HM Government

Department for Business, Enterprise and Regulatory Reform
Department of Energy and Climate Change

Low Carbon Industrial Strategy: A vision

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The transition to a low carbon world will transform our whole economy. Lord Stern's landmark Review in 2006 set out the economic case for action on climate change and for investment in a low carbon economy. Recognising that economic necessity, the UK has through the Climate Change Act become the first country in the world to adopt a legally binding target to reduce carbon emissions – by at least 26% by 2020 and by 80% by 2050.

Achieving this means that by that date, every unit of output in Britain will need to be produced using on average just one tenth of the carbon used today.

This transition will transform our whole economy. It will change our industrial landscape, our supply chain, and the way in which we all work and consume. For as well as being an environmental and economic imperative, the shift to a low carbon economy is also an economic opportunity. Businesses and consumers can benefit from significant savings through energy and resource efficiency measures. And supplying the demands of the low carbon economy offers a significant potential contribution to economic growth and job creation in Britain, not only as part of the short term economic recovery, but also through sustainable growth over the decades to come.

The global market for low carbon goods and services is already worth over £3 trillion and growing rapidly. For the UK, which is already a leader in many low carbon and resource efficient services, technologies and processes, this is a huge potential opportunity.

The challenge for business and government is to make sure that the UK benefits economically and industrially from the move to low carbon – ensuring that the jobs and growth that it could bring support our recovery from the downturn and our long term industrial future.

A low carbon industrial strategy must seize the opportunities that will come with change: a new industrial activism for a new green industrial revolution

We already have in place the key targets and regulatory drivers for carbon reductions in the areas of households, transport and power generation. The framework Government has put in place aims to give industry the confidence to invest in bringing low carbon products and services to the market. It includes the Climate Change Act, which sets binding carbon budgets for the UK, the EU Emissions Trading Scheme, which covers almost half of all emissions, the Renewables Obligation and our target of 15% of all energy coming from renewables by 2020, the new Carbon Reduction Commitment, building regulations, vehicle emissions standards, and dynamic product standards for consumer goods. All these, alongside the public spending and planning processes the Government has put in place, will drive demand for low carbon and resource efficient goods and services.

But we must also think about how we best equip UK businesses and workers to compete for these opportunities. In an increasingly competitive global market it is vital we create the conditions that make the UK the best country in the world to grow a low carbon business. We need a new industrial activism that brings together different strands of government policy to ensure low carbon companies based here have access to the infrastructure, skilled workers, research and development and investment opportunities they need. We need to make sure that we drive the green industrial revolution from the regions as well as nationally, building on distinct regional and local advantages across the UK, and market British strengths in a competitive global marketplace.

Opportunities will exist in sectors right across the UK and global economy

For businesses, the transition to low carbon offers both commercial opportunities and the chance to save money and release

***80%**

The UK is the first country in the world to adopt a legally binding target to reduce greenhouse gas emissions by 80% by 2050

productive resources through greater energy efficiency. At the heart of the Low Carbon Industrial Strategy are drivers of fundamental change in four key areas:

- Energy efficiency to save businesses, consumers and the public services money
- Putting in place the energy infrastructure for the UK's low carbon future – in renewables, nuclear, Carbon Capture and Storage and a 'smart' grid
- Making the UK a global leader in the development and production of low carbon vehicles
- Ensuring our skills, infrastructure, procurement, research and development, demonstration and deployment policies make the UK the best place to locate and develop a low carbon business and make sure international business recognises that.

The global shift to a low carbon economy could help to drive renewed growth that will lift us out of the economic downturn. It will be key to the UK's long term industrial future. Set out here are the areas in which the Government believes we can build on existing work to create a comprehensive and ambitious step change that ensures UK businesses can benefit fully from global moves to a low carbon economy. In close consultation with businesses, unions, environmental experts and other stakeholders we will now develop our approach for ensuring UK businesses can benefit from the transformative change to a low carbon economy. The resulting Low Carbon Industrial Strategy will be published in the summer.

CASE STUDY: T-Mobile

T··Mobile···
Life's for Sharing

By establishing an energy management steering group, T-mobile was able to save £648,000 on its energy bills last year alone. The group helped to map and carry out a raft of measures to optimise energy savings, establishing targets to drive this across different areas of the business.

Saving businesses, consumers and the Government money through energy efficiency

More efficient use of energy and other resources could save businesses and consumers in Britain billions of pounds every year. Much of this can be achieved from simple and cheap actions. The savings made could be quickly channelled into new investment.

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Greater resource efficiency has a fundamental role to play in increasing the productivity and competitiveness of UK business and it is also increasingly becoming a selling point for both UK and international customers. A national shift to greater resource efficiency would also support the creation of tens of thousands of jobs for businesses in this sector.

Despite the clear economic case for undertaking energy efficiency measures, lack of information and lack of finance – especially in the current economic climate – can prevent businesses from taking them up. Government has a clear role in removing these barriers and already provides advice and low cost finance, including through the Carbon Trust and Regional Development Agencies. While this assistance has been very successful, our ambition is to go further. This includes making it easier for businesses to access advice and support through Business Link (www.businesslink.gov.uk) under Solutions for Business, the Government's streamlined portfolio of business support products, and the Real Help campaign being offered during the downturn, so as to help them make simple changes to reduce their resource use and save money.

The public sector has to demonstrate leadership in the move to a low carbon economy. The public sector could save a significant proportion of the £4 billion it spends on energy each year through energy efficiency measures. The public sector could also boost demand for innovative low carbon products and services as part of the £175 billion it spends annually on providing public services.

CASE STUDY: Blue-NG

Blue-NG has created an ultra-efficient Combined Heat and Power system fuelled by sustainably sourced bioliquid, the first of its kind in the world. The CHiP (Combined Heat and intelligent Power) is already attracting global interest due to its electrical efficiency rating which peaks at 86%, making it 30% more efficient than its closest rival.

We have two objectives on energy efficiency for our Low Carbon Industrial Strategy: to facilitate a comprehensive step change in the number of businesses and public sector operations making the shift to greater energy efficiency, and to make sure that an active industrial policy means UK firms have the skills to advise and carry out this work, and to bring new energy efficiency technologies to market.

What are the main barriers in the UK to business and the public sector realising the full benefits of energy efficiency?

Putting in place the energy infrastructure for the UK's low carbon future

Energy is the engine of our society and our economy. Since the industrial revolution, the world has been dependent on high carbon fossil fuels for its energy needs. That will change dramatically in a low carbon economy. In the years ahead we will be transforming our electricity generation and energy grid to deliver power more efficiently and to adapt to new forms of power generation.

By 2020 we will need to increase energy from renewable sources by nearly 10-fold to meet our renewable energy targets, saving 20 million tonnes of CO^2 each year. Alongside our civil nuclear sector and a shift to clean coal through Carbon Capture and Storage, these new technologies will vastly reduce the carbon released in generating our electricity supply and heating our homes. The shift to renewable energy sources could also help to reduce the UK's dependence on imported oil and gas, helping to reduce the vulnerability of UK businesses to shifting energy prices.

***£3.3BN**

It is estimated that UK businesses could save a massive £3.3 billion a year on their energy bills through greater energy efficiency

But it is not enough to increase our use of low carbon energy generation sources. We must also transform the electricity grid itself, ensuring that it is equipped for the rapid connection of new forms of energy, able to adapt to the move to low carbon vehicles and increasingly efficient in the way it transmits and distributes electricity. Improving our grid architecture will be essential as we support more small-scale generation through the advent of our new Feed-in Tariffs. £5 billion of investment in the grid is already planned for the next five years, and we have set an aim of having smart meters installed in every home by 2020. We could also achieve carbon savings by generating heating centrally and distributing it to local homes and businesses through district heating networks.

The UK's Low Carbon Industrial Strategy will develop further our approach for delivering maximum economic benefits from the UK's shift to greater use of renewables, civil nuclear power and Carbon Capture and Storage. It will set out our strategy for making the UK's energy grid more efficient and 'smarter'. Details of our proposed approach for improving heat generation, creating opportunities for UK businesses are set out in the Government's Heat and Energy Strategy for consultation on 12 February, and we will continue to explore other opportunities such as Combined Heat and Power.

What are the key opportunities for UK business in moving to a new energy infrastructure?

CASE STUDY: Smith Electric vehicles

Smith Electric Vehicles is the world's largest manufacturer of road-going commercial electric vehicles. Hundreds of Smith's zero emission vans and trucks are in operation today with customers including Royal Mail, DHL, TNT and Sainsburys. Boasting a top speed of up to 70 mph, a range of over 100 miles and a payload of up to 7,400 kg, these vehicles are well suited for urban delivery cycles. Last month it announced a major collaboration with Ford to develop an electric version of the Ford Transit Connect for the North American market.

Making the UK a global leader in the development and production of low carbon vehicles

Our transport system is fundamental to our economic strength, connecting people to places and businesses to markets. However, the only sustainable future for transportation lies in a transformative shift to low carbon. Our ambition must be for the UK to be a world leader in low carbon transport, especially at the forefront of development and manufacture of low carbon automotive technology.

CASE STUDY: Wave Hub

Wave Hub is a groundbreaking project off the North Cornwall coast to create the world's first large-scale wave energy farm. It will allow wave device developers to test their devices on a scale not seen before, potentially creating 1,800 jobs and injecting £560 million into the UK economy over 25 years, and providing the base for a much wider marine energy industry in the UK.

We have already committed over £350 million of support to encourage uptake of ultra-low emission vehicles and our support for the automotive sector in the downturn has been designed to help secure its long-term future as a world leading low carbon industry. We now need to equip the UK to compete in the global market both for vehicles and their components.

This means removing barriers to private sector investment, accelerating the development of low carbon road transport technologies through support for low carbon vehicle research and development, showing leadership through our public procurement policies, and making the UK a leading global location to demonstrate low carbon vehicle technology, as well as in other systems such as rail transport.

Our Low Carbon Industrial Strategy will set out how, working with the private sector, we can coordinate public sector activity to ensure the UK is a global leader in developing, demonstrating and manufacturing ultra-low emission vehicles and vehicle components.

What is the best way for Government and business to work together to secure a world leading position for the UK in low carbon transport?

*7.4%

Our low carbon sector represents 7.4% of our GDP in the UK.

Making the UK the best place in the world to locate and grow a low carbon business

To capitalise on the growth opportunities from a move to a low carbon economy, we must create the conditions for the UK to be – and be seen to be – the leading location in the world for growing an innovative low carbon business, developing new low carbon products and services. In practice, this means having people with the right skills in the right place at the right time, a research base which supports ground breaking research, and the capacity to turn these into world beating technologies.

The UK is already establishing itself as a major player in the £3 trillion global market for low carbon goods and services. Our low carbon and environmental sector, worth £107 billion a year, represents 7.4% of our GDP. The sector is growing fast, even in the downturn, and is expected to employ over 1 million people by the middle of the next decade.

We also have a world class science and research base and a superb record for innovation: in 2007, the UK attracted 30% of all European venture capital investment in clean technology.

CASE STUDY: OGI Groundwater Specialists Ltd

OGI Groundwater Specialists Ltd is a groundwater specialist consultancy, traditionally providing advice to engineering firms who need to dig boreholes. Using their existing expertise they have taken advantage of a new low carbon opportunity to become specialists in the installation of Ground Source Heat Pumps. These renewable heat systems provide space and hot water heating with 40% of the carbon emissions of conventional heating.

In the decades ahead, companies will make critical decisions about where to locate low carbon manufacturing and innovation. If we are to benefit, this will require strategic thinking from government to use the power of public procurement, public policy, and shape the regulatory environment, Britain's infrastructure, its facilities for research and development and the skills of its workers to make the UK an obvious international destination for low carbon industry,

*30%

In 2007, the UK attracted 30% of all European venture capital investment in clean technology

CASE STUDY: Toyota Motor Europe

Toyota Motor Europe take a 360 degree approach, deliberately integrating training, e-learning and performance management within their Environmental Leadership programme. Tackling the entire life cycle means leadership on production, logistics, sales and end-of-life skills, as well as the well known skills in vehicle technology.

research and development. It also means coordinated support for RD&D that is easy for business to access and navigate, and delivered efficiently.

Our Low Carbon Industrial Strategy will set out ways of ensuring that the UK is the best place in the world to grow a low carbon business and successfully attract new investment, not only as part of the short term economic recovery, but to contribute to long term job creation and growth.

UK workers across all sectors will need to gain the skills to work with new low carbon technologies and processes, or provide new services that will come with a low carbon economy. Often, these are not new skills, but new ways of applying a foundation of training in technical subjects.

The skills to use low carbon goods and services will be embedded into training across every profession, equipping businesses across the UK economy to move rapidly to meet demand for new services.

The Low Carbon Industrial Strategy will set out how the Government will work with leading employers and key strategic partners, such as the Sector Skills Councils, to stimulate demand, support business innovation and create the framework for developing low carbon skills in the UK workforce and securing jobs for the future. It will be particularly important to address the leadership and

management issues that will deliver the culture change required in all sectors of the economy. Harnessing the talent and commitment of the entire UK workforce will be the key to success.

How do we build the infrastructure, skills and research base we need to make the UK the world's foremost destination for low carbon investment?

Next Steps – Building on our vision

This document sets out our vision for a low carbon economy in the UK. Going forward, we will work actively with stakeholders to develop our approach for achieving that vision. We are committed to using a strategic direction from Government to continue to drive a step change in the UK's transition to a low carbon economy. This change is not just an environmental and economic imperative; it is also potentially a huge economic opportunity for Britain, both in moving out of the current downturn, and in mapping out our industrial future.

We now want to hear your views on how we achieve that vision. You can contact us through our website,www.hmg.gov.uk/lowcarbon, setting out both the challenges facing business now and in the future, and how we can work together to overcome them. We will use these views to inform policy development towards our Low Carbon Industrial Strategy.

www.hmg.gov.uk/lowcarbon

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This vision is helping us to ACT ON CO_2

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