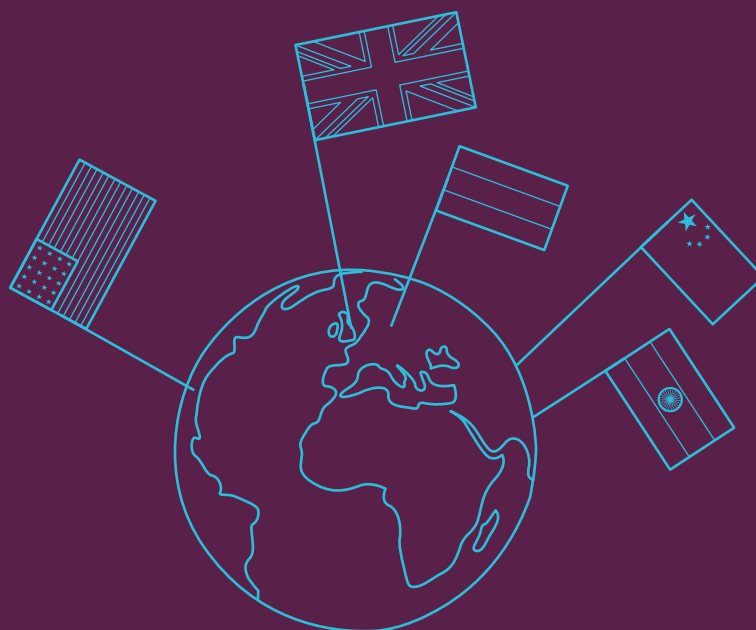

Greening the Economy

A strategy for growth, jobs and success



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Aldersgate Group

The Aldersgate Group is an alliance of leaders from business, politics and society that drives action for a sustainable economy.

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While members support this publication and provided extensive input, individual recommendations cannot be attributed to any single member and the Aldersgate Group takes full responsibility for the views expressed.

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Foreword

There is an increasing recognition that our current economy is unsustainable and, furthermore, competitive advantage can be gained by companies and countries if they meet the growing appetite for more sustainable goods and services.

The economy is no more than the aggregate effect of the decisions made every day by companies, individuals and society's agents in government about what next they will do, where they will go and what they will buy.

This report discusses those measures that can influence these decisions and perhaps not surprisingly finds public policy and its manifestations in regulation, incentives and fiscal measures are critical.

Arguably the decisions which will have the most influence on the future are those made by companies on innovative low cost, sustainable products and services which will allow future generations to make different and better, choices.

The dilemma of the moment, given the desperate state of public finances, is how can we afford those measures required to support the transition to a green economy?

This dilemma is an illusion that can be shattered by recognising the true cost of what we currently do and the report highlights this.

However, the fact remains that innovative new products and services are required to meet both our sustainability and cost goals. We must support their provision by UK companies to achieve national competitive advantage. The tools to do this are not well understood and perhaps because of this difficulty their deployment is half hearted.

Support for innovation from supply side groups such as the Technology Strategy Board is often well managed but at a significantly smaller scale than our competitor countries and the long term consequences of this are unlikely to be good. The report emphasises that investment in R&D and skills is essential for our future prosperity.

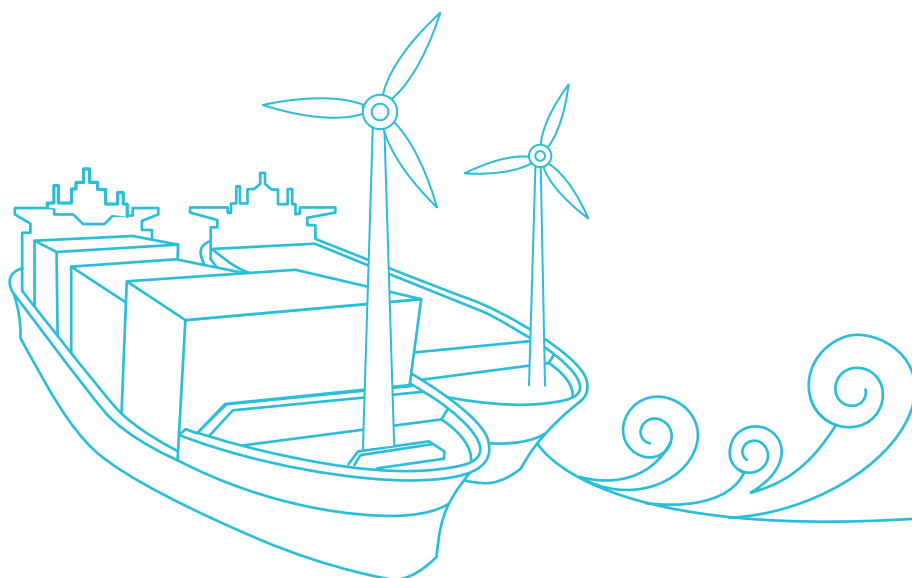
To my mind it is the demand side of innovation support and particularly the use of public procurement that provides the biggest under utilised opportunity for the public sector to drive innovation for sustainability while reducing future costs.

Public procurement is naturally the focus of many short term cost reductions or value for money initiatives but as the report points out, tools such as Forward Commitment Procurement can bring new technologies and services into the market at low risk and low near term cost. This is an area where we can get ahead of our competitors in other countries with huge future benefits.

The future green economy offers tremendous opportunity for productive investment and sustainable growth – it should be the clear, central focus of government policy.

Dr Jonathan Frost

Director, Johnson Matthey Fuel Cells
Green Growth Chair, Aldersgate Group



Executive Summary

This report sets out the case for a comprehensive green growth strategy that goes beyond reducing the budget deficit to drive a dynamic economic recovery.



What the fence sitters and the sceptics fail to understand is that climate change fundamentally changes the 21st century balance sheet... Investing now in green solutions is cheaper – and ultimately more profitable – than spending more, later, in a catch-up race for global competitiveness.¹

U.N. Secretary-General Ban Ki-moon

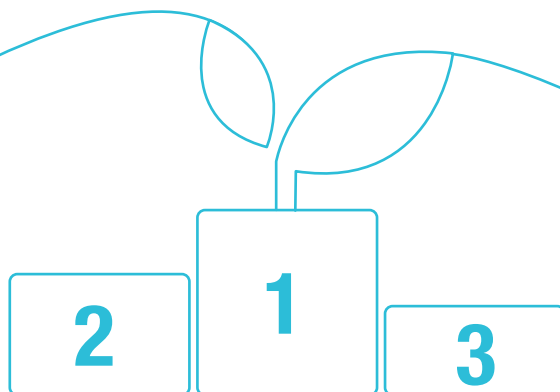
The UK is losing momentum in the green economy race and there is only a small window of opportunity to assert leadership in the years ahead. A strong regulatory and fiscal framework will be vital for success, combined with a concerted push to get behind those sectors that have competitive advantages.

The green economy race

How each nation addresses the challenges of a resource constrained world will increasingly determine its future economic competitiveness. Economies must be transformed to provide rising prosperity to citizens, strengthening new growth sectors and modernising traditional sectors. UK policy should focus on three core elements: building a globally competitive green economy, stimulating export growth and attracting inward investment from foreign based firms.

Policies to enable the transition to a sustainable economy will generally require investment in the short term to maximise returns in the long term. Not only is the scale of the task enormous and the timetable challenging, but the pressure on public finance is considerable. Nonetheless early mover advantage is essential to drive success and only bold action will maximise investment and stimulate innovation. At the same time, a number of interventions have the potential to raise significant funds for the public purse. The 2011 Budget must be the first to set out a clear framework for a far-reaching and progressive green tax shift, an important commitment in the Coalition Agreement.

The world is engaged in a green economy race and acting early will ensure that the UK is well positioned to attract global investment, stimulating job creation and export growth. While the UK's economy has strong green foundations on which to build, it is rapidly losing ground to developing nations and other competitors. This trend is directly related to aggressive regulatory and fiscal policy packages that countries are putting into place, not least China's new Five Year Plan that seeks to underpin a 'clean revolution' in its economic development and India's National Action Plan on Climate Change that is projected to stimulate US\$1 trillion of investment over the next decade.



¹» United Nations (24th May 2009)
Ban Ki-moon's speech at World Business
Summit on Climate Change.

Executive Summary

The Government's plan to restore the public finances should include a green growth strategy which seeks to raise output and boost employment. If the regulatory and fiscal interventions are designed correctly, this would not only help reduce the budget deficit but meet a number of other government objectives, such as delivering a more balanced economy, stimulating regional growth and contributing to a Big Society.

Greening the whole economy

To lay the foundations for a more resource efficient and competitive economy, the UK needs an intelligent and dynamic policy framework that corrects market failures. Otherwise green investments will flow to more attractive markets or develop at too slow a pace. The most effective policies will provide as much certainty as possible by being:

- » Credible. Legal, enforceable, fully deliverable and supported by an overarching vision.
- » Consistent. Providing confidence that a policy direction will be maintained, implementing progressive, and avoiding retrospective, changes.
- » Bankable. Risk and reward levels are attractive over clear investment timeframes, with no shocks to damage early investors.

For example, the government target for zero carbon homes by 2016 meets this criteria by providing an ambitious timetable for the progressive tightening of building regulations, not backtracking on commitments and inspiring sufficient confidence to stimulate early investment. This has released latent innovation in a sector which will now deliver more long term value in the UK's new housing stock.

To ensure success, the Government's regulatory and fiscal framework should adopt a broad approach. The entire economy must be made more sustainable with greater prioritisation given to energy efficiency and technological innovations for improving the processes of established industries. This must:

- » Ensure that prices reflect environmental realities;
- » Adopt a regulatory approach that prioritises long-term value;
- » Embed sustainability across public policy;
- » Incorporate a lifecycle approach;
- » Address climate and resource risks; and
- » Enable a socially just transition.

Dynamic sectors

The most effective way to stimulate green investment is on a sectoral basis due to the large number of specific barriers and solutions that each sector faces. This will be crucial to deliver the Prime Minister's vision for a new economic dynamism that seeks to create the right framework for business investment. It will drive growth in those industries where Britain enjoys competitive advantages, making it easier for new companies and innovation to flourish.



Executive Summary

To secure the growth and jobs of the future, the UK requires a systematic and transparent prioritisation of support for specific sectors. The full range of areas where the UK has competitive strengths and national need must be examined. This must extend beyond traditional environmental technologies to sectors that must play a leading role in the transition to a sustainable economy, including automotive, aerospace, information technology, the built environment, farming and the water industries.

In each priority area, the Government must provide long-term policy frameworks with a different combination of market pull and supply push interventions. This approach, for example, has helped to drive Germany's renewable energy sector, make Silicon Valley a centre for technological innovation and build South Korea's high tech manufacturing base virtually from scratch. This requires identifying 'technology families' that would stimulate competition across the range of companies and products in each market. Any support should be time-limited (this will build up scale at speed in the short term and ensure competitiveness in the long term).

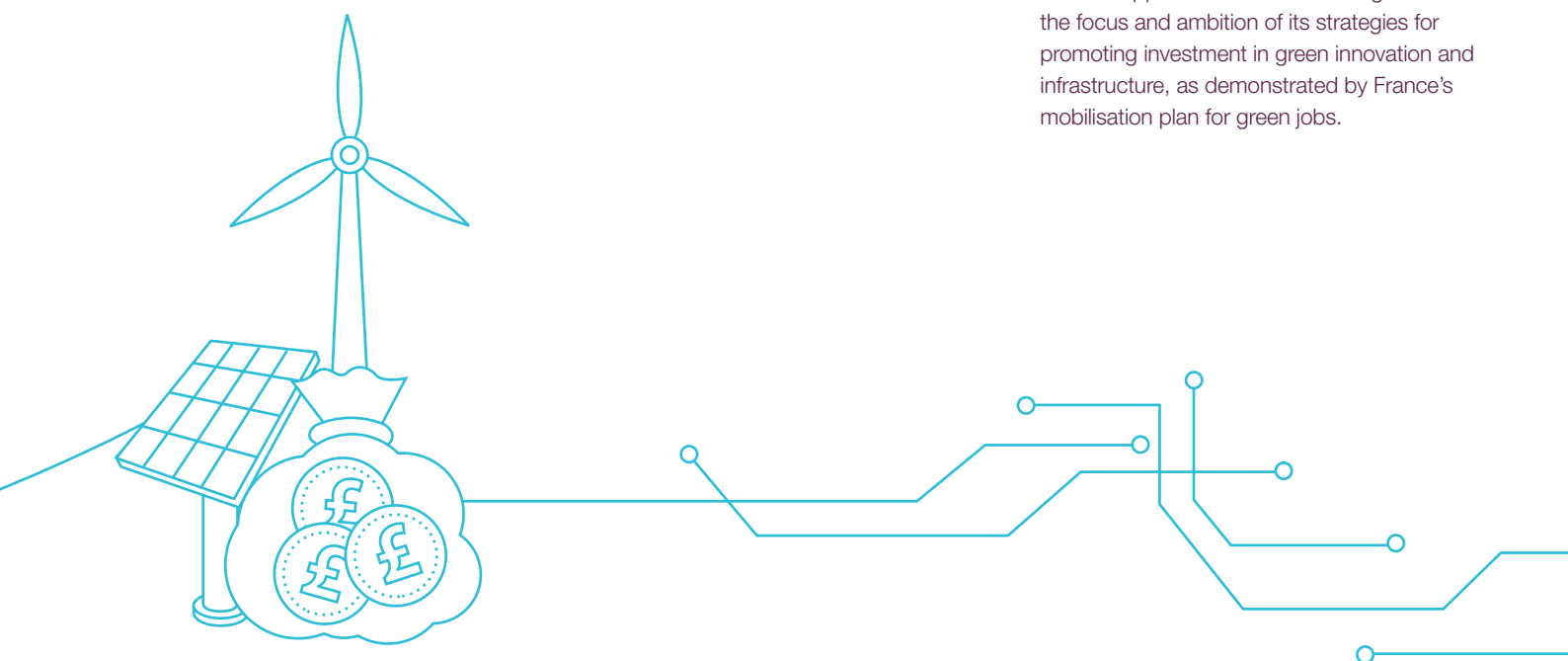
Addressing market failures

There are a number of market or system failures that are holding back the transition to a more sustainable economy. The Government must fully examine the barriers to growth, both in dynamic sectors and across the economy more widely, setting out how it will address these barriers in a way that is credible, consistent and bankable.

Finance. With long-term finance scarce and significant funding gaps projected for green technologies, the UK must seek to reduce risks and mobilise finance at scale from institutional investors. For example, the Green Investment Bank must seek to make a transformational impact and play a significant role in supporting the greening of industry and manufacturing.

Fiscal Policy. The government commitment for the phased reduction of Corporation Tax will help to increase UK tax competitiveness but more can be done specifically to incentivise the shift to a more sustainable economy and provide manufacturers with the confidence to make green investments in the UK. Taxes must be structured to incentivise and reward the best as well as penalising the worst environmental performers.

Skills. Strong evidence suggests that the UK does not have the necessary skills to make the transition to a green economy at the pace required, or the training arrangements in place to fill the gap. The Government must build on its national skills strategy to ensure that its support for skills and training matches the focus and ambition of its strategies for promoting investment in green innovation and infrastructure, as demonstrated by France's mobilisation plan for green jobs.



Executive Summary

Innovation. Government support for research, development and deployment (RD&D) is crucial to provide a long-term focus, drive private sector growth and create lasting jobs. Current public expenditure for RD&D on the environment should be regarded as a minimum and any cuts would contradict and undermine the Government's ambition to be the "greenest ever".

Public procurement. The £166 billion annual public procurement budget represents a major opportunity to ensure the full analysis of lifecycle costs are considered, accelerating the growth of environmental markets and saving taxpayers money. Despite its vast potential to drive change, reforming public procurement practices remains a relatively low priority for Government and practices such as Forward Commitment Procurement should be mainstreamed. Goods and services procured from other countries must be assessed against the same high standards to which we aspire in order to maintain a level playing field.

Planning. The UK planning system has historically been a major barrier to investments in green technologies. The Government must ensure that its reform of the planning system meets its objectives to deliver a more streamlined system and significantly improves the time it takes to provide consent to projects, particularly for major infrastructure projects with environmental gain.

A plan of action

The litmus test of whether the Government meets its ambition to be the "greenest ever" will be its ability to deliver on the ground. Now that a large number of targets and policy frameworks are in place, there must be a shift in focus from rhetoric to results-driven action.

The transition to a sustainable economy will involve massive changes in business activity and every job in the UK will need to change to some extent. Building on existing knowledge and expertise will lay the foundations to deliver a more competitive economy. This should focus on improved education (particularly STEM subjects), building on existing skill sets and developing the sustainability knowledge of employees across the economy, as well as advancing the expertise of the civil service and ensuring a more joined up approach by Government.

In terms of implementation, the new Local Enterprise Partnerships (LEPs) must play a leading co-ordination and implementation role and the green economy should be a central element of the UK's bilateral relations, building on the recent strategic partnerships with China and India.

Conclusion

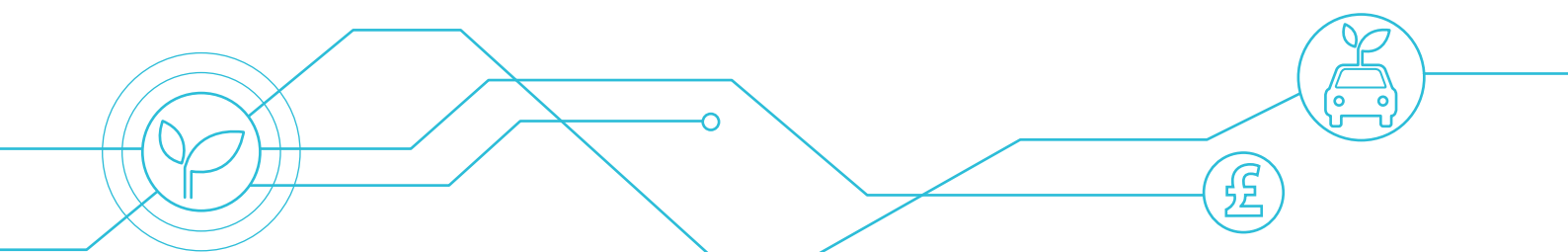
Resource efficiency must be at the heart of a green growth strategy.

A fundamental aspect of this should be a resolute energy efficiency drive for industry and buildings, as this often represents the most cost-effective investment opportunity and is commonly overlooked. But it cannot stop there.

Critical resource challenges beyond carbon need to be addressed urgently, particularly in light of the re-emergence of steep rises in world commodity prices and resource security concerns.

Competitiveness in a sustainable economy must be a key priority for all government departments. Mainstream policies on tax, regulation, education, skills and employment must stimulate a green revolution, rather than tinkering at the sides with measures aimed specifically at green sectors.

The private sector will reward consistent and holistic policy with the investment needed to drive to the maximum pace the industrial transition to a low carbon and resource efficient economy.



Introduction

How each nation addresses the challenges of a resource constrained world will increasingly determine its future economic competitiveness.



The global economic recovery presents an ideal opportunity for countries to shift towards low carbon growth. Countries which don't seize this opportunity will undermine their future competitiveness and prosperity.²

Lord Nicholas Stern

Global actions to reduce carbon emissions coupled with a growing demand for commodities such as energy and raw materials will make resource efficiency a major factor for industrial location and commercial success. Economies must be transformed to ensure rising prosperity for citizens, strengthening new growth sectors and modernising traditional sectors. UK policy should focus on three core elements: building a globally competitive green economy, stimulating export growth and attracting inward investment from foreign based firms.

The transition to a sustainable economy will create winners and losers, resulting in changes in production costs, consumer demands and trade patterns. Countries that are relatively less resource intensive or are early movers will gain a relative advantage as the world shifts to a more sustainable path and resource pressures intensify. The challenge for each individual nation is to put in place a strong policy framework that stimulates low carbon and sustainable growth, creating enduring economic value through environmental technology, products, services and efficiency.

To lay the foundations for success, the Government requires a comprehensive green growth strategy that goes beyond reducing the budget deficit and drives a dynamic economic recovery. A strong regulatory and fiscal framework will be vital, combined with a concerted push to get behind those sectors that have competitive advantages and addressing barriers to growth. If these interventions are designed correctly, they would represent the most effective approach for reducing the budget deficit by raising output and employment, as well as meeting a number of other government objectives, such as delivering a more balanced economy, stimulating regional growth and contributing to a Big Society.

Policies to enable the transition to a sustainable economy will generally require investment in the short term to maximise returns in the long term. Not only is the scale of the task enormous and the timetable challenging, but the pressure on public finance is considerable. Nonetheless early mover advantage is essential to drive success and only bold action will maximise investment and stimulate innovation.

At the same time, a number of interventions have the potential to raise significant funds for the public finances and the 2011 Budget must set out a clear framework for a comprehensive and progressive green tax shift, an important commitment in the Coalition Agreement.



²» The Climate Institute & E3G (September 2009)
G20 Low Carbon Competitiveness

Introduction

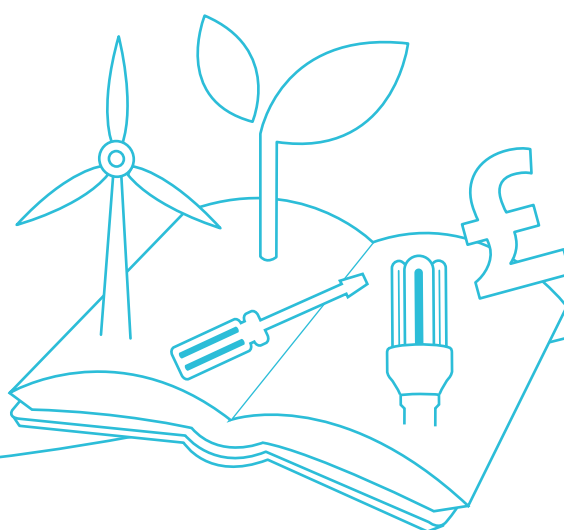
The Aldersgate Group is encouraged to see that concern about resource efficiency is entering political and economic thinking, as we have long advocated. Some of our recent inquiries have identified key elements of this – energy, metals, water, and food – but also noted the underlying challenge, which is the management of our impact on living systems as well as on the stock of natural resources.

The transition that we discuss in this report will have to be informed by a better understanding of these more fundamental impacts, and this will form an important element of our work over the coming period.

This report examines the required policy framework in the UK to ensure a competitive and vibrant green economy, removing barriers to growth and stimulating jobs and innovation. It was informed through roundtable discussion with Aldersgate Group members and external stakeholders, including leading representatives from industry, government, academia, trade unions and NGOs.

While the transition to a green economy will require leadership from business, government and society, our report is focused on policy.

Those from the private sector insist that if they are to invest in the economic transformation, they need to be sure the transition will be carried through with determination, and that an appropriate timetable of regulation and capacity building will be set and adhered to.



The Green Economy Race

A strong policy framework is essential to establish an international leadership role for UK businesses in the economy of the future³.



Around the world, from China to Germany, our competitors are waging a historic effort to lead in developing new energy technologies... Nobody is playing for second place. These countries recognize that the nation that leads the clean energy economy is likely to lead the global economy.⁴

President Barack Obama

The world is engaged in a green economy race and acting early will ensure that the UK is well positioned to win share in emerging markets and build competitiveness through adopting more resource efficient practices.

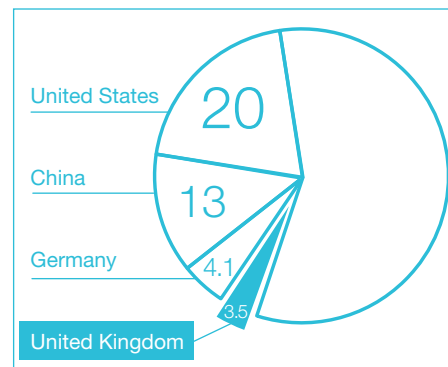
In a global market, companies have a range of competing opportunities and will choose to invest in the countries that can provide the most attractive returns at least risk. Increasingly, companies have global supply chains with greater scope to source components and set up production facilities around the world. In terms of manufacturing, the UK is unlikely to be cost competitive

with emerging economies in many sectors and so must ensure that it builds on its vast experience and skills for higher value-added manufacturing activities. The Government must do all that it can to provide the most competitive business environment, building on domestic strengths and incentivising growth in the markets with the best potential in the long-term.

The green economy in the UK

In many sectors, the UK has strong green foundations on which to build. It currently has around 3.5% market share of the £3.2 trillion global environmental goods and services sector with a positive net trade position of £4.5bn. By 2015, the UK market could be worth as much as £150 billion and employ over 1.2 million people⁵. This will provide a core source of expertise for transforming the whole economy and both costs and imports will increase if this market develops too slowly. The UK also performs well on climate competitiveness indices⁶ that typically reflect comparatively strong policy drivers and business engagement on environmental issues but a relatively weak industrial and manufacturing base (for example, in many renewable technologies).

Share of global environment goods and services sector



While the industrialised world has been the mainstay of the green economy over the past decade⁷, the UK and EU are losing momentum to competitors. Many developing countries are winning market share and increasing their carbon productivity, driven by the high proportion of green spending in stimulus packages and a strong turnaround from the global recession.

Ernst & Young's analysis of the relative attractiveness of countries for renewable energy investments demonstrates that "a new world order is emerging in the cleantech sector with China now the clear leader in the global renewables market"⁸.



³» For specific interventions aimed at environmental sectors, see Environmental Industries Commission (June 2010) *2010 Green Growth Strategy: An Environmental Industry Policy Manifesto for the Coalition Government*.

⁴» The White House (26th May 2010) *Remarks by the President on the Economy*.

⁵» Department of Business, Innovation and Skills (December 2010) *Growth Review Framework for Advanced Manufacturing*.

⁶» See Accountability & UNEP (2010) *The Climate Competitiveness Index 2010: National progress in the low carbon economy* and Germanwatch (December 2010) *The Climate Change Performance Index 2011*.

⁷» HSBC (September 2010) *Sizing the Climate Economy*.

⁸» Ernst & Young (November 2010) *Renewable Energy Country Attractiveness Indices*.

The Green Economy Race

The research finds that manufacturers in the West need to be particularly innovative if they are to preserve their share of the market, and are likely to need a greater proportion of Asian product to remain cost competitive.

HSBC ⁹ predicts that the share of the three largest industrialised low carbon markets (EU, USA and Japan) will fall from 60% in 2009 to 53% in 2020, while the share of the three leading major emerging markets (China, India and Brazil) will grow from 25% to 34%. Its research also suggests that the market will primarily be driven by energy efficiency themes, notably low carbon vehicles such as plug-in hybrid and full electric vehicles, that will surpass low carbon power as the major investment opportunity.

Green growth is directly related to aggressive regulatory and fiscal policy packages that countries are putting into place around the world. While economic value can eventually become widely shared and collaborative, the market in 2010 is fiercely competitive as businesses strive to achieve first mover advantages¹⁰. In the words of Barack Obama; “nobody in this race is standing still”¹¹. The UK must ensure it has the right policy framework in place to deliver growth, innovation and decent jobs in the markets of the future.

⁹ HSBC (September 2010) *Sizing the Climate Economy*.

¹⁰ Accountability & UNEP (2010) *The Climate Competitiveness Index 2010: National progress in the low carbon economy*.

¹¹ The White House (26th May 2010) *Remarks by the President on the Economy*.

A snapshot of policies from around

China

Driven by significant public spending, R&D investment, ambitious targets (such as a 20 per cent energy intensity improvement target and 10 per cent renewable energy target for 2010) and strong incentives and regulatory levers, China has transformed itself over the past two decades to a major manufacturer of a number of low carbon technologies¹². The new Five Year Plan (2011–15) seeks to underpin a ‘clean revolution’ in China’s economic development over the next decade. By speeding up the cultivation and development of emerging strategic industries (including energy saving and environmental protection)¹³, it aims to restructure China’s economy and reshape its industry, improving R&D in science and technology, and establishing a resource efficient and environmentally friendly society¹⁴.

United States

A mixed policy framework (for instance, with no federal carbon policy and a patchwork of state renewable energy standards,) means that the United States has a comparatively weak clean energy sector given the relative size of its overall economy. However, with significant natural and intellectual resources and a strong culture of entrepreneurship, a strengthened policy framework could enable the United States to regain a leadership role in the coming years¹⁵. Around \$100 billion of the US’s economic recovery package was earmarked for investment in environmental technologies, including advanced batteries, plug-in cars, and a smart grid. In the next few years, it aims to make 40% of the world’s advanced batteries (currently 2% market share) and 10% of the world’s solar panels (currently 5% market share)¹⁶.



¹² World Resources Institute (October 2010) *Scaling Up Low-carbon Technology Deployment: Lessons from China*.

¹³ The new ‘Magic 7’ industries are energy saving and environmental protection; next generation information technology; bio-technology; high end manufacturing; new energy; new materials and clean energy vehicles.

¹⁴ HSBC (October 2010) *China’s Next 5-year Plan: What it means for equity markets*.



¹⁵ Pew Environment Group (April 2010) *Who’s Winning the Clean Energy Race?*

¹⁶ The White House (26th May 2010) *Remarks by the President on the Economy*.

The Green Economy Race

the world

India

It is estimated that low carbon initiatives in India could result in investments of over US\$1 trillion over the next decade through the implementation of the National Action Plan on Climate Change. This package aims to promote energy efficiency (including targets for energy efficiency in large energy-consuming industries and the introduction of a trading system for energy-savings certificates), investments in renewable technologies (particularly wind and solar), sustainable buildings, water efficiency, sustaining the Himalayan ecosystem and reforestation. It has been estimated that the Government's plans to increase industrial and village-level biofuel production has the potential to create ten million jobs across the country¹⁷.

South Korea

The five-year 'green growth' strategy contains policy goals and targets to tackle climate change and enhance energy security, create new engines of growth through investment in environmental sectors, and develop ecological infrastructure. The commitment to spend 2% of GDP on green investments (such as green technologies, resource and material efficiency, renewable energies, sustainable transport, green buildings, and ecosystem restoration) is a significant effort to reorient and refocus spending on the environment¹⁸. It aims to increase Korea's share of clean tech exports from 2% to 8% of the world total by 2012¹⁹.

Germany

The German Government has acknowledged the need to develop strategic industrial policy that will further both Germany's economic interests and environmental goals. It specifically aims to strengthen strategic industries of the future, promote innovation, adapt the industrial structure of the economy to ever-scarcer resources and switch the material base of industry in important fields to renewable resources²⁰. Through its leadership over the last few decades, Germany has already generated 280,000 jobs in the renewable sector and strong growth is forecast. By 2020, the environmental sector is predicted to increase to €500 billion from the current level of €220 billion and create one million new jobs²¹.

17» UK-India Business Climate Group (November 2010) *UK-India Collaboration for a Prosperous Low Carbon Economy: Opportunities, Challenges and Recommendations*.

18» UNEP (April 2010) *Overview of the Republic of Korea's National Strategy for Green Growth*.

19» HSBC (September 2010) *Sizing the Climate Economy*.

20» Jenny Bird and Kate Lawton (October 2009) *The Future's Green: Jobs and the UK low carbon transition*.

21» Frank-Walter Steinmeier & Sigmar Gabriel (June 2006) *A Growth Strategy for Germany: New jobs through investments in energy and environment*.

Credible, Consistent and Bankable Policy

The UK needs an intelligent and dynamic policy framework to lay the foundations for a more resource efficient and competitive economy.



"We need to recognise the fierce urgency of now... For I see in this green recovery not just the fight against climate change, but the fight for jobs, the fight for new industry, the fight for lower family energy bills and the fight for less wasteful government."²²

**Chancellor of the Exchequer
George Osborne**

Crucial to economic success will be innovative companies that strategically address environmental challenges such as climate change and resource depletion and offer the products and services of the future.

Current market prices do not reflect the full costs associated with environmental externalities and therefore do not provide appropriate incentives for the development of many green technologies and stimulate energy efficiency investments. We have made a start with carbon emissions, but even here the true costs have not been built into our decisions. Valuation of other environmental services and resources are still in its infancy. Government intervention is required to correct these and further market failures. However, the policies to drive this transition are not cost free. There will inevitably be a trade-off between short-term costs and the potentially huge but uncertain longer-term economic benefits in terms of higher growth, job creation and competitiveness.

The role of good regulation




The Coalition Government recognises that well designed regulation that provides long-term signals to businesses and tackle inefficiencies has an important role in incentivising investment and innovation in environmental technologies²³. However, the drive to reduce regulatory burdens risks losing sight of how to most effectively deliver the outcomes that regulation is designed to achieve, and so puts at risk future wealth and prosperity. A sufficiently ambitious, clear and stable policy framework is needed even though it may be more challenging to implement. What does this encompass and what have been the critical factors in driving success in the UK and elsewhere?

A recent report by the United Nations finds that the rewards of greening the world's economies are tangible and considerable, that the means are at hand for both governments and the private sector, and that the time to engage the challenge is now.



For governments, this would include leveling the playing field for greener products by phasing out antiquated subsidies, reforming policies and providing new incentives, strengthening market infrastructure and market-based mechanisms, redirecting public investment, and greening public procurement. For the private sector, this would involve understanding and sizing the true opportunity represented by green economy transitions across a number of key sectors, and responding to policy reforms and price signals through higher levels of financing and investment.²⁴

To lay the foundations for a more resource efficient and competitive economy, the UK needs an intelligent and dynamic policy framework that corrects market failures. Otherwise green investments will flow to more attractive markets or develop at too slow a pace. The most effective policies will provide as much certainty as possible by being:

-  **Credible.** Legal, enforceable, fully deliverable and supported by an overarching vision.
-  **Consistent.** Providing confidence that a policy direction will be maintained, implementing progressive, and avoiding retrospective, changes.
-  **Bankable.** Risk and reward levels are attractive over clear investment timeframes, with no shocks to damage early investors.

²²» George Osborne (24th November 2010) Speech at Imperial College: *A sustainable Government; a sustainable economy.*

²³» BIS (December 2010) *Growth Review Framework for Advanced Manufacturing.*

²⁴» UNEP (February 2011) *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*

Credible, Consistent and Bankable Policy

Policy certainty in the UK

The long-term framework provided by the legally binding Climate Change Act demonstrates that the UK is a world leader in climate change legislation. However, the policies that are needed to deliver carbon budgets have generally not been sufficiently credible, consistent or bankable leading the Committee on Climate Change to call repeatedly for a step change in delivery.

In the onshore wind sector, for example, a lack of support has resulted in the UK losing out to countries such as Denmark, which has won 50% market share of the global turbine market with annual revenues of £2.7 billion. This was secured through government support measures worth £1.3 billion since 1993²⁵. This demonstrates that stringent environmental regulations which force the pace of adoption of renewable energy generation can help foster rapid industrial expansion with high export growth potential. The UK is now scrambling to import wind turbines and solar panels from its European neighbours and paying a higher price when the pound is weak.

The policy framework for zero carbon homes by 2016, in contrast, has generally been regarded as a success. It set out an ambitious timetable for the progressive tightening of building regulations (Part L) in 2010 and 2013, supported by the Code for Sustainable Homes, the Planning Policy Statement on Climate Change and stamp duty relief for zero carbon homes. This timetable has been developed following consultation, and in partnership with business, local government and green stakeholders²⁶. Within a relatively short period of time and despite overcoming a number of stumbling blocks (not least defining 'zero carbon'), significant progress has been made towards a target that many in the industry thought

at the outset was unattainable. The policy framework was credible (a clear regulatory timetable), consistent (no back tracking on commitments) and bankable (generating confidence for investment decisions to be made). This has helped cement UK leadership in the design, manufacture and construction of sustainable new homes²⁷.

The Landfill Tax Escalator is another example of a policy that has generally been regarded as credible (increases of £8 per tonne per year to 2013 announced in the 2010 Budget with a long term floor of £80 per tonne), consistent (a long-term policy that has given a sustained signal that landfill prices will be escalated until alternative technologies can compete) and bankable (sufficient timeframes to invest in alternative waste management facilities, although extending lead times would provide greater certainty). As a result, overall quantities of waste recorded at landfill sites registered for the tax year fell from around 96 million tonnes in 1997–98 to around 72 million tonnes in 2005–06, a reduction of around 25%²⁸.



²⁵ RenewableUK (2010) *Manifesto 2010: Policy actions for wind, wave and tidal energy in the UK*.

²⁶ www.zerocarbonhub.org

²⁷ It is unfortunate, given the success of this set of interventions, that the Government has withdrawn its funding contribution to the body that has been mainly responsible for de-risking this policy, the Zero Carbon Hub. The private sector may replace some of the lost public funding, but the Government risks losing some of its ability to shape industry practice in a vital economic sector.

²⁸ www.defra.gov.uk/environment/waste/strategy/factsheets/landfilltax.htm

Credible, Consistent and Bankable Policy

Case Study»

Lessons from China in scaling up low carbon technology development

A report by the World Resources Institute²⁹ highlights the important role of effective domestic policy in stimulating low carbon technology in three sectors (clean coal, offshore wind and energy efficient steel production). While the Government took different approaches for each of the three technologies examined in this report, its building blocks for technology deployment infrastructure include:

1. Making a deliberate, holistic plan and long-term commitment to the localisation of a low carbon technology. This approach is taken in all three cases.
2. Establishing direct R&D funding programmes to support the launch and scale-up of low carbon technology innovation.
3. Improving businesses' technological absorptive capacity through directly funding their technology learning. Two leading Chinese clean energy companies, Goldwind and Shanxi Glower Group, are both indebted to this measure.
4. Capitalising on public-private and industry-academia synergies to bring together multi-sector expertise.
5. Designing national-level and sector-wide laws, policies, and regulations to scale-up commercialization of low carbon technology, create domestic markets, and drive down the costs.
6. Relying on international cooperation to pursue new-to-market technology and knowledge.

The report finds that without clear and lasting signals from the Government and a central role for government-funded R&D, the market will not automatically embrace low carbon technology. Other countries might lack the tremendous scale of resources for domestic investment in R&D that China can bring to bear, but China's experience demonstrates some clear successes from which other countries can benefit.



²⁹» World Resources Institute (October 2010) *Scaling up Low Carbon Technology Development: Lessons from China*.

Case Study»

Reuse and recycling our metal resources

A research project convened by the University of Cambridge³⁰ demonstrates that making steel and aluminium products, even from scrap, is expensive and energy intensive. It finds that significant opportunities exist now for reuse of steel in construction and for diversion of manufacturing scrap, and it may be possible to reuse aluminium swarf without melting using an emerging technology. In the UK, the report estimates that these strategies used now could save about 2 Mt CO₂ profitably and without significant capital investment. Furthermore, if we make the right design choices now, up to 75% of steel and 50% of aluminium could be reused without melting and with negligible emissions. The construction sector is identified as a key opportunity, where 30% of building and construction scrap could be reused. For example, the reuse of steel sections for low grade purposes could result in an average profit of £190 per tonne.

Similarly, the Aldersgate Group's recent analysis of resource efficiency demonstrated that too much scrap metal is exported, such as 60% in the case of aluminium. These scrap exports are undertaken at low economic value (around £60million for steel) whilst our deficit demand for re-imported materials is at high economic cost (around £6 billion for steel). It finds that policies to encourage re-manufacturing and re-use rather than recycling are still largely absent and most focus on behavioural change rather than re-thinking products and production processes (particularly across supply chains outside the UK).³¹



³⁰» WellMet 2050 (September 2010) *Conserving Our Metal Energy: Avoiding metal steel and aluminium scrap to save energy and carbon*.

³¹» Aldersgate Group (February 2010) *Beyond Carbon: Towards a resource efficient future*.

Greening the Whole Economy

The role of good regulation in forcing the pace of industrial change is now a central element of economic policy. Its key objectives are not only to reduce environmental impacts but to stimulate growth, exports and job creation.



We will accelerate the development of a low carbon economy and green economy so as to gain an advantageous position in the international industrial competition.³²

Chinese Premier Wen Jiabao

The Government needs to develop a clear set of criteria for identifying the “sweet spot” in terms of reducing environmental impact, building economic advantage and stimulating good quality job creation.

To build a more competitive economy, the government’s regulatory and fiscal framework should:

Tackle the whole economy

Building a more competitive economy is not just a question of establishing a flourishing environmental technologies sector³³. Primarily, it is concerned with modernising the entire economy and transforming conventional business models³⁴. The Low Carbon Industrial Strategy, for example, failed adequately to address the opportunities associated with energy efficiency or the

technological innovations for improving the processes of established industries. Relatively small wins in energy and resource intensive industries can lead to significant financial and environmental benefits. In a world of rising energy costs and increasingly scarce raw materials, our international economic standing will in future depend on maximising resource efficiency just as much as on boosting labour productivity.

Ensure prices reflect environmental realities

Current prices are a long way off providing a sufficient incentive for investments at the pace and scale required to meet environmental challenges. This can most clearly be illustrated by the inadequacy of current policy to create a sufficiently stable, high and credible carbon price, primarily through the EU ETS. For this reason, the government commitment to create a carbon floor price is

welcome. While this will raise concern about ‘leakage’ of economic activity to areas with less stringent carbon regulation, a number of studies have shown that this is only a genuine threat requiring a special response in a small number of sectors. In reality, other considerations are much more significant for industrial location in the vast majority of sectors (such as wage costs, workforce skills, exchange rate fluctuations and proximity to the market)^{35/36}.

Adopt a longer-term focus

Pricing policy alone is not sufficient to drive investment in environmental technologies and resource efficiency. As a result, a regulatory approach that prioritises long-term value is required that addresses the full range of barriers and does not ‘lock in’ existing technologies or practices. This must include reform to the policy appraisal process (such as impact assessments), so that they fully reflect the strategic framework set out by Government. Instead of focusing on currently available solutions and static assessments of existing costs, they must allow for the potential of innovation and investment to deliver better, cheaper solutions³⁷.

³²» Wen Jiabao (10th September 2009) *Speech at the World Economic Forum Annual Meeting of New Champions 2009*.

³³» It should be noted that the environmental industries have their biggest client base in the rest of the UK economy and greening the whole economy will lead to special opportunities to build these sectors up to world leaders and high export earners.

³⁴» Frank-Walter Steinmeier & Sigmar Gabriel (June 2006) *A Growth Strategy for Germany: New jobs through investments in energy and environment*.



³⁵» Carbon Trust (March 2010) *Tackling Carbon Leakage: Sector-specific solutions for a world of unequal carbon prices*.

³⁶» Climate Group (2009) *The Effects of EU Climate Legislation on Business Competitiveness: A survey and analysis*.

³⁷» Aldersgate Group (December 2009) *Green Foundations 2010: The path to a vibrant economy, competitive advantage and sustainable prosperity*.

Greening the Whole Economy

Embed sustainability across public policy

The transition to a more sustainable world will transform the whole economy. As previous government analysis has shown, it will change our industrial landscape, the supply chains of our businesses and the way we all live and work. The vast majority of, if not all, economic activity in Britain will have to reduce its environmental impact significantly³⁸. Government policy and delivery should not seek to isolate the environment as if it was a sector of the economy but ensure a joined-up approach where sustainability is embedded into all policy decisions. This should include analysis of target outcomes and thresholds for key resources (e.g. the quantity of the resource consumed or pollution emitted) and ensure the implementation of sufficient price, regulation, demand reduction and innovation policies³⁹.

Incorporate a lifecycle approach

Effective management of resources necessitates consideration of the whole resource cycle. UK waste policy must move away from a linear model and look towards 'closing the loop'. In addition, physical accounting for the use of key resources on an economy wide basis, alongside monetary accounting, would help to make more

balanced and robust decisions. This would systematically track the flow of materials through the economy with the associated environmental impacts (including an analysis of embodied carbon)⁴⁰.

Address climate and resource risks

Climate change is real, and is happening now. As a report from the Environment Agency demonstrates⁴¹, this will affect people's lives, homes and businesses as well as essential services and supplies such as transport, hospitals, water supply and energy. Companies and organisations must take timely, proportionate steps to avoid threats and exploit opportunities. The Government also needs to play a leading role to build climate resilience

across the economy and identify climate change adaption opportunities in both domestic and global markets. In addition, a recent report by Defra demonstrates the challenges of resource security and the severe impact on business if the availability of certain resources is affected by restricted access or price volatility⁴². The Government needs a framework that addresses critical resource challenges and adopts general resource efficiency principles through practices such as resource pricing and life cycle management.

Enable a socially just transition

The transition to a green economy has the potential to be a major source of wealth and employment. As with previous structural changes to the economy, it will create losers as well as winners and the Government must intervene to provide a suitable level of social protection. This should include identifying the jobs that are at greatest risk and developing strategies to transform skill sets so that these workers are able to compete for the new job opportunities in cleaner technologies⁴³. The Government must also engage more actively with the UK workforce so that the transition becomes accepted as a positive change.



³⁸» HM Government (July 2009) *The UK Low Carbon Industrial Strategy*.

³⁹» Aldersgate Group (February 2010) *Beyond Carbon: Towards a resource efficient future*.

⁴⁰» The Aldersgate Group's report *Beyond Carbon* (February 2010) recommends that there will need to be some form of physical accounting for the use of key resources on an economy-wide basis and economic decisions will have to balance measures of these resources alongside more familiar monetary measures.

⁴¹» Environment Agency (June 2009) *Climate change: adapting for tomorrow*.

⁴²» Defra (December 2010) *Review of the Future Resource Risks Faced by UK Business and an Assessment of Future Viability*.

⁴³» Aldersgate Group (November 2009) *Mind the Gap: Skills for the transition to a low carbon economy*.

Dynamic Sectors

The most effective way to stimulate green investment is on a sectoral basis due to the large number of specific barriers and solutions that each sector faces.

*All over the world, governments are identifying dynamic sectors in their economy and working strategically to strengthen them... What they understand is that when you're looking for growth opportunities you don't stick a pin in a map and drop down a research centre here or arbitrarily back an industry there. You go with the grain of what is already working.*⁴⁴

Prime Minister David Cameron

This will be crucial to deliver the Prime Minister's vision for a new economic dynamism that seeks to create the right framework for business investment. It will drive growth in those industries where Britain enjoys competitive advantages, making it easier for new companies and innovation to flourish⁴⁵.

As public resources are finite, the UK Government must identify strategic areas of opportunity and ensure policy is targeted to where it will have the greatest effect. It is not desirable or affordable to lead in all areas of the green economy and the Government must seek to collaborate internationally where it does not have significant competitive advantages⁴⁶. To secure the growth and jobs of the future, the UK requires a systematic and transparent prioritisation of support for specific sectors.

The Institute of Public Policy Research (IPPR) has shown that strategic and active government intervention can help drive innovation and stimulate growth. Germany has invested heavily in generating supply chains and technology to support production in the renewable energy sector and is now a leader in this field. The US Government levered large amounts of money into Silicon Valley where industries are now leaders in business innovation. Since the 1980s, South Korea has developed a high-tech manufacturing base virtually from scratch⁴⁷.

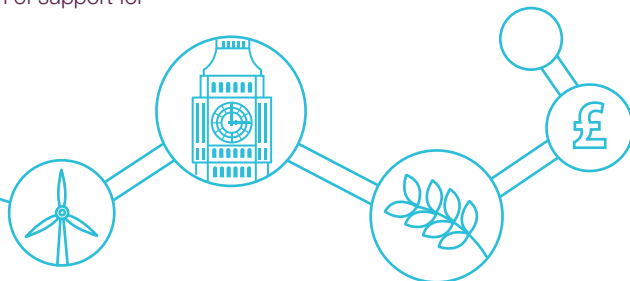
Market pull and supply push

A previous government commission that examined how to make the UK one of the best locations in the world to develop and introduce low carbon and resource efficient products found that the Government must provide long-term policy frameworks,

supported by market 'pull' (creating lead markets which do not generally exist in the absence of policy intervention) and supply 'push' (investment in the technologies and skills that will help develop competencies in the UK)⁴⁸.

In the leading dynamic sectors with potential competitive advantages, all the relevant market pull and supply push solutions need to be put in place and barriers removed. This requires identifying 'technology families' that would stimulate competition across the range of companies and products in each market rather than 'picking winners' that would support specific companies or technologies within a sector⁴⁹. Strategic areas of opportunity should extend beyond traditional environmental technologies to sectors that must play a leading role in the transition to a sustainable economy, including automotive, aerospace, information technology, the built environment, farming and the water industries.

Any package of supportive measures should be time limited. In the longer term, economies of scale will reduce technology cost and the successful technologies will be cost competitive without the need for government intervention. While government measures are necessary in the short term to build up scale at speed, phasing out support will ensure the development of a vibrant private sector with globally competitive firms.



⁴⁴» Number 10 (25th October 2010) PM's speech on creating a "new economic dynamism".

⁴⁵» Ibid.

⁴⁶» See Committee on Climate Change (July 2010) *Building a Low-Carbon Economy: The UK's innovation challenge*.

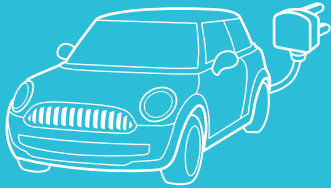
⁴⁷» IPPR (July 2009) *Building a Better Balanced Economy: Where will jobs be created in the next economic cycle?*

⁴⁸» HM Government (November 2007) *Commission on Environmental Markets and Economic Performance*.

⁴⁹» CBI (November 2008) *Low-carbon Innovation: Developing technology for the future*.

Examples of supportive mechanisms in leading sectors

The Government's commitment to a new economic dynamism must ensure that the most effective market pull and supply push mechanisms are pursued in leading sectors where the UK has competitive advantages.



Automotive

Support for the production of low emissions automotive technology must include both supply push (such as support for RD&D, electrical vehicle infrastructure and fiscal incentives)⁵⁰ and market pull (public procurement, incentives for consumers and tax differentials in favour of low carbon vehicles). Government backing must be competitive with countries such as the United States and France that provide low interest, long-term loans to manufacturers⁵¹.



Aerospace

The UK has the second biggest aerospace industry in the world in terms of employment and turnover and technological improvements (particularly improving fuel efficiency and developing second generation biofuels) will be vital to reduce carbon emissions for the aviation industry. Aerospace is a global industry with demand driven by international markets. Industrial location is dependent on an innovative supply chain and the most effective government intervention tends to be support for RD&D.



Information and Communications Technology (ICT)

The main barriers to the development of smart technologies are an absence of profitable markets. Lead markets tend to be in regions where there is strong policy support (with a number of cities in the United States, China, South Korea, Germany and the Netherlands showing the way). Interventions should focus on demand pull, driven by a strong carbon price, stricter regulations on building efficiency (both new build and refurbishment) and a clear strategy and implementation timetable around the deployment of smart grids and meters.



Construction

An extensive government review into low carbon construction published in November 2010⁵² demonstrates that government must provide extensive leadership due to the degree of market failure and the scale of the challenge. It finds that it would be counter productive to set objectives and develop capacity only to find there are no customers. The almost universal perception in the industry is that only regulation will create mass demand for energy efficient retrofit of the domestic and non-domestic building stock. A combination of the removal of barriers and the creation of incentives is therefore critical.

⁵⁰» For example, last year the Government approved a £20.7m grant for Nissan to produce its plug-in Leaf car in the UK, and a £360m guarantee for Ford to develop a new generation of low emission "eco-boost" engines and other low CO₂ technologies in Britain.

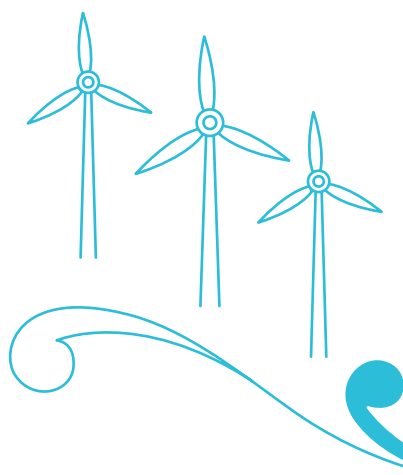
⁵¹» Last year, the French Government granted PSA Peugeot Citroën and Renault €6bn (\$7.4bn) in low interest loans, on top of aid for their electric car programmes. The US Department of Energy has approved billions of dollars in low interest loans for automakers including Nissan, Ford, and electric car start-up Tesla Motors. See John Reed (24th June 2010) *The Financial Times: Car industry hopes boost to manufacturing will help*.

⁵²» HM Government (November 2010) *Low Carbon Construction Innovation & Growth Team: Final report*.

Dynamic Sectors

Develop the supply chain

Not only must demand-side policy be matched by development on the supply side, but both must advance together as each promotes the progress of the other. A sudden and unexpected hike in standards may not lead to job creation if industry is either unprepared or unable to respond effectively. In these circumstances, new jobs may be exported while old ones dwindle. Where there is good infrastructure support for new standards, employment patterns respond much more flexibly and the very creation of new opportunities encourages both employers and employees to support and encourage further change⁵³.



⁵³» Aldersgate Group (November 2009) *Mind the Gap: Skills for the transition to a low carbon economy*.

Case Study»

The supply chain for offshore wind

Demand side policy must be matched by the development of the supply side. For offshore wind, this includes the explicit development of UK-based engineering and construction capacity. A failure to do this effectively over the past decade has meant that only 10–20% of the investment for recent UK offshore wind projects (such as the London Array and Thanet) has gone to British based firms. It is envisaged that benefits for UK firms will be increased through a recent package of measures, such as the commitment for public investment in port infrastructure in the 2010 Spending Review, that has been rewarded with a number of turbine manufacturers committing to a UK presence (such as Siemens, Clipper, Mitsubishi and GE).

Research by Douglas Westwood demonstrates that the size of the UK supply chain and job creation potential in the sector is expected to grow dependent on the number of turbine manufacturers present and their output. For example, it estimated that if three turbine manufacturers located in the country, 50% of UK installed capacity would be manufactured in the UK by 2020, creating 34,000 new jobs⁵⁴. Further studies have found that the UK would be well positioned to generate domestic jobs in component manufacturing, such as the manufacture of towers and foundations

which could draw on existing skills and knowledge bases in the offshore oil and gas sectors, as well as in the related legal and financial services⁵⁵. In fact, the Carbon Trust estimates that the UK could accrue half of all service jobs in the global offshore wind industry by 2020.⁵⁶

RenewableUK finds that the period to 2016 will be critical in ensuring sufficient production capacity can be brought online to meet project requirements and avoid lengthy lead times and upwards cost pressures. With the fast growth expected in the UK market between 2016 and 2018, it is imperative that factories are established well in advance. The UK's forecast growth will require the equivalent of 22 factories for just the required turbines, foundations and cables. Investment decisions on plants are required straight away and government support will be required to help establish these facilities. The cost of building the necessary plants (for these major components only) is estimated to be in excess of £1 billion. Given the relatively early peak in factory production capacity it is important that any factories established in the UK are then able to take advantage of further UK development rounds and the wider European export market⁵⁷.

⁵⁵» Global Climate Network (March 2010) *Low-Carbon Jobs in an Interconnected World*.

⁵⁶» Carbon Trust (2008) *Offshore Wind Power: Big Challenge, Big Opportunity*.

⁵⁷» RenewableUK (June 2010) *UK Offshore Wind: Building an Industry*.

Addressing Barriers to Growth

There are a number of market or system failures that are holding back the transition to a more sustainable economy.



Whoever is first to conquer green-tech markets will have an enduring export advantage and create jobs.⁵⁸

Angela Merkel, Chancellor of Germany

The Government must examine fully the barriers to growth and set out what it will do to address these in a way that is credible, consistent and bankable. While each sector will face its own particular set of barriers that need to be addressed on an individual basis, the most common barriers across the economy that stakeholders identified are as follows:

Finance

The shift to a green economy generally involves higher upfront capital costs and lower operating costs. Following the credit crunch, capital and private equity investment in environmental sectors has fallen dramatically and long term finance remains scarce. The funding gap between business-as-usual and what is required to meet environmental targets is becoming ever more stark, with Ernst & Young estimating that the UK funding gap for low carbon technologies alone to 2025 is approximately £330–£360 billion⁵⁹.

To address this immense financing challenge, the UK must seek to reduce risks and mobilise finance at scale from institutional investors. The government commitment to create a Green Investment Bank (GIB) is welcome and the Bank must be designed to make a transformational impact. In the global green economy race, there will be competitive advantage for the countries that are able to cut the costs of capital. For example, KfW in Germany has a long track record with many decades' head start. It provided €19.8bn of investment in environment technologies in 2009 – up 12.5% on the previous year⁶⁰.

The GIB could also have a significant role in supporting green industry and manufacturing. Helping successful low carbon companies access finance as they grow will help to maximise economic opportunities and unlock competitive potential for British based firms, particularly in sectors where the UK is well placed to be a global leader.

Fiscal policy

For many manufacturers, the tax regime is a much more significant driver for long-term investment than environmental regulation or the projected carbon price. The government commitment for the phased reduction of Corporation Tax over the current Parliament will help to increase UK tax competitiveness but more can be done to incentivise the shift to a more sustainable economy and give manufacturers the confidence to make green investments in the UK. For example, tax credits have been a significant driver to stimulate growth in renewable energy investments in the United States. A signal that Corporation Tax reductions will favour green investing industries and not be allocated to poor performers would increase a Board's attention on opportunities to ensure their enterprise is progressive in changing to more sustainable practices.



⁵⁸» The Economist (11th March 2010) *The green machine: A second wind for German industry?*

⁵⁹» Ernst & Young (October 2010) *Capitalising the Green Investment Bank: Key issues and next steps.*

⁶⁰» The Climate Bonds Initiative (June 2010) *Green Investment Bank: Experiences from France, Germany, Spain and a few others.*

Addressing Barriers to Growth

A strong driver for the transition to a sustainable economy is a green tax shift, reducing taxes on income and increasing taxes on pollution. An extensive research project by the Green Fiscal Commission demonstrates that this will be vital to put the UK on a sustainable trajectory; help develop the new industries that will both keep it there and provide competitive advantage for the UK in the future; and contribute to restoring UK fiscal stability after the recession⁶¹. In light of the significant financing gaps for environmental technologies and market failures in resource efficiency, revenues from progressive and rigorous environmental interventions (such as the CRC Energy Efficiency Scheme, EU ETS Phase III and the carbon floor price) should help to finance the shift to a green economy. For example, the Landfill Communities Fund is an innovative tax credit scheme that enables operators of landfill sites to contribute money to enrolled environmental bodies to carry out projects that meet environmental objectives and has helped create jobs and promote sustainable waste management⁶².

Skills

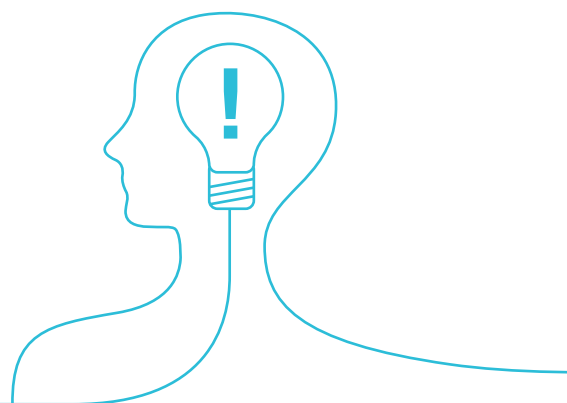
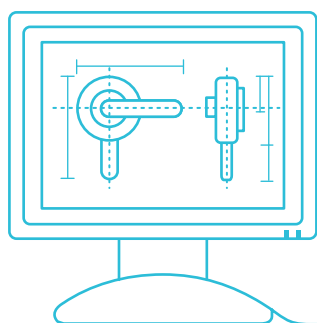
A crucial component of the transition a green economy is the development of new skills in rapidly growing environmental markets (mainly building on existing skill sets) and sustainable literacy skills in all sectors and businesses (such as project management and communication skills). Strong evidence suggests that the UK does not have the necessary skills to make the transition at the pace required, or the training arrangements in place to fill the gap. Greater collaboration between government, industry and learning providers to deliver a cohesive approach to skills and education is needed and funding should be responsive to industry needs⁶³.

While the Government's recent national skills strategy⁶⁴ expands the number of adult apprenticeships and supports skills needs through a growth and innovation fund, there is no explicit strategy to prioritise the skill needs to drive the economy through the environmental transition. The Government cannot rely on the market to respond to environmental targets at the required scale and urgency, and it is vital that all major environmental policies, such as the Green Deal or offshore

wind subsidies, are accompanied with a corresponding skills strategy⁶⁵. An extensive research project by the International Labour Office and Cedefop urges Europe's policy-makers to ensure that their support for skills and training matches the focus and ambition of their strategies for promoting investment in green innovation and infrastructure. It finds that France is the most advanced in this respect with the publication of a mobilisation plan for green jobs⁶⁶.

Innovation

The competitive advantage of the UK in the green economy will depend on companies commercialising innovative goods and services and adopting novel resource efficient practices. Private sector support (such as venture capital) for companies in the early stages of developing new solutions to environmental challenges is limited due to high capital intensity and significant risks moving from proof of concept to scale commercialisation.



⁶¹» Green Fiscal Commission (October 2009) *The Case for Green Fiscal Reform*.

⁶²» www.entrust.org.uk/home/lcf/about

⁶³» RenewableUK (June 2010) *UK Offshore Wind: Building an Industry*.

⁶⁴» BIS (November 2010) *Skills for Sustainable Growth*.

⁶⁵» Aldersgate Group (November 2009) *Mind the Gap: Skills for the transition to a low carbon economy*.

⁶⁶» Cedefop & International Labour Office (September 2010) *Skills for Green Jobs: European synthesis report*.

Addressing Barriers to Growth

Government support for research, development and deployment (RD&D) is crucial to provide a long-term focus, drive private sector growth and create lasting jobs. The UK is currently an average spender on total R&D⁶⁷ but investments are threatened by the Government's deficit reduction programme. As a result, the Committee on Climate Change recommends that current levels of public expenditure for RD&D in environmental sectors should be regarded as a minimum and any cuts would be detrimental to the achievement of the UK's climate goals and the Government's objective to build a green economy. UK energy RD&D funding is low by international standards and international funding is low relative to benchmarks proposed by the Stern Review, the International Energy Agency (IEA) and the EU (e.g. IEA analysis suggests that a two to fivefold increase is required)⁶⁸. In addition, support must distinguish between earlier stage technologies, whose lower development costs and higher uncertainty argue for public support for multiple options, and later stage technologies, where clear focus is needed because deployment support costs are high⁶⁹.



67» CBI (November 2008) *Low-carbon Innovation: Developing technology for the future*.

68» Committee on Climate Change (July 2010) *Building a Low-Carbon Economy: The UK's innovation challenge*.

69» Carbon Trust (July 2009) *Focus for Success: A new approach to commercialising low carbon technologies*.

Public procurement

One of the most direct ways that Government could stimulate demand for more sustainable goods and services is by exemplary action as the UK's largest purchaser. The £166 billion annual public procurement budget⁷⁰ represents a major opportunity to ensure the full analysis of lifecycle costs are considered with the environmental costs internalised, accelerating the growth of environmental markets and saving taxpayers money. Despite its vast potential to drive change, reforming public procurement practices remains a relatively low priority for Government and, for example, was not included in the remit of the recent government spending efficiency review by Sir Philip Green. Goods and services procured from other countries must be assessed against the same high standards to which we aspire in order to maintain a level playing field.

While there has been some progress in the last few years in the development of Forward Commitment Procurement (FCP), which specifies future performance levels and cost as opposed to locking in today's technologies, this now needs to be scaled up to become common practice and used in major procurement contracts. Sustainable public procurement will only be achievable if civil servants have the relevant skills and in-house expertise by providing more extensive training, real opportunities in terms of career progression and strengthening links between the public and private sectors through secondments⁷¹.

70» Sir Philip Green (October 2010) *Efficiency Review by Sir Philip Green: Key Findings and Recommendations*.

71» Aldersgate Group (November 2009) *Mind the Gap: Skills for the transition to a low carbon economy*.

Planning

The UK planning system has historically been a major barrier to investments in green technologies. For example, a survey of senior executives in the renewable energy sector by Taylor Wessing finds that uncertainties over planning and consenting processes is the second biggest barrier that is deterring investors⁷². Research by RenewableUK finds that the average onshore wind farm project in England waits 17 months for a decision by local planning authorities and only 25% of applications are approved⁷³.

It is, therefore, welcome that the Government is reforming the planning system to facilitate the timely delivery of infrastructure. It is imperative that this meets the Government's objectives to introduce a more streamlined planning system and significantly improve the time it takes to provide consent to projects. The CBI recently called on the Government to tackle a raft of planning applications awaiting approval (including 87 energy infrastructure projects) and to ensure the transition to its new Major Infrastructure Unit is smooth⁷⁴. Early clarity on the transitional arrangements will be essential to ensure the timely delivery of vital green infrastructure projects.



72» Taylor Wessing (November 2010) *Bridging the Funding Gap: The financing challenge for European cleantech and renewable energy*.

73» RenewableUK (2010) *Manifesto 2010: Policy actions for wind, wave and tidal Energy in the UK*.

74» CBI (December 2010) *Climate Change Policy Tracker – 5th Addition*.

A Plan of Action

The litmus test of whether the Government meets its ambition to be the “greenest ever” will be its ability to deliver on the ground.



*I consider that Brazil has a sacred mission to show the world that it is possible for a country to grow rapidly without destroying the environment. We are and will continue to be the world champions in clean energy, a country that will always know how to grow in a healthy and balanced fashion.*⁷⁵

Dilma Rousseff, President of Brazil

Now that a large number of targets and policy frameworks are in place, there must be a shift in focus from rhetoric to results driven action. The government must realise Chris Huhne’s pledge “to make things happen”⁷⁶.

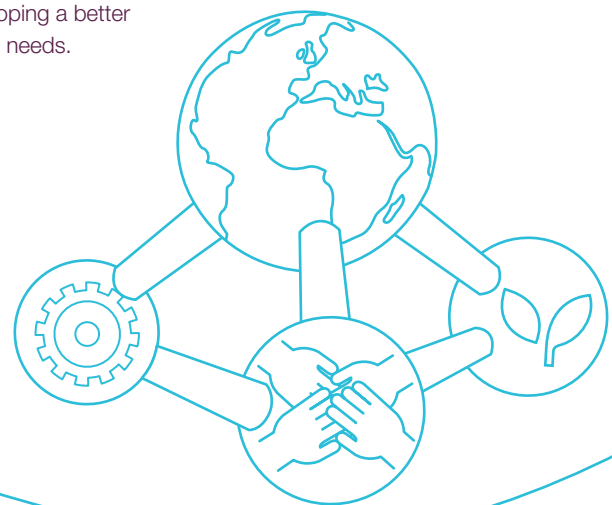
Wide ranging environmental challenges cannot be effectively addressed through segmented government. Progress can be hampered by civil service officials all too often only responding to the narrow set of interests of their function and department without sufficient incentive to consider the broader picture. The transition to a low carbon and resource efficient economy

requires unprecedented cross-departmental co-ordination. The Government should seek to reform delivery mechanisms where feasible and ensure a more joined-up approach. Clear prioritisation from the Prime Minister would help to increase awareness and needs to be supported by appropriate mechanisms (such as the commitment to departmental carbon budgets or increasing the importance of sustainability objectives in civil servant’s annual performance reviews).

The transition to a sustainable economy will involve massive changes in business activity and every job in the UK will need to change to some extent. Building on existing knowledge and expertise lays the foundation to deliver a more competitive economy. This should focus on improving education (both in STEM subjects and sustainability more widely), building on existing skill sets and ensuring employees across the economy appreciate the reasons for change and are sufficiently knowledgeable to take an active part in the process. The Government must also ensure that it has the relevant skills to implement sustainable policies. This must include the development of high-level expertise to deliver the most effective interventions in specific sectors and developing a better understanding of business needs.

Localism and the Big Society

The solutions to environmental challenges must be delivered at the local level. Regional and local level actors will need to perform a number of vital functions in the successful shift to a more sustainable economy and meet the aspirations of the ‘Big Society’. In terms of skills and resources, smaller, less complex environmental projects tend to have simpler supply chains providing the added benefit of effective utilisation, the development of UK skills and providing greater opportunities to smaller businesses and new market entrants.



⁷⁵» President Dilma Vana Rousseff (1st January 2011) *Speech by the President of Brazil, Dilma Vana Rousseff, at her inauguration*, www.brazil.org.uk.

⁷⁶» Energy and Climate Change Committee Oral Evidence (15th September 2010) *Work of the Department of Energy and Climate Change*.

A Plan of Action

The Localism Bill, which will shift power from central government into the hands of individuals, communities and councils, must prioritise sustainable growth. In particular, a suitable framework needs to be in place to ensure the knowledge, skills and assets of Regional Development Agencies (RDAs) are not lost with their replacement by Local Enterprise Partnerships (LEPs).

The RDAs have played a key role in fostering private sector investment in green industries, such as ultra low carbon transport in the north-east, wave and tidal power in the south-west and carbon capture and storage in Yorkshire. In addition, more clarity is required on how green low carbon clusters should build on an area's competitive advantage; criteria for how bid proposals for a £1.4 billion Regional Growth Fund should contribute to green economic growth; to what degree growth hubs that

will provide access to specialist strategic advice will have environmental expertise, and; how local planning will be reformed to introduce a national presumption in favour of sustainable development.

Global strategic partnerships

On the international stage, the UK should also seek to enhance its strategic exchange programmes with key partners and make sustainable growth a central element of bilateral relations. The World Resources Institute demonstrates, for example, that the success of Japanese and German companies in the wind and power sectors indicates that through joint venture, licensing,

or joint design, foreign technology providers can benefit from the financial resources, manufacturing capacity, and enormous market of many emerging economies⁷⁷. As such, the Prime Minister's commitment to promote British commerce and put international trade at the heart of the UK's foreign and economic policy is welcome. This was recently illustrated by agreements with Chinese and Indian political and business leaders on low carbon initiatives and exchange programmes⁷⁸. National impetus for greater innovation must also be supported at the European level⁷⁹.



⁷⁷» World Resources Institute (October 2010) *Scaling Up Low-carbon Technology Deployment: Lessons from China*.

⁷⁸» Number 10 (25th October 2010) *PM's speech on creating a "new economic dynamism"*.

⁷⁹» Frank-Walter Steinmeier & Sigmar Gabriel (June 2006) *A Growth Strategy for Germany: New jobs through investments in energy and environment*.

Conclusion

The expert stakeholders from business, politics and civil society who contributed to this report insist that a green growth strategy must seek to transform the entire economy.



We're about actively getting behind businesses. Now, what does that mean? Well, it means being clear about which are the high-growth industries and working strategically to strengthen them.⁸⁰

Prime Minister David Cameron

New growth sectors can be created and strengthened, whilst modernising and increasing competitiveness of traditional sectors. There is a common purpose here which is a rare opportunity for this Government to embrace, and so create a national momentum and consistent direction behind our future economic growth. A good starting point would be an energy efficiency drive for industry and buildings, as this often represents the most cost effective investment opportunity, yet it is still commonly overlooked.

A green growth strategy must also address critical resource challenges beyond carbon as resource efficiency and related innovation increasingly become primary benchmarks of a successful economy. Destabilising rises and volatility in world commodity prices that contributed to the global recession are beginning to re-emerge, and security of supply is now a major strategic theme for policy makers. A prudent economic policy would promote low resource consumption as a vital part of securing future competitive advantage and economic resilience.

Policies must act in advance of markets that do not effectively anticipate constraints or disruptions in natural resource stocks. Increased global competition for strategic resources will also bring political risks from an over-dependency on stressed supplies from limited overseas sources.

Leading global companies operating in the UK are now ahead of government in their strategic thinking, looking to create long term shareholder value by anticipating the need for greener technologies, lower resource dependency and reduced carbon, water and ecological footprints. The UK already has international credibility in leading policies for the green agenda, not least with its statutory carbon budgets. But this Government must act now to signal to big business that it will build on this in the coming years with practical support and action to deliver. This needs to be a deep and profound signal, including a new green dimension to taxation, and a willingness to tackle the causes, and not just the symptoms of a resource profligate and therefore deeply inefficient society.

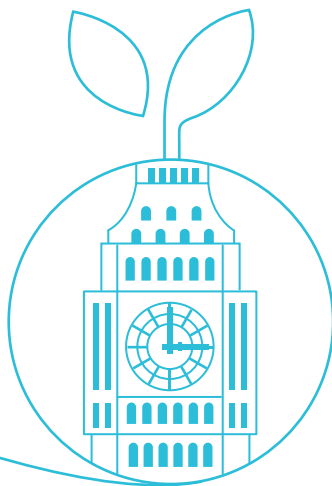
The UK must be a leader of the next industrial revolution where all wealth creation is set on a sustainable path which enhances and does not erode the legacy for future generations. In delivering on being the 'greenest government ever' this administration must also win the internationally competitive race. Just incremental greening will not do. A re-packaging of existing measures or reluctance for bold action excused by current financial constraints will spectacularly miss the point.

There is a window of opportunity for this Government to now signal a significant policy shift. Policies must stimulate market demands for greener solutions, provide sustainability savvy workforces and deliver innovation throughout the supply chain. In so doing the UK could enjoy unprecedented inward investment and export led growth in high end manufacturing and services, as global drivers for climate resilient technologies, resource efficient solutions and sustainable enterprise build over coming years and decades.

Competitiveness in a sustainable economy should be a key priority for all Government departments. Mainstream policies on tax, regulation, education, skills and employment must stimulate a green revolution, rather than tinkering at the sides with measures aimed specifically at green sectors. The private sector will reward consistent and holistic policy with increasing investment driving at maximum pace the industrial transition to a low carbon and resource efficient economy.

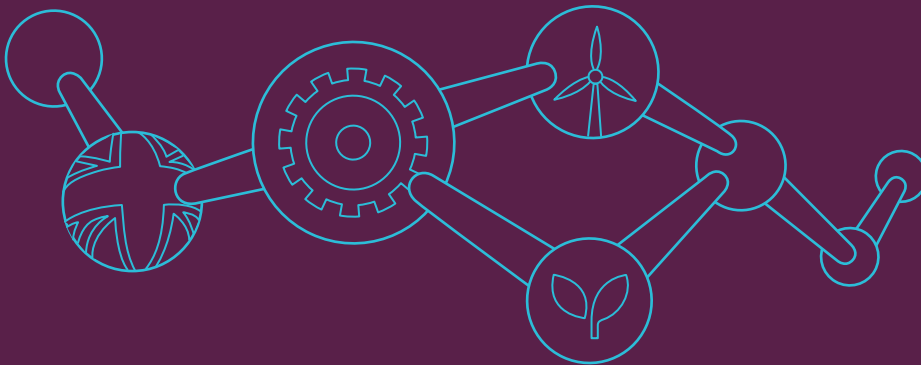
Peter Young

Chairman, Aldersgate Group



⁸⁰» Number 10 (6th January 2011)

Prime Minister's speech on economic growth.



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