



Submission by The Carbon Trust to the PIU Energy Review

The Carbon Trust, an independent company set up by Government and the Devolved Administrations, was launched in March 2001 with a wide-ranging remit from the Prime Minister to “take the lead on low carbon technology and innovation in this country, and put Britain in the lead internationally”. Our objectives are,

- To ensure that UK business and the public sector meet ongoing targets for carbon dioxide emissions
- To improve the competitiveness of UK business through resource efficiency
- To support the development of a UK industry sector that capitalises on the innovation and commercial value of low-carbon technologies

The remit The Carbon Trust has been given, together with the way we are organised, gives us a unique market position – and a unique opportunity to help the UK move towards a low carbon economy. In particular,

- The Carbon Trust reflects consensus between Government, the Devolved Administrations and business on the support required to deliver the climate change programme
- We have active commitment from Government, the Devolved Administrations and business, through the Prime Minister, the Deputy Prime Minister and the Chairmanship of Ian McAllister
- We take a strategic view across the low carbon landscape with a secular constitution reflected in Board membership comprising national and Devolved Governments, academic research, NGOs, Trade Unions and business

We are currently developing our strategy and programmes with a view to publishing our strategy for consultation at the end of October. Many of the insights and proposals derived from our strategy work are therefore preliminary.

1. The need for a bold yet balanced Energy Policy

The energy policy review has the task of balancing the trade-offs between the three pillars of UK energy policy, security of supply, environmental protection and competitiveness. The cross-government and cross-sectoral nature of energy supply and service means that reconciling the tensions between these pillars would be difficult even at the best of times.

Events in the last year, however, have emphasised the importance of each pillar of energy policy and have increased the potential tensions between them,

- The need to reduce CO₂ emissions from energy use is being driven by the Kyoto process, in which the UK plays a leading role
- The recent atrocities in the US could have a wide-ranging impact on security of supply and acceptable risk
- The volatile state of world capital markets and prospect of recession could exacerbate business concerns over competitiveness

Whilst the drive for a low carbon economy has, in the past, primarily been environmental protection, it will entail a move away from hydrocarbon fuels. The potential for significantly higher oil prices would increase the value of energy conservation to policy-makers as a hedge against security of supply risks while higher fuel prices also make low carbon options more attractive to business. There is, therefore, strong alignment between the needs of security of supply and environmental protection.

Competitiveness is of particular concern when the cost of competing is prohibitive or when market conditions for competing companies differ materially,

- Whilst long term costs in a low carbon economy are likely to be competitive, the transition period will be costly for many
- There are, however, early moves towards a low carbon economy both in Europe and beyond, building broad consensus and momentum which should limit any competitive disadvantage for the UK
- In some cases, for example on emissions trading, the UK could, by acting positively, build a competitive advantage

Given the above, we believe that the UK's Energy Policy should be bold yet balanced, providing clearly signalled, sustained and substantial support for moves to a low carbon economy. Our early thoughts for the form this support could take are set out in the later section, *Delivering low carbon innovation*.

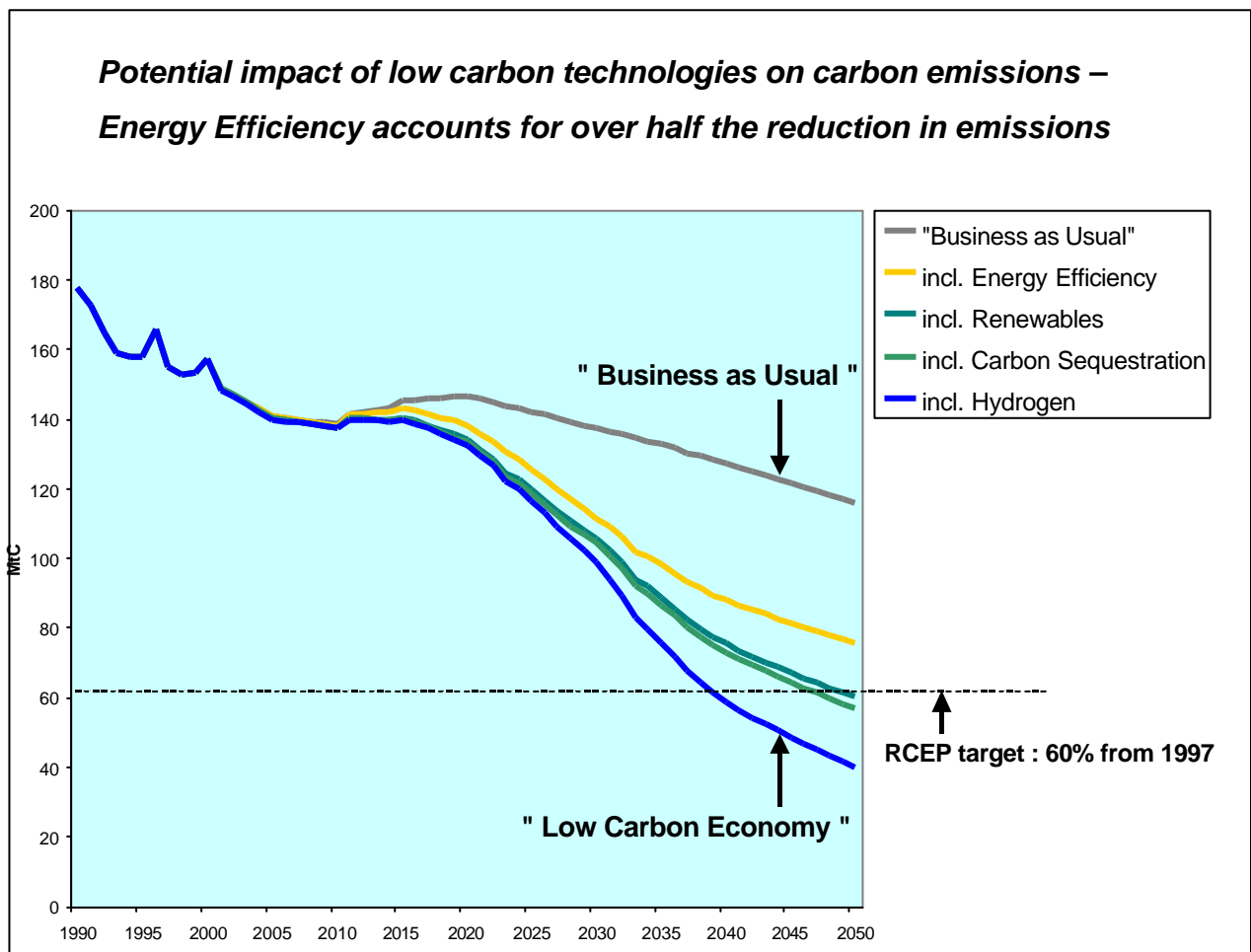
2. The low carbon landscape - a UK Carbon Map

The Carbon Trust has carried out an assessment of UK CO₂ emissions over the period to 2050. We have adopted the Royal Commission on Environmental Pollution's time scale and, to provide a sense of scale to the reductions needed, we have compared our projections to the RCEP 60% carbon emissions reduction recommendation .

We are aware that others have also developed projections over this timescale to address a number of questions and scenarios. Our approach is specifically designed to support the development of programmes that address the constraints to development and deployment of low carbon technologies – to reflect technological, behavioural, market and other constraints, we have built a series of “milestone driven” technology deployment curves reflecting a range of prevailing opinion from recognised sources. Other groups have used

different approaches and we are sharing our ideas with them. There are four key elements to our approach,

- A baseline of carbon emissions to 2050 derived in part from DTI Energy Paper 68 (by sector and by energy service - heat, light, motive power, etc.)
- An assessment of the “carbon gap” - what additional emission reductions would be required to achieve a 60% reduction by 2050?
- An assessment of the potential impact of an internally consistent basket of existing and emerging low carbon technologies (We are currently developing alternative “baskets” of technologies but do not anticipate these will change our conclusions significantly)
- An assessment of what other organisations are doing, what other resources are being invested in low carbon technology programmes, at home and abroad, what constraints other countries face and what policy instruments they are choosing to deploy



Our early conclusions, endorsed by a series of recent stakeholder workshops, are that,

- Energy efficiency and renewable energies have vital roles to play, as part of a balanced energy supply mix, to help the Government achieve its goals
- Greater use of energy efficiency and renewable energies will contribute to the competitiveness of business and the efficiency of public services
- Development of specific low carbon technologies, building on UK strengths, will enable the UK low carbon technology sector to capitalise on opportunities in the growing global market. Carbon trading schemes and other flexible Kyoto mechanisms will make low carbon technologies more attractive and will return carbon value to the UK.

Whilst the potential impact of low carbon technologies is significant, sustained innovation will be needed to overcome the constraints to market deployment.

3. Delivering low carbon innovation

The forward view to 2050 shown above cannot be realised without significant support over and above that assumed in our carbon emissions baseline to 2050. Sustained innovation, in its broadest sense (technological, policy measures, behavioural changes, etc) will be needed throughout the period to bring forward and deploy new technologies effectively.

Delivering innovation crucially depends upon providing a balanced and effective set of incentives to overcome the constraints and market failures that obstruct innovation and change in the UK. For programmes of support to be effective, the right policy environment also needs to be created and maintained over the long term. This will require,

- Clear and unambiguous political commitment beyond the lifetime of individual Ministers and Governments

- A long-term policy and legislative framework, linked to targets, to reassure markets and to allow business to plan for and adapt to change
- Mechanisms supporting partnership between the different stakeholders: business, the public sector, Government, universities, etc.
- An informed, high level, low carbon economy debate to engage business, Government and key decision makers
- International engagement and collaboration

The Government has demonstrated political commitment to tackle climate change and develop low carbon technologies. There are significant amounts of money available for R&D both from UK sources and overseas. There are also significant resources being made available for demonstration, early market take-up and exploitation, primarily through three initiatives – the money allocated (or about to be allocated) to renewables, the incentives attached to the UK emissions trading scheme and The Carbon Trust itself.

On the other hand,

- There is a lack of co-ordination between the various sources of funds and considerable confusion amongst businesses seeking to exploit them
- Support is usually available in prescribed forms (a grant, a loan, some information) whereas companies' needs vary according to their state of development and the specific needs of the technology they are developing or deploying
- Support for demonstration and early market take-up is not as seamless as it needs to be to create a dynamic and sustained climate for innovation
- There is a lack of integration - technologies cannot be deployed in isolation but must be elements of energy systems, with each element to some extent dependent on the existence of another. Examples would be the infrastructure requirements to support hydrogen and renewable energies

The programmes currently being developed by The Carbon Trust will address these issues.

The Carbon Trust's remit puts it at the centre of low carbon technology innovation in the UK. Energy efficiency and other low carbon technologies, including renewable energies, are essential elements in the delivery of UK energy and climate change policy objectives. We will work with the Government, the Devolved Administrations and our other stakeholders to create a climate for innovation and develop programmes to deliver the significant carbon savings necessary to meet the UK's climate change goals now and in the future.

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London, 11th October 2001