 English Housing Survey found that three quarters
of owner occupiers had installed at least one energy efficiency measure
in the last five years, with servicing or replacing a central heating boiler
or putting in loft insulation the most common measures.

Nevertheless the pace of energy efficiency improvements needs to
increase substantially, and current government policy has set some
aspirations for this. The 2018 Clean Growth Strategy sets an aspiration to
upgrade “as many homes as possible” to Energy Performance Certificate
(EPC) Band C by 2035. To put this into context, the Bank of England mod-
els that around 72% of the UK’s current housing stock is below a Band C.
Government estimates that the investment required for this will be as much
as £6.5 billion, but has recently put a mere £10 million into a challenge
fund for firms to explore innovative ways to retrofit homes. By contrast, a
future Labour Government plans to invest £2.3 billion per year to provide
households with the financial support to insulate their homes, and will aim
to upgrade 4 million homes to Band C within the first term. A Labour
Government motivated by the ambition to create a Green New Deal
could pursue innovative funding models for this, as Dan Marks outlines in

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Ideas for Climate Justice
his chapter on the Case for a National Offset Fund.

There is also an important role for mortgage lenders in this. The Green Finance Strategy proposes setting requirements for lenders to help households improve the energy performance of homes they lend to as one policy option. There is also talk about ‘green mortgages’, with an announcement of £5 million Green Home Finance Fund to fund innovative ways of incentivising borrowers to improve the energy efficiency of their home.

Much of this work will be supported by the Green Finance Institute, which was founded in June by the City of London Corporation and the Government, and is headed up by Dr Rhian-Mari Thomas, the former Global Head of Green Banking at Barclays. One of the difficulties is likely to be around getting consumers on board. Energy efficiency improvements do not come cheap, especially once the low hanging fruit are taken care of. If people are to be expected to spend thousands of pounds to retrofit their home there needs to be a real prospect of saving, either on the mortgage costs or energy bills, so we need to come up with ways to quantify these savings and make them feel real and achievable.

However, as much as we would like private capital to mobilise and bring about a cost effective way of retrofitting homes that works for business and the consumer, it is likely that most of the cost is still going to land on the public sector. In addition to Labour’s plans to subsidise households for improvements, we should also be thinking of using the public purse in more creative ways to incentivise people to retrofit their homes. Clearly the most important trigger points for incentivising changes would be when people move into a home or come to sell a property. This avoids disruption to the homeowner once they are settled in – though some schemes targeted towards people who are already planning to change a kitchen, for example, could also help.

Fortunately, the Treasury’s property taxes are charged at convenient times in the home buying and selling process: stamp duty when people first buy their home and capital gains tax on people selling buy-to-let properties and second homes. It would therefore seem sensible for a Labour Chancellor to consider how they can incentivise energy efficiency improvements through rebates on these taxes. This is something being discussed currently by the Sustainable Energy Authority of Ireland. Ireland is an interesting case study as they already have in place a system of energy credits on bills where a homeowner can prove they have made energy efficiency improvements. Such incentives could be transformational in turning energy efficiency from a nice thing to have, into something that makes financial sense for a consumer.

Of course, this has just been a snapshot of many of the things that need to be considered to bring about a wide scale revolution in energy efficiency. It is likely that none of the options on this menu will achieve much on its own, and that in reality we need all of them. It is helpful to think of them, as parts of the Labour Party have already, as part of a Green New Deal which will bring about a necessary transformation of the entire economy towards meeting the climate change challenges for generations ahead.

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Like it or not, pricing and financing are the lubricants of the economy. This is no different for the transition to a low carbon economy. However, attempts at creating pricing and financing structures to aid the transition – cap and trade systems, carbon offsetting, the climate development mechanism – have been disappointing. There are many reasons for the failures of these schemes which will not be rehearsed here. But what they have in common is that results have been poorest when regulatory oversight has been weak and a strong and reputable implementing agency lacking.

A carbon offset fund administered by a national development bank (NDB) would address both these issues in a way that is consistent with Labour values. It would be the engine of any green new deal.

A national carbon offset fund

In 2016 the Labour Party announced plans to establish a new national development bank (NDB) to rebuild the British economy. This new NDB should also administer a national offset fund, with the goal to achieve a transparent price to offset a unit of greenhouse gas emissions. The offset fund would invest in programmes to reduce greenhouse gas emissions from ongoing polluting activities and reduce greenhouse gas emissions already in the atmosphere. This would be somewhat analogous to the Bank of England inflation target, and be applied within a broader social and developmental mandate.

Once the mandate is established, the NDB-administered fund would invest in a portfolio of emissions-reducing schemes. This would then establish a single portfolio-level price for offsetting emissions. This could then be used as a policy instrument to achieve zero net emissions over the short-medium term. The portfolio would be developed with the goal of achieving a low price of carbon as well as the goals of the social and developmental mandate, incorporating these into the cost-benefit analysis of each transaction.

Investments could range from grants for insulation and efficient boilers in low income and social housing, to commercial loans for renewable energy projects. It could include investments in the electrification of rail lines, reforestation and rewilding initiatives in the United Kingdom and abroad, alongside lending to solar home system and mini-grid providers in the developing world. The inclusion of grants, concessional and commercial investments in the portfolio would allow the bank to balance the negative economic impact of a high emissions price against the substantial social and developmental benefits of grant and concessional investments.

The bank’s role implies a regulatory function, as well as a strong monitoring and evaluation component. This is because it would fall to the bank to decide what investments meet the criteria for offsetting and the quantitative emission reduction accounted for each transaction type. Investments would need to be monitored and evaluated to ensure expected emissions reductions were being achieved and the portfolio cost is adjusted to take these findings into account. These functions could be separated into a formal regulatory structure or kept as a benchmark similar to the International Finance Corporation Environmental and Social Performance Standards.

The average cost of offsetting across the portfolio would provide a national benchmark for carbon pricing. This would then form the basis of compulsory emissions offsetting which could be industry specific or general.

This would be particularly beneficial for problem industries such as aviation, where reducing emissions is very difficult and could have significant economic ramifications. Flights in and out of the UK could be required to pay a sum into the national fund equivalent to – or perhaps even greater than – the emissions from the flight. A more radical policy option would be compulsory offsetting for all fossil fuels used in the United Kingdom.

Why offsetting?

Combatting climate change is about reducing the concentration of greenhouse gases in the atmosphere. While a carbon tax might reduce demand for carbon intensive services, it fails to establish a mechanism linking greenhouse gas emissions to measures to reduce future emissions or to reduce the concentration of such gases in the atmosphere.

Similarly, the size of a carbon tax must be to some extent arbitrary, because there is no transparent or reliable way of pricing the offsetting of a unit of emissions. As a result, the tax is liable to be a blunt tool, impacting too heavily on some sectors and too lightly on others.

Offsetting creates a one-to-one relationship between emissions and emissions reductions, making the system better suited to facilitating zero net emissions targets if regulated effectively.

There are also economic benefits. In many cases, such as financing investments into renewable power plants and housing efficiency, effective offsetting converts a revenue flow into a low or zero emission capital stock. This increases productivity and dampens the cost of capital for emissions reducing programmes.
Why a national fund?

Carbon offsetting has failed for two reasons. Firstly, regulation has been weak. This has resulted in cowboy schemes accepting money for projects which do not materialise. Even where projects do exist, without regulation, it has been almost impossible to prove additionality. Many projects might have gone ahead without funds from offsetting. Furthermore, opacity in the market means that there is no clear price for offsetting. This encourages a race to the bottom.

Secondly, existing offset companies are too small to implement strong offset programmes. Companies frequently attempt to build up a pipeline of small projects with partners and then raise money through offset investments to finance them. This limits the scale and impact of the projects that offset investments can have.

A national approach resolves these issues. As a national institution with a public mandate, the fund’s portfolio and investments would be transparent and managed in the public interest. This would increase the chances of public buy-in. As the Gilet Jaune movement in France has demonstrated - given its origins in fuel levy – this is critically important.

The NDB would also have the political and financial clout to lead the roll out large-scale programmes with public and private partners. It would be able to support, or in some cases even implement, government policies such as insulation and efficient boiler programmes (see Charlie Blagbrough’s article in this pamphlet for more on what an ambitious Labour retrofitting programme could look like). It would also have the technical wherewithal to manage a large and diverse portfolio.

The ability to give a mandate to the NDB would also likely make the offset programme more durable. A change of government from Labour to the Conservatives might result in a lower carbon price with less focus on social or developmental goals, as a Conservative government sought to reduce the cost burden on industry. But if the fund was effective and embedded in the economy, it would not be scrapped. It would continue to fulfil its core function of ensuring that the concentration of carbon emissions in the atmosphere does not increase, albeit with a reduced social mandate.

Offset efficiency

Another issue to consider is the efficiency of investments made to reduce emissions. Are the lowest hanging fruit being targeted and are investments delivering the most benefit? A national offset fund would be much more efficient than the current system, in particular because of much greater economies of scale and better regulation.

It is possible that efficiency could be further increased by establishing several large-scale and highly regulated funds, which would compete to offer the lowest price to offsetting industries while achieving regulated social outcomes.

There might be benefits in having a variety of regulated funds – similar to the healthcare insurance system in Germany – which greenhouse gas emitting companies would be required to choose between. In this scenario, the NDB would still play a key role in setting a benchmark for other funds and potentially in a regulatory capacity.

The risk of a system with multiple funds is that social and development goals are diluted, although the quality of healthcare has not been compromised by having nearly 170 providers to choose from in Germany. Having multiple funds could bring benefits through putting pressure on all providers to invest efficiently and effectively.

In conclusion: A catalytic force

An NDB-administered offset fund would be the catalytic engine of any green new deal. It would provide a transparent and reputable means of calibrating and recycling emissions levies on greenhouse gas emitters into programmes which would assist the poorest in adjusting to the demands of a low carbon economy. At the same time, it would drive deep infrastructural change to reduce emissions structurally in the economy.

Through the fund, the NDB could manage national programmes such as insulating homes and introducing efficient boilers. It could implement international programmes by lending to companies providing solar home systems, mini-grids and clean cooking stoves to rural communities in developing countries. It could provide grants for rewilding projects in the United Kingdom and reforestation programmes abroad.

At the same time, the NDB could help fund the infrastructure needed for the energy transition, providing commercial loans or equity to large-scale projects such as railway electrification and renewable power projects. It could lend to large industrial companies to upgrade their equipment to become more efficient. It could also anchor a wider offsetting industry where regulated funds use the price and performance of the national fund as a benchmark.

By providing a clear mechanism for recycling carbon taxes into emissions reductions, the fund would ultimately enable the government to require net zero emissions in a way that is both fair and effective.

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Many readers will be familiar with the recent Tory Government cuts to subsidies for renewable energy. These have slashed the potential financial gain from selling renewable energy back to the Grid. In April 2019, the closure of key renewable energy support schemes, despite widespread opposition, led to a staggering 94% fall in household solar installations in just one month as the investment potential for solar all but vanished.

Granted, we are (at the time of writing) arguably in the lowest ebb for financial support for renewables, as the Government’s replacement scheme does not begin operation until January 2020. However, it is doubtful that the proposed Smart Export Guarantee (SEG) will return the household solar market to its previous buoyant position.

The impact of these changes on household renewable installations is already clear. However, a sector of the energy market which is likely to be impacted just as much as, if not more than, household solar installations is the community energy sector. Community energy schemes are locally owned and managed energy generation and support schemes. These usually involve a group of local people collectively investing in installing solar panels on community buildings such as schools. This provides that building with cheap energy and communities can use the proceeds from selling the energy back to the Grid to fund community projects and recoup their initial investments.

Power by the People

According to Community Energy England, “By placing democratic control, shared benefits and active participation at the centre of project delivery, community energy can create a foundation for the significant infrastructural and cultural change we need to reduce the impact of climate change and increase our energy security. Where successful, community energy has the potential to draw people in, not just as consumers but also as active participants, or partners, in a process of change. Partners because people share in the benefits, have some say in how things happen, are actively involved and feel a connection with the outcomes.”

Even before this year’s cuts, the community energy sector has faced significant barriers to expansion. This has included gradual reductions to subsidies preceding the complete closure of the support schemes this year and a restrictive planning environment presented by national Government and some local authorities.

And yet, between 2008 and 2016, more than 5,000 community energy groups sprung up around the UK, providing over 60MW of renewable generating capacity, creating jobs, and contributing over £23 million to community benefit funds. Many community energy schemes also partner with organisations such as Citizens’ Advice to provide energy saving advice to vulnerable groups in the community, providing vital on-the-ground insight and tackling fuel poverty. Altogether, it is estimated that community-owned renewable energy projects deliver 12 to 13 more times the community value for local areas than 100% privately owned schemes. At its best, community energy is a perfect example of socialist values transforming the energy sector and should be celebrated.

The community energy sector is clearly resilient and adaptable, but nonetheless is not achieving its full potential and faces significant challenges. So what needs to happen to reinvigorate the sector? In February of this year, leading environment thinktank Green Alliance launched a ‘Manifesto for Community Energy,’ featuring four key recommendations for policymakers at all levels of Government:

- Open new routes to market for community energy schemes
- Design local energy markets that fully value community energy
- Stimulate local innovation with more trials
- Support clean energy ownership through community enterprise.

The underlying principle at the heart of these recommendations is that yes, money matters, but a supportive regulatory environment which enables innovation is even more fundamental.

Learning from community energy in Germany

For examples of such regulatory environments we can, as is so often the case, look to our European neighbours. Denmark and Germany are widely thought of as world-leaders in community energy – over a longstanding period in the case of Denmark and more recently in Germany. In both these instances, the stability of Government support for both renewable energy and decentralised solutions has been key in encouraging investment and innovation in community energy by local groups. This is reflected in both the scale and ambition seen. For instance, Middelgrunden Wind Turbine Co-operative, located 3km from Copenhagen harbour, generates a staggering 3% of the capital’s electricity needs. This project, operational since 2001, is 50% owned by 10,000 local community energy members and 50% by Copenhagen Energy, the local, municipal-owned energy supplier. The long-term financial sustainability of Middelgrunden demonstrates the vital importance of regulatory stability. This is in contrast to the UK where over 42% of community energy organisations have a stalled or failed project.

It is clear that regulatory changes to support community energy are needed now more than ever. In particular, the sector is in desperate need of policy support to ensure that community energy has a role to play in the energy transition.
need of secure, long-term finance models which local authorities are well placed to provide, perhaps via municipal energy companies. In London, the Mayor has attempted to provide this through the London Community Energy Fund. This fund provides grants of up to £15,000 for community energy projects in the capital.

However, local authorities in the UK do not have the funding to invest the capital needed for projects at scale. There is potential for social value investors to plug this gap, with local authorities providing the vetting and certainty needed for these bodies to have the confidence to invest in community groups.

Expertise is also a barrier for many community energy groups, often run by volunteers. Again, local authorities will have the skills and expertise to navigate complex regulatory systems. They could pass these on to community energy groups through pro-bono capacity building programmes.

In Germany, the federal structure means that state governments are empowered to influence their energy mix through control over planning rules and the provision of local energy supply, including the prioritisation of renewables. There has also been a strong push for local municipalities to become energy self-sufficient, and many have been engaged in the supply, production and distribution of energy through public or municipal utilities.

One such example of proactive, supportive local partnerships can be found in the Jühnde ‘bioenergy village’, where 70% of the heating demand for the 750 residents is supplied by a biogas plant. The development of this plant was a joint project between local people and the University of Göttingen.

**Unleashing community energy in the UK**

In England access to suitable development sites is an ongoing problem for community energy organisations, which often lack land or assets for development. Constraints related to site identification, as well as the added complexity and time of negotiating agreements and leases, were reported as barriers by 30% of respondents to Community Energy England’s survey.

The planning system in the UK has not been favourable for community energy. It could provide much more support for community energy, particularly as the housing crisis is forcing large-scale developments in many UK cities and towns.

As the UK heads towards a decarbonised energy system, there is a risk that this will entrench centralised ownership of energy generation. Local people should be given first preference in the ownership of any renewable energy projects established in their area, forcing developers to partner with local people if they want to set up renewable energy projects. Further, planning systems must be more flexible in allowing innovative ownership models to be trialled locally.

The future of community energy in the UK remains at risk as financial support from Government has been decimated. However, the sector has already been proven to be resilient and adaptable to financial challenge. Regulatory and planning changes at the local level could give community energy greater opportunities to innovate and thrive despite the financial challenges it faces. That way, it could continue to provide valuable local services for some of the most vulnerable in society.

The following recommendations could help realise the potential of community energy in the UK:

1. Local Authorities should proactively partner with community energy groups and social value investors to provide long-term sustainable finance and expertise support.
2. Planning regulations must be reformed to enable installation of community energy and give local people ‘first dibs’ on ownership of renewable energy generation in their area.

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The transition to low carbon energy will provide many benefits to our society, from increased employment in rural areas to improvements in air quality and public health. However, while renewable energy technologies have been specifically designed with a focus on sustainability, conventional nuclear power was not. The expansion of the UK’s nuclear generating capacity may intensify a number of social and environmental challenges inherent to nuclear. Solving these will be essential if nuclear is to play a greater role in the UK’s energy sector.

Achieving the UK’s CO2 emission reduction target will require a two-fold increase in our low-carbon generating capacity between 2018 and 2035. The graph above represents the Government’s Clean Growth Strategy, which aims to achieve this goal gradually by displacing natural gas with renewables and nuclear power. Labour have made similar but more ambitious commitments, and are also hoping to use renewables in tandem with nuclear power to solve the energy trilemma of sustainability, affordability and security.

Reforming the economics of nuclear energy

One major challenge of nuclear is the financing of new power station projects. Once complete, the operating costs of a modern nuclear power station are comparatively low, but its construction is a lengthy and capital intensive project, with substantial financial risks that drive up the costs of nuclear new build. All of the nuclear power stations operating in the UK have been directly financed by Government, and only one new build project, Hinkley Point C (HPC), has commenced construction since the liberalisation of the UK’s energy markets, which happened as part of a sweeping free-market agenda outlined in Adrienne Buller’s chapter on a liberalisation of the UK’s energy markets, which happened as part of a sweeping free-market agenda outlined in Adrienne Buller’s chapter on a Green New Deal in these pages.

HPC will provide enough low carbon energy to power 6 million homes, but the strike price and terms of the deal agreed between the Government and HPCs constructor, NNB Generation Company (HPC) Ltd, were deeply unfair to the public. It is forecast that consumers could be forced to pay up to £30 billion in top-up payments to NNGB over the next 35 years, the effects of which will be felt most by the poorest members of our society. A novel approach to the financing of new build projects is needed - one that safeguards the financial interests of consumers and allows the economic potential of low-carbon nuclear power to be realised.

The Realised Asset Base (RAB) model is a promising solution. Under RAB, specific low probability but high impact financial risks would be underwritten by Government. These risks may include disruption to debt markets, political risks, and ‘acts of god’ such as earthquakes and hurricanes. It is hoped that the mitigation of these risks would attract sufficient low-cost capital to finance new build projects. RAB would also provide protection to consumers through the creation of an economic regulator, who would be charged with securing favourable energy prices from energy companies. RAB was successfully used in the UK to raise capital for the Thames Tideway Tunnel project and a Government consultation on the RAB model for new nuclear projects is presently underway.

The Mankala model is also of interest. Mankala has been used extensively for nuclear energy investments in Finland. Under it, new build projects are undertaken by shared-ownership cooperatives of utility companies and industrial electricity users. This shared ownership model distributes the construction risks and improves the confidence of investors, lowering the financial costs of new build projects. Once complete, the cooperative sells the electricity produced to its shareholders at cost price to be sold on to consumers. The adoption of a Mankala-like model could substantially improve the economic case of nuclear power and assist the UK in achieving its decarbonisation targets.

Safety first

The safe disposal of radioactive waste is another fundamental challenge that must be addressed. A typical conventional nuclear power station generates electricity for 25-35 years, but it produces harmful radioactive waste that poses a hazard to people and the environment for tens of thousands of years. This is a major caveat of nuclear power that challenges its sustainability claims and places moral obligations on our Government. We must ensure that these wastes are disposed of with an abundance of care, and in a way that places no economic, social or environmental burdens on future generations.

The UK’s policy for disposing of these wastes mirrors that of Sweden, Canada, Finland and the U.S. who will bury their high level waste deep underground in specially-engineered geological disposal facilities (GDF). However, attempts to find a community willing to host a GDF in the UK have been ongoing since 1983 without success. A study on public perceptions of nuclear waste disposal found that while most people appreciate the need for a GDF they would strongly oppose the construction of one in their community. Understandably, public concerns are focused on public health, the environment, and the impact on local house prices.

The UK has a significant inventory of radioactive waste from decades of civil nuclear power generation and the development of our nuclear deterrent. Finding a community willing to host a disposal facility for these wastes will be a significant challenge, and one which will need to be
solved if nuclear power is to play a greater role in our society. Its location must be chosen in a fair and transparent fashion, and the concerns of the host community must be addressed through extensive public consultation. Overcoming the difficult hurdle of institutional mistrust will require the effective communication of peer-reviewed, independent research, and closer collaboration between Government and the scientific community.

Low carbon nuclear power has great potential to help the UK achieve its decarbonisation goals. Implemented with a focus on consumer protection by a Labour Government, it could provide our country with much needed energy security in a future without fossil fuels. But the social and environmental challenges it brings cannot be ignored, and if nuclear is to play a greater role in our society we will have work together to find their solutions.

**Recommendations**

- A Government review is required to determine the most appropriate model for sustainably financing nuclear new build in the UK. This review should be undertaken as part of a wider ‘root and branch’ strategic review of the UK’s nuclear power strategy that focuses on the economic arguments for/against nuclear power, and considers strategic benefits and future technologies.
- Increase Government R&D investment in solving the sustainability challenges of nuclear power. This should be guided by the review mentioned above, which should consider potential benefits provided by small modular reactors (SMRs), partitioning and transmutation (P&T) and fusion power.
- Ensure that the siting of the UK’s GDF is undertaken in a transparent, fair, and democratic way. The concerns of candidate host communities must be carefully listened to throughout the siting process, and they should be addressed through the effective communication of independent, peer reviewed research.
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tectric cars, though much discussed, are not the future of
urban transport. They’re a key piece of the wider green
transport puzzle, sure, but cycling and public transport
are the real keystones of a greener future for our cities. Cycling
takes up less road space than cars, emits fewer greenhouse
gases than cars or buses, and literally makes us healthier as
we cycle, let alone the broader impact of fewer exhaust pipes
pumping out poison into our cities. There are three low-hang-
ing fruit interventions, Cycle Parking, Filtering Rat-Runs, and
Quietways, that can make an outsized difference to making our
cities safer, quicker and cleaner.

Cycling for greener, healthier cities

The benefits of cycling can be broken down into four broad categories,
improved Air Quality, reduced emissions slowing Climate Change, better
use of space lowering Congestion, and the Health benefits of the physical
activity. These obviously intersect, with high congestion being highly dam-
aging to air quality, and with the toxic and greenhouse pollutants being
tightly interwoven, but they impact in different ways.

Road transport in Britain contributes a full third of nitrogen oxides
and a quarter of particulate matter, the main pollutants that damage our
lungs1. 40,000 people a year have their lives cut short by air pollution,
slowly poisoned by our streets, and traffic pollution is by far and away
the biggest cause of that, the toxic gases trapped in our cars and on
our streets and pavements2. Beyond the thousands of deaths and the
14% of asthmatic children that are directly caused by air pollution, some
estimates put the economic impact at between £4.5 and £10.6 billion a
year lost to the economy from poor urban air quality3.

A European Cycling Federation study found that, even accounting for
the emissions of manufacturing the bike and growing the extra calories
consumed by cyclists, cycling emitted 21 g/km of CO2, compared to
271 g/km for cars and even 101 g/km for bus passengers4. Personal cars
contribute about an eighth of British CO2 emissions, and most journeys
are short, with only a tenth of British drivers covering more than 100 miles
a week in their cars5. In our cities this will be even lower, and a vast num-
er of car trips could be replaced with cycling, slashing by nearly 95%
the CO2 emitted for each trip.

Congestion is hugely detrimental to our cities, and the time spent idling
in traffic is time spent emitting greenhouse gases and other pollutants, but
without even getting anywhere for it. Cars clog up our streets and poison
our air, while wasting both the time of drivers and space on our roads.
Last year, congestion cost the British economy £8 billion in wasted time,
pollution and accidents, with the average driver on the North Circular in
London wasting 61 hours in traffic, and this is far from being just London’s
problem6. While five of the top ten most congested roads are in London,
the other five are in Manchester, Birmingham and Leeds, and very few
commuters in the country are lucky enough to not face traffic7. One lane
can carry about 2,000 people an hour in cars, or 10,000 people an
hour on bikes, a fivefold difference in people getting to where they need

to be.

While cyclists do sometimes get injured, the health benefits outweigh
the risks from injury by somewhere between 13:1 and 415:1, although
the most common figure is 20:18. That’s around 20 years of life gained
through the benefits of the exercise for every year of life lost to injury, not
a difficult choice to weigh up. Cycling for children is even more beneficial,
with girls aged 10-16 who cycle to school seven times as likely to meet
recommended fitness levels as their non-cycling peers9. With 37,000
premature deaths a year from inactivity, there’s a clear benefit to getting
as many people as possible on their bikes and cycling, to prevent what is
predicted to be a £10 billion annual bill for the NHS from obesity.

Unleashing pedal power

So, what can we actually do to make our cities healthier, cleaner
and faster by getting people on their bikes? The ball here is in local
government’s court. Councils have the control over roads to put in the
infrastructure to make cycling safer and more appealing, and it is safety
that’s the single biggest pull factor. Cycling in cities is scary, particularly
to non-cyclists, people do die from being on the roads without a ton of
steel wrapped around them, and yet the evidence from places like the
Netherlands is that the more people who cycle, the fewer of them get hurt
or killed10.

Education about cycling safety is a key part of the story, but it’s a
broader and relatively amorphous issue that can seem huge, so how do
we convince everyone that cycling is safe and normal? Well, by making
it safe. There are a few simple interventions that can be made that can
make a huge difference and make our cities safer, quicker and cleaner.
1. Cycle Parking
2. Filtering Rat-Runs
3. Quietways
Cycle Parking is probably the simplest and most self-explanatory
of these: people need to be able to park their bikes at either end of
their journey. A ‘Sheffield’ bike stand, the classic squared arch in the
pavement, is the best option, at about £100 to install for two bikes,
and allowing people to lock both their frame and wheels to it for extra
Cycle Parking is also not just a council issue, any employers, schools, hospitals, supermarkets or anywhere else that provides parking can install cycle parking and get a more efficient use of their space than car parking slots. At home is slightly more complicated, as people tend to live more spread out than they work, and where there is the density, in flats, there often aren’t enough lamp posts and fences for everyone to lock their bikes up, or lug them up several flights of stairs to drip rainwater in the living room.

One solution to this is installing Secure Cycle Hangars in parking spaces, as Lambeth for example has done around the borough. The cost of installing a cycle hangar is competitive with installing a car parking space, and far more efficient, taking six bikes rather than a single car.12

Filtering Rat-Runs is a great way of managing traffic and making streets safer for residents while also encouraging cycling, all at the cost of a few bollards. There are plenty of residential streets, up and down the country, where most of the traffic is from people trying to dodge the main road by rocketing up and down what should by rights be quiet streets, safe for the residents. Simply by putting bollards, planters or any other kind of more aesthetically pleasing street furniture in the way of this traffic, you can quiet the street to a far safer level. These streets aren’t cul-de-sacs, pedestrians and cyclists can still pass through, and residents can still drive to and from their own homes, but there is no longer any through traffic. A filtered street is quieter and more liveable, with the marginal inconvenience to the residents more than made up for by the quieter safer street, a place where children can play without the risk of being hit by a speeding commuter.

Waltham Forest used this intervention to remove over half the traffic on the chosen 12 streets, 11,000 vehicles a day, and even when counting the major roads that the traffic was diverted onto, there was a 16% overall fall in traffic.13 That total fall figure is particularly notable, as it shows that this doesn’t just move traffic around, but actively reduces car journeys in favour of more sustainable modes of transport.

Quietways, to use TfL’s terminology, are at their core almost nothing but signage. The concept is simple enough, signposted quiet routes that are suitable for cycling, so there’s almost nothing cheaper that can have as positive an impact. The best ones in London are the ones that go through Boroughs that are interested of course, because they mesh very well with other simple interventions like filtering Rat-Runs and lowering speed-limits, but just by signposting existing routes that are already pretty good to cycle on, the psychological barrier to getting on a bike and on the road is reduced. That’s the key to the concept, that they’re quiet and feel safe. Linking up the quiet bits with each other is a perfect place to bring in the filtered Rat-Runs, and can have huge impacts, one stretch of Quietway 1 saw a 188% rise in cycle traffic over four years, a near tripling from really simple interventions.

These three interventions are all cheap, proven to be effective, and the biggest barrier to any of them is getting residents and cautious councillors on board with going after the low-hanging fruit of making our cities safer, quicker and cleaner. All it takes is signposts, bollards and bike stands and we can make a meaningful difference.
Ideas for Nature-Based Solutions

A Call for a National Afforestation Programme
Isaac Turner

The British public values forests for wildlife, recreation, exercise, relaxation, climate change mitigation and habitation. At present, forests and woodlands cover just 13% of the UK’s land area, with their density only varying slightly from location to location. In Northern Ireland, tree cover stands at a low of 8%, while the highest percentage is found in Scotland, at 19%. This figure is much lower than most other Western European countries, like France and Germany, where forest cover is above 30%, and has increased since 1990.

Why do we want more forests in the UK?

Unlike many modern instances of environmental degradation, British deforestation was a particularly early tragedy of the commons. Following land clearances, the Domesday Book estimates that only 15% of England was covered in woodland by the early Middle Ages. This means that we cannot blame the paucity of trees on modern practices alone, particularly when 88% of the public are receptive to ‘a lot more’ tree-planting in the future. In the UK, the roots of such radical support for increasing forestry are far spread. Culturally, forests have been long-celebrated in our national mythology. Beyond the fame of Sherwood Forest, tales pertain to legends such as Fionn mac Cumhaill, the giant-hunter of Slieve Gullion in Armagh, or skirmishes between Yorkists and Lancastrians at Gwydyr Forest in Conwy.

More pragmatically, forests also stimulate economic growth, proving crucial to the sustained existence of geographically isolated communities. Overall, 61% of the UK’s population has visited a forest in the past few years. In line with such sustained support for forests, this chapter proposes that a National Afforestation Programme should be introduced, which delivers multiple benefits to a wider cross-section of society while addressing the needs of existing stakeholders.

As with any significant change to our environment, public framing is a crucial consideration. In particular, the British agricultural sector is a powerful stakeholder, with 63% of our land currently being used for some form of farming. Therefore, if afforestation is to occur on a greater scale, we need a means of bringing more farmers on board. Enter multifunctionality, which is about the productive joint-management of agriculture and the environment. A multifunctional landscape can be seen to not just support farm productivity, but also additional environmental, social and economic outputs. Many of these outputs are non-commodified, with some form of publicness or public benefit. An example would be a parcel of semi-afforested land which produces the commodified product of cereal crops, while also providing recreational opportunities for visitors, regulating rainfall run-off and sequestering carbon (amongst many other benefits) as non-commodified outputs.

A simple way of approaching multifunctionality in a British tree-planting context is to ask: how might we derive the greatest level of socio-economic and environmental utility from less intensively farmed land? In approaching farm management from this perspective, we ensure that our land provides a range of ecosystem services, defined as ‘the direct and indirect contributions of ecosystems to human well-being’. In the long-run, this has been shown to benefit farmers (i.e. through substituted income sources) as much as the public.

Case study: afforestation in the Yorkshire Dales National Park

In the Yorkshire Dales, for instance, pastoral farming (the breeding of livestock such as sheep and cows for their products) is a practice which is particularly crucial to local economies. The national park’s logo features the head of a Swaledale ram, and the Dales has a particularly high number of private landowners compared to other national parks, while also having proportionally lower rates of tree coverage.

Despite this, in recent years, its National Park Authority has produced both a Dales Woodlands Strategy and an updated National Park Management Plan, both of which support woodland increases and the active management of ancient semi-natural woodlands. Almost 1,000 hectares of new native woodland has been planted since 2002, almost all of which is on privately-owned land. Charities and civil society partnerships have been an active part of this, with the Yorkshire Dales Millennium Trust planting 1.5 million broadleaf trees since 1996. The Dales Woodland Strategy has had benefits for biodiversity, biosecurity, timber extraction, flood-risk management, public access, recreation and reductions in erosion runoff. Perhaps most relevantly, given current events, it has also resulted in a significant increase in carbon sequestration. The Dales is just one case study, but it goes to show that centralised authorities can work co-operatively with different land owners (including farmers) in delivering afforestation.

Building a National Afforestation Programme

The time has come, therefore, for future afforestation practices to be more ambitious, in speeding up tree planting in all areas of the UK, and convincing land-owners and planning authorities alike of the benefits of multifunctional landscapes. The positive impact of forestry has been noted in Westminster, with a new £10m fund to plant 130,000 urban trees announced by Defra earlier this year; and beyond Westminster, as
plans are underway to create a new Northern Forest of 50 million trees. Furthermore, in the long term, evidence has shown that investment in tree planting reaps dividends for the UK. With this promising context in mind, the recommendations below outline potential next steps for a National Afforestation Programme.

1. Prioritise tree planting in areas with high levels of air pollution, urbanisation and/or low-income residents. Trees have proven health and well-being benefits, and this would reduce the burden on local health-care providers, increase prosperity and play a central role in environmental approaches to social justice.

2. Provide stronger statutory obligations for National Park Authorities and councils to protect, preserve and enhance the variety and number of trees across the UK. This would provide a legal justification for interventions into unsustainable planning and development practices.

3. Introduce consultation-based Regional Tree Targets, commensurate with ongoing revisions to carbon targets from the UK Committee on Climate Change’s (CCC) recommendations. The CCC currently argue that, across the UK, this should be set at 30,000 hectares of woodland annually. Defra should be directly accountable for the implementation of annually reviewed targets, to be set according to regional capacities in line with feasibility assessments.

4. Establish regional afforestation consultations to ensure that tree-planting is context-appropriate and leads to maximum local benefits. This is particularly relevant to areas where afforestation poses a challenge to established cultural landscapes and practices. It would also lead to the sensitive development of local objectives in line with pre-existing NGO and/or community schemes for afforestation.

5. Incentivise new ‘payment for ecosystem services’ markets to encourage private monetary payments between non-government actors for tree-planting. As a simple illustration, farmers may be remunerated by water companies for planting trees which reduce quality control costs further downstream, due to less surface run-off and erosion. For instance, in West Cumbria, United Utilities have been providing payments to landowners under a Water Supply Scheme, intended to offset the loss of trees in surrounding valleys. These markets may be achieved through policy instruments focusing on service provision (supply), policy drivers, market-side payments (demand) and/or new forms of governance and organisational arrangements.

6. Offer a more diversified portfolio of tree-planting options under future national environmental land management schemes, to incentivise farmers and private land owners to plant trees on their properties. After the EU Exit, there will be an opportunity to re-establish where agricultural payments are directed. This may enable greater flexibility (and hopefully funding) for afforestation than might be achieved with current policy instruments. In this sense, it would be prudent to use instruments such as Defra’s woodland creation fund and payments made under the Common Agricultural Policy framework as benchmarks for more ambitious policy developments in the future. Here, the idea of ‘public money for public goods’ should be utilised as a guiding principle.

7. Continue to utilise landscape-scale approaches to integrate tree-planting with complementary approaches to land use, such as the Environment Agency’s flood protection schemes and Natural England’s long-term action on ecological restoration. This ensures that a more holistic framework can be used to deliver the multifunctional benefits of afforestation.

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4. Ibid.
5. Ibid.
6. DEFRA, 2015, Agriculture in the United Kingdom.
17. For the economics of afforestation, see: Zhang, D. Economics of Reforestation and Afforestation. (Oxford University Press, 2017)
Breaking Down our Bog-Standard Peatland

Adam Barnett

The mention of peat doesn’t usually inspire a great deal of enthusiasm. Depictions of peat-rich landscapes such as bogs, mires and moors are most commonly represented in popular culture as desolate backdrops for personal struggles, such as in Wuthering Heights – if they are indeed represented at all.

This is in contrast with the positive language and iconic imagery of the wider climate and environment movement – which involves countless depictions of exciting and mysterious ancient rainforests, mangrove swamps and untouched meadows. Despite peatland being on many people’s doorsteps it is often much more ‘out of sight, out of mind’ in comparison to other landscapes that exist thousands more miles away. In reality, however, peat is a thriving, biodiverse and carbon-rich habitat whose correct management is crucial for reaching net zero emissions by 2050 and mitigating the impact of the twin environment and climate crises.

Carbon sinks and tipping points

‘Peat’ is an accumulation of decaying vegetation and organic matter, such as moss and shrubs, occurring as areas of peatland, bogs, mires and mires and taking millennia to reach a depth of several meters. Peat currently covers 3% of land worldwide but manages to hold 30% of all land-based carbon - twice the amount of carbon stored in the world’s forests. The UK has about 13% of the world’s peat, which covers 10% of the UK’s total land area and stores an estimated 3 billion tons of carbon. This is equivalent to 3 years of the UK’s total carbon emissions!

When properly managed, peat is one of the most effective carbon sinks in the world. The stagnant water causes the vegetation to partially break down, trapping the carbon under the ground. As the amount of peat grows additional vegetation becomes trapped. Unlike woodland, however, which becomes saturated with carbon (i.e. no more carbon is able to be absorbed) when the trees reach maturity, peatland can continue to absorb additional carbon indefinitely.

However, when peat isn’t properly managed problems start to arise. The UK’s peatland is being assaulted by a variety of factors. These include draining (to allow for the industrial extraction of peat, and to enable conversion into agricultural land) and burning as part of the intensive management by estates so that the land can be used for grouse shooting. Commercial tree planting, overgrazing, and developments (such as housing) are all also rife on peatland. These processes disrupt the peatlands’ natural functioning by causing the peat to dry out, which enables the trapped vegetation to complete its decomposition. This, in turn, produces carbon which is then emitted into the atmosphere. 80% of the UK’s peat is currently classed as damaged, and is estimated to be currently releasing 3.7 million tonnes of carbon every year - equivalent to the emissions of 660,000 UK households. This is due to the decades (if not centuries) of abuse and mismanagement of our peat finally taking its toll - converting these landscapes from carbon sinks into emission sources. A useful illustration of this degradation is Holme Fen in Cambridgeshire. In 1852 an iron post was driven into the peat and its top cut at the level of the post's surface. Today the post rises 4 meters above the ground. To make matters worse, damaged peat increases both the risk of local flooding and the possibility of wildfires, as well as reducing water quality – and the rate of the peat degradation which we have already been put into motion will only increase as climate change ensures that the weather stays hotter for longer.

But fear not - a different future for our peat is possible! Through a mixture of immediate policy changes and longer-term strategies, the UK can not only restore its functioning as an indefinitely increasing carbon sink, but also provide wildlife rich habitats, mitigate the climate crisis and better connect the public with our precious natural landscapes.

For peat’s sake, save our bogs!

We need to ban the burning of peat bogs (replacing the ineffective system of voluntary no-burn agreements). This would immediately reduce carbon emissions from England’s upland bogs by 75%. We also need to ban the extraction and sale of peat-based products in gardening and horticulture. And thirdly, we need to properly fund the protection and restoration of peatland. The current £10 million grant for peatland restoration only covers 6580 hectares of peat – 1% of England’s total peatland. Restoration can take several forms – from a complete ‘rewilding’ of upland areas, to supporting and paying farmers to block peat drainage ditches, reduce pressure from grazing, maintain high water tables, and help native plants thrive again. This could be done via a ‘carbon sequestration’ public good in the Agriculture Bill, or as a focus in the subsequent Environmental Land Management Schemes (ELMS) which have been promised. Targets for peatland restoration should be included in the forthcoming Environment Bill, and peat-rich landscapes must be protected in the ‘Nature Recovery Network’ that is being designed to inform local planning decisions.

Beyond these immediate fixes, we should seize the opportunity to explore the wider role our peatland can play in society – presenting an alternative vision for these landscapes; in opposition to its current scorched and fenced off state. Private grouse moors cover an area of England the size of Greater London, and are given millions in farming subsidies to
intensively manage the land for blood sports that are enjoyed by just a tiny group of aristocrats and wealthy people – to the detriment of local communities, the natural environment, wildlife and efforts to mitigate climate change. When challenging how our peatland should be managed, we also need to challenge the socio-economic and political context that the peatland exists within. This context has caused the general public to not only be physically barred from huge swathes of the countryside, but culturally alienated from their land as well.

When asking the question of who we think our natural landscapes should work for the benefit of – it’s clear that the benefits should be felt by the local communities, and in turn wider public. This means not only managing the land in a way which reduces flood risk, improves water quality and reduces the risk of wildfire, but also exploring the ‘social’ goods that these landscapes could provide. I recently visited the RSPB’s Dovestone reserve in the Peak District, which involved me planting sphagnum moss by hand on the moor. Sphagnum moss is a naturally occurring plant on peat, which soaks up huge amounts of water and keeps the bog wet. Spending the day planting moss doesn’t initially sound too thrilling, but I found it, personally, a really valuable opportunity to learn about the sustainable maintenance of a landscape which I had actually grown up around 20 minutes’ drive away from. The site team later told me that a group of around 30 local people make regular moss planting trips – and are often up on the moor for several hours!

**Community action to save the UK’s peat ecosystems**

What if we were able to replicate this across the UK: a mass peatland restoration project done in collaboration with local communities? These projects could create local jobs, provide valuable research, better access to land (with the accompanying physical and mental benefits), sustainable leisure activities, and opportunities for educational trips from schools and other groups both local and from further afield. This could empower the public to feel like they had a real stake (and say) in the maintenance of their countryside, whilst their communities’ resilience to extreme weather events grew – and climate change increasingly mitigated. This would also help seize back control of the cultural and political narrative surrounding what these landscapes are able to ‘do’, which has long been captured by the political and financial elite. As with community-led renewable energy (see Holly Smith’s chapter on EmPowering Communities within this pamphlet), this shows how a holistic Green New Deal can spur political and social change.

For too long we have viewed rural land as primarily a tool for food production or for days out for the wealthy – or just development opportunities waiting to be tapped into – as opposed to possessing value for its own sake as a carbon store and refuge for wildlife. The Committee on Climate Change (CCC)’s recent report on reducing emissions included the recommendation to shift a fifth of our agricultural land to tree planting and peatland restoration10, and the CCC’s report on adapting to climate change listed peatland restoration as a priority measure, urging the UK to reverse the ongoing loss of our peat soils, and to expand work on peatland restoration11.

The current Government lacks the vision to adequately step up to the problem of ecosystem degradation. Labour, therefore, must be bold in taking urgent action to save our peatlands – and in turn confronting the social and political structures which have allowed its degradation to continue for so long. Only by doing both will we be treating our peatland as the globally unique and important landscape it is and ensuring that it works for the greatest benefit of society.

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2 Rewilding Britain, Rewilding and Climate Breakdown: How restoring nature can help decarbonise the UK, (2019).
5 Ibid, p.4.
7 Martin Harper, Our best places for nature are also important carbon stores – we need to look after them, RSPB (2019). https://bit.ly/2XqHYGw
9 Rewilding Britain, Rewilding and Climate Breakdown: How restoring nature can help decarbonise the UK, (2019): p.8
11 Committee on Climate Change, Reducing UK emissions, Committee on Climate (2019): p.66.
Most of the world’s population will soon be in cities and the urbanisation of our natural planet is a seemingly inevitable conclusion of continued human expansion. We’ve cut down nearly all our great forests, we’ve drained many of our great marshes and we’ve taken from nature the most fertile land. The climate emergency we’re experiencing has been compared to a man-made asteroid hurling towards us, and we do not seem to want to stop it.

If we are to continue this growth in our urban environments we need to live in harmony with our natural world, whether that’s increasing the amount of green space we design-in to our cities or focusing on how we might live side by side with wild species in urban environments. To halt the heating of our atmosphere and reverse the decline of biodiversity in Britain, we should lead the world in retrofitting our urbanised spaces to include nature, rather than unsustainably excluding it.

The benefits of green cities

In the UK over 83% of the population lives in urbanised environments, where average temperatures are typically 1 to 2 degrees higher than sparsely populated areas. This effect is called the urban heat island (UHI). It largely results from the materials we build towns and cities with, which absorb more of the sun’s energy than the natural surfaces they have replaced. With increases in temperature worldwide, and the UHI, London in 2050 will be as hot as Barcelona. Consequently, the climate will reach extremes that UK cities are not prepared for.

Trees are nature’s very own air conditioners, and we need to be planting a lot more of them. Urban greening reduces the UHI effect by providing shade and by cooling the air through the process of evapotranspiration. During evapotranspiration, the sun’s energy is used to transfer water from the leaves of plants into the atmosphere. Areas in urban environments that have been sufficiently greened are on average 1 degree cooler, in both night and day time, than similar un-greened space in the same city, and this cooling effect can extend itself into surrounding urban areas. During the summer this may reduce the need for air conditioning and associated energy use in nearby buildings, whilst creating spaces where urban biodiversity can survive or even thrive.

We might learn from cities such as Seville, which have adapted their urban environments to cope with temperatures upwards of 40 degrees. They contain many more plants, buildings and roads are painted white to reflect solar energy, shaded areas are far more prevalent and buildings are constructed to require less air conditioning. Retrofitting urban environments in the sprawling cities of the world will be a herculean task, but UK cities must now lead the way in demonstrating how it might be done.

The impact of urban greening on air quality is much discussed. Data from the Air Quality Expert Group found that increased levels of trees and foliage can reduce pollution in inner city areas by more than 20%, but is typically likely to reduce pollution by under 10%. The greatest impact is achieved when green walls and other greened barriers, including densely packed trees, are used to protect areas around sources of pollution, with up to 60% drops in particulate matter. This approach must work in combination with other urban strategies, which prevent the air from being polluted in the first place.

One of the key focuses for the greening of our cities is increasing canopys, with and that, investing in biodiversity that can be designed into our built environment. This is not just a method of coping with the heat and the intensity of the changes to come. Rather, by creating thriving eco-systems, we can help mitigate the impacts of climate change and create resilient urbanisation that works in tandem with our ecosystems.

Research conducted in thirty UK cities by the Building Research Establishment shows that 90% of respondents identified the urbanisation of the environment as a key challenge. At present, just over 50% of participating cities have a development strategy that would be beneficial for urban biodiversity. This clearly shows an appetite for the development of urban greening programmes within UK cities, but we now need a more ambitious platform of action. For this, the RSPB have identified three species as some of the best indicators for the overall state of biodiversity within urbanised environments; birds, butterflies and bats.

Rapidly declining urban biodiversity

The Bat Conservation Trust has tracked the decline of the bat populations in our urbanised environments and the destruction of their natural habitats. The 2018 RSPB State of Nature assessment shows that between 1970 and 2013, 56% of bat species declined. The only compensation for the loss of natural habitats has been through increased provision of bat boxes throughout our urban environment, although it has been patchy at best - often, it falls to charities and enthusiasts to make up any losses. The same decline can be seen in the UK’s wild bird populations, with farmland birds dropping by nearly 60% since the 1970s, due to the urbanisation of their natural habitats and the increased use of pesticides causing a decline in insects. Well known species such as turtle doves, grey partridges and starlings have experienced declines nationally since the mid-1970s, with skylarks, yellowhammers and linnets suffering the steepest declines through the 1980s. Commentator Chris Packham lamented recently:

“Nightingale numbers have plummeted by 90 per cent since the 1960s, and there are now fewer than 5,500 breeding pairs in the UK. They are a migrant, so we have to accept that it’s not just due to what’s happening in the UK, but when I travel back here it’s like coming to a vacuum – silent springs have already fallen upon us. We know that the collapse in farmland and woodland bird numbers is severe, dangerous
and ongoing. We’ve got to get people to engage with that fact.”

With butterflies there has been a similarly drastic decline across the UK, particularly in cities. Between 1975 and 2013, the rural butterfly population dropped by 45%, while the urban butterfly population fell by 69%.

This decline has put down to habitat loss, reductions in food sources and pest control by gardeners, meaning that breeding has become increasingly challenging where food is available.

A key global review published in May this year concluded 40% of insect species are at risk of extinction in the next few decades, and a 2019 UN report has warned that biodiversity ‘indispensable to food security, sustainable development and the supply of many vital ecosystem services’ is in decline, risking ‘severe production losses or livelihood disruption’.

If we do not learn to live side by side with biodiversity in our cities, we will have failed in our duty to leave a better world behind.

**Neo-wilding as a new approach to urban greening**

UK cities are already innovating, and councils are taking action to return green spaces and biodiversity to our cities, but it is not happening widely enough or quickly enough. To save the environment and preserve our habitats, we must do more and rapidly.

Re-wilding is often batted around as a solution to greening our urban environments, but returning much of London to the forests of over 200 years ago would not be suitable or sustainable, and would also take too long. The strategy of re-wilding habitats has worked well in more rural places where it is suitable, but it faces greater logistical barriers in dense urban environments where space is at a premium. Instead, we should be talking about a different approach in our cities where it’s no longer possible to have the old oak and bear populations of the past.

This is where the concept of neo-wilding has a great amount of potential. It’s a term I recently discussed with David Elliot, the Chief Executive of a Trees for Cities, when interviewing him for the Young Fabian Podcast.

Neo-wilding involves taking a scientific approach, in assessing how much greening and biodiversity is possible in an urban environment. The simple statistic that a mature urban tree can not only cool a city but host an incredible variety of invertebrates should tell policy makers enough. A neo-wilding strategy should involve the local community and aim to create a sustainable and low maintenance greened habitat that allows manageable levels of wildlife to return. The approach would involve increased canopy cover by installing street trees and reforesting suitable spaces; allow verges to go wild with flowers and install bus stops with wildflower roofs; retrofit buildings with permanent bird and bat boxes; change building regulations for new builds and redevelopments to increase green space, and regulate the design of new areas to include a greater and more sustainable level of biodiversity.

All of these approaches are possible. The regulatory changes could be made overnight, and as Isaac Turner discusses in his call for a National Afforestation Plan in this pamphlet, greater tree cover can improve health and wellbeing for urban communities, as well as improving air quality and biodiversity. We should be designing-in healthy shared ecosystems to increase our resilience to the heightening pace of climate change.

What is now needed is the inclusion of neo-wilding within a national strategy for tackling the climate and biodiversity crisis we face.

**Key recommendations:**

1. Change building regulations, by stipulating that developments must have greater amounts of green space. This might include a minimum number of trees per square meter, mandated green roofs and green walls, and the allocation in part of the property tax that is assigned for local infrastructure ($106 funds) for greening projects in the surrounding area.

2. Mandate councils and other statutory bodies at all geographical scales (i.e. the National Plan, London Plan and Local Plans) to include stricter targets on increasing biodiversity in urban areas.

3. To work in parallel with a national housing strategy to increase home insulation, remove old boilers and retrofit green energy onto existing buildings. In addition the strategy should encourage the fitting of bird and bat boxes, and the development of wildlife corridors in gardens to allow safe passage for hedgehogs, foxes and other small mammals.

4. Ensure that councils and environmental management bodies are reintroducing species of flora that support butterflies and other insect species, and ban all pesticide use in cities unless it is avoidable for pest control.

5. Encourage councils to adapt their biodiversity strategies, in order to achieve increases in populations of small birds and bats throughout urban environments.

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3. Ibid.
8. Ibid.
Reforming the Fashion Industry: Building Sustainability into the System

Carolina Saludes

Fashion is everywhere. It isn’t just responsible for protecting us from the weather; it creates glamour, informs our culture and sometimes even makes history. What’s more, fashion is a vast part of the global economy. It’s one of the UK’s largest sectors by employment, and contributed £32bn to the UK economy in 2017.

However, fashion is also one of the UK’s most environmentally damaging sectors, emitting more CO2 than international flights and maritime shipping combined. The problem worsens as demand for fast fashion rises, garments get used fewer times, and workers get paid less to produce more.

In February 2019 the Environmental Audit Committee [EAC] published a report on sustainability in the fashion sector, and submitted urgent recommendations to the Government. The case for new policies to address these recommendations was dismissed entirely in the Government’s Response, and no mention of the sector was made in the Government’s 25 Year Environment Plan last year. Furthermore, the sector doesn’t feature specifically in the Government’s Industrial Strategy.

We know that the way the sector is set up is unsustainable. This chapter will focus on practical policy measures that can help build supply chains that are environmentally sustainable, and humane for workers in the UK and across the world. As Adrienne Buller points out in her chapter in this pamphlet, environmental standards and workers’ rights must be promoted internationally and together for any Green New Deal to be truly just and effective.

Towards a circular economy in fashion

If we are to redress some of the immediate environmental challenges we face, we need a change of mindset from a linear to a circular model amongst businesses and consumers. No manufacturing efficiency can be meaningful long-term if it isn’t backed by the ability to reuse or recycle garments. This means that re-use, repair and recycling need to be front and centre of textile policy development.

A circular model is still a pipe dream in fashion, due mainly to the technological inability to recycle many fibres; industry dependency on high-volume demand; governmental inertia in creating and enforcing regulations; and a lack of consumer awareness. Even when clothes get into the second-hand market, they mostly end up incinerated, in landfill, or sold in developing countries, contributing to supply gluts in those markets.

This chapter proposes changes in the supply and demand sides of the fashion sector in the UK. Because the sector is so large, global and integrated with other sectors, these policies must focus on the parts of the sector most present in the UK, and be aligned with international initiatives such as the EU’s Ecodesign Directive and the UN Sustainable Development Goals. It’s worth noting that these measures become much harder to enact in a post-Brexit scenario where the economy slows, especially in the event of a no-deal exit.

In the UK, a progressive government should focus on three values:

- Accountability: shared responsibility when standards are not met.
- Awareness: in order to inform and educate consumers so we can make more sustainable choices.

Transparency

“One of the greatest difficulties for companies is that the ones that aspire to respect human rights and environmental standards, are faced with competition from those that do not.” Eco Age

Transparency is meant here as both the reporting and disclosing of information by companies, and the capacity for collection and analysis of data from the Government.

Right now, neither industry nor the Government can accurately account for fashion’s environmental impact. The Government’s current approach is to encourage companies to voluntarily sign up to programmes such as WRAP’s Sustainable Clothing Action Plan (SCAP), and to require them to disclose what they are doing to tackle slavery in their supply chains under the Modern Slavery Act. That means there is no obligation at all to disclose fibre sources, design briefs, water use, or worker unionisation figures.

This has a two-fold effect: firstly that the sector isn’t following unified standards with an aim to sustainability; and secondly that little data is collected for analysis. The voluntary approach is ineffective, and allows for many industry players to cut corners and abuse the environment and their workers. Transparency of information must be regulated, as is the case in banking and electronics, in order to be reliable.

Transparency: recommendations for Government

- Make SCAP membership mandatory for all large UK retailers with a turnover above £36m, and make membership free for smaller retailers to encourage their uptake.
- SCAP should include more stringent targets that follow the EU’s Ecodesign Directive, i.e. on fibre durability and recyclability.
- Use membership revenue to fund sector-wide research and development, and development of reporting systems in the UK. This will allow the adoption of clear, flexible standards for retailers and manufacturers.
- Invest in Government database infrastructure to identify, penalise and monitor companies that break the law.
- Make full disclosure of supply chains compulsory for large retailers, with results published on the Government’s website.

Accountability

“The current system favours brands that are located offshore, utilise unsustainable or environmentally unsound fabrics, and are unaccountable for the product at end of life.” Christopher Raeburn

A durable policy framework that looks to change the whole sector’s behaviour needs to assign responsibilities across three stakeholder groups: the commercial stakeholders (designers, retailers and manufacturers); the Government; and consumers.
Commercial stakeholders must change their mindset from ‘sustainable products’ to ‘sustainable supply chains’, with accountability being shared across the design, production, distribution and end of life management. This should apply to both environmental concerns and workers rights, as well as the interaction between suppliers. Penalising those who abuse the system will allow those who are taking measures to be more sustainable to become more competitive.

The Government, which has largely ignored fashion, is central to the environmental and people-centric push the sector needs. Their first and most symbolic move would be to create a dedicated function in the Department of Business, Energy & Industrial Strategy (BEIS), to coordinate across Government functions, commercial stakeholders and non-profit organisations. This function would help drive a focus towards waste reduction through better design [where future waste is most preventable], fibre recycling research, and workers’ rights.

Finally, consumers must be given the opportunity to learn more about these topics, spend our money in ways that align with our values, and reward those who invest in circular fashion. This will make sustainable brands more competitive, and therefore much more mainstream than they are now.

Accountability: reforming the sector
- Ban incineration and landfilling of unsold stock via a phase-out period, and strengthen Defra’s Resource and Waste strategy to include eco-design targets.
- Create an EPR scheme. This could include a supplementary sales tax on garments, with exemptions and a labelling scheme for organisations already hitting high sustainability standards. The revenue from this scheme could be earmarked for funding waste management, innovation, and industry auditing.
- Ban abusive fines from retailers to suppliers (e.g. extortionate late delivery fees).
- Mandate large companies in the fashion supply chain to notify employees of their union membership options and allow for ongoing internal advertising of those options.
- Revise the Modern Slavery Act requirements to include action and accountability in the ‘Transparency in Supply Chains clause’, in partnership with non-profit organisations working on these issues.

Accountability: reforming the government
- Have a dedicated minister for the retail sector (based in BEIS), who can coordinate collaboration across the Government, the industry and non-profit organisations.
- Team up with workers’ unions to assess union membership figures across entire supply chain which involves UK retailers.
- Provide funding and powers to local authorities to deal with textile waste management, as well as fining companies who don’t adhere to ETI standards.
- Set up an investment fund for research and development in textile recycling, via universities and other research organisations.

Awareness

Raising public awareness and changing fashion demands has been led by independent organisations such as the Fashion Roundtable and the British Fashion Council, which hosts the Positive Fashion platform on best practices. There is much that the Government can and should do to help scale-up such initiatives.

One way is education via schools, apprenticeships and universities, to teach children where clothes come from; encourage the learning of textile crafts; and upskill industry professionals. This can raise working standards and facilitate the dissemination of innovative techniques in an industry which is heavily dependent on manual labour.

The second is labelling, showing information like traceability, water usage, fibre shedding or recyclability, both in the label and in the product description online. There is consumer demand for this, and a traffic light system, similar to those in the food industry, could be used to make these clear to understand.

Finally, supporting national public awareness campaigns to encourage debate and engagement with existing sustainable methods. This could include direct-to-consumer marketing, collaborations with broadcasters and content makers, and partnerships with businesses.

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10. House of Commons Environmental Audit Committee, Fixing Fashion: clothing consumption and sustainability
11. This is also the threshold for the Modern Slavery Act
12. House of Commons Environmental Audit Committee, Fixing Fashion: clothing consumption and sustainability
14. More information on the Positive Fashion platform is available here: [https://bit.ly/2w1RnY]
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16. Fast fashion democratised the idea of buying the clothes we want whenever we want them, but without regard for the wellbeing of those who make them or the effects this has on our environment. If we are to make sustainable fashion mainstream, we need to acknowledge the roles that the fashion industry, the Government and ourselves as consumers have in creating a more sustainable world. And we need to support those who will help make change happen.

Carolina is Co-Chair of the Young Fabian Arts & Culture Network.
England’s waste system is broken. Large businesses are causing confusion, with a focus on waste export having seen a few large companies benefit at the expense of the many, including increasing amounts of waste dumped into the ocean.

Waste: who really pays?

Currently, waste collection is based on a ‘Producer Responsibility Note’, or a PRN scheme. There are 52 separate PRN and PERN- packaging export recovery note- schemes in the UK. Under the current provisions of producer responsibility obligations, businesses that handle packaging must fund the recovery and recycling of packaging material in proportion to the amount that they have placed on the market. In other words, the more packaging producers make, the more they pay.

However, in practice, this is not as fair as it sounds. If a company is in possession of a PRN/PERN, they have the legal evidence to state that they are complying with the law. And as long as they have that note, they can push the burden of the collection, treatment and recycling of their waste overseas or onto underfunded local councils.

Put this into context. Between 2014 and 2016, the average revenue from system compliance was about £60 million a year. However, the estimated cost of recycling services for local authorities was nearly £600 million annually. This cannot continue, not least because councils are reeling from the austerity agenda of successive Tory Governments. Due to local government cuts, more than half of England’s councils have had to cut budgets for communications and collections for kerbside plastics recycling.

And currently, there are no financial incentives for big business to take responsibility for their waste. The UK’s Producer Responsibility Obligation fees are among the lowest in the EU and leave British taxpayers to cover around 90% of the costs of packaging waste disposal. The way that PRNs and PERNs are sold on an open, fluctuating market means that the price can fluctuate based on supply and demand. This has restricted the growth of the UK’s recycling capacity. Instead of investment in UK recycling, much of the growth in the waste disposal sector has been achieved through exporting waste and through a growing dependence on export markets.

In addition to picking up the tab for big businesses’ waste, the piecemeal nature of local authorities’ waste collection is causing confusion. The types of materials collected by local councils vary across the 345 local authorities in England and Wales. This patchwork approach has been causing family arguments up and down the country. A recent survey by ComRes for the BBC found that nearly half of those surveyed (47%) said that they argue over what items they can recycle, and over a quarter (26%) saying that they disagree more than once a month. Rubbish, right?

Fixing a broken system

It’s clear the system needs urgent reform. And the Government recognise this too, as outlined in DEFRA’s Resource and Waste Strategy for England, released in December 2018. This was the first Government document on waste and recycling since 2011, and gave much needed clarity and assurance to the industry and households. The four main proposals suggested in the strategy were:

- Extended Producer Responsibility (EPR)
- Reforming the consistency of collections
- A deposit return scheme (DRS)
- Implementing a plastics tax

Reform to the UK’s EPR system was almost universally welcomed by producers and experts. DEFRA’s strategy includes a ‘full net cost recovery’ model, which proposes that 100% of the costs associated with dealing with waste packaging are shouldered by the producer. It is also proposed that innovation is built into the system too; charging producers modulated fees to incentivise them to make their products easier to recycle and disincentivise them using less eco-friendly materials.

However, it is clear that this is going to be a long, drawn-out process, in the midst of Brexit, Cabinet reshuffles and no-deal planning. And we need to implement something quickly.

Until the results of the Resource and Waste Strategy can be properly implemented nationally, the Government should legislate for a stop-gap and fund localised deposit return schemes in local authorities to serve their local communities.

These would be deposit return schemes with a difference. This could work on similar principles to the Preston model - a model of procurement pioneered by Preston City Council, Lancashire, which ensures big contracts, like construction, are fulfilled by local businesses and people - and promote local businesses that are waste-free and eco-friendly. Instead of receiving direct financial discounts, reimbursements would come in the form of activated Quick Response (QR) codes on the bottom of validated receipts. These QR codes could be scanned by the consumer and the value of these QR codes could be ‘banked’ via an online account or mo-
bile phone application. The value of this money could then be redeemed in participating local retailers. These retailers will have been audited by the local council, and been approved as an eco-friendly vendor. These retailers could be anything from zero-waste shops to local cafes.

**Why do this?**

Firstly, this could allow more cash to be generated for local authorities than the current waste system. According to Allison Ogden-Newton, the chief executive of the Keep Britain Tidy Campaign, a deposit return scheme would create savings for local government. Whilst there would be a loss of income through a reduced number of cans and plastic bottles in kerbside collections to sell to recyclers, money would be saved through having fewer containers to collect and sort, as well as reduced levels of littering and reduced landfill charges. Experts believe that this should outweigh the cost of revenue.

This saved money would be put back into the system, and would fund maintenance of the DRS machines, the increased collections, associated wages and - crucially - the local public awareness campaign to provide clarity on what materials could be processed in the DRS system. Through a Preston model-style procurement system, any jobs created by the increased frequency of waste collections should also be given to local people, instead of contracted out to external waste organisations.

Secondly, local authority distributed deposit return machines could allow the local community to have a larger stake in how their waste is processed. In some countries, like Scotland and Norway, currently running or proposing a deposit return scheme, many legislate for the deposit return ‘reverse vending machines’ to be kept within local businesses. However, for small local businesses, this has - anecdotally - proven problematic. Deposit return machines can be bulky. To get around this, some shopkeepers in countries running compulsory deposit return models have manually collected plastic bottles and other compatible materials and are forced to store them behind shop counters. This has produced a deposit return scheme machine lottery, with no consistent population to re-coup some money and boost investment in local communities. And crucially, this is a vision of a deposit return scheme that could be implemented immediately, instead of waiting for national reforms to trickle through the Brexit-blocked wheels of government. Given the ever-worsening climate emergency, a simple reform like localised Deposit Return Schemes could make a massive difference.

Fiona is a member of the Young Fabians.

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6 WP Group, Can we tackle Construction’s waste problem? (WP Group) http://www.thewp-group.co.uk/Can_we_tackle_Constructions_waste_problem.html
S traws, sunglasses and shampoo bottles – these three ‘S’s might have been in your suitcase this summer, but if we don’t get tough on tackling plastic, they will be floating around you in the sea, or forming a geo-layer beneath your beach towel, in years to come.

But plastic’s fantastic! I hear you say. Doesn’t plastic solve a lot of environmental problems, like extending the shelf life of fruit in supermarkets, reducing our food waste? Well, yes, but plastic itself is now a growing environmental problem. Most plastic ends up in landfill – and we are ramping up how much plastic we produce to unsustainable levels.

A Green New Deal to tackle plastics

The growth in plastics is an environmental crisis of enormous proportions, which is why Labour needs to build it into its plan for a ‘Green New Deal’. Global plastics production has grown by 5% a year since 1980. At the moment, 85% of this plastic is incinerated, dumped into landfill or ends up in the ocean. The problem has spread around the globe, so that even remote places, like Cocos Island, are full of plastic. Plastics in the food supply chain have been shown to damage human health, with chemicals like ‘Bisphenol A’ being linked to kidney and liver damage. The eco-threat posed by plastics is increasingly being reflected and reported on by writers and artists. Chris Jordan’s recent film ‘Albatross’ shows us how plastics are working their way into the food chains of these ancient birds, endangering their health and habitat.

The current ‘Green New Deal’ narrative often focuses on climate change more than plastics, but there is a growing body of evidence to suggest that the two issues are linked. In 2019, the production and incineration of plastic will produce greenhouse gases equivalent to 189.500MW coal power stations, according to the Center for International Environmental Law.

However, is the plastics problem over-hyped? There are plenty of scientists who argue the plastic problem, while unsightly, is nowhere near as significant an environmental threat as, say, climate change. In the journal Marine Policy, Richard Stafford and Peter Jones argued that the plastics problem is a ‘convenient truth’ which is distracting the public and policymakers from the real issues that are threatening our oceans, like climate change and over-fishing. They also allege that ‘corporations and governments focus on plastics to appear ‘green’’.

There are many threats to our oceans, and we do need to ensure that noise from the plastics debate doesn’t drown out other environmental concerns – or simply provide a conduit for corporate press releases. Nevertheless, plastics are a substantial eco-threat that we can’t ignore. Over 80% of marine litter is plastic. Annett Finger, of Victoria University, estimates that the oceans hold 5.25tn pieces of plastic debris. “The scale of the problem means cleaning up our oceans is currently not possible,” she said. “The only viable solution is to reduce plastic production and consumption while improving waste management to stop this material entering our oceans.”

Stafford and Jones are right to argue that single consumers’ choices cannot save us from eco-meltdown. We need people, policymakers, and corporations around the world to join forces if we want to save the planet. That’s why, in this part of the pamphlet, we set out 5 policy asks to transform the ‘plastics problem’.

1. Educate and campaign on ‘plastics’

When I first wrote about being a ‘teenage eco-warrior’ in the Times Educational Supplement, nobody had heard of the term. Now, young people are eco-warriors extraordinaire, protesting together to create a global environmental movement. This is exciting: after all, these students are the next generation of policymakers, corporates, scientists, and consumers.

Schools and universities can achieve so much if they build on this passion: by teaching students about the plastics problem; by investing in research projects to find new processes and materials; by demanding their suppliers cut down on plastics; and by linking up with education institutions across the globe to campaign to protect our earth. Think Greta Thunberg and Extinction Rebellion, turbo-charged.

We needn’t confine it to the classroom, either. Unions have done plenty of campaigning in this area (see, for example, the work of New South Wales’s Builders Laborers Federation branch in the 1960s-70s). Unions have a huge part to play in educating their members on the environment, and implementing ‘green bans’ in workplaces that are plastics-heavy.

Local authorities can contribute too by educating residents on where their waste goes, what percentage gets recycled, and how to reduce and reuse waste.

2. Ban single use plastics

One way to make a huge impact on the plastics problem is for our government to ban all single use plastics – and use international diplomatic channels to persuade other governments to follow suit. Though the EU has made some headway on single use plastics, the US has resisted attempts at wider action in other parts of the globe.

Kenya has already announced a ban on single use plastics in beaches, national parks, forests and conservation areas. The EU has already committed to a ban of a range of single use plastics by 2021, including plastic cutlery, plates and straws. Depending on what sort of resolution to the ‘Brexit’ debate the United Kingdom opts for, we may not be bound by these environmental commitments in future.

It’s a no-brainer: Labour should commit to banning all single use plastics, Brexit or no Brexit.

A UK single-use plastics ban could be brought in over a several-year implementation period, starting with the most easily banned products first.
to allow time for industry to adjust. In the meantime, we would need to focus on reducing usage; changing industry practices; and funding more research into how we can replace the need for plastics.

3. Reduce, not just recycle

Paper straws, wooden crates, glass bottles: the fad for using packaging from our pre-plastic days seems to have swept the nation. We need to make sure this isn’t just a summer fling, but a love built to last. After all, what better way to save our world - and the creatures that live in it - than to cut down our plastic consumption?

Every year, Europeans generate 25m tonnes of plastic waste, but less than 30% is collected for recycling. The UN has recently placed restrictions on the global trade in plastic waste, which may help to cut this figure down. However, what’s concerning, is that the petrochemicals industry forecasts a growth in single use plastics, and plastics factories around the globe are ramping up to produce more than ever before. The American Chemistry Council reports that $204bn of new investments in petrochemical infrastructure have been announced since 2010.

A growing body of evidence suggests that recycling plastic will not suffice. There is so much plastic already in the environment that to solve the problem we need a two-pronged approach: firstly, we must drastically reduce our production of new plastics, and secondly, we must find ways to recycle the plastic we’ve already produced.

4. Change corporate practices

In a recent survey carried out by Accenture, 83% of consumers believed it was important for companies to produce recyclable packaging. 23% said they had stopped buying certain food and beverage items due to environmental concerns.

Around the world, campaigners are working to change corporates’ practices around plastics. The Plastic Solutions Investor Alliance has signed up investors including Aviva, Axa, Candriam, Hermes and others, and is seeking to put pressure on companies to move away from single-use plastic and towards reusable, recyclable or compostable packaging. There’s also the New Plastics Economy Global Commitment, led by the Ellen MacArthur Foundation, a new initiative which aims to create a ‘circular economy’ for plastics.

Consumers and investors want to do the right thing: but corporates have been slow to act.

Clearly, government and business will need to partner to achieve change here. One way forward might be to legislate: Labour could pledge to introduce laws requiring manufacturers to develop recycling facilities for their own products and packaging. What about tougher sanctions, including criminal offences on directors of companies which knowingly dump plastics or other petrochemical products in illegal landfill sites?

A softer approach would be to regulate: Labour could pledge to set up an environmental regulator, which audits companies for their ‘plastic footprint’ and requires them to report on their reliance on plastics and their contribution to environmental clean-up initiatives.

Acting fast to cut down plastics is popular with consumers, and could reduce costs in businesses’ supply chains, so this could be a win-win situation for business. Forbes has written about the potential PR gains for businesses that act fast in this space.

5. Fund research and development into the plastics problem

Labour should commit to investing in scientific research to tackle the plastics problem. Labour should pledge to set up a Plastics Research & Development Fund, with a larger budget and more ambitious objectives than the recently-announced Industrial Strategy Challenge Fund on research into replacement of plastic packaging. This fund could support scientists to investigate ways to biodegrade plastic and develop new materials which are less environmentally damaging than plastic. The fund could be used to help businesses innovate, finding ways to cut down on plastics in their products and supply chains.

Funding research & development in this way makes sense. The UK is home to world-leading scientists and cutting-edge research centres and labs, so we have the infrastructure to scale up research into the plastics problem quickly. This fund could be one of the planks of the ‘Green New Deal’, Labour’s policy pledge for a green economy that Ed Miliband has said should be ‘central to the industrial strategy of the future’.

Elen is a member of the Young Fabians, and a member of Greenpeace’s Political Lobbying Network. She is also an Executive Committee Member of the Society of Labour Lawyers and a Trustee of Women for Refugee Women.

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