



Executive summary

- i** The transition to a low carbon world will transform our whole economy. 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 carbon impact significantly.
- ii** In driving the move to a low carbon economy, the combination of both the massive dynamism of the private sector and a strategic role for government will help ensure that we can make the most of the potential benefits for innovation, growth and job creation in Britain.
- iii** This will be a global transition. Governments from across the world are now putting in place policies that will reduce carbon emissions, creating a greener global economy, and an entire economic sector driven by the demand for low carbon goods and services.
- iv** The move to a low carbon economy will bring costs as well as economic benefits for Britain. But the costs of inaction will be far greater than the costs of action.
- v** The core objective of this strategy is to ensure that British businesses and workers are equipped to maximise the economic opportunities and minimise the costs. They will do this both by catering to growing British and global markets for low carbon goods and services, and also by using energy and other resources more efficiently to reduce costs. The Government will aim to make the transition in a way that ensures a fair distribution of costs and benefits across the economy.
- vi** Building on the framework for supporting British business set out in *Building Britain's Future: New Industry, New Jobs*¹, this strategy sets out both the scale of these potential opportunities and a programme of government action for assisting

¹ HMG (2009) Building Britain's Future: New Industry, New Jobs, www.berr.gov.uk/files/file51023.pdf

British based firms in seizing them. In parallel to this document, the Government is also publishing *The UK Low Carbon Transition Plan*², *The UK Renewable Energy Strategy*³ and *The Carbon Reduction Strategy for Transport*.⁴ Together these set out the policies, including in the areas of energy efficiency and renewable energy which, combined with encouraging consumer and business demand for low carbon goods and services, will help drive the transition to decarbonising our economy, and reflect how departments across Government are working together to deliver the transition to a low carbon future.

- vii** At the heart of this strategy are three basic principles for a positive environment for low carbon business:
- a long-term strategic approach from government that sets stable frameworks for businesses and consumers;
 - a pragmatic approach to the role of both markets and government in making the transition to low carbon quickly and effectively, recognising that the need to progressively increase the cost of carbon, encourage low carbon innovation, remove barriers to market for some low carbon technologies and adapt to inevitable climate change, will require intelligent intervention from government;
 - a recognition that government has a responsibility to ensure British-based companies and people are equipped to compete for the new demand created by global climate change policies.

The low carbon opportunity

- viii** The global market for low carbon and environmental goods and services (LCEGS) was already worth £3 trillion in 2007/08⁵. As international action on climate change gathers momentum, this could grow to an estimated £4.3 trillion by 2015 – or potentially more, if boosted by an ambitious global climate change agreement at Copenhagen this December.
- ix** Britain already has a strong base. The UK low carbon environmental goods and services (LCEGS) market is worth £106 billion and employs 880,000 people directly or through the supply chain. It is estimated that over 1 million people will be employed in the LCEGS sector by the middle of the next decade. These are skilled jobs, with the average market value per employee well above the national average. The UK LCEGS sector is one of the few areas of the economy expected to maintain positive growth rates through the downturn and is expected to grow by over 4% per annum up to 2014/15.
- x** There have been multiple studies assessing Britain's opportunities in the move to a low carbon economy. This strategy has used these analyses to identify the greatest

² HMG (2009) *The UK Low Carbon Transition Plan*, www.decc.gov.uk/en/content/cms/publications/lc_trans_plan/lc_trans_plan.aspx

³ HMG (2009) *The UK Renewable Energy Strategy*, www.decc.gov.uk/en/content/cms/what_we_do/uk-supply/energy-mix/renewable/res/res.aspx

⁴ DfT (2009) *The Carbon Reduction Strategy for Transport*, www.dft.gov.uk/carbonreduction

⁵ Innovas (2009) *Low Carbon and Environmental Goods and Services: an industry analysis*, www.berr.gov.uk/files/file50253.pdf

areas of economic opportunity for Britain, and to develop a picture of where market conditions are allowing British firms to exploit durable competitive potential and where, conversely, barriers to market or market failures may be preventing this.

Removing barriers to market in low carbon sectors

- xi** This strategy sets out where the Government believes opportunities are greatest and the further action that will be taken to address market failures and barriers to help unlock these opportunities for British based firms.
- xii** As set out in *New Industry, New Jobs*⁶, the intention is not to support particular technologies or sectors on principle, but to target areas where Britain has the potential to take a leading global role, and where proportionate government intervention can unlock long-term competitive potential for British based firms. This does not mean that the sectors identified here are the only ones with growth potential; there will be other sectors, including other renewable technologies, which will play an important role in the move to a low carbon economy.
- xiii** Alongside a wide range of support and policy announced over the last year, this strategy sets out further action, including the first investments from the £405 million for low carbon industries and advanced green manufacturing announced at Budget 2009. Key announcements include:
 - **Offshore wind.** Up to £120 million to support the development of a British based offshore wind industry. With tens of thousands of miles of coastline, shallow waters and high average wind speeds, Britain is, and will remain for the foreseeable future, the largest single market for offshore wind in the world.
 - **Wave and tidal power.** Up to £60 million for a package of measures which will help accelerate the development and deployment of wave and tidal energy in the UK and cement our current position as a global leader in this sector. This includes almost £30 million to capitalise on Britain's wave and tidal sector strengths including investment in a major demonstrator facility for new technologies in Cornwall, as well as new support for the testing facilities at the New and Renewable Energy Centre (NaREC) in Blyth, Northumberland, to provide testing infrastructure for marine drive systems and other critical wave and tidal energy device components; up to £8 million to fund expansion of testing facilities at the European Marine Energy Centre (EMEC) in Scotland; and up to £22 million for a Marine Renewables Proving Fund to support testing and demonstration of pre-commercial renewable devices.
 - **Civil nuclear power.** The Government will provide capital investment of up to £15 million in order to establish a Nuclear Advanced Manufacturing Research Centre consisting of a consortium of manufacturers from the UK nuclear supply chain and universities. The facility will enable around 30 companies to work together on the development and production of high quality nuclear components, and to achieve the necessary accreditation to supply this industry.

⁶ HMG (2009) Building Britain's Future: New Industry, New Jobs, www.berr.gov.uk/files/file51023.pdf

Rolls-Royce will take a leading role – bringing technical ability, commercial discipline and access to markets.

- **Ultra-low carbon vehicles.** Further funding of up to £10 million for the accelerated deployment of electric vehicle charging infrastructure in the UK and the establishment of a cross-Whitehall Office for Low Emission Vehicles (OLEV) that will drive policy delivery. This will support infrastructure in a number of UK cities and will build on the previously announced £20 million to tackle barriers in electric vehicle charging infrastructure through the 'Plugged in Places' electric vehicle infrastructure framework. It will also complement the £230 million already announced to reduce the price to consumers of electric and plug-in hybrid cars from 2011.
- **Renewable construction materials.** The Government is investing up to £6 million to construct 60 or more low carbon affordable homes built with innovative, highly insulating renewable materials.
- **Renewable chemicals.** £12 million for a new open access demonstrator facility for fermentation of up to 10 tonnes for industrial biotechnologies, and a fund of £2.5million over the next two years to support SMEs in using the facility.
- **Low carbon manufacturing.** A £4 million expansion of the Manufacturing Advisory Service, to provide more specialist advice to manufacturers on competing for low carbon opportunities, including support for suppliers for the civil nuclear industry.

- xiv Building on the analysis in this strategy, further investments from the funding announced at Budget 2009 will follow in the months ahead.

Developing low carbon economic activity across the country

- xv There is clearly a set of low carbon activities and priorities which must be common across all parts of Britain. These include greater energy efficiency, smarter low carbon procurement and the construction or retrofit of low carbon buildings. But each nation, region and locality has a particular set of low carbon challenges and capabilities of its own. Understanding these is critical to effective policy delivery.
- xvi For this reason the Government is developing 'Low Carbon Economic Areas' to accelerate low carbon economic activity in areas where Britain's existing geographic and industrial assets give a locality clear strengths.
- xvii The first Low Carbon Economic Area will be located in the South West of England and will focus on the development of marine energy demonstration, servicing and manufacture. The South West has an obvious marine resource, successful existing activity with high potential and a high level of regional expertise in marine research, development and engineering.
- xviii There is a clear regional commitment to collaboration between the Regional Development Agency and other partners to develop this low carbon economic opportunity through the creation of new demonstration facilities for wave and tidal power; investment in world class academic and research strengths; the

creation of a network of science parks and businesses to generate growing momentum in the wave and tidal power sector; new port infrastructure to ease the loading and transport of tidal and wave technologies to offshore locations; and the creation of an industry forum based in the region.

- xix** The South West will network with organisations in other parts of the country that are engaged in marine energy projects, including Scotland, the North East, the North West, Wales and Northern Ireland.
- xx** Over the next six months, central government will work with national, regional and local partners to identify further Low Carbon Economic Areas, examining where key opportunities exist, where there are local and regional advantages and where local partners are strategically aligned and focused on delivery. Sectors where we will particularly look to develop such areas will include offshore wind, marine energy generation, the nuclear energy supply chain, carbon capture and storage, and ultra-low carbon vehicles.

Growing innovative low carbon businesses in Britain

- xxi** Companies commercialising innovative low carbon concepts will be central to the transition to a low carbon economy in Britain. While the range of innovations that will underlie the shift to a low carbon society and economy is ultimately very wide, the innovations that will drive sustainable economic growth will be those that develop a low carbon concept into a commercial product or service. This journey from concept through commercialisation into a successful company is critical to making Britain one of the best places in the world to build innovative green businesses.
- xxii** The Government has developed a suite of policies for complementing markets in the commercialisation of scientific research and innovation. These include:
 - **Increased support for the early stages of innovation.** Budget 2009 allocated £405 million of additional funding to support low carbon industries and advanced green manufacturing. It also announced a further £50 million in funding for the Technology Strategy Board, to increase its capacity to support innovation in areas such as low carbon vehicles and buildings which have high potential to drive future growth, and £90 million to fund detailed design and development work (FEED studies) for the carbon capture and storage demonstration competition.
 - **Closing the financing gap for growing low carbon companies.** The Government has created the UK Innovation Investment Fund to address the finance gap which occurs before new technologies reach the marketplace, where companies have invested in research and development but where new revenue streams have yet to begin to be generated by sales. The Fund will invest in technology-based businesses with high growth potential, including in the low carbon area, that require equity finance. It will focus on investing in growing businesses. The Government will invest £150 million to cornerstone the Fund and leverage additional private sector investment. It is the Government's ambition to build this into a fund of up to £1 billion over the

next 10 years. The Government is also working to bring together investors, innovators and policy officials in a three-way symposium to be held in the autumn.

- **Greater co-ordination on low carbon innovation.** The Government will ensure that public sector support for low carbon innovation is coordinated and that these investments create critical mass and coherence so that UK business has greater clarity and is better able to access the most relevant support available. This will include expansion of the Low Carbon Innovation Group – a strategic collaboration between key organisations delivering this support.

A low carbon transition for the whole economy

xxiii The economic opportunities and threats arising from the shift to low carbon extend across the entire British economy. This strategy therefore addresses not only the specific needs of business catering to the growing market for low carbon goods and services, but the wider actions that Government is taking to ease Britain's transition to a low carbon economy. These include:

- **Measures to encourage organisations to take advantage of greater resource efficiency and energy savings,** including an additional £100 million in Budget 2009 for interest free loans to businesses investing in greater energy or resource efficiency;
- **Facilitating the low carbon transition through a transformation of Britain's infrastructure,** including investment in the refurbishment of the UK's energy infrastructure to handle renewable technologies, including micro-generation;
- **Equipping the British workforce with the skills that will allow them to seize the opportunities of the low carbon economy,** including the development of a new skills strategy that will address the UK's low carbon skills needs;
- **Driving demand for low carbon products through procurement and by providing consumers with information and incentives to encourage them to choose lower carbon options.** This includes the use of tools such as 'Forward Commitment Procurement'; the development of standards, such as PAS 2050; and the introduction of consumer incentives, such as the £230 million of support for consumers purchasing low carbon vehicles from 2011;
- **Creating a climate resilient economy.** This includes activities to understand and increase awareness of the inevitable changes in climate such as the Climate Change Projections.

xxiv Later this year, the Government will be launching a campaign to help SMEs better understand and respond to the opportunities and risks posed by the move to the low carbon economy.

A just transition

- xxv** As with previous structural changes to the economy, the move to a low carbon economy will affect each business, worker and family differently. This will depend on the sector a person works in, the type of job they are doing and where they are geographically located. Previous economic structural shifts have had huge social impacts, with some workers and communities being left behind as industries are restructured by change.
- xxvi** Equipping Britain to take advantage of the move to low carbon is a social obligation as well as an economic imperative. It requires policies that enable people to respond to industrial change positively, through the acquisition of new skills and access to new opportunities and new jobs.
- xxvii** The Government is committed to doing all it can to ensure this just transition. For this reason, the Government will create a forum for considering these issues and advising government. The new Forum for a Just Transition will include representatives from Central Government, national, local and regional bodies, Trade Unions, business organisations, and third sector bodies.