

Building a low-carbon economy – the UK's contribution to tackling climate change



COMMITTEE ON CLIMATE CHANGE (CCC)

The CCC is an independent body established under the Climate Change Act to advise the Government on setting carbon budgets, and to report to Parliament on the progress made in reducing emissions.

This booklet sets out the CCC's advice to Government on what the UK's contribution should be to reducing emissions by 2050 as part of a global deal , and the level of the first three carbon budgets for 2008-2022.





CLIMATE CHANGE – WHAT ARE THE FACTS?

There is now broad agreement that the earth's climate is changing as a result of human activity. Since the industrial revolution, humans have been emitting much higher levels of greenhouse gases into the atmosphere.

These gases, including carbon dioxide and methane form a protective layer which causes global temperatures to rise.

The world needs to aim to limit temperature increases to 2 degrees Celsius, and to reduce the chance of a 4 degree increase to very low levels. Failure to do this would result in adverse environmental impacts with significant human consequences: melting of the Greenland ice caps, extinction of large numbers of animal species, flooding, extreme weather events, ocean acidification and reduction in crop yields.

Cutting the levels of greenhouse gases that we emit could significantly reduce the impacts of climate change. But we must act now, and act globally.

REQUIRED GLOBAL EMISSION CUTS

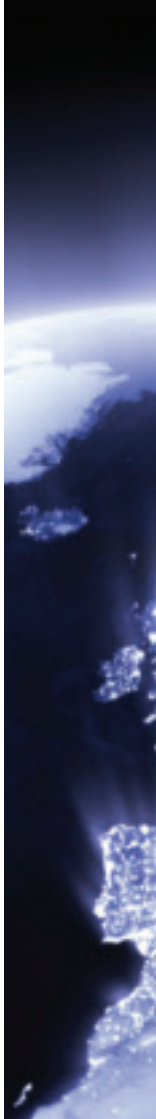
To contain the threat of climate change, **the world needs to reduce emissions by at least 50% by 2050.**

This amounts to **a reduction in Kyoto greenhouse gases to between 20-24 billion tonnes.**

Reaching an ambitious global agreement to take action will be vital, and the role of the UK and other developed countries in making early and deep emissions cuts will be key.

THE UK'S SHARE

The UK should reduce emissions of greenhouse gases by at least 80% by 2050, as a fair contribution to a global action on climate change.





THE PATH TO AN 80% REDUCTION

Meeting an 80% target would be challenging but feasible based on a range of options for reducing emissions including:

- **Energy efficiency improvement in buildings and industry** (e.g. loft and cavity wall insulation, use of more efficient appliances, turning appliances off and using less air conditioning), which will be particularly important for reducing emissions in the period to 2020.
- **Decarbonisation of the power sector**, starting now and continuing through the 2020s, based on replacing existing conventional fossil fuel fired plant with renewable technologies (e.g. wind, tidal), nuclear new build and Carbon Capture and Storage (CCS).
- **Transport sector decarbonisation**, first through improving fuel efficiency of conventional engines and increased use of sustainable first generation biofuels, with progressive introduction of new technologies such as electric cars, plug in hybrids and hydrogen vehicles, and second generation biofuels.
- **Heat sector decarbonisation** through increased use of biomass in boilers and CHP, air exchange and ground source heat pumps, and modern electric storage heating.
- **Decarbonisation of industry** through the introduction of new technologies such as CCS in cement, iron and steel.

THE COST OF MEETING AN 80% TARGET IS AFFORDABLE

The good news is that **it is possible to achieve these cuts without harming our economy!**

Achieving an 80% cut by 2050 is likely to cost between **1 and 2% of the UK's Gross Domestic Product in 2050**. Put simply, this means sacrificing one out of the next 42 years of economic growth. This is a small price to pay compared to the consequences and much higher costs of inaction.





THE VIEW TO 2022

The CCC has been asked to advise on the level's of the UK's first three legally binding carbon budgets. These are for the period from 2008-2022.

Carbon Budgets set a ceiling on the level of emissions over five year periods.

The CCC has produced two sets of budgets: one if we reach a global deal and the second for the period before a global deal is in place. **Once a global deal is reached, the UK should aim to reduce emissions of greenhouse gases by 31% in 2020 (below 2005 levels).**

Whilst we are waiting for a deal, the UK should aim to reduce emissions by 21% by 2020 (below 2005 levels).

These budgets: are on an appropriate path to the 80% target; make an appropriate contribution to required global emission reductions; and are consistent with the UK's commitments to the EU.

REDUCING EMISSIONS OVER THE NEXT FIFTEEN YEARS

Our proposed budgets can be feasibly reached through energy efficiency improvement in buildings and industry and carbon efficiency improvement in road vehicles, combined with a significant shift towards renewable and nuclear generation and renewable heat.

To deliver feasible emissions reductions, strengthening of existing policies and development of new policies will be required.





THE ECONOMIC AND SOCIAL IMPACTS OF MEETING BUDGETS ARE MANAGEABLE

The cost of meeting proposed budgets **is less than 1% of Gross Domestic Product (GDP) in 2020.**

The CCC has assessed potential effects of budgets on competitiveness of UK industry. These are important, and can be addressed through appropriate design of the policy framework.

There will be potential costs for the fuel poor which can and should be addressed through design of the policy framework.

REGIONAL IMPACTS

There are opportunities to cut emissions across all nations of the UK and we have addressed these in our report. National Authorities in Scotland, Wales and Northern Ireland have an important part to play in contributing to efforts to tackle climate change. To find out more about what policies are in place within national authorities to tackle climate change go to:

Scotland: www.scotland.gov.uk/Topics/Environment/Climate-Change

Wales: www.wales.gov.uk/climatechange

Northern Ireland: www.doeni.gov.uk/index/protect_the_environment/climate_change.htm





We hope this booklet has been helpful.

Building a low carbon economy is the CCC's first report.

Our next report, which will update on the progress made by Government in reaching the targets set will be published in September 2009.

Meanwhile, you can keep in touch with us via our website at: www.theccc.org.uk or by writing to: enquiries@theccc.gsi.gov.uk



*Independent advice to
Government on building
a low-carbon economy*