



The 80% challenge

Delivering a low-carbon UK

A WWF and RSPB Executive Summary: implications for the Climate Change Bill

THE 80% OPTION

WWF and RSPB have come together with the IPPR to produce a report examining the implications of achieving an 80% emissions reduction in the UK. This is a briefing for decision-makers highlighting the key implications of this research for the Climate Change Bill.

The UK Climate Change Bill will make the UK the first country in the world to set legally binding domestic targets on carbon dioxide (CO₂) emissions. This is very welcome – but as currently constructed, the Bill will not ensure that the UK plays its full part in avoiding dangerous climate change.

The Government is proposing that the UK's CO₂ emissions fall by at least 60% from 1990 levels by 2050. However, it is now clear that developed countries, including the UK, will need to reduce emissions by at least 80% for us to have a good chance of avoiding the most damaging impacts of climate change. Moreover, the UK's share of emissions from international aviation and shipping, which are currently excluded from the target in the UK Climate Change Bill, will need to be fully taken into account.

This report by the IPPR, the RSPB and WWF demonstrates that it is both technically and economically feasible to reduce the UK's emissions of CO₂, including its share of international aviation emissions, by 80% by 2050. It also demonstrates that it is possible to achieve this goal without relying on unsustainable technologies.

WHY DO WE NEED AN 80% CUT?

The world's leading climate scientists agree that to avoid the worst impacts of climate change, the average global temperature should not rise more than 2°C above pre-industrial levels. The UK Government and the EU have accepted this goal and the science behind it.

To stand a good chance of staying below a 2°C rise will require a minimum 50% global reduction in greenhouse



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gas (GHG) emissions by 2050. The UK Government gave public support to this conclusion, when calling for a 50% reduction in GHG emissions by 2050 at this summer's G8 meeting.

The UK Government also supports the principle that developed nations should shoulder a greater proportion of this cut than developing countries. A 50% cut in emissions globally, distributed fairly between developed and developing countries, would require the UK to cut its own emissions by a minimum of 80%, not 60%, by 2050. If the UK and other developed nations reduce their emissions by 60%, the world still faces a high likelihood of warming of around 4°C – well above the critical 2°C threshold. The target proposed in the Climate Change Bill is, therefore, inadequate to meet the Government's own stated environmental goals and responsibilities.

HOW DO WE GET TO 80%?

In our study, we set out to discover if there are technically and economically feasible ways of achieving an 80% decarbonisation of the UK economy by 2050. Where appropriate, we followed the same broad assumptions and approaches used by the Government in background modelling for its 2007 Energy White Paper and by the Stern Review.

However, we applied a more ambitious 80% CO₂ reduction trajectory – and included the UK's share of emissions from international aviation. In recognition of wider environmental limits, we also excluded new nuclear generation, and placed limits on the use of biofuels to reflect concerns about their sustainability. We also applied an upper limit on wind generation, to address intermittency issues and potential impacts on wildlife.

Both models identified pathways towards an 80% reduction that involved rapid decarbonisation of the electricity sector, achieved by major investments in wind power, and a significant role for carbon capture and sequestration (CCS). Emissions from the production of heat would be reduced through a major programme of energy efficiency and, in one model, through a move to the use of low-carbon electricity for heating. Surface transport emissions would see major improvements in vehicle efficiency and, for cars, a move towards the use of advanced second-generation biofuels derived from sustainable sources.

While there may be other sustainable ways to meet the 80% target, and this report does not claim there is one single blueprint for a low carbon economy, there are several clear general recommendations that emerge for government policies, if the 80% goal is to be reached:

- A much greater focus on energy efficiency measures across all sectors of the economy is required.
- The UK must meet its fair share of the new EU target for renewable energy: to achieve 20% of primary energy by 2020.
- Carbon capture and sequestration (CCS) must be investigated and promoted. No new fossil fuel power stations should be consented to without an unambiguous commitment to install CCS.
- Urgent action is required to constrain significantly the forecast growth in aviation.
- Sustainable development principles must be used when selecting climate mitigation measures in the future, to avoid, for example, the use of unsustainable volumes or sources of biofuels.



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Our models show that even with an 80% cut in emissions, UK GDP would reach the 2050 'business-as-usual' levels less than two years later

HOW MUCH WILL THIS COST?

According to the models, the cost of meeting the 80% target, including our share of international aviation emissions, would range between 2% and 3% of GDP per year by 2050, though a successful drive for energy efficiency could markedly reduce these costs to approximately 1.5% to 2% of GDP.

These are the costs that would be incurred by meeting the target purely through domestic effort, and as such represent a probable upper limit. While the sums involved are large, the impact on growth across the whole economy over time is relatively minor. By 2050 the UK economy would almost triple in size, even with an 80% cut in emissions. GDP would reach the 2050 'business-as-usual' level less than two years later, in the spring of 2052. The costs of achieving the 80% target are also likely to be dwarfed by the costs of unmitigated climate change, which the Stern Review estimated would reduce global GDP by between 5% and 20%.

WHAT DOES THIS MEAN FOR THE CLIMATE CHANGE BILL?

The Climate Change Bill is the first of its kind anywhere in the world and it is important that we get it right to serve as a successful, agenda-setting model to others. It should reflect the most up to date science, and set a framework for the UK to contribute its fair share

towards achieving its own stated goal, of avoiding dangerous climate change.

The Climate Change Bill is not just about domestic policy – it is also a key test of whether the government is serious in its claims of international leadership on climate change. At the end of November, just after the Bill is debated in Parliament, officials and Ministers will travel to Bali to agree a roadmap for the next phase of the Kyoto Treaty, post-2012. Increasing the targets in the Bill to 80% will send a powerful and inspiring signal to the rest of the world that the UK is serious in its pursuit of a global agreement consistent with staying below 2°C warming and reducing global emissions by 50% by 2050.

The Bill should also include wider environmental safeguards, to ensure that the mitigation measures chosen do not exacerbate environmental and social problems elsewhere, for example by promoting unsustainable biofuel production.

Reducing the UK's CO₂ emissions by 80% and including the UK's share of international aviation are critical to delivering the Government's stated objectives on climate change.

This report demonstrates not only that the task is achievable but also that it can be delivered within a growing and sustainable economy.



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