

UK Climate Change Programme: a policy audit

SDC report

Summary headlines

1. The key findings of our audit of the UK Government's Climate Change Programme are:

- Without further measures, the UK will fall well short of the Government's goal of reducing carbon dioxide emissions by 20% from 1990 levels by 2010.
- The Kyoto Protocol target, of reducing total greenhouse gas emissions by 12.5% from 1990 levels over the period 2008-12, will be achieved.
- Looking beyond 2010, the Government's projections do not yet show the radical shift needed to a low carbon path, nor are the policies in place to achieve more sustainable patterns of energy generation and consumption.
- Factors outside the influence of the Programme, including electricity market pricing and aviation, strongly affect its outcome.
- Additional measures - including environmental cost internalisation, renewables, Combined Heat and Power (CHP), energy efficiency, transport - are required now, to bolster the Programme itself and to establish the groundwork for a low-carbon economy.
- Political leadership is required to set this process in train, and to provide clarity of long term intentions. The forthcoming energy White paper provides a major opportunity for the Government to demonstrate such leadership.

Global climate change

2. Climate change is the biggest challenge to the sustainable development of the UK and the world as a whole.

3. The UK is rightly held up as one of the very few countries in the world addressing this challenge today in a systematic way, with the UK Climate Change Programme being the Government's core mechanism for tackling the issue. We commend the inclusion in the Programme of specific and challenging targets, and measures to achieve them.

4. One of the Sustainable Development Commission's strategic objectives is to review how far sustainable development is being achieved in the UK. In 2002, we commissioned the Edinburgh Centre for Carbon Management Ltd.(ECCM) to carry out a [technical audit of the Programme](#); their report, to which the Policy Studies Institute also contributed significantly, is being published together with this, the Commission's report. We asked ECCM to judge the Programme by its own objectives and by our principles of sustainable development; and to assess whether it was likely to lead to deeper cuts in emissions in the longer term.

5. Later this year, the Government will begin its own review of the Climate Change Programme. This audit is a contribution to that process.

Climate Change Programme

6. The Climate Change Programme sets out to demonstrate how this country will achieve:

- its target under the Kyoto Protocol for reduction of a basket of six greenhouse gases (12.5% from 1990 levels over the period 2008-12), and
- the more demanding domestic goal set by the Government for reduction in carbon dioxide emissions (20% from 1990 levels by 2010)^[1].

In absolute terms, these represent a reduction from 208.6 MtC^[2] to 182.5 MtC in greenhouse gas emissions and from 164.5 Mtc to 131.6 MtC in carbon dioxide emissions.

7. The Devolved Administrations have their own separate Programmes which contribute to the UK Programme.

8. The UK Programme comprises two elements:

- a projection of how the 'baseline' of emissions (in the absence of the measures in the Programme) would vary between 1999 and 2010; and

- a suite of specific measures to reduce emissions below that baseline.

9. Our consultants have examined both, using an alternative model to construct the baseline. The audit focused on carbon dioxide emissions, which accounted for 79% of the UK's man-made contribution to the greenhouse effect in 1990 and 84% in 2000. But it is important to note that the Programme projects a steep reduction in the other five greenhouse gas emissions: down 40% from 1990 levels by 2010. And in fact emissions of these other gases had already fallen by 34% from 1990 levels by 2000.

10. Chart 1 illustrates, (for the period 1990-2020) the Programme's and (for the one year 2010) the audit's, projections for carbon dioxide emissions; and their impact on the Programme's ability to reduce emissions to meet the domestic goal. Chart 2 illustrates the same in respect of the full basket of six greenhouse gases and the Kyoto target. The charts also illustrate the Programme's projection that emissions of CO₂ and greenhouse gases will not continue to reduce but will level off in the period 2010-2020.

Chart 1:

Climate Change Programme (2000) Projections of UK CO₂ Emissions, 1990 - 2020, together with SDC audit report projections for 2010 (only)

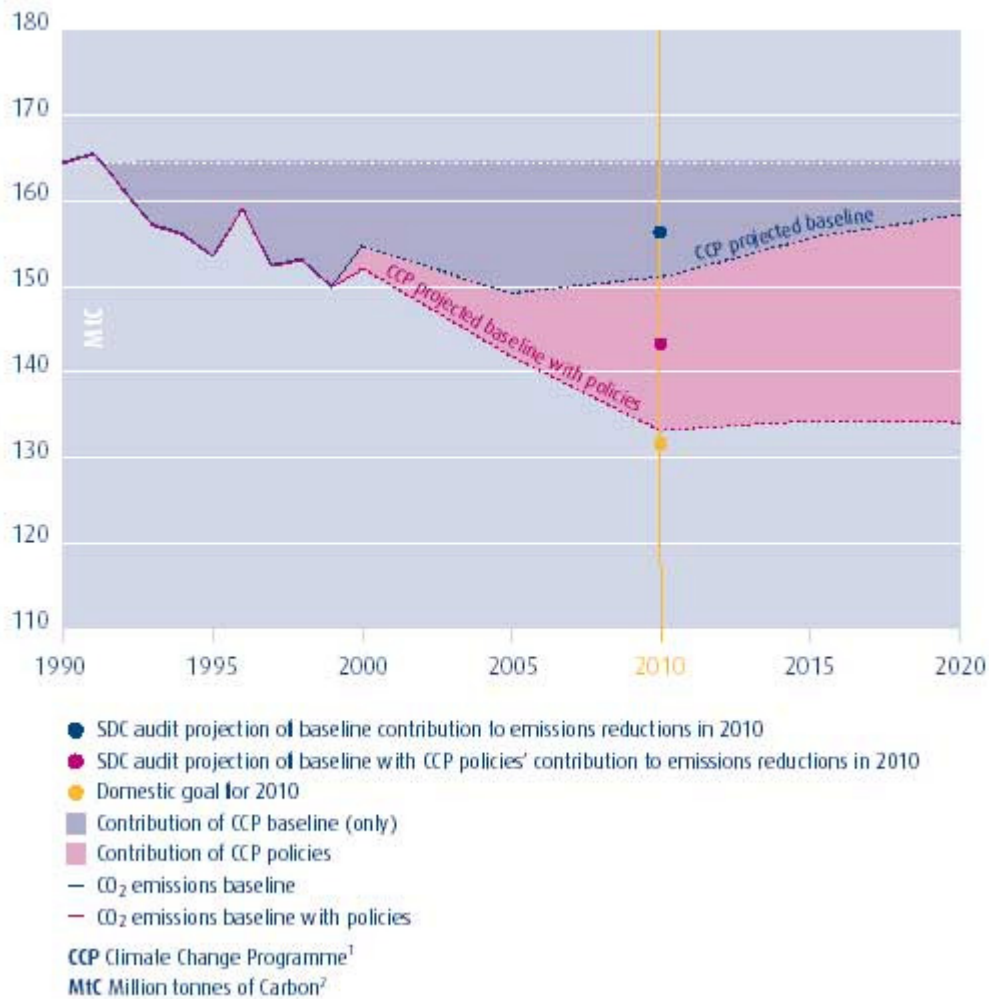
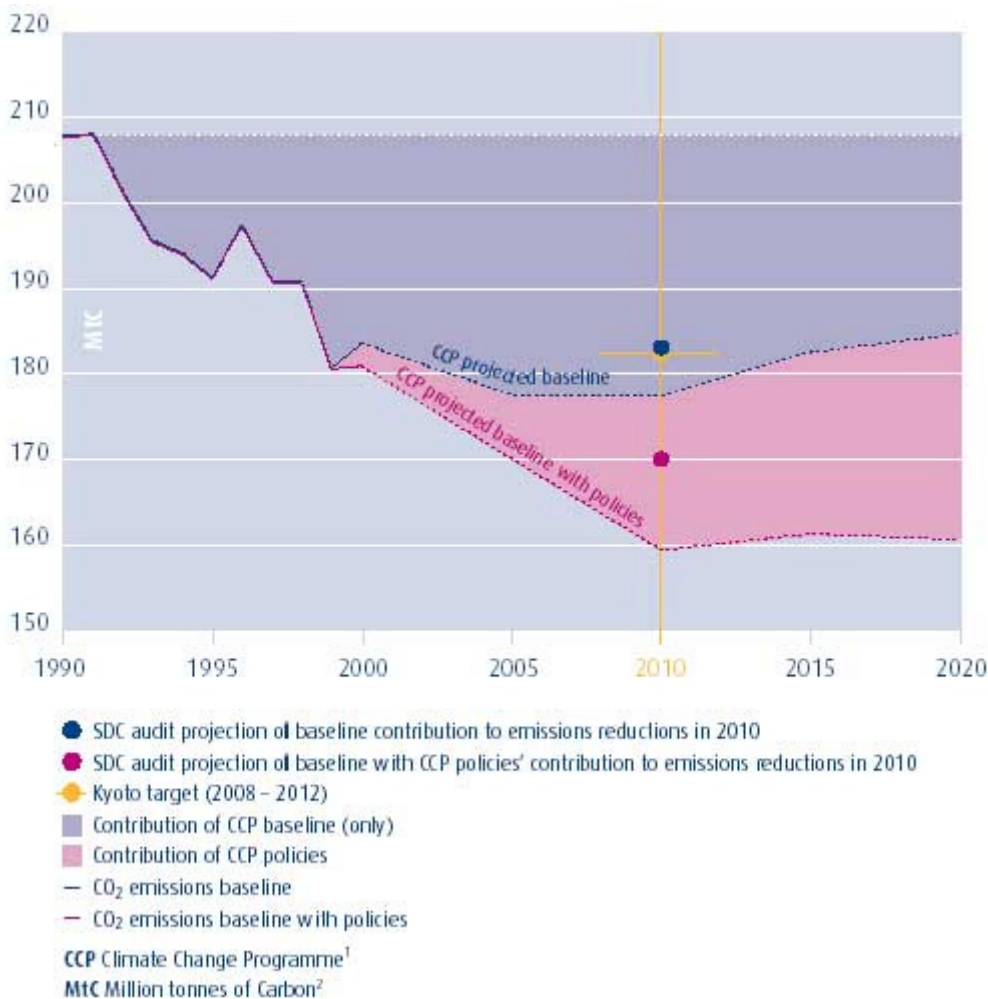


Chart 2:

Climate Change Programme (2000) Projections of UK Greenhouse Gas Emissions, 1990 - 2020, together with SDC audit report projections for 2010 (only)



1: CCP baseline and policies' contribution data drawn from the UK's Third National Communication under the United Nations Framework Convention on Climate Change (October 2001).

2: Greenhouse gas emissions are expressed throughout as million tonnes of carbon equivalent (MtC). One tonne of carbon is equivalent to 3.7 tonnes of carbon dioxide which is the ratio of the molecular weight of carbon dioxide to the atomic weight of carbon. Other gases are expressed in terms of carbon equivalent by multiplying their emissions by their global warming potential (GWP) and dividing by 3.7. 1995 is used as the base year for emissions of fluorinated compounds. In accordance with Article 3.8 of the Kyoto Protocol.

Audit findings

11. There are two main findings:

- Without further measures, the UK will fall well short of the domestic goal of reducing carbon dioxide emissions by 20% from 1990 levels by 2010.
- The Kyoto Protocol target, of reducing emissions of the basket of greenhouse gases by 12.5% from 1990 levels over the period 2008-12, appears very likely to be achieved.

12. Firstly, we believe that the Climate Change Programme's baselines are optimistic, as Charts 1 and 2 illustrate. The consultants' work suggests that, in the absence of the measures in the Programme:

- total greenhouse gas emissions would fall by 12.0% (25.5MtC) by 2010, rather than the 14.9% (31.5MtC) projected in the Programme;
- CO₂ emissions alone would fall by 4.9% (8.2MtC) rather than 8.4% (14.2MtC).

This is because of more coal use in power generation (coal having a higher carbon intensity than gas); higher energy demand by households and the services sector; the (price-lowering) impact of the New Electricity Trading Arrangements and their, and other, effects on attaining the renewables and CHP targets; and more nuclear power outage. All this demands more from the Programme itself if the carbon dioxide goal is to be met.

13. But there are real doubts whether significant elements of the Programme will deliver what is expected of them. The Government estimates that the measures in the Programme will save 18.0MtC of CO₂ emissions (10.7% of 1990 levels) by 2010. We believe that:

- 6.0MtC (3.6%) of this is secure, eg those arising from changes in building regulations, vehicle tax changes and EU limits on CO₂ emissions from cars;
- 8.2MtC (4.9%) is fairly secure, including business activities (eg reflecting the enhanced capital allowance) and a range of energy efficiency initiatives in the domestic sector;
- 3.8MtC (2.3%) is insecure, including savings from the ten year transport plan.

14. Notwithstanding the above, we judge that the Kyoto target is almost certain to be achieved. Even on our own, less optimistic projection, the baseline cut in greenhouse gas emissions is 12.0% by 2010, almost down to the Kyoto target of 12.5%; so, even if only the fully secure elements of the Programme were to be realised, emissions should fall comfortably below the target level. Thus the UK Government can be confident of meeting its international obligation; on current trends, it will be one of the very few EU Member States to be in that position^[3].

15. But the domestic goal is in grave peril. On the basis of our projections, we judge that emissions of CO₂ alone will fall by at most only 12.6% by 2010, and perhaps substantially less. There is still time to remedy the situation. But major additional measures will be required urgently if the 20% goal is to be achieved.

16. A range of factors outside the influence of the Programme itself strongly affects its outcome. For example, the move to competitive gas and electricity markets in recent years has driven down prices, which may be expected to increase consumption. Emissions from international air travel emanating from this country are not even counted within the UK's Kyoto target or the domestic goal (all parties to the Kyoto Protocol treat emissions from international aviation in this way). Yet such emissions are of rapidly growing importance, weakening the overall value of good work in other sectors of the economy. The Government should provide leadership on this very serious issue on the international stage.

17. In addition, our consultants have found that saving a tonne of carbon emissions is implicitly valued much more highly in some sectors of the economy than in others. This means that the overall goal of carbon reductions is being pursued at greater cost than need be the case. The Government should address this as a priority, drawing on ECCM's report and the Performance Innovation Unit's assessment^[4] of the role of economic instruments. In addition, explicit financial values should be ascribed to emissions to reflect their true environmental costs. A good deal of work^[5] has been undertaken by national and international economists on costing environmental impacts. This should be used.

Way forward

18. The audit's findings are not a reason to abandon the domestic goal, but to redouble efforts to achieve it. The development of new policy measures, within the Programme and more widely, will be a key test of political leadership for the Government. They should act quickly and decisively to demonstrate international leadership.

19. Such leadership and its translation into specific policies will also be required if we are to progress toward deeper cuts in carbon emissions in the longer term. We believe that many of the steps required are of immediate, as well long term, benefit to our well being. They include:

- designing ambitious targets and policies against a consistent sustainable development framework;
- providing capital markets with clear signals about the move to a low carbon economy, to encourage investment in low carbon energy sources;
- improving resource productivity to reduce wasteful throughput and benefiting economic competitiveness;
- ensuring environmental costs are fully internalised, and more equal value placed on carbon savings in different sectors of the economy;
- on air travel specifically, we have argued^[6] separately for some constraints on the growth of demand, so as to keep its adverse impacts to manageable proportions.

- 20.** The forthcoming energy White Paper provides a major opportunity for the Government to demonstrate this leadership and direction. It is important to create a context in which businesses and individuals are aware of the true environmental and social costs of their actions and are motivated to reduce them.
- 21.** Following its forthcoming review of the Climate Change Programme, Defra should design the next stages of the Programme more clearly within a sustainable development framework. This means taking into account such issues as local governance and regeneration, and the need for a culture shift in production and consumption.
- 22.** In our input to the energy White Paper consultation exercise^[7] we urged the Government to base energy policy on sustainable development principles. Moving to a sustainable, low-carbon economy would have many benefits and create huge new opportunities for UK business. In addition, we have started to help this process through our dCARB-uk project. This will identify and actively promote medium and long term action towards deep cuts in carbon dioxide emissions at regional and local levels.

Conclusion

23. The Climate Change Programme is an excellent step in the right direction. But our findings demonstrate the need for a major drive to make the Programme's domestic goal a reality. The Programme must be strengthened to deliver as intended, and extended to deliver more. And the Government must urgently address the wider policy context of setting the country on a path to low-carbon economy, bringing in energy, transport and planning; and taking a range of initiatives including regulations and fiscal measures. The UK should also encourage other countries to join with them by demonstrating that it is in their interests to do so, as it is in ours.

24. We made a number of recommendations on energy policy in our White Paper submission^[8]. We do not rehearse them here. But in the light of the audit, we recommend that:

- **Defra** should take the lead across Government for developing additional policy measures to reduce emissions of carbon dioxide, within a sustainable development framework.
- **DTI** should use the forthcoming energy White Paper to set more demanding targets and associated measures for renewables, energy efficiency and CHP. The Department should also review its guidance to Regional Development Agencies as they revise their economic strategies to secure a more substantial contribution to carbon reductions.
- **HM Treasury** should review and strengthen its commitment to using fiscal instruments and environmental taxes to advance key sustainable development goals, particularly in the fields of energy and transport. In addition, new guidance should be issued stipulating the inclusion of low-carbon and energy efficiency provisions in all PFI projects.
- **Department for Transport**, together with HM Treasury, should lobby urgently within the European Union to secure agreement on phasing in an EU-wide climate change levy on aviation. It should also develop a demand management strategy before authorising any expansion in airport capacity. In addition, the Department should look again at the opportunities for improving public transport services at the local level, substantially increasing grant support for quality schemes which enable people to walk, cycle and use public transport.

25. The Devolved Administrations have a key role in developing further their own Climate Change Programmes, and implementing them in conjunction with other players.

26. We similarly call on others - local government, businesses, NGOs and the public generally - to seize the opportunities of a low-carbon economy and set us on a more sustainable path.

27. The Sustainable Development Commission is happy to offer our further help to the Government and the Devolved Administrations in the development of practical solutions in this enterprise, especially to ensure that the additional measures brought forward in a modified Climate Change Programme are those most likely to contribute to the wider goal of sustainable development.

28. We shall, in any case, return to this topic in our future work, to monitor progress on this vital journey.

1: The quantified measures in the Programme are estimated to deliver a reduction of 19% in carbon dioxide emissions, the other 1% arising from non-quantified measures.

2: The term MtC is explained in a footnote to Charts 1 and 2.

3: *European Environment Agency*, Environmental issue report No 33 "Greenhouse gas emissions trends and projection in Europe: Are the EU and the candidate countries on track to achieve the Kyoto Protocol targets?", http://reports.eea.eu.int/report_2002_1205_091750/en/tab_abstract_RLR.

4: 'Energy Review - A Performance and Innovation Unit Report' - February 2002, at <http://www.number-10.gov.uk/su/energy/1.html>.

5: For example, Partha Dasgupta's 'Human Well Being and the Natural Environment'.

6: Air Transport and Sustainable Development, <http://www.sd-commission.gov.uk/pubs/air/index.htm>.

7: SDC's Sustainable Energy Response to the Government's 'Energy Policy: Key issues for Consultation' can be found at <http://www.sd-commission.gov.uk/pubs/sustainable-energy/index.htm>. The summary and recommendations are being published along with this report as 'Sustainable Energy Policy'.

8: *ibid.*