



GREEN & RESPONSIBLE CONSERVATISM

**Embedding
sustainability
and long-termism
within the UK
economy**

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long-termism within the UK economy

Ben Caldecott



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About the author

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Prior to moving to the Smith School he was Head of Policy at investment bank Climate Change Capital, where he ran the company's research centre and advised clients and funds on the development of policy-driven markets. Ben has previously worked as Research Director for Environment and Energy at the think tank Policy Exchange, as Head of Government Advisory at Bloomberg New Energy Finance, as a Deputy Director in the Strategy Directorate of the UK's Department of Energy and Climate Change, and as Sherpa to the UK Green Investment Bank Commission established by George Osborne MP as Shadow Chancellor.

Ben read economics and specialised in development and China at the University of Cambridge and the School of Oriental and African Studies, University of London. He has been a Visiting Scholar at Peking University and held Visiting Fellowships at the University of Oxford and the University of Sydney. Ben is a Member of the Senior Common Room at Oriel College, Oxford and a Fellow of the Royal Asiatic Society and Royal Geographical Society.

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The views in this report are my own and do not necessarily reflect the views of Bright Blue, the funder, or any of the organisations with which I am affiliated. This report has been written in a personal capacity. I apologise in advance for any errors or omissions, which are entirely my responsibility.

Foreword

The Rt Hon Lord Howard of Lympne CH QC

In his introduction to this report, its author, Ben Caldecott, says that it is a modest attempt to move forward the process of delivering better environmental, economic and social outcomes.

In fact, the report is much more than that. It puts forward a series of radical, far-reaching proposals which would significantly change the way we do things. And, though they are undoubtedly radical, they are, for the most part, fairly and squarely consistent with Conservative principles.

Ben Caldecott's objectives certainly don't lack ambition. He wants to benefit the natural environment, help address climate change, improve the quality of life and reinvigorate the productivity and competitiveness of the UK economy. Few would disagree with these objectives and the merit of this report is that it sets out a series of specific policy changes designed to achieve them.

Underlying all of them is the desire to embed sustainability and long-termism within the UK economy. And that, surely, should be at the heart of a Conservative approach to the challenges we face.

The devil, inevitably, is in the detail. And the report's proposals will not all be greeted with universal acclaim. But they do merit serious consideration.

Why, for example, shouldn't government use growth in net assets as a key measure of economic performance, in addition to GDP?

Why not give civil servants incentives better aligned with their long term performance?

Not all the proposals necessarily involve action by government.

One of the most interesting is the suggestion that the FTSE 100 index be reviewed to make it more genuinely UK centric in a way that would support UK businesses and investors.

Other objectives can be achieved in different ways from those advocated in the report. For example, the report rightly criticises the constraints imposed on the Green Investment Bank's ability to invest in infrastructure by EU State Aid regulations. It suggests that the Bank should be exempted from the State Aid rules and that this should be on the agenda as part of the UK's renegotiation with the EU.

Since the report was written, however, the Government has announced its intention to privatise the Bank, achieving the same result without adding to the Prime Minister's European Agenda, something for which I'm sure he will be profoundly grateful!

The report does not shy away from addressing the Government's investment programme.

One of its most interesting proposals relates to investment in Carbon Capture and Storage. This, the report suggests, should be restricted to industrial schemes and, if practicable, should be focused on industrial clusters that can deliver economies of scale.

But a better use of resources, it argues, would be investment in a large scale demonstration and research and development programme for electricity storage, linked to the development of electric vehicles.

Ever since Margaret Thatcher's speech to the UN General Assembly in 1989, British Conservatives have been in the vanguard of developing environmental policy. It is vital for that tradition to be maintained.

The Conservative victory at the 2015 General Election must be seen as a springboard for the continuing need for the centre-right to win the battle of ideas and set the pace for intellectual advance in policy formulation.

There is no area in which this is more important than environmental policy. This report is an important contribution to the debate on what that policy should be.

Executive summary

This report sets out some ideas for how the centre-right of British politics could better embed sustainability and long-termism within the UK economy. Doing so would benefit the natural environment, help address climate change, and improve quality of life. It would also help to reinvigorate the productivity and competitiveness of the UK economy.

By understanding and overcoming the issues that impede our ability to become more sustainable and long-term, we can deliver better environmental, economic, and social outcomes. The progressive centre-right is best able to understand the changes required and then bring them to fruition in an ambitious, pragmatic, and cost-effective way.

The report is structured around three major themes to build a greener and more long-term economy.

Chapter One explores the reasons for and consequences of the **tragedy of horizons** in public and private sector institutions, and proposes policies to remedy short-termism. Recommendations include:

- Government should use the growth in net assets as a key measure of economic performance, in addition to GDP. This measure should integrate natural capital.
- The mandates of public sector organisations and the guidance provided to civil servants should be updated to induce long-termism.

Discount rates used as part of the cost-benefit analyses of capital investment should be reviewed to encourage long-term decisions.

- Consideration should be given to civil servants having incentives better aligned with their long-term performance – for example, deferred bonuses for senior responsible officers or the ability to reduce or claw-back pension rights or benefits in certain circumstances.
- Local government should be required to improve the stock of natural capital in their area and public sector bodies should be mandated to assess the materiality of environment-related risks (such as flooding).
- Senior civil servants appointed to run major projects now have to pass through the Major Projects Leadership Academy (MPLA). Similar academy programmes could be set up for scenarios and strategic planning. These should be extended to local government as well.
- Government should explicitly prioritise growth in the stock of certain asset classes that will enhance long-term economic potential and productivity, such as low carbon infrastructure, research and development, natural capital, and resource efficiency. Specific plans to increase net asset growth in these areas should be drawn up.
- Investments that are more resilient (for example, those future-proofed against climate change or technological change) and supportive of multiple government objectives (such as decarbonisation, biodiversity, air quality) should be prioritised. Infrastructure UK and National Infrastructure Plans should determine these win-win opportunities.
- The government's record low borrowing costs should be used to enable important productivity enhancing investments. This can be done in a way that minimises the direct role of the state, the impact on the public finances, and the risks of 'picking winners'. A centre-

right government can get the appropriate balance between positive intervention and counter-productive market distortion.

- The UK Guarantees Scheme for Infrastructure (the ‘Scheme’) and the UK Green Investment Bank (the ‘GIB’) could do more to unlock financing for infrastructure, but both are constrained by EU State Aid regulations and cannot provide concessional finance. Consequently, the Scheme and the GIB should be exempted from EU State Aid and this should be on the agenda as part of the UK’s renegotiation with the EU. Providing concessional finance to sectors (as opposed to specific companies or ‘national champions’) through fair and competitive tendering processes open to all EU companies should not be prevented by Brussels.
- The Scheme should be more explicitly aligned with the Climate Change Act (2008) and the independent Committee on Climate Change should have a role in ensuring that government avoids financing infrastructure that might become prematurely obsolete or increase committed future carbon emissions.
- The Scheme should be extended to underpin Green Deal energy efficiency loans for households and businesses – each loan would automatically be folded into the Scheme, dramatically improving the attractiveness of the Green Deal.
- Projects eligible for Contracts-for-Difference (CfDs) could also receive the option of a guarantee from the Scheme. This reduction in the cost of capital would allow companies bidding for CfDs to reduce their bid prices, reducing costs for ratepayers, and increasing the amount of capacity in a finite Levy Control Framework (LCF) budget. Other priorities could be energy intensive industries – providing low cost finance for new technologies that improve the resource efficiency of industrial processes – and the deployment of a new national electric vehicle charging network. An offer of low cost capital could unlock the construction of an ambitious new UK

electric vehicle charging network that would be privately owned and operated on a commercial basis.

- Default settings in finance are important for encouraging long-termism and the allocation of capital in society. One of the most important defaults is the main stock market index, which in the UK is the FTSE 100. There is strong case for exposing and disclosing more of the investment risks associated with the FTSE 100, especially to retail investors and those selecting the ‘safe’ setting for their pension funds. The assumption that the FTSE 100 is the safe default option for savers is no longer correct.
- The composition of the FTSE 100 should be reviewed, and serious consideration given to creating a more balanced UK blue chip index that better reflects what UK investors, particularly retail investors and asset owners with UK beneficiaries and sterling liabilities, want from the main index – something more genuinely UK centric that also supports UK businesses and investors.

Chapter Two examines how to secure **value for money** in relation to environmental outcomes, focusing on the role of subsidies, the closure of coal power stations, and the future of Carbon Capture and Storage (CCS). Recommendations include:

- Government should consult on new criteria for when subsidies for technologies should end and publish technology-specific roadmaps for phasing out subsidies. This would provide clarity for industry and investors, and transparency for taxpayers and ratepayers.
- We need to quickly close down the infrastructure that causes environmental problems in the first place. By far the quickest way of doing this is closing down our nine remaining coal-fired power stations. The government should create a new coal closure programme to retire remaining UK coal-fired power stations by

the end of 2020. This is achievable, affordable, and would leave a significant political legacy. It would improve power market conditions for gas and could reduce projected payments to be made under CfDs.

- The EU Emissions Trading Scheme (ETS) is unreformable in the near term and structurally oversupplied – it is therefore almost completely irrelevant for the timely closure of coal in the UK. The UK carbon tax regime lacks certainty and there is unlikely to be the political appetite to raise this tax to the levels required to permanently retire UK subcritical coal by 2020 – the impact on energy intensive industries and the windfall for low carbon generators make this an unattractive option. Government should simply regulate away coal through an appropriately tough emissions performance standard, introduced in 2015 or 2016, with a four to five-year grace period.
- The UK approach to CCS must be reviewed. We should urgently re-examine the £1 billion allocated to CCS and restrict future funding to industrial CCS only. This should be focused on industrial clusters that can deliver economies of scale. But if suitable and affordable plans cannot be developed, then public support for UK demonstration projects should cease.
- If the UK is to embrace a large demonstration and R&D programme for any major utility scale technology, it should not be CCS, but electricity storage. Electricity storage research and deployment, especially if linked to the development of electric vehicles, has the real potential to transform our power and transport sectors.

Chapter Three urges a new **internationalism** that could help address climate change, and spur the green economy. Recommendations include:

- Regardless of whether a UN agreement in Paris is reached, clean technologies will continue to transform markets and disrupt

traditional business models remarkably quickly. Nevertheless, an international deal still matters and the UK centre-right should be helping to ensure the best possible outcome.

- While recognising the importance of the UN process, we should also recognise the importance of bilateral and plurilateral action and be much more active in this respect. Key countries, including the UK, should identify key sectors and then mobilise the right coalitions to reduce emissions from those sectors.
- Sector specific agreements would be complementary to the UN process, but could be separate from it. The UK should take the lead on negotiating one such sectoral agreement by 2020 – phasing out subcritical coal-fired power stations globally by 2030 or a comprehensive and funded international deal to stop tropical forest deforestation would be potential options.
- Government should partially frontload some of the UK's 0.7% development aid commitment into areas where it unquestionably makes sense to act sooner, rather than later. Vaccines, education, environment, and climate adaptation might fit into this category. Government should explore how we could frontload 20–25% of planned annual aid expenditure over the next 10–15 years into key initiatives in the short-term to prevent irreversible losses or harm.
- London is the 'green' financial capital of the world. One of the great opportunities for London to retain its position in this large and growing sector is the need for infrastructure investments throughout Europe. Key for this opportunity to be realised is the establishment of the capital markets union (CMU) and the second is the single internal EU energy market. It is vital for London and broader UK interests that these two processes conclude successfully. The UK has played, and should continue to play, a vocal role in making sure these reforms are carried through.

Introduction

This report sets out some ideas for how the centre-right of British politics could better embed sustainability and long-termism within the UK economy. Doing so would benefit the natural environment, help address climate change, and improve quality of life. It would also help to reinvigorate the productivity and competitiveness of the UK economy.

While written to help inform UK centre-right thinking on the above topics, the report was also prepared for those from other political traditions in the UK and internationally. Much of what is proposed can be applied in other countries and I hope readers from outside the UK find some of the themes relevant to their particular contexts.

The report does not spend any time reiterating why the environment and sustainability are integral to conservatism. Others eloquently make this case and have done so for centuries. The view of some on the political left that a majority Conservative government is automatically bad for the environment is entirely wrong. For recent contemporary distillations of these and related arguments I would encourage you to read recent work by the Conservative Environment Network¹ and the Green Alliance.²

1 Conservative Environment Network, “Responsibility & resilience: what the environment means for Conservatives”, <http://cen.uk.com/publications/> (2014).

2 Green Alliance, “Conservatism in a changing climate: security, prosperity and a low carbon future”, <http://www.green-alliance.org.uk/resources/Conservatism%20in%20a%20changing%20climate.pdf> (2010).

Nor does the report spend any time rehearsing the arguments for why anthropogenic climate change is one of the major challenges of our time. The late Lady Thatcher made these points eloquently in 1989.³ Climate change is occurring, it is largely caused by humanity, and we must respond in a cost-effective way to address its causes and consequences. But neither is it the only environmental issue of global significance that requires concerted and coordinated attention from policymakers at home and abroad.

The report also embraces ideas of responsible and inclusive capitalism and recognises that markets work best when well regulated. Markets often fail and such failures can and should be corrected by government and other actors for the benefit of the economy and society. Subscribing to the dogma that markets should always be left alone will lead to poor outcomes for people, society, and the environment, and such thinking should have no place in any form of progressive conservatism.

The report is structured around three major themes to build a greener and more long-term economy:

- Chapter One explores the reasons for and consequences of the **tragedy of horizons** in public and private sector institutions, and proposes policies to remedy short-termism.
- Chapter Two examines how to secure **value for money** in relation to environmental outcomes, focusing on the role of subsidies, the closure of coal power stations, and the future of Carbon Capture and Storage (CCS).
- Chapter Three urges a new **internationalism** that could help address climate change, and spur the green economy.

³ United Nations Environment Programme, “Speech by Margaret Thatcher to the UN General Assembly, 8 November, 1989”, <http://www.unep.org/newscentre/Default.aspx?DocumentID=2712&ArticleID=9462&l=en>.

It is well beyond the scope of this report to cover all the issues related to sustainability, climate, or the environment. Instead it focuses on some of the policy areas that currently receive least attention and it tries to prioritise topics that are most relevant to the new Conservative majority government. Considerably more could be written about each of the issues and so this should be treated as an initial foray into a limited number of important topics, as opposed to a definitive assessment of them.

By understanding and overcoming the issues that impede our ability to become more sustainable and long-term, we can deliver better environmental, economic, and social outcomes. The progressive centre-right is best able to understand the changes required and then bring them to fruition in an ambitious, pragmatic, and cost-effective way. This report is one modest attempt to move this essential process forward.

Chapter 1: **Tragedy of horizons**

Mark Carney, the current Governor of the Bank of England, coined ‘tragedy of horizons’ and first used it publicly at a World Bank seminar in October 2014.⁴ This report borrows the phrase to group together issues of endemic short-termism in both the public and private sector.

Carney was referring to the fact that policymakers, including central banks, have mandates that necessarily result in them focusing on short to medium-term factors. This blind spot can result in longer-term issues and concerns, even those of immense importance, being given less weight than they ought to be. He was also alluding to the fact that financial institutions and markets are infamously short-term, which can detrimentally affect how capital is allocated in society.

The Conservative-led Coalition Government of 2010–15 took tough decisions to manage the aftermath of the financial crisis in the short-term, but also for the long-term. The Conservative Party heavily emphasised its desire to continue governing for the long-term with its ‘long-term economic plan’. This clear ambition to govern in the national interest over a multi-parliament time horizon is critically important if we are to deal with all of the great challenges (and opportunities) – from

⁴ Jon Hay, “Carney raises the heat on climate: you can’t burn all the oil”, <http://www.emergingmarkets.org/Article/3389530/Carney-raises-the-heat-on-climate-you-cant-burn-all-the-oil.html> (2014).

pensions to defence, through to balancing the budget and education. This approach is, of course, vital for dealing with the numerous environmental challenges we now face, such as climate change, air pollution, water stress, habitat destruction, and biodiversity loss.

Inevitably there have been some inconsistencies between the rhetoric of long-termism adopted by the Coalition and some of the decisions actually taken by it in government. Regardless of the exact number of such inconsistencies and the fact that every government is to some degree guilty of this, now that the Conservatives have a majority more can be done to incentivise long-term behaviours throughout the economy. Endemic short-termism is both hugely expensive (for example, excessive risk-taking leading to the financial crisis) and results in missed opportunities (sub-optimal infrastructure investment, for instance), and so better aligning long-termist rhetoric with real policymaking should be an important objective of current and future UK governments.

The centre-right, with its emphasis on stewardship, is well positioned to embed long-termism throughout the economy. The UK should be a country that looks ahead and invests strategically in its future. For this to happen, companies, individuals, civil society, and the public sector need to extend their horizons and take responsibility for longer-term risks and opportunities.

An asset-based framework

Focusing on income as a measure of a country's economic performance, specifically growth in annual income (GDP), is the current norm among decision makers and policymakers. It is wholly inadequate and results in a variety of perverse incentives that encourage short-termism. This is well documented and has been for many decades.⁵

⁵ Ryan Shorthouse, Kate Maltby and James Brenton (eds.), *The modernisers' manifesto* (London: Bright Blue, 2014), 41–46.

Growth in net assets (or net worth) is a much more useful measure, more attuned to encouraging long-termism, and one that is just as straightforward to understand. While there is a relationship between income growth and net asset growth, ignoring the asset side of the picture is a huge omission. Individuals are as interested in the net value of their assets (their skills, experience, savings, pensions, and property minus mortgages, personal loans, student loans, and overdrafts) as they are in the annual growth in income from their assets (whether as wages, interest payments, or dividends). Government should think in the same way and concentrate more on growing the UK's productive asset base.

As well as physical and human capital, this approach must include natural capital. Colleagues at the University of Oxford, in particular Dieter Helm, have been at the forefront of helping the government integrate natural capital into the UK national balance sheet.⁶ This work, supported by the Coalition Government via the formation of the Natural Capital Committee, is important for making sure that asset-based measures properly incorporate changes in natural capital – for example, the quality of water catchments, the value generated by biodiversity, and the importance of clean air. This work will make it possible to track whether the 'stock' (total quantity of productive assets) and 'flows' (quantity produced from the stock) of natural capital are growing or not, and allows government to identify opportunities for achieving growth in the natural capital stock. All things being equal this should also increase the amount of natural capital flows (such as clean water and air) available sustainably each year.

But a greater emphasis on an asset-based approach is not just about the integration of natural capital, fundamental though that is. It needs to be used much more broadly across public policy.

⁶ See the work of the Natural Capital Committee here: "State of natural capital reports", <http://www.naturalcapitalcommittee.org/state-of-natural-capital-reports.html>.

For a start, government should explicitly prioritise growth in the stock of certain classes of productive assets in the economy – those assets that enhance long-term economic potential and productivity (such as low carbon infrastructure, research and development, natural capital, and resource efficiency). Government should set out the current state of the asset base in each of these key areas and then develop plans to improve their size and quality, subsequently publishing performance figures regularly via the Office for National Statistics in a similar way to GDP. We would then know how much national annual income has grown by (via GDP growth), as well as how much key asset classes have expanded by. This is analogous to the approach that households (and businesses) take to assess performance – measuring both income (cash flows) and wealth (balance sheets).

Identifying asset classes that can yield the most productivity growth for the economy is relatively straightforward, as is ranking these in order of cost-effectiveness. Policymaking can then be tailored to meeting net asset growth objectives for specific areas. When considering which assets to focus on, those more resilient (for example, those future-proofed against climate change or technological change) and supportive of multiple government objectives (such as decarbonisation, biodiversity, air quality) should be prioritised. Government via Infrastructure UK and National Infrastructure Plans can guide this process.

These institutions should also have a more explicit role in ensuring the resilience of new assets to physical risks (such as flooding) and broader societal and technological change (such as massive reductions in the cost of decentralised power generation). For example, is a new generation of gas infrastructure with a lifespan of 40 to 60 years a good idea when demand for gas across Europe is falling and affordable Carbon Capture and Storage (CCS) technology is so far away from realisation? Or is building new motorways a good idea given the rapid growth in flexible working and investment in high-speed rail? Investing in assets that then become prematurely redundant is a needless and

avoidable cost for society. Infrastructure planners need to do more to prevent these outcomes by making sure policy areas are joined up, such as the Climate Change Act (2008) with National Infrastructure Plans.

Accelerating productivity investment

It is time for government to review its role in helping to finance productivity enhancing capital investments. UK productivity growth, the ultimate driver of long-run economic growth, is a major concern and new supply side investments are urgently required.⁷ While the amount of financing available for capital investments are returning to pre-crisis levels, the length (or ‘tenor’) of loans and the cost of capital have not. Financing is available for too short a period of time and is too expensive, which results in many potentially profitable and productive investment opportunities failing to go ahead. We need a careful reappraisal of how the UK Government might use its balance sheet to encourage such investments in key asset classes – some of which will have important environment and climate-related co-benefits.

By definition, the UK’s national balance sheet will grow and improve each year if new or growing assets exceed new or growing liabilities. The credit rating agencies that evaluate the UK Government’s sovereign debt rating are largely concerned with the state of this balance sheet in the public sector. If new liabilities are added to the public sector balance sheet (such as government guaranteeing a loan for an infrastructure project), the public sector debt will grow. If these liabilities add or generate new assets (such as repayments of the loan with interest), then the net position of the balance sheet will stay the same or improve. The key, therefore, is making sure that new assets offset new liabilities, and if this is genuinely achieved and explained properly to financial markets, there is no reason why this should worsen the public sector balance

7 BoE Monetary Analysis Directorate, “The UK productivity puzzle”, <http://www.bankofengland.co.uk/publications/Documents/quarterlybulletin/2014/qb14q201.pdf> (2014).

sheet. In fact it could significantly improve it, if profits are made and as new productive assets generate tax income and stimulate economic activity across the economy.

We are in a sweet spot where the UK Government has record low borrowing costs (partly due to the hard work of fiscal consolidation over the previous five years), the economy is growing, and there is no shortage of investment opportunities that are profitable (at the right cost of capital) and able to produce long-lasting productivity improvements. Given the massive difference between long-term UK Government borrowing costs and those available to private investors, it would make sense to pass on some of this difference in capital costs and tenor to those making productivity enhancing investments in social, physical, technological, and human capital.

Encouraging investments in this way would spur growth today and increase the long-term potential growth rate of the UK, while meeting other policy priorities, such as decarbonisation and energy security. This really is a unique opportunity. The Government should not waste it.

There are ways that the government's record low borrowing costs can be used to enable these investments, while minimising the direct role of the state, the impact on the public finances, and the risks of 'picking winners'. The centre-right can deliver this and get the appropriate balance between positive intervention and counter-productive market distortion.

An approach could be based on existing instruments created by the Coalition Government, namely the UK Guarantees Scheme for Infrastructure (the 'Scheme') and the UK Green Investment Bank (the 'GIB'). Both of these policy instruments – described in the Box 1.1 below – were created to help unlock financing for infrastructure, but both are constrained and should be unshackled.

Box 1.1 Current government schemes to finance infrastructure

The Scheme was announced in 2012 and it provides guarantees to infrastructure projects.⁸ Up to £40 billion in aggregate (excluding interest) has been offered and by the end of 2014 seven projects had been extended £1.7 billion worth of guarantees, and there remained 39 projects (including Hinkley Point C nuclear power plant) worth £24 billion that had successfully prequalified for the Scheme. The Scheme is currently scheduled to close in December 2016.

The GIB was created on the recommendation of the UK GIB Commission, which was established by George Osborne MP while he was Shadow Chancellor. The commission reported in 2010 and the GIB was formally established in 2012. Proposals for a national development bank for green infrastructure had been first proposed by Climate Change Capital, E3G, and Policy Exchange over the course of 2009 and had then been incorporated into Conservative, Labour, and Liberal Democrat manifestos for the 2010 UK general election. The GIB was capitalised with an initial £3.8 billion of public funds and uses this to finance green projects.

Both the Scheme and the GIB were established when the amount of available capital for financing infrastructure was constrained due to the financial crisis and its aftermath. As the recovery has progressed, the nature of the problem has changed, from being about whether capital is available or not (liquidity) to the cost of capital and tenor. The cost of capital is central to the affordability of capital-intensive infrastructure – a 1% change in the cost of capital on a £10 billion project (e.g. a new nuclear power station) is £100 million per year. Tenor is vital for long-term projects – if you can only get a loan for five years and your project

⁸ For full details, see: National Audit Office, “UK Guarantees scheme for infrastructure”, <http://www.nao.org.uk/report/uk-guarantees-scheme-for-infrastructure/> (2015).

only delivers a profit after 15 years, then you are exposed to significant refinancing risks.

Yet the Scheme and the GIB fail to actually solve these problems. They do not provide lower cost capital than the market. Both provide guarantees and financing on commercial terms. In the case of the Scheme, this is in the form of a negotiated market-rate fee for guarantees. For the GIB, it lends at the same rate as other investors and tends to ‘club’ with many other banks on exactly the same terms (‘pari-passu’) when investing in projects. These interventions, while undoubtedly useful on occasion, are not sufficient.

Both the Scheme and the GIB are constrained largely because of the need to comply with EU State Aid rules. State development banks in other EU member states, such as KfW (originally Kreditanstalt für Wiederaufbau) in Germany, have block exemptions from these requirements as they were established prior to the EU existing and were folded into EU treaties and directives. The Scheme and the GIB should be similarly exempted and this should be on the agenda as part of the UK’s renegotiation with the EU. Providing concessional finance to sectors (as opposed to specific companies or ‘national champions’) through fair and competitive tendering processes open to all EU companies should not be prevented by Brussels.

Such a reform would allow lower cost capital to be provided to assets able to improve long-run productivity. Concessional finance can be disbursed through tendering processes, or by allocating funds to asset managers operating in selected sectors. This would be an important public policy tool able to accelerate investment in key areas. It could improve the UK Government balance sheet: interest would be charged on finance provided and these rates would be above the government’s own cost of capital, but below market rates.

In addition to these changes, the Scheme could be more explicitly aligned with the Climate Change Act (2008) and the independent Committee on Climate Change should have a role in ensuring that

we avoid financing infrastructure that might become prematurely obsolete or increase committed future carbon emissions. The Scheme could also be extended to underpin Green Deal energy efficiency loans for households and businesses, which were introduced by the last government – each loan would automatically be folded into the Scheme, dramatically improving the attractiveness of the Green Deal.

Something similar could be possible for winners of the long-term contract auctions – Contract-for-Difference (CfDs) – now used to underpin power generation investment. Projects eligible for CfDs could receive the option of a guarantee. This reduction in the cost of capital would allow companies bidding for CfDs to reduce their bid prices, reducing costs for ratepayers, and increasing the amount of capacity a finite Levy Control Framework (LCF) budget – the capped amount that can be added to energy bills each year to pay for Feed-in-Tariffs, the Capacity Mechanism, and CfDs – can pay for.

Other priorities could be energy intensive industries – providing low cost finance for new technologies that improve the resource efficiency of industrial processes – and the deployment of a new national electric vehicle charging network. The latter is desperately needed if we are speed up the deployment of electric vehicles, which have multiple societal benefits including electricity storage for the grid and reducing air pollution. An offer of low cost capital via the Scheme could unlock the construction of an ambitious new UK electric vehicle charging network that would be privately owned and operated on a commercial basis.

Public sector mandates

In addition to shifting the key measures of economic success more towards net assets and wealth, and away from solely GDP and income, other things can be done to embed long-termism and sustainability into the practice of public policy.

The mandates of public sector organisations (including regulators) and the guidance provided to civil servants (for example through HM Treasury’s ‘Green Book’) could be updated to reflect these preferences. The discount rates used as part of the cost-benefit analyses of capital investment should be reviewed to encourage long-term decisions. Consideration should be given to civil servants having incentives better aligned with their long-term performance – for example, deferred bonuses for senior responsible officers or the ability to reduce or claw-back pension rights or benefits in certain circumstances.

Requirements to improve the stock of natural capital locally and assess the materiality of environment-related risks (such as flooding) could be introduced for public sector bodies. Scenario and strategic planning are important skills and tools for long-term decision-making, but are missing or deficient in many public sector bodies and this should be remedied.

For example, senior civil servants appointed to run major projects now have to pass through the Major Projects Leadership Academy (MPLA). This was a significant reform introduced by the Coalition Government and has improved the capacity of civil servants to manage large projects.⁹ Similar academy programmes could be set up for scenarios and strategic planning. These should be extended to local government as well.

Long-termism in finance

Much of the focus of this report thus far has been on public policy and the public sector. However, short-termism is often much more acute in the financial system and this has implications for the real economy. The most prominent example is the excessive risk-taking that led to the financial crisis, but it has implications for other areas too, for

⁹ National Audit Office, “Major Projects Authority annual report 2012–13 and government project assurance”, <http://www.nao.org.uk/wp-content/uploads/2015/02/Major-Projects-Authority-Annual-Report-2012-13-and-government-project-assurance.pdf> (2014).

example on whether companies are well run, whether new sectors and technologies can secure capital, whether pension funds are in deficit or not, and the availability of insurance for households.

Short-termism in finance encourages short-termism in business. Companies inevitably focus on the short-term metrics and objectives created for them by their investors (for example via quarterly earnings reports). There is also the phenomenon of ‘get-rich-quick’ exits from start-ups resulting in fewer major home-grown companies and money being taken out of companies too early and not reinvested for growth. These issues are well documented, particularly the UK’s poor performance relative to Germany.¹⁰

While finance can do a lot of fantastic and important things, we should recognise that an awful lot of it does little for productivity growth in the real economy and may in fact reduce it in some instances. This makes it an important public policy issue and one that is also relevant to sustainability – for example, investors are seriously deficient in their ability to understand and act on environment-related risks, even those risks having an impact today, let alone those that will emerge in the medium- to long-term. This results in a major misallocation of capital to ‘brown’ polluting activities and away from ‘green’ sustainable ones.

Government has a key role in promoting long-termism within the financial system. This has been recognised in post-financial crisis reforms, which have included an emphasis on improving the safety and soundness of individual financial institutions, eliminating the perception that some financial institutions are ‘too big to fail’, introducing countercyclical capital buffers, managing leverage ratios, increasing liquidity requirements, and realigning compensation with long-term performance. Beyond micro- and macro-prudential regulation, the Kay Review comprehensively covered how and why

¹⁰ Konrad Adenauer-Stiftung, “Investing for growth: a comparison of German and British SME funding”, <http://www.kas.de/grossbritannien/en/publications/36757/> (2014).

equity markets are too short-term and set out a policy programme to turn this around.¹¹

In addition to the Kay Review and discussion papers like the *One Bank Research Agenda*,¹² which sets out an important and comprehensive new research agenda for the Bank of England, investment institutions have also made important recommendations in relation to stranded assets, integrated reporting, quarterly earnings, and loyalty-driven securities.¹³ Over the last five years significant progress on all of these fronts has been made. Implementing these ideas in full and ensuring that the promotion of long-termism in finance does not fall by the wayside should be a priority for the centre-right. This is important for making sure that finance contributes positively to the real economy and environmental sustainability, as well as being important for electoral success – the centre-right is not beholden to the financial services industry and it is important this remains the case if we are to pursue a genuine ‘One Nation’ conservatism.

Indices

Default settings in finance are important. One of the most important defaults is the main stock market index, which in the UK is the FTSE 100. All investors pile capital into the companies listed as part of the index in order to track its performance and fund managers are remunerated in large part based on their performance relative to the main index.

11 Department for Business, Innovation and Skills, “The government response to the Kay Review”, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/253457/bis-12-1188-equity-markets-support-growth-response-to-kay-review.pdf (2012).

12 Bank of England, “One Bank research agenda”, <http://www.bankofengland.co.uk/research/documents/onebank/discussion.pdf> (2015).

13 For example: Generation Investment Management LLP, “Sustainable capitalism”, <https://www.generationim.com/media/pdf-generation-sustainable-capitalism-v1.pdf> (2012); Aviva, “Sustainable capital markets union manifesto”, http://www.aviva.com/media/upload/SCMU_Manifesto.pdf (2014).

Given that a very large part of people's pension funds and savings are invested in the FTSE 100, its composition is hugely important. As of April 2015 the FTSE 100 had a market capitalisation of £1.77 trillion¹⁴ – for context the entire net wealth of UK households is £9.1 trillion and of this £5.5 trillion is financial wealth (the rest is property).¹⁵ So if you assume that the FTSE 100 is 50% foreign owned and UK investors own the rest (both reasonable assumptions), it would account for approximately 16% of UK net financial wealth.

The reason a default UK blue chip index is important for investors, especially retail investors, is that it should provide a place where savers can find liquidity (lots of buyers and sellers), diversify risk and returns (lots of large UK companies), and minimise exchange-rate risk (dividend payments and share prices in sterling in order to meet sterling liabilities). The reality is that the FTSE 100 by virtue of the companies within it, gives a lot of default exposure to companies, sectors, and markets that might not best reflect the characteristics you would want to find in the main UK index.

Resource companies are a good example of this. They account for just over a fifth of the FTSE 100 as of April 2015 (though this fluctuates with share prices and they were worth more than a quarter in June 2014 prior to the oil price crash).¹⁶ In contrast, the approximate total value of minerals produced in the UK (including oil and gas) was £37.7 billion in 2011 (the latest data found; the number will be significantly lower today due to the fall in oil prices and continued decline of North Sea production),¹⁷ which is about one fiftieth of UK GDP. They also entail, for example, significant exposure to political risk in Nigeria (Shell),

14 FTSE, "FTSE 100 Index factsheet April 2015", <http://www.ftse.com/Analytics/FactSheets/temp/fe1519d2-6a9d-4dd1-b6cc-fd87db6a11d2.pdf> (2015).

15 Adam Palin, "UK household wealth exceeds £9tn", *Financial Times*, 15 May, 2015.

16 FTSE, "FTSE 100 Index factsheet April 2015", <http://www.ftse.com/Analytics/FactSheets/temp/fe1519d2-6a9d-4dd1-b6cc-fd87db6a11d2.pdf> (2015).

17 House of Commons Business, Innovations and Skills Committee, "The extractive industries", <http://www.publications.parliament.uk/pa/cm201415/cmselect/cmbis/188/18806.htm> (2014).

technical risk in the Arctic (Shell) and the Gulf of Mexico (BP), water risk in Australia (BHP/Rio Tinto), energy policy risk in China (all), and climate policy risk globally (all).

These might be acceptable risks if listed natural resources companies could construct responsibly diversified portfolios, but there is growing evidence that they are having increasing difficulty doing so due to competition from state-owned companies, among many other factors.¹⁸ It might also be acceptable if these companies could actually manage the risks they are exposed to. No doubt there is a huge amount of technical and risk management expertise in these companies, but decades of major oil spills, law suits, compensation claims – just to home in on the risk of accidents – show us that risks will always materialise and impact even the best prepared companies. Moreover, when risks do materialise they are often very significant – the 2010 Deepwater Horizon oil spill halved the value of BP, then worth 7% of the FTSE 100.¹⁹

Many of the investments that FTSE 100 investors are exposed to are very risky, environmentally destructive, and have embedded carbon emissions well beyond what can be reasonably combusted to keep climate change within manageable bounds. The fact is that by investing in the FTSE 100 you are disproportionately exposed to these risks, relative to almost any other portfolio of assets you might want to construct.

One key question is whether this is a reasonable default level of risk for the average UK saver or pension fund beneficiary to be exposed to automatically? I am not sure that it is. The default setting should be safer, more UK focused, and less dependent on resources companies with high levels of exposure to a wide variety of risks. A UK blue chip index

18 Dane Rook and Ben Caldecott, "Evaluating capex risk: new metrics to assess extractive industry project portfolios", <http://www.smithschool.ox.ac.uk/research-programmes/stranded-assets/Evaluating%20Capex%20Risk%20-%2010.02.15.pdf> (2015).

19 Bestinvest, "There's more to UK equities than the FTSE 100", <http://www.bestinvest.co.uk/news/theres-more-to-uk-equities-than-the-ftse-100> (2014).

should be exactly that – full of UK companies, mainly doing business in the UK, and from a wide range of business sectors representative of the UK economy.

That's not to say that investors should not invest in international natural resources companies or seek out these investment opportunities. The point is merely that it should not be the default 'safe' setting for everyone. If you want exposure to Kazakh copper or Mongolian coal use another index, invest directly, or instruct your asset manager accordingly. The ordinary saver should not be overly exposed automatically to investments that are actually highly contentious. Despite protestations to the contrary, these are not 'safe' bets.

There are a number of reasons why we have ended up in this situation. The London Stock Exchange (LSE) is itself a listed company, providing quarterly earnings reports to its own investors. It has little direct incentive to construct a primary index for the benefit of the UK as a whole, merely one that allows it to secure ongoing revenues from listings. Requiring good corporate governance standards from companies before listing them on the LSE, while important, does not actually resolve the central problem identified. It might reduce the risk of corruption or dodgy accounting – but it does not change the risk of the underlying business. A company mining Indonesian coal is still a mining company exposed to the whole gamut of risks associated with that activity.

So what should policymakers do? First, there is a strong case for exposing and disclosing more of the risks associated with the default option, especially to retail investors and those selecting the 'safe' setting for their pension funds (which invariably involves a significant allocation to the FTSE 100). Second, the composition of the FTSE 100 should be reviewed, and serious consideration given to creating a more balanced UK blue chip index that better reflects what UK investors, particularly retail investors and asset owners with UK beneficiaries

and sterling liabilities, want from the main index – something more genuinely UK centric that also supports UK businesses and investors.

The UK and City of London should always be at the forefront of international business and finance. Reforming the main index would not change that – finance can still be raised for opportunities globally and UK retail investors can allocate capital to these activities together with more sophisticated institutional investors. Britain has been doing this successfully for centuries and will continue to do so. International exposure is not the issue, rather that the default ‘safe’ choice has lost some of the characteristics needed to benefit investors and the UK as a whole. In contrast the main beneficiaries from the current arrangements are those that benefit from organising new listings – the stock exchange and the advisers that guide firms through the process.

This issue is important, but has been largely ignored in the debate about how to reform our financial system after the crisis. The centre-right should be at the forefront of examining this issue. It is ultimately about protecting ordinary savers and helping UK companies raise money from a deep pool of capital held by UK investors. We should be helping companies that have the solutions to our productivity crisis and that create jobs in the UK to raise capital more easily in London.

Box 1.2. Summary of policy proposals

- Government should use the growth in net assets as a key measure of economic performance, in addition to GDP. This measure should integrate natural capital.
- The mandates of public sector organisations and the guidance provided to civil servants should be updated to induce long-termism. Discount rates used as part of the cost-benefit analyses of capital investment should be reviewed to encourage long-term decisions.

- Consideration should be given to civil servants having incentives better aligned with their long-term performance – for example, deferred bonuses for senior responsible officers or the ability to reduce or claw-back pension rights or benefits in certain circumstances.
- Local government should be required to improve the stock of natural capital in their area and public sector bodies should be mandated to assess the materiality of environment-related risks (such as flooding).
- Senior civil servants appointed to run major projects now have to pass through the Major Projects Leadership Academy (MPLA). Similar academy programmes could be set up for scenarios and strategic planning. These should be extended to local government as well.
- Government should explicitly prioritise growth in the stock of certain asset classes that will enhance long-term economic potential and productivity, such as low carbon infrastructure, research and development, natural capital, and resource efficiency. Specific plans to increase net asset growth in these areas should be drawn up.
- Investments that are more resilient (for example, those future-proofed against climate change or technological change) and supportive of multiple government objectives (such as decarbonisation, biodiversity, air quality) should be prioritised. Infrastructure UK and National Infrastructure Plans should determine these win-win opportunities.
- The government's record low borrowing costs should be used to enable important productivity enhancing investments. This can be done in a way that minimises the direct role of the state, the impact on the public finances, and the risks of 'picking

winners.' A centre-right government can get the appropriate balance between positive intervention and counter-productive market distortion.

- The UK Guarantees Scheme for Infrastructure (the 'Scheme') and the UK Green Investment Bank (the 'GIB') could do more to unlock financing for infrastructure, but both are constrained by EU State Aid regulations and cannot provide concessional finance. Consequently, the Scheme and the GIB should be exempted from EU State Aid and this should be on the agenda as part of the UK's renegotiation with the EU. Providing concessional finance to sectors (as opposed to specific companies or 'national champions') through fair and competitive tendering processes open to all EU companies should not be prevented by Brussels.
- The Scheme should be more explicitly aligned with the Climate Change Act (2008) and the independent Committee on Climate Change should have a role in ensuring that government avoids financing infrastructure that might become prematurely obsolete or increase committed future carbon emissions.
- The Scheme should be extended to underpin Green Deal energy efficiency loans for households and businesses – each loan would automatically be folded into the Scheme, dramatically improving the attractiveness of the Green Deal.
- Projects eligible for Contracts-for-Difference (CfDs) could also receive the option of a guarantee from the Scheme. This reduction in the cost of capital would allow companies bidding for CfDs to reduce their bid prices, reducing costs for ratepayers, and increasing the amount of capacity in a finite Levy Control Framework (LCF) budget. Other priorities could

be energy intensive industries – providing low cost finance for new technologies that improve the resource efficiency of industrial processes – and the deployment of a new national electric vehicle charging network. An offer of low cost capital could unlock the construction of an ambitious new UK electric vehicle charging network that would be privately owned and operated on a commercial basis.

- Default settings in finance are important for encouraging long-termism and the allocation of capital in society. One of the most important defaults is the main stock market index, which in the UK is the FTSE 100. There is strong case for exposing and disclosing more of the investment risks associated with the FTSE 100, especially to retail investors and those selecting the ‘safe’ setting for their pension funds. The assumption that the FTSE 100 is the safe default option for savers is no longer correct.
- The composition of the FTSE 100 should be reviewed, and serious consideration given to creating a more balanced UK blue chip index that better reflects what UK investors, particularly retail investors and asset owners with UK beneficiaries and sterling liabilities, want from the main index – something more genuinely UK centric that also supports UK businesses and investors.

Chapter 2: **Value for money for environmental outcomes**

Achieving better environmental, sustainability, and climate change outcomes should be done in the most cost-effective way possible. Long-term public support for this agenda is dependent on ensuring affordability and spending finite taxpayer and ratepayer funds in a responsible and accountable way. The centre-right gets this intuitively.

Reducing subsidies and stopping them once sectors do not need them is clearly sensible and necessary. Stopping new onshore wind farm subsidies – a commitment made in the 2015 Conservative Party manifesto – can now be done, because many projects can now generate positive returns without subsidy. Costs have fallen and experience has grown in the sector, which is progress that should be celebrated.

The challenge is to increase the pace of innovation and scale deployment to drive down costs so as to ensure that other technologies can thrive without subsidy.

Another related challenge is to know when to stop subsidy when a technology has had its chance and failed to deliver the necessary cost reductions. Government should consult on new criteria for when subsidies for technologies should end and publish technology-specific roadmaps for phasing out subsidies. This would provide clarity for industry and investors, and transparency for taxpayers and ratepayers.

Subsidies for all new renewables should probably stop in the mid-2020s, if not earlier. Those that are niche and expensive (like offshore wind and wave) should have relatively more time to prove themselves, while solar photovoltaics, onshore wind, and biomass are clearly nearing the end of their ‘trial’ period.

It is worth making a point of clarification with regards subsidy and what counts as subsidy. Long-term contracts such as Contracts-for-Difference (CfDs) to guarantee cash flows for projects are required for capex-intensive infrastructure to be financed and constructed. The availability of such contracts should not automatically count as a subsidy, especially if such contracts are available in some form to all generation technologies. Determining whether the subsidy/no-subsidy line has been crossed will depend on whether total lifetime payments made under a CfD are above what other technologies receive, particularly the lifetime costs of the most mature and cheapest technologies. Government and/or independent organisations can assess this accurately.

There are other things that can be done to improve the affordability, and therefore the sustainability, of environment and climate change policies. Some were discussed in the previous chapter: for example, reducing the cost of capital through an improved and expanded UK Guarantees Scheme for Infrastructure and UK Green Investment Bank. Others have written extensively about the importance of auctions (if designed well) in reducing the strike price of CfDs²⁰ and the need for well-designed CfDs to underpin capital-intensive infrastructure

20 For example, see: Simon Moore, “Going, going gone: the role of auctions and competition in renewable electricity support”, <http://www.policyexchange.org.uk/images/publications/going%20going%20gone.pdf> (2013).

investments.²¹ There has also been lots written elsewhere about how to improve domestic and commercial energy efficiency policy.²²

Instead of going over this terrain again, the focus of the next section is on how to deliver emission reductions and other environmental benefits by tackling sources of pollution directly. Too much of our attention is focused on how to build new low carbon infrastructure. We also need to quickly close down the infrastructure that causes the problem in the first place. By far the quickest way of doing this is closing down our nine remaining coal-fired power stations, which will be explored in detail. It is also worth discussing the future of carbon capture and storage (CCS) in the UK.

Closing coal

The government should create a new coal closure programme to retire the remaining UK coal-fired power stations by the end of 2020.²³ This would generate significant environmental and health benefits, and help induce new investment into the UK energy sector, helping to solidify and extend the economic recovery. It would also send an important signal to other countries, especially those with coal generation assets that have the ability to ‘make or break’ our climate future. Such a programme is achievable, affordable, and would leave a significant political legacy. It would improve power market conditions for gas and could reduce projected payments to be made under CfDs.

On Valentine’s Day this year the Prime Minister, Deputy Prime Minister, and leader of the Labour Party signed a cross-party letter agreeing to phase out unabated coal (though no date was proposed).

21 For example, see: ICEPT Imperial College London, “On picking winners: the need for targeted support for renewable energy”, http://assets.wwf.org.uk/downloads/on_picking_winners_oct_2012.pdf (2012).

22 For example, see: Green Alliance, “Creating a market for electricity savings”, http://www.green-alliance.org.uk/page_47.php (2012).

23 This is based on: Ben Caldecott, “Retiring subcritical coal-fired power stations”, <http://aeneconomythatworks.org/content/uploads/2014/12/AETW-Policy-Report-FINAL.pdf> (2015).

In addition to tackling by far the largest source of power sector carbon emissions (76% in 2013),²⁴ closure would address the estimated 1,600 premature deaths caused annually by air pollution from UK coal-fired power stations.²⁵ These power stations also rely on thermal coal imported from Russia – with around 44% of our coal coming from that unreliable trade partner.²⁶

The UK's coal generation capacity in 2012 was 28 GW and this was entirely subcritical (the oldest and least efficient technology),²⁷ accounting for approximately 18% of the EU's total subcritical capacity.²⁸ Fortunately for policymakers, since 2012 approximately 9 GW of this capacity has already closed, leaving the UK with just nine coal-fired power stations with 19 GW of capacity.²⁹

Given that the UK has not built a new coal-fired power station in over 40 years and existing plants long ago paid off their construction costs,³⁰ the price of accelerating a near-term and inevitable decommissioning process is likely to be low. The rapid pace of recent closures shows how a 2020 coal closure programme is feasible.

24 National Atmospheric Emissions Inventory, "UK greenhouse gas inventory" http://uk-air.defra.gov.uk/assets/documents/reports/cat07/DA_GHGI_1990-2013_Report_v1.pdf (2015).

25 HEAL, "The unpaid health bill: how coal power plants make us sick", http://www.env-health.org/IMG/pdf/heal_report_the_unpaid_health_bill_-_how_coal_power_plants_make_us_sick_finalpdf.pdf (2013).

26 DECC, "Solid fuels and derived gases", https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/386829/2_Coal.pdf (2015).

27 DECC, "Coal in 2012", https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/170708/et_article_coal_in_2012.pdf (2012).

28 Smith School of Enterprise and the Environment, *Stranded assets database* (University of Oxford, 2015).

29 DECC, *Digest of United Kingdom energy statistics 2014* (London: DECC, 2014).

30 Modern Power Systems, "How will the UK close its generation gap?", <http://www.modern-powersystems.com/features/featurehow-will-the-uk-close-its-generation-gap-4303669/> (2014); Bloomberg New Energy Finance, "UK capacity market will benefit old coal, not new gas", [http://about.bnef.com/press-releases/uk-capacity-market-will-benefit-old-coal-new-gas/\(2014\)](http://about.bnef.com/press-releases/uk-capacity-market-will-benefit-old-coal-new-gas/(2014)); Utility Week, "Tomorrow's generation", <http://www.utilityweek.co.uk/news/tomorrow%E2%80%99s-generation/985402#.VNOBzi7Quiw> (2014).

It is worth putting such a closure programme in perspective. Of the nine coal-fired power stations operating today, between six and seven (if not more) are very likely to close by the end of 2020 under business-as-usual, according to various modelling and analyst reports. In fact, the number could be even higher. So we are then talking about accelerating the closure, by probably no more than a few years, of only two to three 40-plus year coal-fired power stations. This is surely achievable and desirable given the significant benefits and political legacy it would create.

While it is perfectly correct to say that accelerated coal plant closure without a commensurate programme to ensure replacement capacity, interconnection, and improved energy efficiency might endanger UK capacity margins, this is not what this report is proposing. The key is to have a more ambitious build programme in place to replace lost capacity, including new gas-fired capacity in the short-term. The removal of old coal capacity would have the consequence of improving the attractiveness of the UK market for other generation and demand reduction options. But if further investment is required this could be underpinned by the government's electricity market reforms, including CfDs and the capacity market.

One of the reasons why a UK coal closure programme is urgently needed is that if advanced economies with old and inefficient subcritical plants, like the UK, Germany, and the United States, do not act first to close these power stations, we cannot expect China, India, South Africa, or Indonesia to follow suit in a timely fashion. The world's climate future really does depend on what these countries do with their much larger fleets of coal-fired power stations. Delayed closure in these emerging countries, due to inaction in advanced economies, could be the thing that scuppers global climate change mitigation efforts – regardless of whether we have a new international climate agreement or not.

Closing coal would need to be done in the most cost-effective way possible. Carbon taxes, emission performance standards, or tradable allowances are all mechanisms to internalise the externalities of coal

combustion and could induce premature closure within the timeframe proposed here.

The EU Emissions Trading Scheme (ETS) is unreformable in the near term and structurally oversupplied – it is therefore almost completely irrelevant for the timely closure of coal in the UK. The UK carbon tax regime lacks certainty and there is unlikely to be the political appetite to raise this tax to the levels required to permanently retire UK subcritical coal by 2020 – the impact on energy intensive industries and the windfall for low carbon generators make this an unattractive option. Perhaps the most effective strategy, therefore, is to simply regulate away coal through an appropriately tough emissions performance standard, introduced in 2015 or 2016, with a four to five-year grace period.

Carbon Capture and Storage (CCS)

For some time I have argued in favour of CCS deployment in the power sector.³¹ If we had acted in the late 2000s, such action might have yielded some material benefit. But given the limited progress to date, and the growing evidence that if CCS is to be used it should only be used for industry (not utility scale power generation)³² and negative emissions,³³ I am now deeply sceptical of the value of the UK CCS demonstration programme. UK governments have spent more than a decade talking about CCS and not a single demonstration plant has yet been built as a result.

The reality is that CCS for power generation, while technically possible, is just too expensive, costs are unlikely to come down very much (each CCS retrofit is unique, capital intensive, requires storage infrastructure, and reduces plant operating efficiency), and it has

31 For example, Green Alliance, “A last chance for coal – making carbon capture and storage a reality”, http://www.green-alliance.org.uk/page_147.php (2008).

32 For example, Green Alliance, “Decarbonising British industry: why industrial CCS clusters are the answer”, http://www.green-alliance.org.uk/decarbonising_british_industry.php (2015).

33 Ben Caldecott, Guy Lomax, and Mark Workman, “Stranded carbon assets and negative emissions technologies”, <http://www.smithschool.ox.ac.uk/research-programmes/stranded-assets/Stranded%20Carbon%20Assets%20and%20NETs%20-%202006.02.15.pdf> (2015).

implications for areas with water stress (CCS is water intensive). Moreover, I just do not think politicians and policymakers globally are going to find ways to pay for its large-scale deployment.

Claims of significant cost reductions as a result of demonstration programmes (if they happen) could be accurate. But even if this does materialise, the costs will not fall at anything like the pace of genuine zero carbon renewables (as opposed to merely low emission CCS). Decentralised, small-scale technologies have proven their ability to push down costs due to the huge potential for economies of scale and learning by doing. They are already economic in many markets without subsidy (such as onshore wind in parts of the UK).

The UK approach to CCS needs to be reviewed. We should urgently re-examine the £1 billion already allocated to CCS and restrict future funding to industrial CCS only. This should be focused on industrial clusters that can deliver economies of scale. But if suitable and affordable plans cannot be developed, then public support for UK demonstration projects should cease.

If the UK is to embrace a large demonstration and R&D programme for any major utility scale technology, it should not be CCS, but electricity storage. Electricity storage research and deployment, especially if linked to the development of electric vehicles, has the real potential to transform our power and transport sectors.

Box 2.1. Summary of policy proposals

- Government should consult on new criteria for when subsidies for technologies should end and publish technology-specific roadmaps for phasing out subsidies. This would provide clarity for industry and investors, and transparency for taxpayers and ratepayers.
- We need to quickly close down the infrastructure that causes environmental problems in the first place. By far the quickest

way of doing this is closing down our nine remaining coal-fired power stations. The government should create a new coal closure programme to retire remaining UK coal-fired power stations by the end of 2020. This is achievable, affordable, and would leave a significant political legacy. It would improve power market conditions for gas and could reduce projected payments to be made under CfDs.

- The EU Emissions Trading Scheme (ETS) is unreformable in the near term and structurally oversupplied – it is therefore almost completely irrelevant for the timely closure of coal in the UK. The UK carbon tax regime lacks certainty and there is unlikely to be the political appetite to raise this tax to the levels required to permanently retire UK subcritical coal by 2020 – the impact on energy intensive industries and the windfall for low carbon generators make this an unattractive option. Government should simply regulate away coal through an appropriately tough emissions performance standard, introduced in 2015 or 2016, with a four to five-year grace period.
- The UK approach to CCS must be reviewed. We should urgently re-examine the £1 billion allocated to CCS and restrict future funding to industrial CCS only. This should be focused on industrial clusters that can deliver economies of scale. But if suitable and affordable plans cannot be developed, then public support for UK demonstration projects should cease.
- If the UK is to embrace a large demonstration and R&D programme for any major utility scale technology, it should not be CCS, but electricity storage. Electricity storage research and deployment, especially if linked to the development of electric vehicles, has the real potential to transform our power and transport sectors.

Chapter 3: Internationalism

Environmental challenges are often collective action problems that require co-ordination to solve. Such co-ordinated responses frequently need to happen internationally. Anthropogenic climate change is a perfect example of this challenge – carbon pollution has the same impact wherever it is emitted and emissions are currently associated with most forms of economic activity. It is, therefore, impossible to solve without concerted collective action internationally.

Without global progress, physical climate change impacts will make it incredibly challenging to secure long-term economic sustainability. From a UK perspective, key trade partners are likely to be seriously impacted (the US, China, India, and Australia all rank highly in terms of exposure to climate risk) and we will suffer from countless other direct and indirect impacts. The literature on this is well-established, large, and growing.³⁴

As we approach another set-piece international negotiation in Paris in December 2015 it is worth putting that process in context, setting out what the centre-right can do as part of these efforts, and also identifying what other initiatives can be led by the UK to achieve

³⁴ See climate change impact reviews conducted by the Met Office, Royal Society, Lloyds of London, Munich Re, Ministry of Defence, US Department of Defense, and Chatham House, among many others, to see how climate change could impact the UK and other countries.

real progress on important aspects of climate change mitigation and adaptation internationally.

International negotiations

The UN climate negotiations culminate annually in early December – the next such meeting is in Paris in 2015. The build up to Paris began immediately after the Durban negotiations held in December 2011. At Durban, negotiators agreed to deliver a ‘new and universal greenhouse gas reduction protocol, legal instrument, or other outcome with legal force by 2015 for the period beyond 2020’.³⁵ This makes Paris the last opportunity to secure such an agreement by the end of 2015 for implementation five years later.

This is slow and inadequate progress given the urgency of climate change. But the good news is that action on climate change is only partly influenced by the negotiations – most of the on-the-ground action has very little to do with the UN process. It is largely determined by national policies and market innovation.

Copenhagen in 2009, the previous big UN climate change ‘save the world’ moment famously ended in acrimony. Since then clean energy investment has exploded (US\$1,462 billion since the start of 2010),³⁶ the price of renewables has fallen dramatically (59% for solar photovoltaics),³⁷ and the world is now adding more capacity in renewable power each year than coal, natural gas, and oil combined – it is now a large and mainstream sector.³⁸

35 United Nations Framework Convention on Climate Change, “Durban: Towards full implementation of the UN Climate Change Convention”, http://unfccc.int/key_steps/durban_outcomes/items/6825.php (2014).

36 Bloomberg New Energy Finance, “Global trends in clean energy investment”, http://about.bnef.com/content/uploads/sites/4/2015/04/BNEF_clean_energy_factpack_q1_2015.pdf (2015).

37 Michael Liebreich, “Bloomberg New Energy finance summit”, http://about.bnef.com/content/uploads/sites/4/2015/04/BNEF_2014-04-08-ML-Summit-Keynote_Final.pdf (2015).

38 Bloomberg Business, “Fossil fuels just lost the race against renewables”, <http://www.bloomberg.com/news/articles/2015-04-14/fossil-fuels-just-lost-the-race-against-renewables> (2015).

So regardless of whether a UN agreement is reached, clean technologies will continue to transform markets and disrupt traditional business models remarkably quickly. Nevertheless, an international deal still matters and the UK centre-right should be helping to ensure the best possible outcome for some of the following reasons.

First, the nature of climate change means that there is significant potential for ‘free riding’. To ensure that all countries contribute their fair share (taking account of different levels of development) we need an international system able to measure, monitor, and hold countries to account. The international process helps to keep countries ‘honest’ with respect to their emissions and progress towards targets. We also need a process that involves the countries responsible for the vast majority of emissions and the UN process does this.

Second, we need a way of setting levels of ambition and urgency. We also need a way of keeping countries in regular contact on specific climate change issues – regular formal and informal dialogue builds trust and helps ratchet up ambition over time.

Third, there are technical issues, methodologies, and scientific assessments that need to be conducted, developed, and evaluated. The international process enables ongoing technical collaboration and co-operation. The importance of this should not be underestimated.

Fourth, some countries require international climate finance to reduce emissions and adapt to current and future climate change. There are also sources of emission reductions, such as preventing deforestation in tropical forest countries, which require financial flows into those countries that can be partly mediated via the international process.

These practical reasons, rather than grander ideas about the importance of UN processes, are why we must be active, ambitious, and vocal supporters of an agreement in Paris and beyond. While failure at Paris will not halt progress, it would slow it down, and this would harm UK interests and disproportionately impact least developed countries.

Beyond the UN

While recognising the importance of the UN process, we should also recognise the importance of bilateral and plurilateral action and be much more active in this respect. The UN process has significant weaknesses – not least the requirement to get universal support from all countries involved.

The NGOs and activists, and actually a large part of our own civil service, have placed too much faith, time, and money in the UN negotiations. Doing things outside of the UN ‘track’ is seen as undermining the sanctity of that process. That is nonsense.

What key countries should have done long ago is to identify key sectors and then mobilise the right coalitions to reduce emissions from those sectors. Cement production, deforestation, and coal-fired power generation are three such sectors – each incredibly important, accounting for 5%,³⁹ 15%,⁴⁰ and 20% of global emissions respectively.⁴¹ The top five countries account for 72% of total global cement production,⁴² 47% of deforestation,⁴³ and 77% of coal capacity.⁴⁴

Sector specific agreements would be complementary to the UN process, but could be separate from it. They would each involve the main countries responsible for emissions in a sector being brought into a negotiation process with each other and key countries to try to agree on timelines for closing down the least efficient power generation or industrial processes,

39 Columbia Climate Center, “Emissions from the cement industry”, [http://blogs.ei.columbia.edu/2012/05/09/emissions-from-the-cement-industry/\(2012\)](http://blogs.ei.columbia.edu/2012/05/09/emissions-from-the-cement-industry/(2012)).

40 World Wildlife Fund, “Deforestation”, http://wwf.panda.org/about_our_earth/deforestation/.

41 Derived from: Allianz, “15 sources of greenhouse gases”, http://knowledge.allianz.com/environment/climate_change/?651/fifteen-sources-of-greenhouse-gases-gallery; Coal Industry Advisory Board, *Reducing greenhouse gas emissions: the potential of coal* (Paris: IEA/OECD, 2005), 12.

42 U.S. Geological Survey, “Mineral Commodity Summaries”, <http://minerals.usgs.gov/minerals/pubs/mcs/2015/mcs2015.pdf> (2015).

43 Derived from: Maps of World, “Top ten countries with highest deforestation”, <http://www.mapsofworld.com/world-top-ten/countries-with-highest-deforestation-map.html> (2015); FAO Facts and Figures, “Deforestation and net forest area change”, [http://www.fao.org/forestry/30515/en/\(2010\)](http://www.fao.org/forestry/30515/en/(2010)).

44 Smith School of Enterprise and the Environment, *Stranded assets database* (University of Oxford, 2015).

or stopping deforestation. Agreements would undoubtedly require developed countries to move more quickly than poorer ones and funds would need to be made available to support transitions.

Just one such agreement, say on phasing out subcritical coal-fired power stations globally by 2030, would be ambitious, but if implemented would almost certainly yield many more net emission reductions than the entire UN process has so far. That's not to say that such agreements are easy – they are not – but such efforts should be made and undertaken in parallel (and in a supportive, reinforcing way) to the UN track. The fact that such efforts have not taken place is largely down to a lack of imagination and an outdated worldview, where the UN track is seen as the only way to secure progress. We must be much more pragmatic and the centre-right should be at the forefront of reimagining British and European international climate diplomacy.

International development

The government's commitment to spending 0.7% of the UK's gross national income on aid is noble. Regardless of your exact views on whether this is a sensible commitment and whether it need be enshrined in UK law, it is important that these funds are now deployed cost-effectively and in ways that support the sustainable, long-term development of the poorest countries.

Promoting environmental sustainability is key to future growth and development in the least developed countries. It is also vital for addressing global environmental challenges. For example, if Myanmar liquidates its vast forests (among the largest intact rainforests in the world) is that compatible with its own near-term development needs, its long-term economic development, or global efforts to tackle climate change and biodiversity loss? I would argue that the answer is certainly not.

There is a strong case for front-loading efforts to support sustainable development to prevent irreversible and counter-productive decisions, such as the liquidation of virgin rainforest. The Department for

International Development (DfID) could do more to lead on these efforts – the sad reality being that environment, climate change, and sustainability have long languished near the bottom of the DfID agenda. This is partly due to the fact that it is easier to measure other types of aid – the number of vaccinations given, children schooled, or amount of food relief delivered to disaster zones. This has placed environment and climate change at a disadvantage as the innumerable benefits of such expenditure are less straightforwardly quantified. Unpicking these biases and making sure environment is better embedded in DfID's work should be a priority for the centre-right as it can support short-term and long-term development objectives.

One idea would be to partially frontload some of our 0.7% commitment into areas where it unquestionably makes sense to act sooner, rather than later. Vaccines, education, environment, and climate adaptation might fit into this category. Government should explore how we could frontload 20–25% of planned annual aid expenditure over the next 10–15 years into key initiatives in the short-term to prevent irreversible losses or harm. Forests would be a good area for such frontloaded expenditure – in terms of livelihoods, climate change, irreversibility (once cut down, they are very hard to restore), and biodiversity. The mechanism for doing this could be bonds issued on the back of future aid commitments.⁴⁵

London

London is the 'green' financial capital of the world. This privileged position was achieved almost entirely by accident – sustaining and developing its valuable lead will require effort.

A combination of factors conspired to give London its lead in green and sustainable finance. As the largest financial centre within the EU Emissions

45 See here for more detailed proposals: The Prince's Rainforests Project, "An emergency package for tropical forests", http://princes.3cdn.net/f29d276ce664b2db67_y6m6vtxpe.pdf (2009).

Trading Scheme (ETS) and being part of a developed country signatory to the Kyoto Protocol, London by default became the centre of both the EU and international carbon market. This is in contrast to key competitors – such as New York, Chicago, and Sydney – which are in jurisdictions that either failed to ratify or delayed ratification of the Kyoto Protocol.

Another critical factor has been the active promotion of green and climate change-related policies by successive British and EU member state governments. Not only does this create a plethora of green investment opportunities in a large and close hinterland (the European market) that can be accessed by London-based professionals, but it also means that London has become a leading green innovation hub. Ideas generated by London's think tanks, NGOs, and academic institutions are quickly picked up by UK politicians, disseminated through London's international media hub and then promoted in other European member states and internationally. This nexus of green innovation is something Britain can be proud of.

But London's promising start in this new sector could be successfully challenged. We will be seriously tested by other ambitious financial capitals, including cities that missed out the first time round, or by those that have identified this as a key growth area, which include the likes of Frankfurt, Shanghai, Hong Kong, Singapore and Tokyo. An intimidating mix of competitors by any standard, especially if one looks to China.

One of the great opportunities for London to retain its position in this large and growing sector is the need for infrastructure investments throughout Europe. From energy efficiency through to grid reinforcements, approximately €470 billion per year (€8.4 trillion until 2030) needs to be invested in infrastructure across the EU.⁴⁶ The vast majority of these investments and refinancing opportunities will be through non-bank lending (NBL) markets. European banks have severely constrained balance

46 Georg Inderst, "Private infrastructure finance and investment in Europe", http://www.eib.org/attachments/efs/economics_working_paper_2013_02_en.pdf (2013).

sheets post-financial crisis and so other types of financing model need to spread rapidly. London is perfectly placed in terms of skills and geography to facilitate this move from bank lending to NBL.

Key for this opportunity to be realised is the European Commission successfully taking forward two processes of market integration across the EU. The first is the establishment of the capital markets union (CMU), which will enable London's expertise to be more easily marketed and sold in other EU member states. The CMU aims to develop more efficient and liquid markets for the issuance of financial instruments. The second is the single internal energy market, which will help to unlock power sector investment, thus spurring demand for investment and financing. It is vital for London and broader UK interests that these two processes conclude successfully. The UK has played, and should continue to play, a vocal role in making sure these reforms are carried through.

In addition to these opportunities across the EU, the global transition to more sustainable and low carbon energy systems is essentially a story of moving from operational expenditure (paying to burn oil, gas, and coal) to capital expenditure (paying for wind, solar, storage infrastructure which will then have low or zero marginal costs). This benefits capital and the providers and organisers of finance. London as a financial centre has much to gain from this shift. The global transition to sustainability will disproportionately benefit London – yet another reason for it to be a significant UK foreign policy priority.

Box 3.1. Summary of policy proposals

- Regardless of whether a UN agreement in Paris is reached, clean technologies will continue to transform markets and disrupt traditional business models remarkably quickly. Nevertheless, an international deal still matters and the UK centre-right should be helping to ensure the best possible outcome.

- While recognising the importance of the UN process, we should also recognise the importance of bilateral and plurilateral action and be much more active in this respect. Key countries, including the UK, should identify key sectors and then mobilise the right coalitions to reduce emissions from those sectors.
- Sector specific agreements would be complementary to the UN process, but could be separate from it. The UK should take the lead on negotiating one such sectoral agreement by 2020 – phasing out subcritical coal-fired power stations globally by 2030 or a comprehensive and funded international deal to stop tropical forest deforestation would be potential options.
- Government should partially frontload some of the UK's 0.7% development aid commitment into areas where it unquestionably makes sense to act sooner, rather than later. Vaccines, education, environment, and climate adaptation might fit into this category. Government should explore how we could frontload 20–25% of planned annual aid expenditure over the next 10–15 years into key initiatives in the short-term to prevent irreversible losses or harm.
- London is the 'green' financial capital of the world. One of the great opportunities for London to retain its position in this large and growing sector is the need for infrastructure investments throughout Europe. Key for this opportunity to be realised is the establishment of the capital markets union (CMU) and the second is the single internal EU energy market. It is vital for London and broader UK interests that these two processes conclude successfully. The UK has played, and should continue to play, a vocal role in making sure these reforms are carried through.

Green and Responsible Conservatism sets out how the centre-right of British politics could better embed sustainability and long-termism within the UK economy. By understanding and overcoming the issues that impede our ability to become more sustainable and long-term, we can deliver better environmental, economic, and social outcomes.

The report proposes ambitious and cost-effective policies to build a greener and more long-term economy based around three major themes: tackling the tragedy of horizons in public and private sector institutions, securing value for money in relation to environmental outcomes, and urging a new internationalism to address climate change.



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