



Lord Smith of
Finsbury



Chris Hewett



Ingrid Holmes



James Cameron



Penny Shepherd



Prof. Paul Ekins



Stephen Radley



Frances O'Grady

“green
alliance...”

From crisis to recovery

New economic policies
for a low carbon future

[foreword](#)

Rt.Hon. Lord Smith of Finsbury
Page 2

[from crisis to recovery: introduction & summary](#)

Chris Hewett
Page 3

1

[accelerating green infrastructure investment with green bonds](#)

Ingrid Holmes & James Cameron
Page 8

2

[reshaping the capital markets for a sustainable recovery](#)

Penny Shepherd
Page 13

3

[rebuilding the public finances with green taxes](#)

Professor Paul Ekins & Chris Hewett
Page 20

4

[the case for a low carbon industrial strategy](#)

Stephen Radley
Page 26

5

[creating green jobs: a just transition](#)

Frances O’Grady
Page 33

6

[From crisis to recovery:](#)

New economic policies for a low carbon future

Edited by Chris Hewett

ISBN 978-1-905869-23-7
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[contributor biographies](#)

Rt.Hon. Lord Smith of Finsbury has been chairman of the Environment Agency since July 2008. He is also chairman of the Advertising Standards Authority. He was a Labour MP for Islington South and Finsbury from 1983-2005. In 1992 he joined the shadow cabinet as shadow secretary of state for environmental protection, and two years later moved to heritage, then social security and health. When Labour came to power in 1997 he became secretary of state for culture, media and sport.

Stephen Radley, has been the chief economist for the Engineering Employer’s Federation since January 2000 and director of policy since June 2008. He is responsible for the EEF’s work on the economy and industrial policy. This encompasses both macro-economic issues such as the state of manufacturing, interest rates, taxation and productivity and competitiveness areas such as investment, skills, trade and innovation. He is also responsible for the economic analysis relating to EEF’s work on environmental and energy policy.

James Cameron is an executive director and vice chairman of Climate Change Capital. He is responsible for strategic and sector development and represents the firm at the highest levels of business and government. He is an expert in developing market based policy responses to climate change. Prior to CCC he was counsel to Baker & McKenzie and was the founder and the head of their Climate Change Practice. He has spent much of his legal career working on climate change matters, including negotiating the UNFCCC and Kyoto Protocol as an adviser to the Alliance of Small Island States. He is also the chairman of the Carbon Disclosure Project, a senior advisor to The Climate Group, a member of the board of GE Ecomagination and a member of the Copenhagen Climate Council.

Paul Ekins has a PhD in economics from the University of London and is professor of Energy and Environment Policy at King’s College London and a co-director of the UK Energy Research Centre. He is also director of the Green Fiscal Commission. He was a member of the Royal Commission on Environmental Pollution from 2002-08. His academic work focuses on the conditions and policies for achieving an environmentally sustainable economy, with a special focus on energy policy, innovation, the role of economic instruments, sustainability assessment and environment and trade.

Penny Shepherd MBE has been UKSIF chief executive since May 2005. UKSIF, the sustainable investment and finance association, promotes responsible investment and other forms of finance that support sustainable economic development, enhance quality of life and safeguard the environment. She was the first chief executive of the London Sustainability Exchange (2001-05) and has been a member of the Mayor of London’s Sustainable Development Commission (2002-07).

Ingrid Holmes is member of Climate Change Capital’s Advisory Team. She leads on UK and EU climate change and energy policy. Ingrid undertakes policy and market analysis and provides strategic advice on managing policy risk across CCC’s business. She also provides advice externally to governments and corporates. She has previously worked for the UK parliament as a scientific adviser and for Defra as a member of the Science policy unit. She is a member of the independent expert panel advising the prime minister’s special representative.

Chris Hewett is an associate of Green Alliance leading the sustainable economy theme. He was previously head of climate change for the Environment Agency and a senior research fellow leading the sustainability team at the Institute for Public Policy Research, publishing work on green taxation, low carbon economy, emissions trading, energy and environment policy.

Frances O’Grady became TUC deputy general secretary in January 2003, the first woman ever to hold this post. She has lead responsibility for a wide range of key areas of policy development across the TUC’s work including trade union recruitment and organisation, inter-union relations and TUC services to members. She is a member of the Policy Advisory Council of the think tank IPPR and joint vice chair of the LSC National Council. Since March 2006, she has been co-chair of the Public Services Forum Learning and Skills Task Group. She served on the Commission on Environmental Markets and Economic Performance in 2007, and has played a leading part in the development of TUC energy and climate change policy. She is also a member of the UK Skills Board, and in April 2007 was appointed to the Low Pay Commission.

foreword by Lord Smith of Finsbury



We may not have had very much choice about how we went into the global financial crisis and the recession it precipitated. But we do certainly have choices about how we come out of it, and how we rebuild our economy and society in ways that are far more sustainable than they were before.

If we simply try to recreate what went before – getting and spending and consuming and lending and borrowing in a great frenzy with no concern for consequences – we will find that we end up with exactly the same problems again, only more intractable. We have to find ways of doing better.

There is now a broad consensus that “doing better” involves, most importantly of all, the development of a low carbon economy: an economy that generates less greenhouse gas and especially less carbon dioxide, that imposes less strain on precious natural resources, and that considers all the time the need to avoid creating dangerous climate change. That much is common ground amongst most politicians and economists. But how exactly are we going to get there? This pamphlet sets out, with admirable clarity, a set of proposals and practical steps that will help to do exactly that. It is an invaluable contribution to the debate.

The initial step in response to the financial crisis, advocated by most governments around the world, and coordinated rather remarkably between nations, was a major public-spending stimulus. The size and courage of the stimulus varied of course from country to country, but most if not all contained a “green” element, and this in some cases represented a very significant portion of the overall package. Investment focused on energy efficiency work, renewable energy development, rail infrastructure, electric motor vehicles, and water resources; and a lot will have been

achieved by this initial surge of public expenditure.

But that phase is now over, and expecting the next wave of investment in green initiatives to come simply from the public purse is over-optimistic. The major investment drive for a low carbon economy must now come from the private sector, and this pamphlet concentrates on how that can be stimulated, enabled and encouraged. It looks at how financial regulation (something almost everyone agrees was fatally ignored in the run-up to the credit crunch) can help to focus investment decisions on long-term sustainable goals rather than short-term unsustainable gain. It looks at the creation of new bonds earmarked for investment in low carbon infrastructure, geared for both institutions and for individual savers. It looks at the concept of a Green Infrastructure Bank. It looks at how a green tax shift could help to change behaviour and decision-making – not using green taxes simply to raise revenue, but rather to incentivise sustainable economic activity whilst deterring the unsustainable. And it looks at the development of skills that the economy will need if it is to head in this direction.

To create a genuinely low carbon economy will require clear vision, political courage, and a determination to do things differently. It can't be done overnight. But here in this pamphlet are some compelling ideas for how we can set out on that journey. It should be required reading for leaders across the world.

1

from crisis to recovery: introduction and summary Chris Hewett



Much has been written about the credit crunch and associated global economic downturn. Many have drawn parallels between the causes of the systemic collapse of the banking system and what we need to do to prevent the potential collapse of the climate system. Our leaders have shown they are capable of taking bold measures when faced with an immediate crisis. Can they learn from this and take equally bold measures to prevent an even bigger crisis?

Times of economic and political crisis are opportunities to take policy in different directions. It will not be easy, but it is possible and necessary to make the change in gear required as we come out of the downturn. There are greater economic reasons for a low carbon transformation than ever before. It is widely expected that the global price of fossil fuels will rise dramatically as the recession ends¹, and the financial crisis has demonstrated to policymakers that the UK economy was over-reliant on financial services. Creating a low carbon economy would make the country more resilient to global price shocks in fossil fuels and provide a new focus for the

economic development required to create jobs and fund public services.

Politicians from all parties are now able to speak fluently about the opportunities of a low carbon economy. We have consensus on the targets and ambition set out in the Climate Change Act, together with a trajectory recommended by the Committee on Climate Change. An ever-wider set of interest groups exhort more from government on this agenda. Trade unions, development groups, businesses, the CBI, and eminent economists such as Lord Turner and Lord Stern now frequently join environmental groups in pressing for an accelerated move towards a low carbon economy. But there is a growing chasm between this consensus for change and the willingness of anyone to take the bold decisions to make that change happen. In particular, the big levers of the economy, be they private capital, taxation, public spending or industrial strategy have not yet been engaged in a serious way. If a sustainable recovery is to become reality then we have to use these big levers.

In this pamphlet, we bring together some leading thinkers from the world of investment, business, trade unions and environmental economics to set out how we should use those big economic levers in order to transform the UK into a low carbon economy as rapidly as the science of climate change is telling us must be done.

The Green New Deal

In the immediate aftermath of the credit crunch and financial crisis of Autumn 2008, the focus of most governments around the world was on how to use the big lever of public spending to help prevent the economy from heading into a depression. The rapid development of the concept known as the ‘Green New Deal’, first coined by the Green New Deal Group² but picked up by many around the world, was the first push from environmental advocates for a serious increase in public spending on environmental projects and low carbon infrastructure in particular for a long time. It bore fruit around the world as highlighted by analysis carried out by HSBC. Significant proportions of fiscal stimulus packages have been devoted to low carbon investment with China (\$220bn), the US (\$100bn), Korea (\$31bn) and Germany (\$14bn) in the lead.³ Lord Stern argued that 20 per cent of any fiscal stimulus should go on green investment⁴ but few countries passed that benchmark, and certainly not the UK. The autumn cut in VAT may have been a very swift response to the downturn, but it did not signal a change in direction from high carbon growth.

Beyond the green fiscal stimulus

The first phase of the green fiscal stimulus is now over. Certainly in the UK, there is no current political appetite or economic room for major injections of public spending. So our contributors focus on three other big economic levers: mobilising private capital, raising green taxes, and industrial and skills strategy.

“for these [sustainable recovery] ideas to work, the government has to embrace them, not flirt as they did with the Green New Deal”

This is not to say that public spending will not remain important, and we would expect that some of the revenues from green taxation, in particular, should be reinvested to help the low carbon industrial strategy, and develop the necessary infrastructure.

As with the debate about green fiscal stimulus, the key to success in creating a low carbon economy is taking bold measures and matching the policy response to the scale of the problem. Billions of pounds of private capital need to be invested in the low carbon economy in the next two decades. Price signals created by taxation need to be completely unambiguous to create certainty, and for green taxes to become a major contributor to public finances. Support for new low carbon industries must be tangible to those making decisions about hiring and firing new workers, or expanding or contracting a manufacturing plant.

So for these ideas to work, politicians have to embrace them, not flirt as they did with the green new deal. When sustainable investment is a mainstream part of every pension fund portfolio, when the price of carbon is as important to the chancellor as the inflation rate and when the UK low carbon sector is a major contributor to the balance of payments, then the transformation will be complete, but whilst these considerations are all niche in their respective fields, much more needs to be done.

Mobilising private capital to finance the low carbon transformation

Before the credit crunch, private capital was beginning to flow into low carbon sectors, but at nowhere near the scale needed to fundamentally transform the economy. In the aftermath of the financial crisis, the private sector will provide the vast majority of the investment required. That has always been true, and is brought into even sharper focus given the high government debt and need to restrain public spending over the next decade. The financial crisis exposed some of the flaws in the way private capital has been allocated in the last ten years, driven by short term profit and a fundamental misunderstanding of some of the risks involved.

So how do we construct ways in which we can reward sustainable investment and ultimately redirect a larger proportion of private capital to go towards the low carbon economy over the next decade, as we come out of recession? Public policy could do this in a number of ways:

- reduce the risks of low carbon investment
- create incentives that provide a higher return for such investments
- establish a greater certainty in the future of the low carbon sector.

Green bonds

James Cameron and Ingrid Holmes from Climate Change Capital, have led the

rapidly growing debate around whether long term government bond financing, earmarked for low carbon infrastructure investment, could be a way of attracting institutional investors and individual savers into this field in greater numbers. There are different options being discussed, and in some case implemented around the world, but the concept is straightforward: that government guarantees a low return over a long term basis for investment from the capital markets. Governments will be doing a lot of this over the next few years in order to finance the national debt. There is clearly a demand for these ‘fixed income’ investments from the pension funds, who are seeking more diverse and secure investments in an economy of volatile stock markets. The critical government intervention would be to create a class of bond whose revenues were specifically earmarked for investment in low carbon infrastructure.

As well as bond aimed at institutional investors, government could also create a retail ‘green savings bond’ targeted at individual savers. This would not only be a secure, long term means of saving, but would offer the opportunity for individuals to invest in the rebuilding and transformation of the country to cope with and reduce climate change. At a time when the public are far more receptive to the needs to save, rather than borrow, a bond product backed by government, but specifically targeted at financing the solutions to climate change, could capture the imagination in a way that

mass share ownership did in the 1980s. There is something very appealing about pooling the savings of many individuals in order to invest in the future fabric of the economy and society. Then we will all be saving for a rainy day.

Green infrastructure bank

It is not uncommon for countries to have a state owned bank as part of their financial sector. These institutions lend and invest at commercial rates, but only to projects that fulfil the public goals set out by the government. Spain, Germany and France all have such institutions and there are proposals for one in the US. The UK does not have such a bank at the moment but the state does have a major, if temporary, stake in most high street

banks. This stake could be used to create a new financial institution, a green infrastructure bank that could provide a pool of capital which could lend to major low carbon projects, play a part in multi-bank project finance deals, but require a longer term return than existing private sources of capital.

As well as the pool of capital, the creation of a green infrastructure bank would offer a new way to harness the undoubted wealth of financial expertise in the UK towards the greatest challenge that we face this century. There is very little experience of such financing mechanisms within government itself, and the institution could become a vital link between policy making and delivery at

scale, something else that will be required to achieve the rapid low carbon transformation that the science requires us to do.

Financial regulation

Penny Shepherd looks at how the reframing of financial regulation following the crisis is an opportunity to put in place more robust rules to ensure investors have a better understanding of the medium and long term risks of their decisions. As with the risks of sub-prime mortgages, many of the downsides of high carbon investment and benefits of low carbon investment are invisible to those allocating capital in the free market. Implementing a set of mandatory transparency requirements across pension funds, investment managers and the companies in which they invest, would bring more of the risks of climate change to light. In doing so, investments which bring with them greater social and environmental benefits are likely to receive more attention and capital than they have in the past. The bold change required here is the word mandatory, as it is clear that it is very easy for risks to get brushed under the carpet unless they are forced out into the open.

But rules are not enough, and can frequently be circumvented. The real prize is a culture shift in the City of London away from decisions based solely on short term profit and towards the creation of long term value in the companies and assets that they own. This shift could be led by the pensions funds in the public



“government should be unapologetic about supporting certain strategic low carbon sectors”

sector, as the majority of pension holders are more interested in the long term return than the short term. If the over £100bn worth of pensions funds that are in the public sector were to all require genuine responsible investment behaviour from their fund managers, then this would give a huge lead to the industry.

Rebuilding public finances

Whilst the government is creating the right climate for low carbon investment from private capital, another part of its economic policy in the next decade will be to repair the damage to the public finances created by the credit crunch and bail out of the banks. As well as the squeeze on public spending that will be required, all commentators and voters are now expecting some increase in taxation in the next five years. This new economic context has changed the politics of the tax debate. Paul Ekins and I argue that within this new politics of taxation lies a major opportunity to implement a green tax shift.

During the 1990s and 2000s, it has been very difficult to have an honest public debate about tax policy. Governments have only promoted the tax cuts they have delivered, whilst oppositions decry any tax increase as underhand and ‘stealthy’. In fact during the period 1995-1999, both Conservative and Labour governments cut income tax and increased green taxes, but they did not tell the electorate that is what was happening,

so ultimately the opposition to the green tax rises derailed the policy.

Now that we all acknowledge that taxes will have to go up in the next Parliament, there is an opportunity to debate the relative merits of different types of tax. Increases in tax on energy use, carbon emissions, waste and resource use could raise a significant, and predictable, proportion of the revenue required to repay the national debt, whilst simultaneously creating a price signal in the economy to improve efficiency, reduce emissions and grow the low carbon economy. Indeed forthcoming work from the Green Tax Commission will show that by 2020 green taxes could be raising around £100bn a year for the Exchequer whilst also reducing UK carbon emissions to within five per cent of the government’s target.

But we know from the experience of the 2000 fuel protests that, implemented without explanation, green taxes can be very unpopular. The difference now is that the case for increasing them should be made in the context of the alternative of increasing other taxes: income tax, VAT, corporation tax, stamp duty and further cuts to public spending. So the boldness required here is twofold. First, the increases in green taxes will need to be substantially higher than we have seen previously. Second, politicians have to present them honestly and argue the case, rather than slip them in whilst talking about something else.

Rebuilding our skills and industrial base

If we are able to provide rewards for sustainable investment and increase the price of carbon and other pollution through taxation, the question will still remain as to whether the country has the appropriate skills and industrial base to deliver a low carbon economy. There has been a striking change in tone from the government on industrial policy since the financial crisis, coupled with an equally striking confluence of views between trade unions and employers on the need for greater intervention on industrial development. Pieces from Stephen Radley and Frances O’Grady illustrate this coming together on low carbon industrial and skills policy, whilst highlighting different angles on the types of detailed intervention required.

There is consensus that the government should not be as reticent in ‘picking winners’ in industrial policy as it has been over the last few decades. Giving support to strategic low carbon sectors is not the same as backing specific ‘national champions’. And there are sectors that offer clear economic opportunities for the UK, as well as being essential to the fight against climate change. Carbon capture and storage and marine renewables are the two most frequently cited, but there will be others. More targeted support could be provided for the development of supply chains in wind power, low carbon vehicles or renewable heat systems. The role of the Office for Renewable Energy Deployment should also have the same

resources and remit given to the Office for Nuclear Deployment.

Investment in new skills will be critical to the growth of a low carbon industrial base. This skills development cannot be solely demand-led and greater public investment must be used to anticipate the new skills that the workforce will need to acquire to supply the new companies and create new employment. Again the level of effort and resources going into the nuclear industry skills strategy should be replicated in other low carbon sectors.

Finally, Frances O’Grady highlights the rapid growth in employee participation, often facilitated by local trade unions, in the workplace on climate change and related issues. This activity has mushroomed in recent years but is yet to be replicated at a more strategic level. Greater employee involvement will accelerate a transition to lower carbon in an individual workplace, and will be politically important at a national level. For a major transition in the economy will be about job losses and insecurities in high carbon sectors, as well as opportunities in new ones. Unless the economic and social consequences are planned for and dealt with, then rapid change will either be impossible to implement or will come with an unacceptably high cost to people’s jobs and economic prospects. Well-funded programmes of retraining and diversification will be an important part of what the trade union movement has called a ‘just transition’.

Again boldness is required. Government should be unapologetic about supporting certain strategic sectors, and conversely, not supporting others. And for those workers and communities that are currently dependent on high carbon sectors that will need to change and or decline, there should be targeted help through the transition and genuine engagement, rather than unsustainable promises to protect them from change.

Conclusions

As policymakers chart a course away from the global economic downturn, the vision and tools have to be radically different if they want to realise the low carbon transformation now regularly described by ministers and opposition politicians. Tinkering with the old model will result in a return to where we were, with an economy vulnerable to rises in fossil fuel prices, forced to import most low carbon technology and expertise, and increasingly lacking the credibility to remain a world leader in climate negotiations. We certainly won’t be leading the low carbon economy, on the contrary we’ll be dragging along behind it and paying a high price.

Taking the bold decisions suggested by this pamphlet could:

– make the transformation of our energy and transport infrastructures, as well as our building stock, the engine of economic and human development for the 21st Century.

– reinvent a damaged City of London as a hub for long term, responsible investment, with low carbon technologies at its heart;

– rebuild our public finances in a more balanced way that leads to a carbon price in the economy that supports, rather than undermines, the rapid growth of a low carbon economy.

Making the low carbon transformation is a major political and economic project, and embarking on anything this big takes political leadership and risks. History tells us that such risks are much easier to take at times of crisis. Now is such a time. Government must build rapidly on its rhetoric towards a meaningful low carbon industrial strategy, incorporating a low carbon skills strategy. A Green Infrastructure Bank and associated green bonds could be established within a year. Major advances on green taxation should be trailed before an election and implemented in the first Budget of the new parliament. If we retreat into the false comfort zone that existed before the financial crisis, we may not have another chance.

2

accelerating green infrastructure investment: green bonds

Ingrid Holmes & James Cameron,
Climate Change Capital

Summary

The twin drivers of climate change and energy security concerns mean the UK will need to transition to a low carbon economy to remain economically competitive and relevant over the coming decades. At the same time, the economic crisis is driving up the numbers of unemployed. The need to innovate in order to move to a decarbonised economy is an opportunity to create new low carbon industries that provide the jobs of the future. However, the investment needed to realise this opportunity will amount to trillions of pounds and so the big question is where, in the midst of the worst recession in 60 years, will the money to finance these industries come from? The answer: green bonds.

Policy recommendations

Government should issue a series of green government bonds aimed at institutional investors, offering a fixed return over a period of 15 years or more. The proceeds of these offerings would be exclusively invested in low carbon projects.

The UK should establish a publicly owned green infrastructure bank to hold and invest capital in UK infrastructure projects, alongside private sector banks, that deliver carbon reductions as well as a return on that investment.

Government should offer a short term (five year) green savings bond for the public through the Post Office or via retail banks and building societies. Government would guarantee the return and the proceeds used to fund low carbon investment. These bonds should be accompanied by a national marketing campaign, equivalent in scale to those which advertised privatised shares in the 1980s.



“there is now a will for people to put their money to productive use and not just hope their bank will avoid buying housing estates in Florida”

The opportunity

Some of the most effective – and beautifully executed – British propaganda of the Second World War concerned the selling of war bonds. A little boy and his toy crane were pictured above a caption that read: “Lend to defend his right to be free.” Another had a mother and daughter staring into a rising sun above a line which read: “The Dawn of Victory, worth fighting for – worth saving for.”

Investment points were everywhere and the country was urged to do its patriotic duty and dip into its own savings, however meagre, and lend to the government. The money was specifically used for the war effort. By 1945 the total amount invested in UK war bonds stood at £1.75 billion.

There are dangers in linking the war against Nazism with the war against climate change but now is the time for the government to consider the issue of bonds for another cause – reducing greenhouse gases in our atmosphere – while at the same time kick-starting the faltering UK economy.

The two are linked. We can fix the economy and build a low carbon world. Take for instance the research and development done in this country on carbon capture and storage. There are various technologies in play and the UK is a leader in their development. At Imperial College in London and at Heriot-Watt University in Edinburgh and at the universities in Newcastle and Nottingham,

an extraordinary expertise has been built up. However Britain is in danger of losing this lead because of the lack of investment to turn this work into reality. We are good in the lab but not so good at getting that idea from the lab to market.

Take another example: the financing of new heat networks. This is where hot water, produced from an existing power station for instance, is distributed via pipes to heat homes, factories or offices. However, a new system of heat networks will not be built in the UK because the up-front costs of laying the pipes make it uneconomic compared with gas, where the delivery system, the gas pipe, is long built. In the long term heat networks are proven to drastically reduce carbon output and cost less to run.

Smart grids and the installation of retrofitted energy efficiency measures to existing homes and offices to improve energy performance are two further opportunities that can create jobs and stimulate local economies.

Huge sums of money will be needed for a complete overhaul of how we produce, deliver and consume energy. The building of a single carbon capture and storage power station will cost around £1 billion. But investment in large-scale low carbon projects has not yet reached its full potential. Inconsistent government policies, volatile carbon prices, industrial inertia and short-termist investment behaviour all stop investors coming forward.

So how to pay for it, how do we find green investors? The answer: green bonds. We believe that a series of targeted bonds, with their proceeds ring-fenced for investment in tangible green infrastructure, could capture investors’ attention whether they be individuals or institutions, such as pension funds looking, as they must, for financial return over many years.

The bonds could be fixed or index linked, offering modest but stable rates of return over a long period of time, matching that of the assets into which the funds would be flowing. That is to say we would build things to last. They would have the backing of government and the expected cash flows from the projects themselves. These green bonds would be a sensible way to finance the needed long-term investment in tangible assets that society should have to improve the quality of our lives.

We sense that there is now a will for people to put their money to productive use and not just hope that their bank will avoid buying housing estates in Florida or parcels of debt. There is something powerful in the idea that “My money built that and it works and I use it”. Meaningful work matters too: building things financed by people for a purpose that binds investor and worker and user. In the end people’s savings can produce jobs, galvanise effort in a common cause and leave a legacy of lasting value.

Here is more detail:

“the creation of a permanent body to invest government capital into low carbon infrastructure would be a very powerful market signal”

Why can't the capital markets do it alone?

The collapse of the UK banking sector, unprecedented levels of government involvement in the capital markets, increased investor risk aversion and rising unemployment combined with climate change means there is an increasingly strong need to invest in assets that will create sustainable job opportunities, stimulate local economies and deliver a new 'green industrial revolution'. The issue is how this would be funded in current circumstances. Green bonds can provide a substantial part of the solution, justified and marketed on the grounds that this additional spending is part of a strategic and targeted effort to create jobs. This would not be part of a cyclical fiscal programme, but a long term programme with stimulus benefits. If bonds raised are invested in renewable assets or a securitised energy efficiency programme, for example, this will not be traditional public spending but spending that is reimbursed through future revenues from those assets. This will assist with market confidence and not undermine the UK's overall credit position.

If a new low carbon infrastructure is to be built in the UK – and this is without question absolutely necessary – then more money than is currently accessible has to be found to pay for this. A series of green bonds with proceeds going directly into tangible green infrastructure projects could address this gap by capturing investor attention at both an institutional and retail level.

One could argue that this money could be raised through a regular bond. However, there is a long-standing history of suboptimal funding of the low carbon agenda. We argue that by developing a specific green bond the government can achieve specific clear wins:

- raising additional finance secured on future, policy-driven, revenues from consumers and the private sector, not general taxation;
- public announcement of a new focus on the low carbon agenda through the issuance of green bonds would build confidence and expectations among companies and the public of future policy direction;
- the green nature of the proposed bonds could assist with marketing not just to UK investors but to investors worldwide. In addition, they should reduce any media, political and city objections to stimulus spending, because this would be strategic spending to encourage future growth. According to some institutional investors we spoke to, the targeted nature of these bonds aimed at generating wealth and producing a public good could have a positive effect on the value of the pound and across the existing UK gilt market. Obviously this is a benefit that needs to be explored in more detail.

Green bonds have already been trialled by the World Bank and, as in that case, institutional investors should be the

immediate primary target. Green bonds would provide these institutions with additional opportunities to make socially responsible investments and act to engage the public in climate change issues while delivering long-term stable returns. For example, the California State Pension Fund has recently invested \$300m in the World Bank green bond. But being green will not be the only investment driver for these groups. To be attractive to the widest possible audience, these bonds need to be as conventional in structure as possible. The key difference between these and traditional bonds would be that proceeds would be ring-fenced to low carbon investment. This could happen either directly or via the issuance of such debt via a new state guaranteed Green Infrastructure Bank. This bank – akin to Spain's government-run ICO or Germany's KfW Bankengruppe – would be tasked with assisting with delivering, at arms length, some of the investment for the infrastructure required to achieve UK climate change policy goals. This is described later.

Green bonds: what do they look like?

Green bonds could take several forms. As mentioned, to raise capital fast, green bonds should be structured such that they attract the largest number of potential investors possible and are made very easy for investors to understand, i.e. it is structured in as conventional format as possible. (Any non-standardised structures will require investors to spend more time and money understanding how

the underlying risks, so could put some investors off and lead to delays in raising the required capital.)

A green bond is likely therefore likely to need:

- fixed maturity date – reflecting the lifespan of the asset/policy programme and likely to be long-dated (15+ years);
- two semi-annual payments with return of the 'principal' (capital) on the maturity date;
- fixed interest rate – reflecting the current market interest rate – and auctioned through multiple price auctions;
- issued by the traditional channels (the 'Market Makers').

Retail offerings

Government could also raise green bonds from the public through retail offerings. The government could appoint the Post Office or any high street bank or buildings society to raise debt, perhaps as 5-year 'notes' (short-term gilts), from retail customers in its own name or that of a new Green Infrastructure Bank, if government chose that route. This could either be a generic issue for low carbon technology or specific to fund a particular technology programme. Initially these may not attract large numbers of savers, but with the right marketing and support from other stakeholders, such as NGOs, they could become the war bond of the 21st century. There is considerable

political attraction in linking the new public need to save to investment in a renewed national infrastructure.

Getting funds to projects – a Green Infrastructure Bank

There would be two options for getting funds to projects. Firstly, allocating funds through the market. This could be achieved by HMT setting up a process in which private sector banks 'bid' for capital to invest in good quality low carbon projects. This would enable money to get into the system quickly, and removes some of the risks attached to government getting involved directly in the market. Government would have limited control over which projects were ultimately targeted, however, because selection would need to be market led. The second option would be for government to become actively involved in project selection. At present, however, the government doesn't have sufficient in house expertise to identify which projects should be prioritised. This issue could be overcome if the government were to allocate funds itself via the establishment of a new dedicated UK Green Infrastructure Bank. This new institution would be staffed by investment and finance experts but have an explicit remit to finance projects that would deliver long term carbon reductions and a return on investment. Its role would be wider than the distribution of finance from green bonds. It would perform three important new functions. First, it would provide dedicated and competent public sector financial expertise to deliver public

good outcomes inside a commercial policy environment, mirroring the type of function that the UK has supported the World Bank and IFC playing at an international level. Second, it would create a new and ongoing capacity in government to come up with innovative financing solutions to the challenges and complexity of a low carbon transition. Third, the creation of a permanent body to invest government capital into low carbon infrastructure would be a very powerful market signal that low carbon investment will remain a sound proposition for the foreseeable future, hopefully leveraging in a far higher proportion of private capital into this sector.

Such a state owned banks exist in a Spain, France and Germany. Serious proposals to establish a US Green Bank are coming forward in Congress and promoted by the Center for American Progress.

The UK itself is using the European Investment Bank (EIB) to help finance low carbon investment by up to £4bn, as announced in the 2009 Budget. There are, however, concerns about how much of that theoretical £4bn is actually going to be allocated to UK low carbon projects. Given the lack of control the UK has over distribution of EIB money and the huge investment requirements the UK faces, there is a strong case for having a domestic institution which would be focused on UK investment opportunities exclusively.

“without a coherent UK green financing strategy it is unlikely that the private sector will be able to deliver the necessary investment to meet carbon targets”

Need for an overarching vision

Low carbon markets in renewable energy, energy efficiency and infrastructure have the potential to be a major building block for UK economic recovery and future growth. However, the current financial crisis has hindered growth in many of these sectors, with the renewable energy sector in particular seeing many viable projects stalled, London Array notwithstanding. Without a coherent UK green financing strategy it is unlikely that the private sector will be able to deliver the necessary investment to meet UK targets and realise the potential for economic growth and job creation in these sectors.

Such a strategy must provide a credible investment narrative to attract the private sector. It must also be credible over all the potential scenarios for the UK's financing landscape over the next decade, as private sector banks and the government focus on rebuilding their balance sheets and business and regulatory models remain in flux.

A green financing strategy needs to include:

- targeted short-term interventions such as the more generous subsidies for offshore wind and access to European Investment Bank funding announced in the 2009 UK Budget;

- revised policies to support rapid medium term expansion of low carbon assets in the, for example greater

regulatory clarity on building of the offshore grid capacity;

- public funds made available via green bonds to invest alongside the private sector.

This self-financing public expenditure would represent government putting up capital to back its rhetoric, thereby creating greater confidence in the market for these assets. Green bonds could help drive UK economic recovery while not adding UK government debt that needs to be financed from future taxation revenues. The Green Bond would also provide a unique way of directly engaging the public and institutional investors in the process of decarbonising the UK economy. It provides the perfectly aligned opportunity to invest for the future by borrowing from the future.

Political leaders already understand most of this

At the launch of the low carbon industrial strategy in March Gordon Brown, Lord Mandelson and Ed Miliband all talked of the danger that Britain would get left behind in the “global race” towards a low carbon economy. The flipside, they said, was an opportunity to create hundreds of thousands of jobs in renewable energy and other areas of carbon reduction at a time when unemployment is surging. The government needs to now make this happen: providing actions and a credible plan to back up the rhetoric.

The Treasury can lend a hand. That is what happened in the 1940s.

As the world faces the worst economic downturn in decades, the UK government needs to take a bold and strategic approach to recovery. But it will not be enough to simply prop up existing industries and hope that the financial markets eventually return to some normality. Instead government should focus on how to maximise the opportunities implicit in the necessary conversion of global economies from high to low carbon. The government will need to invest money and political capital now to create the jobs and the assets of the future – and position the UK effectively to benefit from this global market transformation.

As a nation, we need to ask ourselves whether the current focus of spending is a good use of public money and whether the fiscal stimulus is strategic enough or at the right scale given the potential of the green agenda. If the answer is no, we are at risk of losing out as the new low carbon industrial revolution unfolds. If the answer is yes, the government will be creating today the cornerstones for investment in the industries and jobs of tomorrow.

To paraphrase a line from an old poster: “Green Bonds – the present for the future.” We and our political servants should seize the day. We have no time to lose.

3

reshaping capital markets for a sustainable recovery Penny Shepherd

Summary

The current debates on financial reform offer the most significant opportunity in our lifetimes to ensure that the investment system meets the needs of providers and users of capital in new and better ways and, at the same time, protects and supports the real economy, society and the environment. To achieve this, we must tackle the underlying issues that drive today's dysfunctional investment approaches. Until this takes place, the investment sector will delay rather than accelerate the transition to a sustainable economy.



Policy recommendations

Government should make it clear that the fiduciary responsibility of trustees requires responsible ownership and investment. A practical way to achieve this is to require pension schemes to report on how they implement their sustainable investment policies.

All publicly owned investment holders, including local government pension scheme funds, UK Financial Investments Ltd and NHS Trust investment committees should be required to sign and implement the UN-backed Principles for Responsible Investment (PRI) or make equivalent commitments to responsible ownership, and publish an annual report on their progress.

Government should require greater transparency of activity in both investment management practices and in the information that companies are obliged to disclose to investors on environmental, social and governance issues.

Consideration should be given to extending the objectives of financial regulators to enable them to take greater account of the wider public interest, including sustainable development. This would allow them to integrate societal risks, such as climate change and demographics, more effectively into stress tests for financial institutions and give greater flexibility in using sustainable investment indexes and similar ‘soft regulation’ measures to encourage socially and environmentally desirable behaviours.

“we must tackle the underlying issues that drive today’s dysfunctional investment approaches... until this takes place, the investment sector will delay not accelerate the transition to a sustainable economy”

The investment sector exists to maximise long-term value for its customers and in the public interest by the efficient and effective allocation of capital. Recent months have demonstrated massive failures in achieving this. The Turner Review identified “financial innovation of little social value” as a major cause of the financial crisis, while Financial Services Secretary Paul Myners has described current City behaviour as “an entirely rational response to commercial incentives” that results in “a failure to take account of the longer-term consequences of investment activity, including impact on the broader economy and society”⁵.

We now face an urgent need to redirect private sector investment and incentivise companies to build a low carbon, resource efficient, socially sustainable economy. To achieve this, we must tackle the underlying issues that drive today’s dysfunctional investment approaches.

Until this takes place, the investment sector will delay rather than accelerate the transition to a sustainable economy, even though this is not in the best interests of its customers or of society as a whole.

Barriers to sustainable investment

Social and environmental investment analysts now have up to two decades of practical experience in investment management companies. This has resulted in a deep understanding of the social and environmental opportunities and risks faced by companies and

industry sectors, and the barriers to integrating this understanding into City decision making. Leading analysts in this field now believe that regulatory and other changes are needed to fix the market failures that prevent these opportunities and risks from being fully addressed by the capital markets.

Analysts identify the following key barriers⁶ to sustainable investment:

- quality of demand from pension schemes, insurance companies and other investment management customers. Most measure investment services using short-term stock selection criteria rather than achievements in protecting value by good ownership.

- inappropriate or inaccurate beliefs about factors affecting future share prices (“investment beliefs”), eg. the increasingly discredited “efficient market hypothesis”, together with cultural and structural issues such as the “herd instinct” that discourages consideration of risks and opportunities that challenge these beliefs.

- perverse incentives and conflicts of interest that encourage short-term thinking and discourage change.

- lack of transparency; and ineffective or absent scrutiny and accountability, both within the institutional investment chain and from a wider community of specialists and concerned citizens representing the public interest.

- conflicting timeframes between investment decision making and social and environmental impacts; and legal and regulatory frameworks that permit costs to be externalized by companies and other users of capital. These reduce dramatically the rewarding sustainable investment choices available to investment managers measured using current performance criteria.

UKSIF’s online Sustainable Capital Markets library⁷ was launched in January 2009 to bring together key research on these barriers, with an emphasis on the impact of structures and incentives. Some of these barriers can be overcome with changes to regulation, but we also need to see a wider change in the culture of investment.

Changing the system not just the rules

Tomorrow’s sustainable investment system will result from addressing leadership, cultural norms, conflicts of interest, accountability and scrutiny together. Positive outcomes will emerge from the interactions of multiple parts, not from the mechanistic implementation of rules lacking social consent. Financial reform needs to enable learning, look systematically for and be able to correct unintended consequences, and draw on knowledge about innovation, complexity and brain science.

In many fields, there is a psychological difficulty in acting ahead of an emerging consensus. For stock market investors the difficulty is more than psychological.

They are rewarded for outguessing their competitors’ next move rather than for identifying risks that may not materialise for several years. Consensus-building around a new vision is therefore important to move the investment industry “herd”. A recent report⁸ from Ashridge Business School highlighted “Change the paradigm and transformational, whole system change will follow.” Groups such as the Investment Governance Group hosted by The Pensions Regulator have an important role to play in achieving this.

In a new paradigm, we might expect that:

- pension schemes, insurance companies and other major investment management customers believe that they must ensure the health of the economy and environment so that they can achieve sustainable income and capital growth. As a result, they:

- commission investment managers based on skills in protecting shareholder value and managing corporate impacts on society and the environment, as well as picking the right stocks and shares;

- set targets in investment management agreements based on these criteria, and use a balanced scorecard to judge investment managers against them;

- make seedcorn investments to grow the industries of the future so that good future investment opportunities exist when they need them.

- **Investment managers** include both incumbents and new entrants. Incentivised to deliver effective ownership and long-term returns, they:

- design new investment services considering sustainability trends and using tests of social value and resilience;

- vote to unseat company management that seek short-term profits at the expense of either the company’s long-term health or the wealth-generating capability of the economy as a whole;

- influence governments and other market participants to identify and avoid externalized corporate costs and maintain a banking system and securities market that delivers effective capital allocation;

- maintain internal cultures that value and reward ethical behaviour, professional standards, long-term thinking and regard for the public interest.

- **Companies** report publicly on a range of relevant social, environmental and governance (ESG) information. They disclose their sustainability strategy and all information used for financial ratings. Their non-executive directors have the time and resources for effective scrutiny. Directors refuse additional roles that may introduce conflicts of interest into the institutional investment chain⁹. Remuneration encourages long-term

thinking and concern for ESG issues. Major financial institutions and other key companies may have directors appointed to represent the public interest.

- **Financial services regulators** have regard for the wider public interest, including sustainable development, as well as specific objectives like market confidence, effective competition and consumer protection. Even when primary responsibility for a particular public interest issue sits with a specific body, regulatory objectives are drafted so that other regulators can take it into account;

- non-governmental organizations, professional bodies, academics, politicians and other **civil society** actors have a good understanding of the investment management industry and its customers and scrutinise it effectively in the public interest. **Investment professionals** with a commitment to professional standards and the public interest are supported by appropriate professional bodies and whistle-blowing provisions. The **wider culture in society** ensures that significant financial and reputational damage results from behaviours not in the public interest.

As a result:

- companies compete to **maintain ecosystems** affected by their activities, confident that investors will value superior performance on this as well as on conventional financial metrics. For example, oil companies do not seek to

“government should make clear that the fiduciary responsibilities of pension trustees require responsible ownership and investment”

exploit **Canadian tar sands** – corporate remuneration policies discourage it and a carbon intensive business strategy would be rejected decisively by an investor vote.

– **Promising new technologies** to address major social and environmental issues attract a reliable flow of investment.

– An effective market in investment products ensures that **customer needs are met** well. Product providers include both the traditional finance sector and **trusted and innovative brands from other sectors**.

Simultaneous action by government, regulators, investment managers and their customers and by wider civil society is needed to achieve this vision. A robust debate is required on the most effective measures. Some initial thoughts are given here.

1. Leadership by government

Clarifying fiduciary responsibility and increasing transparency by pension schemes and other investors:

Government should make it clear that the fiduciary responsibility of trustees requires responsible ownership and investment. A practical way to achieve this is to require pension schemes to report on how they implement their sustainable investment policies, including the key performance requirements in their investment management agreements¹⁰.

Such disclosure is still relatively rare. An UKSIF survey¹¹ of the corporate pension schemes of the UK’s corporate responsibility leaders published in early June 2009 found that only one fifth of funds referred to their sustainable investment policy in their annual report or communicated details on web sites while less than a tenth published their strategy for responsible ownership.

Equivalent requirements should be put in place for insurance companies and arguably also collective investment funds. As a first step, government could use its reserved powers¹² under the Companies Act 2006 to require transparency about voting records.

Responsible ownership by investment management customers in the public sector:

Government has more direct powers over major investment management customers in the public sector. It should require them to be responsible owners. This includes local government pension scheme funds (with total assets of around £100bn), UK Financial Investments Ltd (the government-owned company that manages the public shareholding in banks)¹³ and NHS Trust investment committees.

They should be required to sign and implement the UN-backed Principles for Responsible Investment (PRI), or make equivalent commitments. They should publish an annual report on their progress. Oversight bodies, such as the

Audit Commission, should address sustainable investment policies and practices in their assessments¹⁴.

Increasing transparency by investment managers:

In spite of voluntary standards set by the Institutional Shareholders’ Committee, disclosure by investment managers of their sustainable investment practices and achievements remains variable. Government should enable greater scrutiny and reduce conflicts of interest by requiring transparency. Initially, it could use its reserved powers under the Companies Act to demand disclosure of voting records. Subsequent disclosure requirements should include clarity on conflicts of interest which may arise and how these are addressed.

Increasing transparency by companies:

Companies and other users of capital are still not providing responsible investors and other stakeholders with the information that they need to integrate sustainability issues into their analysis. There is often limited forward-looking guidance on the company’s sustainability strategy. When information is not disclosed freely, executives can influence ratings and investment analysis by withholding key insights from those who draw unflattering conclusions. Improved corporate information disclosure could be addressed by legislation or by stock exchange listing rules. Government could introduce an investor vote on the business review, the corporate sustainability strategy or other aspects of ESG disclosure. The International



Accounting Standards Board could ensure global comparability of key disclosures.

Regulatory objectives: Regulators, such as The Pensions Regulator and the Financial Services Authority, may sometimes be constrained by narrow objectives which prevent them taking the wider public interest, including sustainable development, into account. Government should consider whether more flexible remits are sometimes needed.

2. Action by regulators

Stress testing and impact assessment: Regulators should require stress testing

at the institutional and system levels against finance system exposure to risks from climate change, resource depletion, aging populations and associated social and political issues. UK government scenarios might be used for this. Tools should be kept up to date as scientific and other knowledge deepens.

Regulators should assess also the impact of the investment management chain and its regulation on the wider public interest, including sustainable development. Unintended consequences and the flexibility to address them should be considered. Greater use of environmental impact assessment should be explored when considering new or changed regulations, together

with assessment of impact on resilience and well-being. Regulators worldwide should share skills in addressing the public interest.

Regulation of senior executives and pension scheme trustees:

Cultural change needs to go beyond remuneration practices. The Financial Services Authority’s recently increased focus on regulation of finance sector senior executives is therefore significant. To reduce conflicts of interest, it may be necessary to go further by constraining the roles held by both finance sector and other corporate executives.

The Pensions Regulator (TPR) should require pension schemes to be long-term responsible investors, taking due account of liabilities and scheme size. For example, TPR’s recent review of the Trustee Knowledge and Understanding (TKU) code of practice and scope guidance should take greater account of the skills needed to be a responsible owner.

Rewarding voluntary achievement and encouraging norms:

Regulators might publish voluntary indexes or other assessments of sustainable investment and ownership performance, thereby highlighting good practice and setting norms. In time, they might reward high ranking market participants more explicitly eg. with lighter touch regulation or lower fees. For example, the Pension Protection Fund (PPF) might use such an index when setting its levy.

“the sub-prime debacle has cruelly exposed the profound limitations of traditional investment analysis. The challenge now is to fix the market failures so that tomorrow’s sustainable investment system can emerge”

The Health and Safety Executive’s Corporate Health and Safety Performance Indicator (CHaSPI) provides an early example of this type of approach, while the OECD offers an example of success in setting transnational norms, eg. on tax.

Corporate disclosure and executive remuneration on ESG issues could be encouraged by additions to the Combined Code.

3. Action by investment managers and their customers

Improving investment management governance and culture: Voluntary measures within the investment industry have focused to date particularly on remuneration structures. For example, in their “Beyond the economic crisis” manifesto¹⁵, PIRC praises recent changes to remuneration structures at UBS as “containing features that could be applied more widely”.

It is important to build on this by addressing conflicts of interest not directly related to the remuneration of executives and professionals. Issues include peer pressure, access to information and role conflicts as well as incentives for intermediaries like rating agencies.

Informed by the Institutional Shareholders’ Committee Statement of Principles, investment managers should implement the transparency measures

described above ahead of any regulation or legislation. They should encourage and enable whistleblowing, particularly where conflicts of interest can arise. They should play an active role in ensuring an effective market and report to their customers on their contribution.

Sustainable investment governance by pension schemes, insurance companies and other investment management customers: Those commissioning investment management services should implement the transparency measures described above ahead of any regulation or legislation.

They should work together to agree transparency guidelines, model clauses for Investment Management Agreements and mechanisms to assess the performance of external and internal fund managers. Learning from experience over time, they should set stretch targets, benchmark their performance and implement processes for continuous improvement.

Improving pension scheme governance and resources: Trustees are equivalent to non-executive directors. They need similar leadership skills, time commitment and support. They should take advantage of best practice advice on sustainable investment now available from major investment consultancies and others. However, this is only part of the solution. For example, an UKSIF pension report¹⁶

recommended greater staff resources to manage relationships with investment managers.

Leadership by the Personal Accounts system: It is particularly important that the trustee body for the new Personal Accounts system demonstrates best practice in responsible ownership and investment as they are likely to set a de facto standard for the UK pensions industry.

4. Strengthening external scrutiny and independent challenge

Scrutiny and independent challenge is needed in ways that go beyond “brave” regulators¹⁷ and more effective owners of capital. David Pitt-Watson and his fellow authors highlighted in their recent paper “Towards an Accountable Capitalism”¹⁸ that “a successful economy is not just about the tensions between two separate poles: regulation or market”. “Just as a healthy political system hinges on the scrutiny of vigilant citizens, a successful financial system will need the oversight of vigilant market participants”, they said. There needs to be urgent debate on how to build both this more effective system of “vigilant market participants” and a wider community of specialists and concerned citizens who hold the City to account in the public interest.

Non-governmental organizations and trade unions: Until recently, scrutiny of the finance sector by NGOs, trade unions

and other civil society bodies has been limited mainly to remuneration and consumer issues and environmental campaigns on high profile projects like the Three Gorges Dam. Campaigners sometimes have low investment literacy and can request actions inappropriate for their target audience. Some capacity building does take place, a handful of guides have been produced and strategic initiatives, like the FairPensions campaign, are becoming well established. Nevertheless, overall NGO capacity is small and, with some notable exceptions, it can still be a challenge to attract knowledgeable staff.

Professional bodies and academics: These play an important role in creating an environment of scrutiny and challenge within technically complex areas. When effective, their role goes well beyond narrow technical competencies. Financial services should explore lessons from fields such as healthcare and science. There may be arguments for a greater number of roles being reserved for those with access to effective independent support from their professional bodies. New or expanded professional bodies may be needed for non-executive directors with public interest responsibilities, pension scheme trustees and “responsible ownership” professionals.

Improved financial literacy: Low understanding of and interest in the institutional investment chain is just one

aspect of a generally low level of financial literacy among the general public. This includes many opinion formers and concerned citizens. Student campaigns for ethical investment are a positive sign but they focus mainly on avoiding investments in particular companies rather than on more systemic change. Other technically complex fields may suggest ways to build capacity and engagement.

Conclusion

There is now a window of opportunity for change. Matthew Kiernan of RiskMetrics Group, the risk management specialists, has described the market meltdown as a “Trillion-Dollar Advertorial for New Investment Approaches”. Writing in the Spring 2009 issue of “GreenMoney Journal”, he said “The sub-prime debacle and its collateral damage have cruelly exposed the profound limitations and inadequacies of traditional investment analysis and risk management”. The challenge now is to fix the key market failures that drove this aspect of the crisis so that tomorrow’s sustainable investment system can emerge. This set of practical steps offers one way to achieve that urgent aim.

4

rebuilding the public finances with green taxes Paul Ekins & Chris Hewett

Summary

The UK government has largely thrown away the opportunity to use the fiscal stimulus forced on it by the recession to lay the foundations of low carbon recovery. Increasingly, this and governments for the foreseeable future will be turning their attention to how to fill the substantial hole in the public finances. This means that the politics of taxing and spending have shifted dramatically. The next government, of whatever political party, should use the imperative of tax increases to re-balance the tax system in favour of structural environmental taxes such as those on energy, road fuel, water and waste.



Policy recommendations

In the current economic context, green taxes should be considered as the first option for revenue raising instead of the income, consumption and profits-based taxes that the government might otherwise introduce.

By 2020, the government should be raising in the order of 15 per cent of its tax revenues (around £100bn) from green taxes.

To maximise the environmental effectiveness of these measures, as well as building their political acceptability and helping society achieve a transition to a high carbon price economy, a small but significant proportion of the revenues needs to be spent on low carbon activities, such as public transport, energy efficiency and low carbon industrial strategy.

Any tax on domestic energy must be accompanied by a major energy efficiency programme, and special treatment for vulnerable households in fuel poverty.

Government and opposition parties must engage in a more honest debate on specific green taxation proposals. Policymakers must be clear with the public that the price of fossil fuel energy is very likely to increase in future years, whether through market forces or tax policy, and it is the job of government to help the economy and society become resilient to this likelihood.

“since 1997 the proportion of government revenue derived from green taxes has actually fallen”

Government was too slow to recognise the fiscal stimulus as a low carbon investment opportunity

The UK government has largely thrown away the opportunity to use the fiscal stimulus forced on it by the recession to lay the foundations of low carbon recovery. The main stimulus element in the 2008 PBR of £12 billion in lost revenues from the cut in VAT did nothing at all to usher in the low carbon economy, and some elements, like the bringing forward of investment in roads, will positively militate against it. Overall, analysis from HSBC¹⁹ has shown that the relatively small accompanying investment in energy efficiency meant that the proportion of the UK's fiscal stimulus that could credibly be described as 'green' was well below that of a number of other countries, including China, Germany, South Korea and the US. Following criticism of the PBR on this count, the April 2009 Budget contained more measures than expected to support low carbon industry, offshore wind and a mechanism to fund carbon capture and storage, but fiscal constraints meant that the sums were relatively small and, as with the PBR, there were elements (such as the car scrappage scheme) which will do nothing to encourage low carbon investment or behaviours.

Will it recognise the taxation imperative as an opportunity for low carbon incentives?

So much for the missed opportunity of a Green New Deal for the UK. The figure that the 2009 budget will be most remembered for is the £175bn of forecast

government debt. It will now be much harder for the UK government to commit to big new public investment in low carbon projects, or any other projects for that matter. Increasingly, this and governments for the foreseeable future will be turning their attention to how to fill the substantial hole in the public finances which has been created by the bail out of the banks and the fall off in tax revenues and increase in benefit payments due to a deep recession.

This means that the politics of taxing and spending have shifted dramatically. Some previously unthinkable spending cut options will need to be considered, and the same is true for taxation. Old commitments have had to be abandoned, as when the chancellor introduced the 50 per cent income tax band for high earners. The 2009 budget also reintroduced the 'fuel duty escalator' (a commitment to an annual real-terms increase in the duty on road fuels). This needs to be the start in a new approach to rebuilding the public finances: we argue in this chapter that the next government, of whatever political party, could use the imperative of tax increases to re-balance the tax system in favour of environmental taxes.

So far there is little evidence that either party has yet given serious consideration to such an idea. As well as the taxation of higher earners, and the restoration of the 17.5 per cent VAT tax rate, we have been promised an increase in National Insurance contributions. None of these will do anything to make low carbon

options more attractive to either consumers or investors, and the latter, as a tax on labour, will positively discourage employment at a time when unemployment seems set to rise to heights not seen since the 1980s.

Since 1997 the proportion of government revenues derived from green taxes has actually fallen, notwithstanding the New Labour Government's Statement of Intent on Environmental Taxation issued a few weeks after its election in 1997, to the effect that it would seek to bring about a tax shift, with less taxation on the 'goods' of labour and profits, and more taxes on the 'bads' of pollution and resource depletion. In fact, the tax shift has gone the other way, with a higher proportion of revenues being now derived from taxing 'goods', even though the 'bads', in the form especially of carbon emissions, have been revealed by climate science in the intervening period to be very bad indeed and seriously threatening to human lives and well-being in the future.

The Conservatives have announced a few specific proposals in recent years but, since the recession has hit, they are saying as little on tax as possible. Even the Liberal Democrats, who have more green tax measures than the other parties, are strangely muted on tax raising in the current context, preferring to do their 'straight talking' on the spending cuts side of the equation. As the election nears, politicians are likely to have to make much clearer just where the extra tax revenues will come from.

“without a green tax shift there is practically no prospect of the UK 2020 carbon target being met”

As with the Green New Deal, the fact that politicians are currently ignoring the relative advantages of green taxation, does not mean that the opportunity, in terms of the benefits it could yield compared to alternative tax increases, is not great. The purpose of this article is to spell out these advantages and sketch out the change in approach that is required from green tax advocates to convince politicians and the electorate of its merits.

What would a fit-for-purpose green tax shift look like?

Let us imagine that the next government, now committed to legally binding carbon budgets, were to embrace the green tax shift in earnest, as the 1997 government had seemed to do. It would legitimately ask what taxes would need to be part of such a tax shift; what the environmental pay off of such a policy initiative would be; what levels of revenue it would yield after people had adjusted their behaviour to yield the environmental pay off; and what the wider effects on the economy might be. The UK Green Fiscal Commission (GFC)²⁰ was set up precisely to answer these sorts of questions and will produce its final report in October 2009. The discussion below is based on some of their work and deliberations.

The green taxes that would need to be part of a substantial green tax shift

Not all green tax measures are able or supposed to raise the sort of substantial and reliable revenues that government will need to repay national debt. The

classic example of a green tax measure that was effective but raised no revenues soon after its introduction was the tax differential on unleaded petrol introduced in 1987. Very soon it had actually lost the government revenue because sales of leaded petrol, sold at the then standard rate of fuel duty, had fallen effectively to zero. Clearly such tax differentials cannot be part of a green tax shift, and will not be further considered here. Moreover, a green tax shift would not be necessary if all environmental problems were as easy to resolve as the removal of lead from petrol. The fact is, however, that the human economy is always going to need to use substantial quantities of energy, water and other natural resources, with almost inevitable negative environmental impacts. The purpose of a green tax shift is to give increasingly strong incentives to increase the efficiency of, and reduce the environmental impacts from, that resource use, not least to offset the tendency towards increased resource use and environmental impact that arises from economic and population growth.

The measures that could be part of a green tax shift, because they fall on a large tax base and because that base would not fall to zero under the influence of the tax, are relatively few in number, but very important in terms of the environmental impacts they influence. They fall into three groups: taxes on energy, especially carbon-based energy (although the exploitation of all energy sources has some environmental impacts that need to be taken into account, so

that encouraging energy efficiency will always be a valid policy objective); taxes on water; and taxes on other materials and waste (aggregates, metals, landfill). In each case a tax would reduce waste and encourage efficiency in the uses of these resources, which are associated with serious concerns about their environmental impact or depletion. But also in each case the residual use of the resources would still yield substantial revenues, as has been shown by fuel duties, which over many years have yielded large revenues while helping to discourage excessive motoring and encouraging the purchase of more fuel-efficient vehicles.

In the current economic context we are advocating that such taxes should be considered as the first option for revenue raising instead of the income, consumption and profits-based taxes that the government might otherwise introduce. It is in this sense that what is being proposed here is a tax shift, rather than a tax increase.

The GFC has recently modelled a hypothetical tax shift, in order to determine its environmental and economic effects. The details of this will be reported late in the year along with the rest of the GFC's work, but here we preview some of the results. The green taxes that were modelled as part of the tax shift were:

– the auctioned permits of the EU Emissions Trading Scheme (EU ETS), not

strictly a tax, but a similar policy instrument that yields revenues to government and reduces environmental impacts:

- an increase in the Climate Change Levy;
- road fuel duty;
- vehicle excise duty/car purchase tax;
- household energy/electricity tax;
- emissions charge for aviation;
- tax on water use (and on water companies' water leakage above a certain rate);
- a tax on a range of materials (metals, aggregates, wastes)

Modelling an environmental tax shift

The effects of this tax shift were simulated through the use of a Cambridge Econometrics macroeconomic model which has been used many times for studies of this kind. The methodology entails projecting one or more 'baseline' runs into the future (in this case to 2020) without the policy to be implemented; and then imposing the policy or policies through 'scenarios' to see how the baseline runs are changed. In each scenario environmental taxes were increased and other taxes were reduced. In one set of scenarios the other taxes were reduced by the full extent of the environmental tax revenues; in another set other taxes were reduced by only 90

per cent (meaning that overall taxes remained higher after the tax shift), and the remaining 10 per cent of the revenues were spent by the government on stimulating low carbon technologies. There is only space here to report headline results. The full results and the details of how they were derived will be published by the GFC later this year.

The environmental benefits of a substantial green tax shift

In the baseline runs without the tax shift policy, but including relevant implemented or firmly proposed government policies up to 2008 (including the EU Emissions Trading Scheme [EU ETS] through to 2020), carbon emissions in 2020 are 15 per cent or 10 per cent below their 1990 level, depending respectively on whether the baseline had a high or low price of oil and other fossil fuels. This suggests that without very forceful new policies, the government's new statutory carbon budget, which requires a carbon emissions reduction of around 30 per cent below 1990's level, will be missed by a very large margin, over a wide range of oil prices.

In the green fiscal reform scenario with relatively high oil prices and full revenue recycling through the reduction of other taxes, carbon emissions fell to 22 per cent below 1990's level (i.e. a further emissions reduction of around 7 per cent of 1990's level), much closer to but still substantially short of the 30 per cent target. When 10 per cent of the revenues are used to stimulate low carbon technologies, the carbon reduction

reached 25 per cent below 1990's level, still short of the 30 per cent, but now within reach through the implementation of other policies. This finding is very important. As we will argue later, the use of some of the revenues for specifically environmental purposes is crucial for both the environmental effectiveness, but the political feasibility of a green tax shift.

The Stern Review advocated three kinds of policy to reduce carbon dioxide emissions: carbon pricing, technology stimulation and removal of the barriers to behaviour change. The green tax shift is the only kind of policy that acts on all three levels: it prices carbon, stimulates low carbon technology and incentivises behaviour change. With enhanced technology stimulation it can reduce emissions to within 5 per cent of the 2020 reduction target. The conclusion is threefold: the target is very challenging; even with a substantial green tax shift other strong policies will be necessary to achieve it; without a tax shift there is practically no prospect of the target being achieved – it is most likely to be missed by a large margin, like the target for 2010.

The revenues yielded by a significant tax shift

The total tax revenue in the (high and low oil price) baselines in 2020 was 5.5 per cent of total tax receipts, a lower proportion even than at present. The package of measures modelled raises revenues of between £92-117bn per year by 2020, which is 15-17 per cent of total tax receipts. The high end of the range

“the era of cheap road fuels is over. Governments must help the economy adapt to this new reality”

corresponds to low oil prices because the taxes have to be raised by a greater amount to reach the same end-user energy prices, which was a feature of the scenarios. It is important to note that these revenues take into account the behaviour change brought about by the measures (which is why emissions go down), so that the modelling strongly suggests that it is possible to cut emissions and raise predictable revenues. To the extent that other policies reduced carbon emissions down to the target, the revenues from carbon-based taxes would be reduced. For the revenues, and the incentive to increase energy efficiency, to be maintained, these taxes would need to be recalibrated in terms of energy, rather than carbon.

The economic impacts of the tax shift

The modelling shows a negligible effect on GDP growth, but employment, because of the relative fall in the price of labour due to the reduced labour taxes, increases by around 500,000 jobs.

These results are not directly applicable to the current context, because the modelling for GFC envisaged a classic tax shift: other taxes were reduced as green taxes were increased. In the current situation, we are advocating an increase in green taxes instead of other taxes. However, the modelling of the green tax shift is still reassuring. Reducing government deficits by any kind of tax increase will cut output in the short term below what it would have been had the government deficit been maintained, but

with the scale of the current UK deficit, all political parties are now preparing for some tax increases in the next few years. The GFC modelling suggests that there is no reason to think that substituting green tax increases for increases in other taxes will damage the economy, and they may, in a situation of high unemployment in which green taxes are substituted for labour taxes, result in increased employment, as well as a substantial reduction in carbon emissions.

Policies to complement the tax shift

The attractiveness of the theory of green tax shifts has by now frequently led political parties to sign up to the principle. As noted earlier the incoming Labour government published a ‘Statement of Intent on Environmental Taxation’ in 1997, and, the Conservatives have now equally pledged that every penny raised in new green taxes would be used to cut other taxes on the family. Implementation of a serious tax shift, however, is a different matter. In the political climate of the 1990s and 2000s, governments have not sought seriously to communicate, or convince the electorate of, the benefits of the two-sided coin of a tax shift. Instead, governments focus on tax cuts, and oppositions decry tax increases. From 1997 to 1999, with the Climate Change Levy, fuel duty and landfill tax escalators, introduced at the same time as cuts in income tax, Labour implemented a green tax shift, as the Conservatives had done in 1995 and 1996²¹. But neither government acknowledged that their

income tax cuts had been funded by the extra revenues coming from green taxes. Green tax shifts were implemented, but the political case for them was not made, so that the fuel duty escalator was the first casualty of the oil price rises in 1999 and the fuel protests that followed in 2000. The government’s half-hearted defence of fuel duties barely mentioned the green motivations behind them, or the fact that they had permitted the income tax reductions of the previous years. Even had they done so, because the government had pursued the whole tax shift policy covertly, their arguments would probably have cut little ice with either the media or the public. The fuel duty protests effectively put a significant green tax shift off limits for nearly a decade.

But now the political climate around taxation is very different. No politician can pretend that they will not have to raise some extra tax revenues in the next parliament. Both the public and the media are expecting tax rises, so the political prize is to design a package that raises revenues in a way that is fair, but also supports other policy objectives. Green taxes can meet those criteria, but the political case for them will have to be constructed very carefully to demonstrate their effectiveness on their own terms of raising revenue and cutting emissions, but also to be sensitive to those who will be most affected in the short term. Some of the revenue stream created will have to be devoted to these issues.

It has already been noted that the green tax shift will need to be complemented by other policies to reach the target for carbon emissions in 2020. It will also need to be complemented by policies to reduce its impacts on the competitiveness of the UK’s (relatively few) highly traded, energy-intensive industrial sectors, and on households especially vulnerable to energy price increases because of the poor insulation of their homes. The GFC will be publishing detailed work on these issues in due course, but the main issues can be briefly rehearsed here.

In respect of competitiveness, the sectors concerned are very largely covered by the EU ETS, so the effect on them of the UK green tax shift over and above this will not be great. However, a rising carbon price will stimulate the low carbon innovation and investment that will be critical in creating a low carbon industrial capacity that looks increasingly likely to be a major source of manufacturing, employment and export opportunities for the future.

In respect of households, the dire state of the energy efficiency of the existing building stock will have to be addressed irrespective of whether there is a green tax shift or not, if the UK is to have any chance at all of reaching its carbon emissions targets. What a green tax shift on top of a major programme of energy efficiency refurbishment of existing homes will achieve is a real likelihood that such refurbishment will result in real

cuts in energy use and carbon emissions (without reducing room temperatures excessively), rather than a continuing increase in all kinds of energy use as has been the pattern of all but the very recent past, when energy prices rose so steeply. But given that an energy efficiency programme of the required scale will take a few years to have an effect, vulnerable households will need to have special treatment over a transition period after the domestic carbon taxation has been introduced.

The other group who will remain very politically influential in the green tax debate will be motoring and haulage lobbies. Here political expectations have to be managed very carefully, and honestly, by governments. Most independent experts expect the price of oil to increase again as the global economic recovery picks up pace. The era of cheap road fuels is over. Governments must now provide policies which help the economy adapt to this new reality, and it is economically far preferable to do this through a green tax shift that raises road fuel prices, and allows other taxes to be reduced, in advance of world market price increases, which enrich oil-producing countries at the expense of the UK. Some of the revenues from higher fuel duty should go to maintain or increase investment in low carbon vehicles and public transport (as in the modelling reported above). Once alternatives are seen to be available for a wider section of the public, then acceptance of high fuel costs will be greater.

Conclusion

People dislike taxes and tax increases. But they are absolutely essential in the current context to reduce public deficits, once the recession has bottomed out, and increasingly recognised to be so. The issue for debate is not whether, but which, taxes should be increased. That such an unprecedented political debate over how the country should raise taxes is going to happen at a time when the urgency of climate change is far higher in public consciousness than ever before is a unique opportunity to lay to rest the politics of the fuel protests and start a serious debate over the merits of green taxation.

Whether the taxes to be introduced by the government are green or not is probably the single most important factor that will determine whether the country in 2020 achieves the carbon reduction and renewable energy targets to which the government is statutorily committed.

If the government of next year or the year after ducks this debate in favour of tax increases that it hopes the public will be less hostile to in the short term, then we can be sure that the 2020 targets will be missed and, despite all their fine words on climate change, UK politicians will be shown again to be incapable of delivering on the most important policy agenda faced by them and their electorate.

5

the case for a low carbon industrial strategy Stephen Radley

Summary

A unique, but limited, window of opportunity exists to position the UK at the forefront of low carbon technology, undoubtedly one of the key industries of tomorrow. Turning this vision into reality, however, will require government to act decisively and depart from the received wisdom of recent decades by taking a more strategic approach to industrial development.



Policy recommendations

Government must set out a clear strategy which signals to potential investors what it is trying to achieve, how it will achieve it and over what timescales.

A world-class business environment for manufacturing must be created. Areas important to emerging industries in urgent need of reform are the corporate tax system and support for R&D. The tax systems treatment of capital investments should be reformed and a higher proportion of existing public support for R&D should be targeted at low carbon technologies.

Government should identify and make a strategic commitment to a portfolio of the most promising low carbon industries. Robust criteria, such as market potential and evidence of potential UK competitive advantage, must be used to identify priority industries.

The Low Carbon Investment Fund should focus exclusively on strategic industries and address issues not adequately addressed by existing support programmes such as setting up low-volume manufacturing facilities and developing supply chains.

Feed-in tariffs should be introduced to marine renewables, an area in which the UK has an opportunity to develop an industrial lead and competitive advantage through the creation of a domestic market.

Government should use the leverage of public procurement to require its contractors to provide innovative, but reliable and cost effective low carbon products, such as vehicles and heating systems.

“the global market for low carbon goods and services will be \$4.3 trillion by 2015”

A widespread commitment to cutting carbon dioxide emissions and the ongoing post-mortem of the financial crisis have converged to create a widely-held vision of the future in which low carbon technologies are a major source of wealth and employment. Turning this vision into reality, however, will require government to act decisively and depart from the received wisdom of recent decades by taking a more strategic approach to industrial development. The low carbon sector encompasses a wide variety of industries at different stages of development. These range from mature industries that have evolved over a number of decades, such as industrial automation and nuclear power, to emerging areas such as marine renewables, fuel cells and anaerobic digestion. What these industries have in common, and what defines the sector, is that the products and services they supply help reduce carbon dioxide emissions.

The importance of a low carbon industrial base

There is a compelling economic and political case for developing a low carbon industrial base. The global market for low carbon goods is already significant and is forecast to grow rapidly over the coming years. A strong low carbon manufacturing sector will also help address some of the imbalances in our economy and enhance the UK's influence on international climate policy.

The global market for low carbon goods and services was worth £3 trillion in 2008 and is projected to exceed £4.3 trillion by 2015. Moreover, the industries with the highest growth rates are also those in which manufacturing accounts for a disproportionate share of activity in the UK. For example, manufacturing accounts for nearly 40 per cent of economic activity in the renewable energy sector, three times as much as in the economy as a whole.

A strong manufacturing sector will help address some of the economic imbalances that the recession has brought sharply into focus. The UK went into the recession with a record balance of payments deficit and a growing reliance on a financial services sector concentrated in a limited number of major urban areas. Manufacturing makes a disproportionate contribution to the nation's balance of payments – it represents 13 per cent of GDP but accounts for 60 per cent of exports and is more evenly spread across the country.

Developing successful low carbon industries will enhance the UK's influence on international climate policy. Demonstrating that the transition to a greener economy can create new sources of wealth and areas of employment would set an attractive example for others to follow. Supplying the technologies and products that will help other countries cut their emissions will not only be good business, leading by example is a far more persuasive form of

international engagement than simply exhorting other nations to adopt ever tougher carbon targets and regulations.

The need for a more strategic approach

The government has already done much to encourage and cajole the transition to a low carbon and resource-efficient economy in the UK. Extremely ambitious long-term targets for renewable energy generation, recycling and emission reductions have been set and backed up by a battery of financial incentives and regulations. So why is a more strategic and explicit industrial policy needed? The simple answer is that financial incentives to consume low carbon products, be they cars, energy or domestic appliances, will not ensure that the UK develops the industries which supply them. To avoid missing out on these opportunities, a new approach is urgently needed.

For the past decade, UK policy has focused on sending “price signals”. Instruments such as emissions trading, the Climate Change Levy and the Landfill Tax have created financial incentives to consume less, or lower carbon, energy, create less waste, and recycle more. The price signals these policies create, when they are consistent and maintained over time, are very important because they help stimulate demand for low carbon goods and services.

However, even generous, consistent and long-term price signals will not be sufficient to ensure that low carbon industrial base develops in the UK.

“the UK is not alone in its aspiration for a low carbon economy. Competition is already fierce and will intensify”

Indeed, this was never their primary objective. Products can, obviously, quite easily be developed and manufactured in one country and supplied into another. The wind energy industry provides a perfect example. Despite having some of the most generous wind energy subsidies in £/MWh terms, the wind turbines now being deployed at an increasingly rapid rate in the UK are mainly manufactured in Germany and Denmark.

The nature of price signals is important too. One of the main reasons for the slow development of renewable energy in the UK compared to other European countries has been the government's reliance on price signals that are either complex – the Renewables Obligation – or inherently volatile – the carbon price in the EU Emissions Trading Scheme (ETS). The incentives created by EU ETS carbon prices are dependent on, often volatile, circumstances in the wider economy. An obvious example is the current recession. A rapid reduction in economic activity has triggered a collapse in the price of fossil fuels and the price of carbon. The net effect has been a dramatic deterioration in the economics of renewable energy, with many UK developers publically questioning the viability of their investments.

Finally, the UK is not alone in its aspiration to create a low carbon economy. Competition to develop low carbon industries is already fierce and will intensify. Many countries are

developing ambitious plans for industrial development, backing their industries with significant resources and actively courting inward investment in clean technologies. Take the example of marine renewables, an area in which the UK is the originator of many of the most promising early-stage technologies and our government has aspirations for industrial leadership. The world's first commercial wave farm, based on British technology, was installed in Portugal and in South Korea a world-record 300MW tidal energy project, again based on British technology but using local industrial partners, is progressing quickly. In contrast, there are no commercial wave farms operational in the UK and the largest tidal energy project planned, due to commission in 2011, is 10.5MW.

If the development of a low carbon industrial base is a key priority for government, then it is clear that a different policy approach is urgently required. Secretary of State for Business, Lord Mandelson, has recently proclaimed a commitment to “a new industrial activism for a new green industrial revolution”. So what should this welcome change in tone mean in practice?

Beyond carbon pricing: a world class business environment

The first priority is to look beyond price signals and think about what makes a country an attractive environment to locate, develop or expand any type of

manufacturing activity. The business environment is created by the complex interplay of a number of factors such as taxation, access to finance, technology policy, the skills of the workforce and infrastructure. Manufacturing, irrespective of the industry, will tend to focus, all other things being equal, in countries with the most conducive business environments. A comprehensive audit of the competitiveness of the UK business environment for manufacturing is urgently needed.

Two areas where there is clearly significant scope for improvement are the corporate tax system and technology policy. These areas are especially important to companies in emerging industries, where investment and research intensive processes, such as setting up new facilities and product development, account for a disproportionate share of overall activity.

The current corporate tax system is actively constraining investment in manufacturing. By its very nature, manufacturing is investment intensive: it adds value and creates wealth by investing in an iterative process through which capital investment in state-of-the-art machines and equipment complements investment in innovation, skills, design and R&D. This is especially true of emerging industries, where many of these investment-intensive processes, such as product development, account for a disproportionate share of overall activity. However, the tax system is

skewed against the capital investments required in modern manufacturing.

The cost of capital investment is rising and investment cycles are shortening as increasingly rapid technological advances render existing machinery, equipment and plant obsolete faster. This well-established trend and economic reality is not reflected in the treatment of capital investments. Manufacturers typically replace their machinery and equipment every 7-8 years. Yet the depreciation rate attributed to capital investments by the tax system means that manufacturers are only able to recoup their costs after thirty years. Some recent changes to the tax system have actually raised the cost of investment in capital goods and the construction of new plant: a reduction in the level of capital allowances for machinery and equipment and the removal of a tax allowance for the capital cost of the construction of new factories.

Government funding of energy-related R&D in the UK has been very limited in comparison with that in other major industrialised economies. Support in the UK has been consistently the lowest in G7 over the past decade, and remains so by a significant margin. In 2006, the UK budget for energy R&D, as percentage of GDP, was less than a quarter of the USA's budget and less than a fiftieth of Japan's.

Not only is public support for energy R&D in the UK significantly lower as a percentage of GDP, it represents a much

smaller share of the total R&D budget. In 2006, energy accounted for 0.2 per cent of the UK's R&D budget, compared to 0.9 per cent in the US and 15.2 per cent in Japan. If the government wants to achieve its goal of placing the UK at the forefront of the green industrial revolution, then a much greater proportion of public support for R&D should be targeted at low carbon energy technologies.

Backing winners: setting a clear agenda

Alongside creating a business environment conducive to investment in manufacturing, a clear low carbon industrial agenda must be set out. A vision articulating which areas of low carbon technology government sees as the priority for industrial development. Prioritisation is essential because resources are limited, especially during a major recession and period of severe strain on public finances, and the UK is better placed in some emerging industries than others.

A frequent criticism of UK industrial policy, compared to that in other countries, is that it lacks a clear agenda. So government must signal to potential investors what it is trying to achieve, and over what timescales, by identifying and making long-term commitments to the most promising low carbon industries. This would give businesses the clarity and assurance they need to make long-term investments. The industrialisation of new and emerging technologies is costly, lengthy and risky. Companies spending significant sums on

product development over a number of years will tend to locate in those countries with the clearest commitment to the technology or industry in question.

A focused strategy will require a significant change in government's attitude to risk. In recent decades, government has had an aversion to 'picking winners' based on the belief that it is more efficient to let the market alone decide which energy technologies to back and a fear of wasting resources by backing technologies which fail to live up to expectations. However, the risk runs both ways, especially when dealing with early-stage technologies. Failure to intervene sufficiently early and to take a long-term view has seen the UK fail to develop a significant lead or presence in industries where it had a potential competitive advantage. For example, Denmark, Spain and Germany have stolen a march on us in the onshore wind industry despite the advantages we had in terms of geography and early stage research. In 2007, the German wind energy industry, deliberately nurtured by over a number of years by government, had turnover of 7.6bn and employed more than 90,000 people.

Rather than managing risk by avoiding taking any chances or making strategic decisions, government should develop a more sophisticated approach to risk management in industrial policy. Focusing support on a portfolio of carefully selected industries will help

“the £405m Low Carbon Investment Fund must be used to support a relatively small number of large projects”

minimise the risks. Robust selection criteria will be essential and we believe the following factors should be used as key identifiers of where to target support:

1. Market potential: any investment of public money by government must be targeted at those areas offering the best potential return on investment. Support should be focused on industries serving markets with high and long-term growth potential. Clean coal technologies, such as carbon capture and storage, are promising from this perspective. The United States Energy Information Administration forecasts that coal will be the fastest growing source of energy over the next few decades. It predicts that global energy use will increase some 45 per cent by 2030 and that a third of that will be fuelled by coal.

2. Competitive advantage: support should be focused on industries in which the UK already holds, or could realistically develop, a competitive advantage. Marine renewables are a prime candidate. The UK has the best wave and tidal resources in Europe, possesses a range of transferable skills (offshore engineering) and manufacturing capabilities (e.g. marine propulsion systems), and is the early leader in the development of marine energy devices.

3. Market Failure: support should be focused on stimulating areas with significant but constrained potential,

where markets are acting as barriers rather than catalysts to development. Examples include industries constrained by under-investment in essential infrastructure by the market or technologies in the “Valley of Death” – i.e. unable to access private finance to move from the R&D stage to commercialisation.

4. Alignment with climate policy objectives: the focus of any intervention should be on technologies or product areas which offer the prospect of delivering major reductions in emissions at competitive costs. An example might be low carbon heating systems. Heating accounts for 85 per cent of domestic

energy consumption and hence the majority of household emissions. In addition, small-scale heating systems tend to be considerably more cost-effective than the microgeneration of electricity.

The most promising industries will be those which meet several or all of the criteria. For the UK, these include carbon capture and storage, marine renewables, low carbon vehicles, low carbon heating and energy storage. Government will need to follow through on its low carbon industrial agenda with concrete, but well targeted, support for areas identified as priorities for industrial development.



Funding: more focused, better targeted

A long-term funding framework which maximises the effectiveness of public support by focusing resources on priority industries and targeting market failures not adequately addressed by existing programmes. The £405m Low Carbon Investment Fund (LCIF) announced in Budget 2009 will be an important test of government’s commitment to “industrial activism” in the green economy. The fund is a significant allocation of resource given the current state of public finances, but must be spent wisely.

The LCIF must be used exclusively to support priority industries and allocations from it must be large enough to make a significant difference to a project, business venture or emerging industry. Rather than spreading the £405m across a wide number of projects, it should be used to support a relatively small number of large projects. In addition, funding should be targeted at genuine market failures which are not adequately addressed or addressed at all by current programmes. Areas where better support is needed include establishing low-volume production facilities to commercialise proven technologies and supply chain development.

The defunct Supply Chain Groups Programme (SCGP), run by BERR until 2008, offers a good example of how cost-effective support can be provided to strengthen and develop supply chains. The SCGP helped companies in the automotive and aerospace industries

raise the performance of their supply chains. Under the programme, Tier 1 suppliers were provided with financial assistance to help raise the productivity of their supply chain companies by investment in their manufacturing capabilities, skills and project management resource. The grant funding provided, in the region of £120,000 to £180,000 per project, was fairly modest and issued against a commitment to pursue measurable objectives.

Finally, it is critical that the government sets out a clear intention and framework for funding the development of priority industries beyond the lifetime of existing support programmes. For example, the funds announced as part of the LCIF extend only to 2011. A commitment in principle should be made to extend the lifetime of the fund or introduce a successor scheme.

Demand stimulation: clear signals for private sector

A key objective of the strategy should be stimulating demand in emerging industries in which the UK has the opportunity to create a lead market. Orders allow businesses to plan, secure finance and invest with confidence. Decisive early leadership can have significant long-term consequences if the engineering expertise, operational experience and supply chains for the nascent industry concentrate in first-mover countries. However, to encourage early deployment of emerging technologies, signals to private

consumers will need to be as clear and stable as possible.

Feed-in tariffs should be introduced to marine renewables and low carbon heating, both are areas in which the UK has a realistic opportunity of developing an industrial lead and competitive advantage through the creation of an early domestic market.

Revenues from feed-in tariffs are predictable – a long-term contract is provided to generate electricity at a fixed unit price. Feed-in tariffs not only remove the uncertainty associated with wholesale electrical prices, there is also evidence that the cost of financing projects is cheaper under feed-in tariffs because the value of support is transparent to lenders. In contrast, the Renewables Obligation compounds the uncertainty created by volatile electricity prices, by introducing additional variables in the form of Renewable Obligation Certificate prices and the recycling of revenue.

Feed-in tariffs are especially suitable to accelerating the deployment of emerging energy technologies. The predictability of support is attractive to developers and investors who might be especially averse to price risk because they are already taking on significant technology risk. Crucially, fixed long-term tariffs significantly reduce political risk from an investor’s perspective – a feed-in tariff is a commercial agreement between two parties protected under contract law.

“a procurement programme to provide innovative but reliable low carbon heating for public sector buildings should be launched”

Demand stimulation: government as lead customer

Government must also follow through on its low carbon industrial strategy by leveraging the power of public procurement to help accelerate the development of priority low carbon industries. But this will require creative thinking from public procurers and a procurement process which is better tailored to innovative businesses.

The total public sector procurement budget is approximately £175bn per year. The sheer size of the budget suggests that there should be ample opportunity to support low carbon goods and services through public procurement. However the public sector, in its many guises, is perhaps less obviously a direct consumer of low carbon technologies than it is of, say, medical equipment and weaponry through the NHS and the Ministry of Defence respectively.

An excellent example of creative thinking is the US Navy's contract to Ocean Power Technologies to supply and build a 1MW wave farm for the Marine Corps base on the island of Oahu in Hawaii. The demonstration project is seen as a potential precursor for the deployment of wave power at US naval bases worldwide. Similar opportunities might exist in the UK to demonstrate and deploy marine energy devices at coastal installations.

Closer to home, the Department for Transport's Low Carbon Vehicle

Procurement Programme (LCVPP) is another example of the creative use of public procurement. The programme uses the public sector's purchasing power to help accelerate the commercialisation of low carbon vehicle technologies. Clear performance criteria for a low carbon van were set out and the private sector was given the freedom to develop a solution. The incentive is a commitment from the public sector to order a meaningful number of the winning product.

The LCVPP model should be replicated for low carbon heating. The public sector, in its broadest sense, has a vast estate with numerous buildings across the country. All these buildings need to be heated. A procurement programme to provide innovative, but reliable and cost-effective, low carbon heating systems for deployment in public sector should be launched. For the many innovative UK companies, from major manufacturers to recent start-ups, already active in this area, this would provide an incentive of secure orders to develop their technologies and take their business plans forward.

Conclusion

Government must seize the moment and set out an ambitious low carbon industrial strategy backed up by focused investments and creative use of policy tools such as public procurement. In addition, a comprehensive review of the business environment should be carried out to ensure that it is conducive to

manufacturing and capital-intensive investments it depends. Failure to do so will result in the loss of major opportunities for UK plc. The growth industries of tomorrow, and the employment opportunities they provide, will develop in other countries around the world rather than the UK.

6

creating green collar jobs: a just transition Frances O'Grady

Summary

The green economy will be central to the UK's and the world's economic and industrial future. Although this transformation is expected to bring new investment, jobs and skills, there will also be 'jobs crush' in some sectors. If low carbon is the growth story, what we have to do is manage the transition.

Policy recommendations

Governments should establish a just transition model for low carbon growth which means formal consultation arrangements with all stakeholders, promotion of green employment opportunities, an emphasis on training, education and economic diversification policies for sectors and regions in transition.

Government support and investment for strategic technologies, such as low carbon vehicles, renewables, nuclear new build and regional clusters for carbon capture and storage.

Greater recognition and encouragement should be given to employer/employee 'green workplace' partnerships to reduce carbon emissions at work

Government leadership and enhanced public funding for skills training for a low carbon economy.



“although the low carbon industrial strategy will bring new jobs and skills there will also be ‘job crush’ in other sectors”

The green economy will be central to the UK's and the world's economic and industrial future. The government's low carbon industrial strategy predicts employment growth of 393,000 jobs by 2014, a 1.3 million strong green workforce by then, including a major expansion of green manufacturing (see box). Much of this green shift will be delivered by a low carbon energy strategy. Although this transformation is expected to bring new investment, jobs and skills, there will also be ‘job crush’ in some sectors. With new evidence of employee involvement in greenworkplace industrial activism, the TUC supports a proposal from the International Trade Union Confederation (ITUC) for a “just transition” framework to feature in the new global change agreement in Copenhagen. The UN has now taken the concept of just transition into its draft negotiating text for Copenhagen. The model should be trialled here in the UK.

If low carbon is the growth story, what we have to do is manage the transition. But the key question is, how do we get to where we want to be? The transition itself presents great industrial, employment and skills opportunities, as outlined by the Turner Committee last December²²: decarbonising electricity supply, low carbon transport and energy efficiency measures at work and in homes. But there are also massive change management challenges in these same sectors, and to an extent, insecurities for our energy-intensive industries and carbon-sweating sectors like road transport.

The only way, as a society, that we will overcome a transformational challenge on this scale is by coming together as communities, in the workplace, and at local, national and international levels. And crucially, by redefining the role of government.

How many green jobs?

The government estimates that the UK's low carbon environmental goods and services (LCEGS) together employ some 880,000 people. This is a big step up from the 400,00 jobs estimate made only last October in the 2008 manufacturing strategy, which narrowly covered jobs environmental goods and services.

With a combined market value of £106.5 billion in 2007-08, the government's more realistic, broader definition of environmental industries includes three sub-sectors:

- traditional environmental industries such as pollution control;
- renewable energy technologies (notably wind); and
- emerging low carbon industries such as biofuels and carbon capture & storage.

Of the 55,000 companies involved, one-third (17,300) are involved in manufacturing. The sector is expected to grow at five per cent a year, despite the financial crisis, with the potential to add 393,000 jobs by 2014. Of these, manufacturing employment could increase by 138,000, from 272,000 to 410,000.

Low Carbon and Environmental Goods and Services: an industry analysis, BERR, 2009.

The financial crisis has prompted fundamental change not just in the regulation and oversight of financial markets, but the emergence of an active industrial policy. The new-found ‘active industrialism’ signifies the most important development in industrial policy since the advent of New Labour. Whilst strongly supporting the role and the importance of markets, government announcements also now highlight the limits of laissez faire capitalism and recognise the catalytic role of the state in our green industrial renaissance.

We have moved a long way from the pro-market delivery model of the 2007 Energy White Paper. Industry is asking for a lot more government intervention now, particularly in the energy sector. The market simply cannot be relied upon to achieve carbon cuts on the scale set out in the chancellor's first Carbon Budget.

The TUC has long held the view that the Labour government accepted too much of the primacy of the market – in both energy and industrial policy – that became accepted currency under Thatcherism. But major issues of national political, economic and environmental interest are at stake in the way in which industry develops, and the way we respond to climate change. Industrial activism therefore also needs to face outwards towards key stakeholders in the great transformation ahead towards a low carbon and resource efficient economy.

Industrial transition

An industrial transition strategy is urgently needed to secure the supply-side benefits of a low carbon economy in the UK. We have reached the point where the government's climate change strategy needs to force the pace and engage the engine of industrial policy. The first report of the Committee on Climate Change, Building a low carbon economy, shows what the industrial delivery of climate policy would look like. It identifies a core set of low carbon technologies needed to reach the UK's climate change targets to 2020 and 2050:

- decarbonise the electricity supply sector – renewable energy (wind generation; solar power; tidal range technologies; biomass power); nuclear power; and CCS generation;
- energy efficiency measures at home and at work, both through changes in behaviour and investment in new technologies;
- transport emissions reduced through new technologies – increasing the carbon efficiency of existing vehicles; electric cars combined with the decarbonisation of electricity generation; hydrogen fuel cells; and biofuels, subject to sustainability criteria.

These core technologies play a key part in the UK's first three rolling five-year carbon budgets to 2022, providing the basis of a massive investment and industrial opportunity. They are also the focus of

much of the TUC's 2009 Budget submission²³, where we called on government to support a £16.8 billion green public works programme including:

- a commitment to green manufacturing and renewable energy;
- a green rail stimulus – to offset the unfathomable decision of Network Rail to cut hundreds of jobs and schemes from its renewables programme in 2008-2009;
- progress on making the UK a leader in low carbon vehicles;
- support for carbon capture and storage, including regional networks;
- action on home insulation and fuel poverty, along with retrofitting houses to adapt to climate change; and
- major house building programme.

In the event, the chancellor announced a £1.3 billion green package on budget day, supported by other investments worth up to £7.8 billion. Clearly, many of these initiatives, such as homes insulation and investment in renewables, are feasible now and jobs-rich, either directly or because of generous multiplier effects down supply chains. They provide the basis for a smart, low carbon regional policy, with employment and skills opportunities playing to regional strengths in wind or tidal power, carbon capture, vehicle manufacture, nuclear new build.

“the new found ‘active industrialism’ signifies the most important development in industrial policy since the advent of New Labour”

Green jobs

To meet our renewables targets, we are likely to see a ten-fold increase in jobs in this sector as a whole, from around 16,000 positions now to 133,000 to design, manufacture, install and operate these new technologies²⁴. In the period to 2020, both on- and offshore wind farms are likely to generate over 80 per cent of the 38.5 GW of installed renewable electricity capacity. Up to 36,000 direct new UK jobs could be created in the wind energy sector²⁵. But these jobs are yet to be felt on the ground. Our recent survey of trade unions reps showed little evidence of new green jobs being created in their own workplace.

The development of carbon capture and storage (CCS), particularly for new coal and gas-fired power stations, is a classic example of how environmental objectives can stimulate job creation with the advice and support of key stakeholders. Linked to the 2009 Budget statement was Ed Miliband’s strongest commitment yet to develop CCS technology in the UK.

Miliband has proposed up to four CCS cluster projects, focusing on key regions such as Yorkshire and the Humber, the Thames Estuary, the Firth of Forth and Tyne/Tees, to be funded by a levy mechanism to accelerate the delivery of this vital technology. Meanwhile, a study for the Scottish government²⁶ has identified capacity to store more than 200 years of Scotland’s industrial CO₂ output.”

The TUC welcomes this shift to a regionally-based CCS investment strategy. The plan seems to be to kick-start each regional cluster with a clean coal demonstration project. But CCS networks aren’t just for coal-fired power generation, though we recognise its need there, but for gas-fired power stations, as well as the much wider range of heavy CO₂ emitters. Across our energy-intensive industries, this includes CCS technologies needed for aluminium, cement, ceramics, steel, etc.

We have consistently argued that commitments to retrofit CCS to new power plant is an essential condition for consenting new installations, so that we don’t develop unabated coal stations.



The National Grid has recently stepped up its support for CCS network, bringing its expertise and capacity to bear on developing CCS deployment at scale. Its preliminary assessment of Miliband’s four CCS clusters suggests they could capture 127 million tonnes of CO₂ annually (15 per cent of UK emissions). How soon depends heavily on the scale of government ambition.

Work undertaken by the Yorkshire Forward CCS Partnership is perhaps at the most advanced stage. This is a consortium led by the RDA, of energy, coal, steel, chemical and other business interests, as well as the TUC and our affiliates in the mining and power sectors in the region.

The YF project illustrates the CO₂ and employment potential of CCS clusters. The Aire Valley region emits 80 million tonnes of CO₂ a year, two-thirds from a cluster of 13 large emitters (coal, steel and chemical plants mainly). Together they provide employment (direct and indirect) for around 10,000 mainly high quality, skilled and semi-skilled workers organised mainly within Unite, Prospect, GMB, Community and Unison. It is the largest CO₂ cluster in Europe. The Yorkshire CCS project aims to build a new high-pressure pipeline round the valley to pick up liquefied CO₂ from these sites and transport it to storage in depleted North Sea gas reservoirs. It could start transporting CO₂ out of the region as early as 2013. By 2030, the system is capable of capturing 60 million tonnes of CO₂ annually for storage under North Sea: ten per cent the current UK total, and a much higher proportion of our reducing emissions by 2030.

The construction phase of the project produces some £1.8 billion in value added and supports 55,000 jobs in the region. The operations phase of the project (modelled for 2033) produces £126 million in value added and supports 2,400 jobs a year. The whole CO₂ transport network itself would cost two billion pounds, or as little as £1.70 per tonne CO₂. The YF project will therefore help retain the region’s energy intensive industries, as they have a place to store their CO₂, and indeed, to attract inward investment to plug into the CCS grid.

So for the TUC, our support for investment in green transition projects such as CCS also extends to renewables, especially offshore wind farms; electric vehicles; and nuclear new build, to underpin our carbon-free electricity supply.

The nuclear new build programme is likely to involve at least four new power stations in the UK generating low carbon electricity by around 2018-2020. We need to ensure UK manufacturing and service companies will be suppliers of choice to the major nuclear OEMs, by supplying major key components, smaller sub-components, parts, maintenance, servicing and decommissioning. Although we welcome the creation of the National Skills Academy for Nuclear, to address the key skills and training challenges facing the industry, there are still major concerns over skill shortages, lack of diversity and an ageing workforce at a time of strong demand for appropriately skilled staff. So the government has to ensure that we have the right education and training provision, including local facilities for existing staff to retrain.

We would highlight three further essentials for low carbon growth:

- promoting energy efficiency at work through the example set by the TUC’s green workplace initiatives;
- developing skills for a low carbon, resource-efficient economy; and

– establishing a just transition model for low carbon growth.

Greening the workplace

The TUC’s *Greening the Workplace* report (2005) stated: “Because workplaces burn energy, consume resources and generate waste, the challenge of climate change is a fundamental issue for trade unionists.” An evaluation²⁷ of the first 12 workplaces covered by the projects found that union-led committees, surveys, green events and other initiatives had helped the organisations reduce carbon emissions. The report found a high level of staff engagement and enthusiasm to tackle climate change.

Now four years on, a further TUC study²⁸ revealed the dramatic extent to which this idea has taken root among unionised workplaces across the UK, with 1,300 responses to a new survey. The study found extensive evidence of union involvement in climate change measures in the workplace. The testimony of union reps identified some of the key mechanisms utilised to secure these changes. Negotiated agreements, climate committees, audits and inspections and training are all ways in which union reps act as catalysts on climate change in the workplace.

Green skills

One area where workplace reps are saying that much more could be done is with retraining and reskilling at work. More than half of survey respondents (57 per cent) commented that their employer

“the idea that the market alone will ensure social justice in the transition to a low carbon economy is a vain hope”

had not introduced opportunities to reskilling and upskilling in relation to climate change, with only seven per cent reporting that opportunities had become available.

An active skills strategy has to accompany the new Industrial Activism. The current level of skills training capacity is inadequate to meet the needs of a low carbon, resource-efficient economy. Furthermore, relying on the market to identify skills gaps is causing delays in moving towards a green economy. Low carbon skills need to be integrated into the whole skills delivery system. Cross-government co-ordination, led at ministerial level, is crucial to deliver skills for the low carbon economy.

It is welcome that the secretary of state at the department for innovation, universities and skills has indicated that this is the trajectory for further skills policy. The government is right to point out that we now need more systematically to address Britain's comparative weakness in low and intermediate skills, and in the specific skills such as handling information technology that are essential for a modern economy. Around 70 per cent of adults aged 25 to 64 in the UK are skilled to level two and above, only just above the OECD average²⁹.

There is a need for more urgent action by government to rapidly develop a strategic skills strategy to support the transition to a green economy. Our demand-led model is inadequate on its own. The skills

system should adapt to anticipate future growth in the economy in areas such as low carbon, so businesses and their employees have the skills to compete for government procurement and other demand stimulated by government policy.

This includes finding a funding mechanism that delivers publicly funded support, certainly for skills levels one and two, but with a recognition of the significant productivity and business benefits of higher-level skilling. The nuclear industry has established an approach, including a skills academy, which other low carbon industries may wish to emulate. We therefore look forward to the promised review of 'skills activism' due later this year.

A just transition

Our union reps' study found a wide variety of workplace committees across the UK discussing climate change and related issues. The joint management-union health and safety committee was the most popular forum, with over 200 examples. We found over 150 working parties on the environment/climate change, and over 80 examples of joint management-unions environment committees. Such levels of participation and stakeholder engagement have yet to be replicated at national level.

Unions recognise that the transition to a low carbon economy is necessary to tackle climate change. However, unions also know a grand social and economic transformation will only be fair under

certain conditions. This is why the TUC supports a 'just transition' framework to feature in the new global change agreement in Copenhagen. Although the transformation is expected to bring new investment, jobs and skills, there will also be job crush in some sectors. The idea that the market alone will ensure social justice in the transition to a low carbon economy is a vain hope.

The UN has acknowledged the importance of just transition in its negotiating text for Copenhagen³⁰: An economic transition is needed that shifts global economic growth patterns towards a low emission economy based on more sustainable production and consumption, promoting sustainable lifestyles and climate-resilient development while ensuring a just transition of the workforce. The active participation of all stakeholders in this transition should be sought, be they governmental, private business or civil society, including the youth and addressing the need for gender equity.

The global trade union movement, both in developed and developing countries, has been actively motivating their governments to agree to an ambitious climate change agreement in Copenhagen. For example, in September 2008, the ITUC published *Green Jobs: Towards Decent Work in a Sustainable, Low-Carbon World*, jointly with the ILO and the United Nations Environment Programme. The report is the first comprehensive study on the emergence

of a 'green economy' and its impact on the world of work.

A just transition article would require governments to support a range of stakeholder consultation and other measures:

– institutionalized formal consultation arrangements with relevant stakeholders including trade unions, business and communities, at regional, national and sectoral levels;

– promotion of green employment opportunities and investment in low carbon technologies, and in the educational qualifications related to them;

– education, training, retraining, and life-long learning programmes for a low carbon, resource efficient economy; and

– economic and employment diversification policies.

The ITUC believes that the future agreement needs to be based on a broad and sustainable political consensus, if it is to provide the stable framework on which States, public authorities and enterprises can base strategies and investments. The agreement needs to signal to all countries and stakeholders that it is mindful of the social and economic impacts of climate change policies, and that it proposes a Just Transition strategy for addressing them, in particular the right to development in a

carbon-constrained world, and the need to transform job losses into new job opportunities. The latter is particularly important in the current economic crisis.

Opportunities exist today, including under economic recovery plans, for promoting a sustainable new deal, creating new and sustainable jobs through an economic framework for our times, protecting the environment and eradicating poverty. These are key for addressing the main challenge for achieving climate protection, which is its compatibility with economic and social development.

Ambitious mitigation measures imply changes to technology, skills and working practices, particularly in energy intensive industries, which need to be addressed through properly managed consultative arrangements with trade unions, employers and other stakeholders.

The lack of analysis, consultation and 'just transition' may generate resistance and barriers for developing green and decent jobs in new sectors, as a transition perceived as unfair may push governments, sectors, workers and populations affected by these losses to oppose an agreement and slow down or even impede the transformation to low carbon economies.

Ensuring that such sectors and regions benefit from new 'green and decent' job opportunities, while promoting appropriate social protection measures,

is a potentially vital component for achieving broad consensus around climate policies. This year the government has called for "a new industrial activism for a new green industrial revolution". Civil society in general, and our trade unions, are the missing element in such a transformation. If the government wants public policy on climate change to be effective, efficient, equitable and inclusive, then just transition provides an answer.

notes and references

¹ *The impact of the financial and economic crisis on the global energy market*. A report for the G8 Finance. OECD/IEA May 2009

² *A Green New Deal: Joined-up policies to solve the triple crunch of the credit crisis, climate change and high oil prices*. Simms et al. New Economics Foundation. October 2008

³ *A Climate for Recovery: the colour of stimulus goes green*, HSBC, February 2009, available at www.globaldashboard.org/wp-content/uploads/2009/HSBC_Green_New_Deal.pdf

⁴ *Towards a Global Green Recovery: recommendations for immediate G20 action*. Ottomar Edenhofer & Lord Nicholas Stern. Potsdam Institute for Climate Impact Research, Grantham Research Institute for Climate Change and the Environment. March 2009.

⁵ Speech by Lord Myners, Financial Services Secretary, to Investment Management Association (IMA) Annual Dinner on 19 May 2009. See hm-treasury.gov.uk/speech_fsst_190509.htm.

⁶ See, for example, the Marathon Club paper 'Behavioural aspects of investment management: lessons from the credit crunch' (December 2008, at www.marathonclub.co.uk/Docs/Behavioural_Aspects_Lessons_FINAL_FULL_REPORT_021208.pdf) and "Corporate governance and the economic crisis: what can shareholders do differently?", Anita Skipper, Corporate Governance Director, Aviva Investors in *The Investors Journal* (Volume 3), Aviva Investors, March 2009 (at www.avivainvestors.co.uk/markets_and_views/thought_leadership/investors-journal-v3/index.htm).

⁷ Available at www.uksif.org/projects/policy/sustainable_capital_markets_library.

⁸ Available at [www.ashridge.org.uk/Website/Content.nsf/FileLibrary/6372C804BC54451A8025758900423F55/\\$file/ACBAS_Thought_Pieces_Booklet_web.pdf](http://www.ashridge.org.uk/Website/Content.nsf/FileLibrary/6372C804BC54451A8025758900423F55/$file/ACBAS_Thought_Pieces_Booklet_web.pdf)

⁹ Possibly including acting as pension scheme trustees on investment committees that select and oversee investment managers who, in turn, vote on the company's annual report, remuneration and re-election.

¹⁰ The 2007 report of the government's Commission on Environmental Markets and Economic Performance (CEMEP) recommended that pension schemes should be required to report on the implementation of their sustainable investment policies. Instead, the Department for Work and Pensions recent consultation on pension scheme information disclosure makes no mention of this issue.

¹¹ *Responsible Business: Sustainable Pension 2009* (June 2009) available at www.uksif.org/sustainablepensions.

¹² Companies Act 2006, Paragraphs 1277-1280.

¹³ Details at www.ukfi.gov.uk.

¹⁴ In 2007, UKSIF published a sustainable investment assessment framework for local government pension funds developed by London Pensions Fund Authority Chief Executive Mike Taylor working with the CIPFA Pensions Panel, the Local Authority Pension Fund Forum and UKSIF. It is available at www.uksif.org/sustainablepensions. Tools like this could be used to assess progress.

¹⁵ *Beyond the crisis: PIRC's manifesto for corporate governance and capital market reform* (April 2009) available at http://pirc.co.uk/publications/PIRC_manifesto_final.pdf.

¹⁶ *Local Government: Responsible Pension* (November 2007) available at www.uksif.org/sustainablepensions.

¹⁷ The Turner Review discussion paper has highlighted that "The new model of supervision ... requires a 'braver' approach to decision-making by supervisors" (ie. by regulator employees) and the FSA aims to have a culture that "attracts and retains quality people who act in a 'brave' and 'decisive' manner".

¹⁸ Available at www.sustainablefinancialmarkets.net/2009/04/18/towards-an-accountable-capitalism/.

¹⁹ *A Climate for Recovery: the colour of stimulus goes green*, HSBC, February 2009, available at www.globaldashboard.org/wp-content/uploads/2009/HSBC_Green_New_Deal.pdf

²⁰ See <http://www.greenfiscalcommission.org.uk>

²¹ See Briefing 1 *Lessons from two green tax shifts in the UK*, *Green Fiscal Commission*, <http://www.greenfiscalcommission.org.uk/index.php/site/about/links/>

²² *Building a low carbon economy: the UK's contribution to tackling climate change*, 2008,

²³ *A Budget for jobs and green growth*, TUC 2009.

²⁴ *Supply chain constraints on the deployment of renewable electricity technologies*, Douglas Westwood, 2008.

²⁵ *Employment opportunities and challenges in the context of rapid industry growth*, Bain and Company, 2008.

²⁶ A capability to store more than 200 years of Scotland's CO₂ output from its major fixed industrial sources, see *Opportunities for CO₂ Storage around Scotland — an integrated strategic research study*, 2009: www.geos.ed.ac.uk/scs/regional-study/

²⁷ TUC GreenWorkplaces Project 2006-07: Objectives and outcomes report, TUC 2007.

²⁸ *Unions, the workplace and climate changes*, Labour Research Department/TUC, 2009 (forthcoming).

²⁹ *New Industry, new jobs*, BERR, 2009, para. 3.14.

³⁰ Unfccc.int – go to 'Negotiating' text

Green Alliance

Green Alliance is an independent charity. Our mission is to promote sustainable development by ensuring that environmental solutions are a priority in British politics. We work with representatives from the three main political parties, government, business and the NGO sector to encourage new ideas, facilitate dialogue and develop constructive solutions to environmental challenges.

This work is part of Green Alliance's sustainable economy theme and the pamphlet was kindly supported by the Environment Agency

Green Alliance
36 Buckingham Palace Road, London SW1W 0RE
tel: 020 7233 7433 fax: 020 7233 9033
email: ga@green-alliance.org.uk
website: www.green-alliance.org.uk

Green Alliance is a registered charity 1045395 and a company limited by guarantee 3037633.

Designed by Howdy
website: www.howdydesign.co.uk

Printed by Park Lane Press using a waterless offset process with vegetable- oil based inks on ECF 100 per cent recycled paper

From crisis to recovery

Politicians and business leaders are all now able to speak as fluently as NGOs and scientists about the urgency of climate change and the opportunities of a low carbon economy. Yet there is growing chasm between this vision of the future and a willingness to take the bold decisions necessary to make the change happen, particularly in the field of economic policy.

This pamphlet looks at how, at this moment of financial crisis, we must seriously engage the big economic levers of tax, public spending, capital markets and industrial strategy, in order to make the transformation into a low carbon economy a reality. Amongst the ideas discussed are:

- establishing a public green infrastructure bank;
- issuing government green bonds to fund low carbon investment;
- reshaping capital markets to boost sustainable finance;
- giving significant public support to low carbon industries; and
- offering transitional support to workers in high carbon sectors.