

Parliamentary technical briefing January 2009

Greenhouse gas emissions and targets

The Scottish Government's Technical Note: **Climate Change (Scotland) Bill: Greenhouse gas Emissions, Annual Reductions and Targets** is helpful in explaining what the provisions of the Bill might mean in practice. However there are number of ways in which it could be more helpful:

- Although six scenarios are defined, the paper only illustrates the least ambitious scenario, which does not even reach the UK Committee on Climate Change's Interim Target for the UK for 2020
- The paper does not list the total emissions for each scenario
- The paper does not compare the scenarios to the SNP's 2007 manifesto promise on climate change
- The paper assumes that we will start to reduce emissions slowly and work progressively harder at this as we approach 2050 – a backloaded approach, putting off critical and necessary early action.
- The data in the paper make a correction for the effects of the European Emissions Trading Scheme and therefore do not show all the emissions from Scotland for 2005 and 2006
- Although the paper includes international aviation and shipping it does not make allowances for the additional impacts of aviation emissions in causing climate change

This paper should be read in conjunction with the Scottish Government's Technical Note.

Comparing the Scenarios

The appendix to this paper shows graphs of all the Scenarios in the Technical Note.

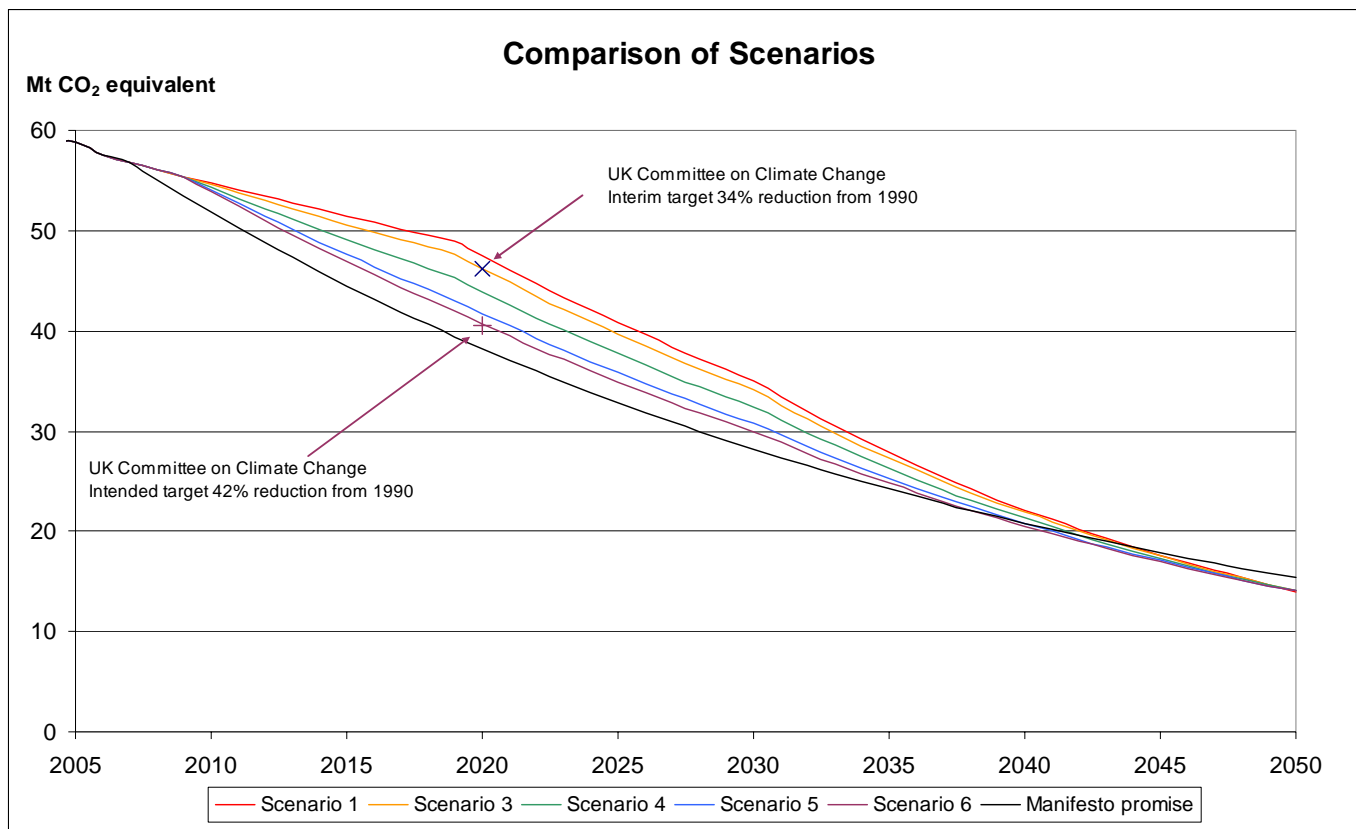
The table below summarises them and the graph overleaf compares them:

Scenario	Meets the UKCCC Interim Target 2020	Meets the UKCCC Intended Target 2020	Total emissions 2005-2050 MtCO ₂ equivalent
Scenario 1	✗	✗	1,700
Scenario 3 ¹	✓	✗	1,675
Scenario 4	✓	✗	1,630
Scenario 5	✓	✗	1,580
Scenario 6	✓	✓	1,560
Manifesto Promise	✓	✓	1,515

¹ Scenario 2 is almost identical to Scenario 3 and so is not covered separately in this paper.

We have included a curve for the SNP 2007 Manifesto commitment which was to “introduce a Climate Change Bill with mandatory carbon reduction targets of 3% per annum and also set a long-term target of cutting emissions by a minimum of 80% by 2050.”²

We also illustrate the comparison with the UK Committee on Climate Change’s (UKCCC) recommendations for the UK to reduce emissions by 34% by 2020 as a minimum (the Interim Target) and to aim for a 42% reduction by the same date if other nations take serious action (the Intended Target). The UK Government has accepted these recommendations, which are also in line with the European proposals for new EU targets.



Early Action

One of the key things the scientists tell us is that we must take early action – we cannot start slow and leave all the real savings to people in the future, when it will be more expensive, more difficult and less effective in tackling climate change. There is common agreement that global emissions need to peak and then decline by 2015 if we are to keep the total warming below the 2°C danger threshold. Scotland, like all other industrialised nations, should therefore try to reduce emissions quickly in the next few decades.

When the Cabinet Secretary for Finance and Sustainable Growth announced there would be a Climate Change Bill in June 2007, he said: “I assure Parliament that we will not wait to take action until the introduction of the bill.”³ Interestingly, the Technical Note assumes that emissions will reduce at the same modest rate between 2007 and 2009 as we have seen since 1990, a tacit admission that the Scottish

² Starting a 3% annual reduction in 2008 (the first full year of SNP government) results in a 78% cut by 2050 so the line on the graph for this option does not quite reach the 80% reduction of the five Scenarios.

³ <http://www.scottish.parliament.uk/business/officialReports/meetingsParliament/or-07/sor0621-02.htm>

Government have done nothing more than the previous administration to reduce emissions so far. In fact, the current recession is likely to reduce emissions faster than the historical trends, but only for a year or two and of course with many undesirable social consequences.

In debating the Government's legislative programme the First Minister gave an assurance that "in every respect the legislation will be more ambitious than the Labour Government legislation [at Westminster]."⁴ To deliver on this promise Scotland should, at least, be aiming to reduce emissions by the UKCCC's Intended Target of a 42% reduction on 1990 emissions by 2020.

Scenario 1 represents business as usual to 2020, with reductions running at about the rate they have been since 1990. Clearly it would not be acceptable to do virtually nothing new to reduce emissions for a decade. As the table and the graph show, only Scenario 6 meets the UKCCC's Intended Target of 42% by 2020. If delivered, the original manifesto commitment would have resulted in a 45% reduction by 2020 and 60% by 2030.

Total emissions

As well as the speed at which we reduce our emissions the other crucial parameter is the total amount of emissions between now and 2050. These figures are shown for each Scenario in the table on page 1.

The SNP Manifesto promised a curve which would have resulted in just over 1.5 billion tonnes of CO₂ equivalent being released between 2005 and 2050. The Scenario that the Scottish Government choose to illustrate in their Technical Note would result in 1.7 billion tonnes, 12% or 200 million tonnes more. This is like taking an extra 14 years to reach the targets or putting a million extra cars on the road for the next 50 years.⁵ The best option presented in the Technical Note – Scenario 6 – would result in 1.56 billion tonnes of CO₂ equivalent, 3% more than the Manifesto Promise.

****So only Scenario 6 approaches delivering what the SNP Manifesto promised and the kind of deep cuts the scientists recommend as absolutely necessary.****

Aviation emissions

Emissions from aeroplanes have a greater climate impact than the same emissions made at ground level. Emissions of nitrogen oxides, water vapour and particulates at altitude generate a number of chemical processes that combine to amplify the climate change effect of aviation. Although there is some uncertainty over the scale of these effects the UK Government currently multiplies aviation CO₂ emissions by 1.9 to get a truer estimate of their climate change impact. The figures in the Technical Note leave out this factor, although, in this case, this makes only a small difference to the Scenarios.

WWF will produce a further Technical Briefing on the methodology for including aviation and shipping.

⁴ <http://www.scottish.parliament.uk/business/officialReports/meetingsParliament/or-08/sor0903-02.htm>, Sept 2008

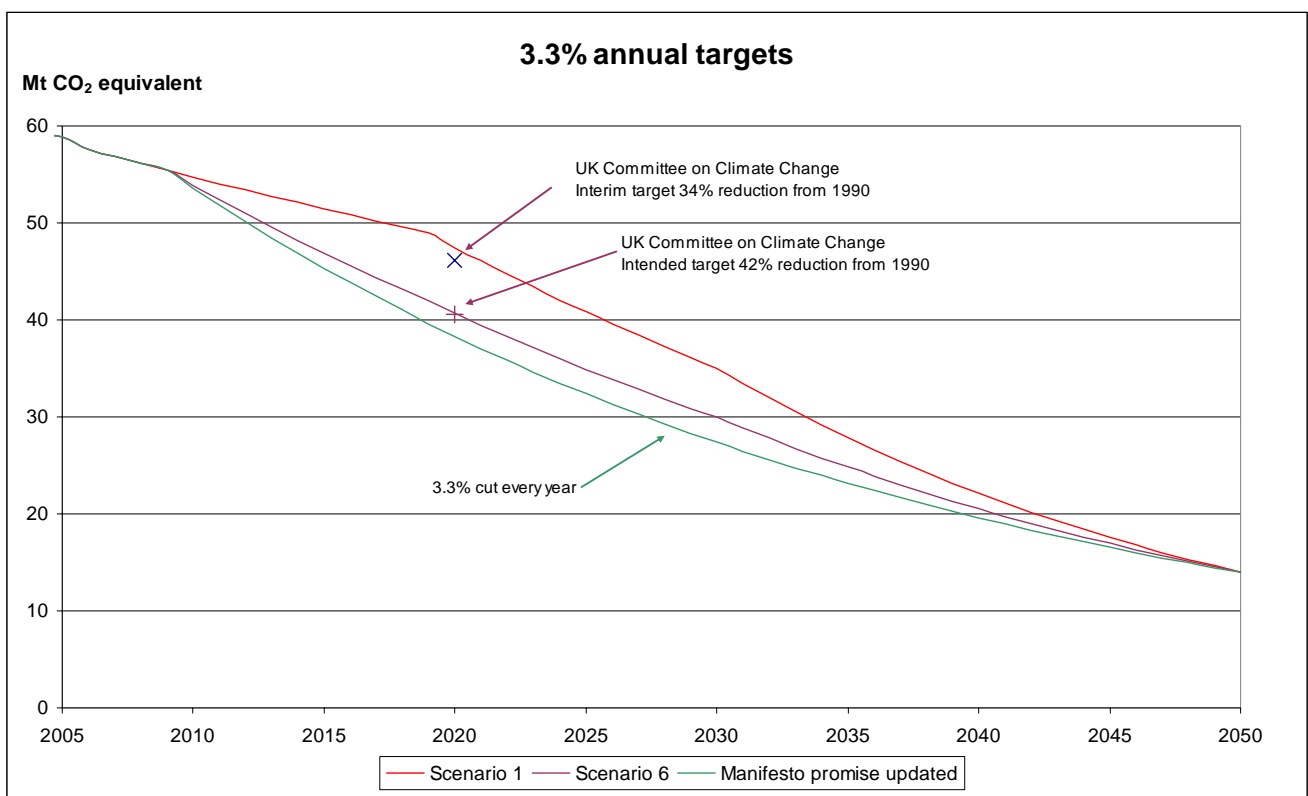
⁵ Allowed emissions in 2050 will be around 14MtCO₂eq so 200MtCO₂eq is equivalent to around 14 years' worth of emissions; the average car doing the average annual mileage currently produces about 4tCO₂ a year.

Recommendation

A simple annual percentage cut

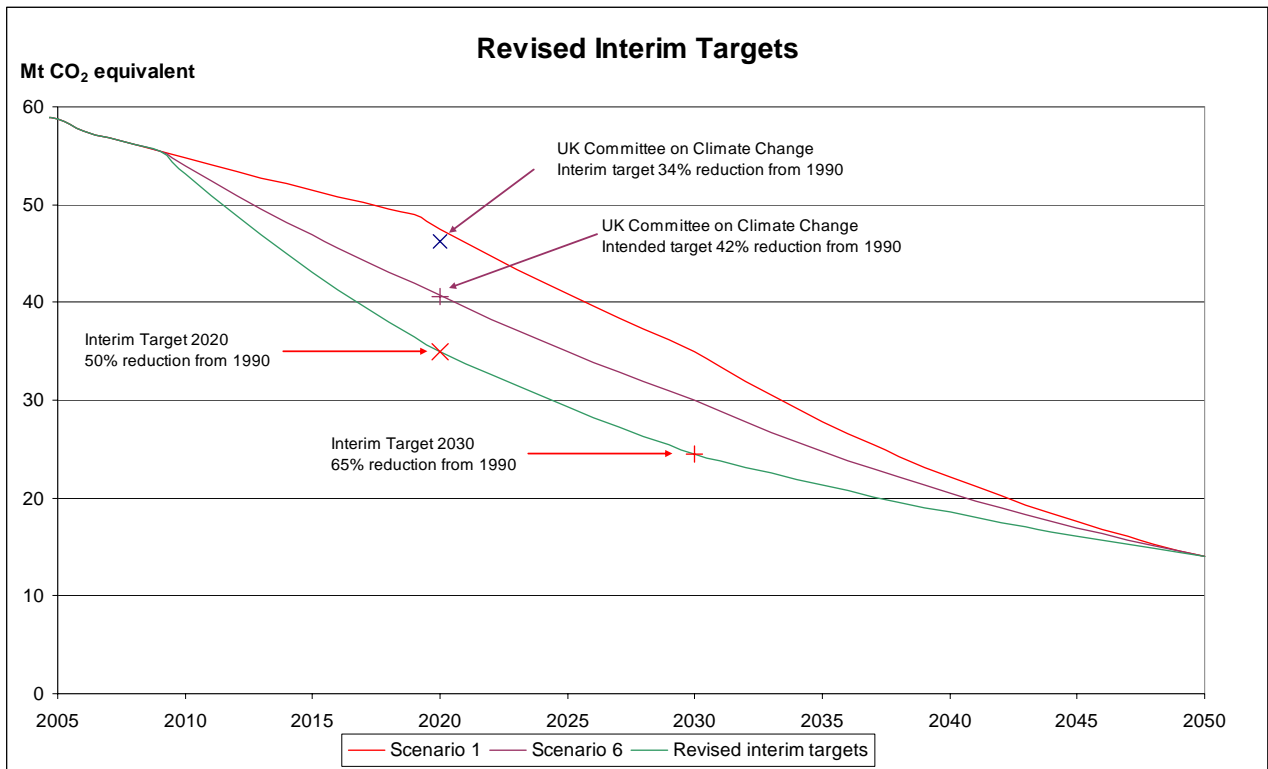
Although Scenario 6 is the best of those presented by the Government it still requires tougher action later, with the Government of 2030 having to produce larger percentage reductions than the Government of today or 2020. A more equitable approach is to have the same percentage reduction required in each year, as promised in the SNP Manifesto. Updating this commitment with the current data, aiming to reach 80% by 2050 and starting serious reductions in 2010 would require an annual percentage reduction of 3.3% (3.4% if aviation is included properly). The total emissions from 2005 to 2050 in this case would be 1.5 billion tonnes of CO₂eq, as good as the original manifesto promise.

This option is illustrated below, compared to the Government’s Scenarios 1 and 6.



This approach is not only more equitable, it has the virtue of being simple, more than delivers the UKCCC’s Intended target and delivers on the spirit of the SNP’s Manifesto promise. This option would be a clear world-leading commitment on emissions reduction.

Tougher early action – if the Committee decide not to recommend the simple annual percentage approach then the Government’s proposals can be toughened up by adding a 2020 target and increasing the 2030 target, thus forcing early action and ensuring continuing strong reductions. As an illustration, setting the 2020 target at a 50% reduction and the 2030 target at 65% would deliver the desired results and lead to total emissions of around 1.42 billion tonnes of CO₂ equivalent between 2005 and 2050.

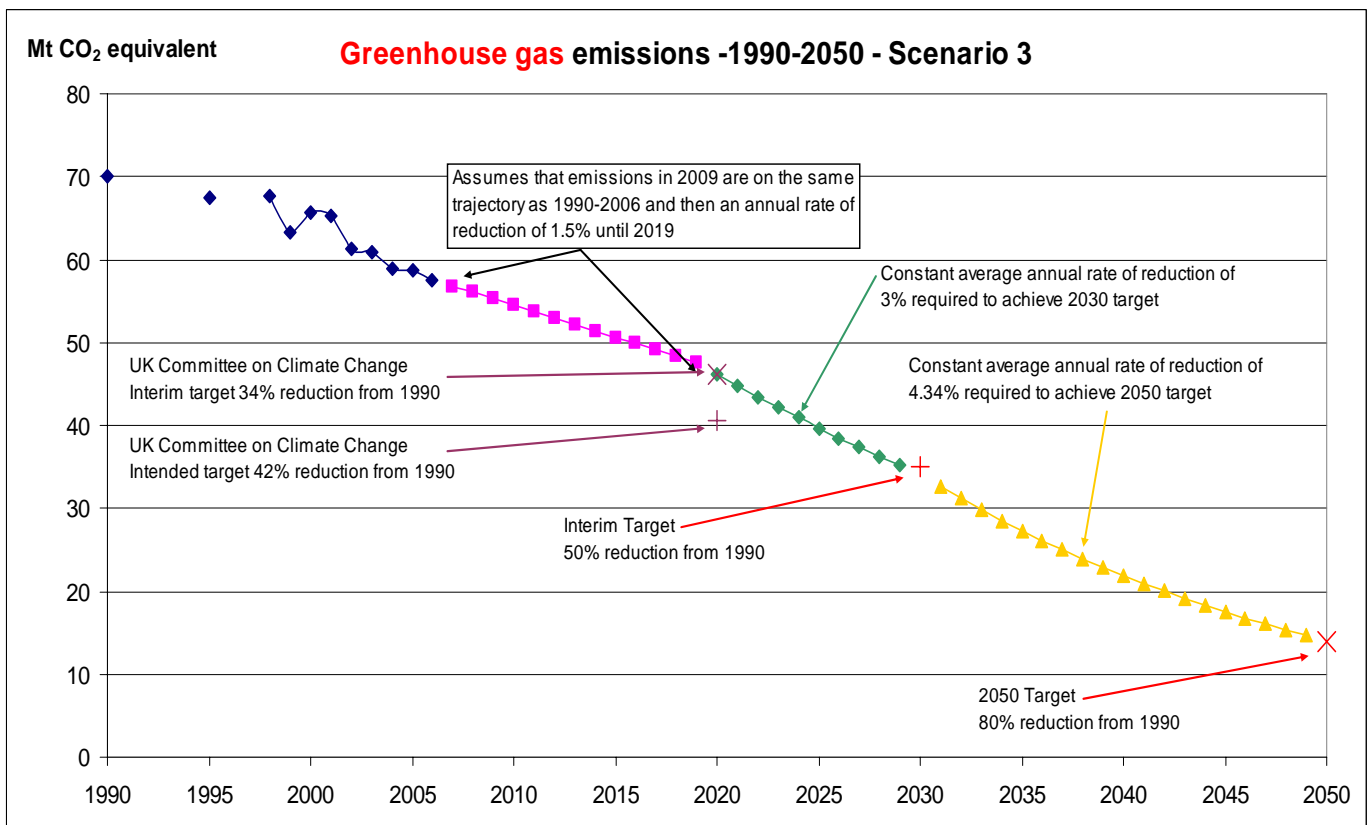
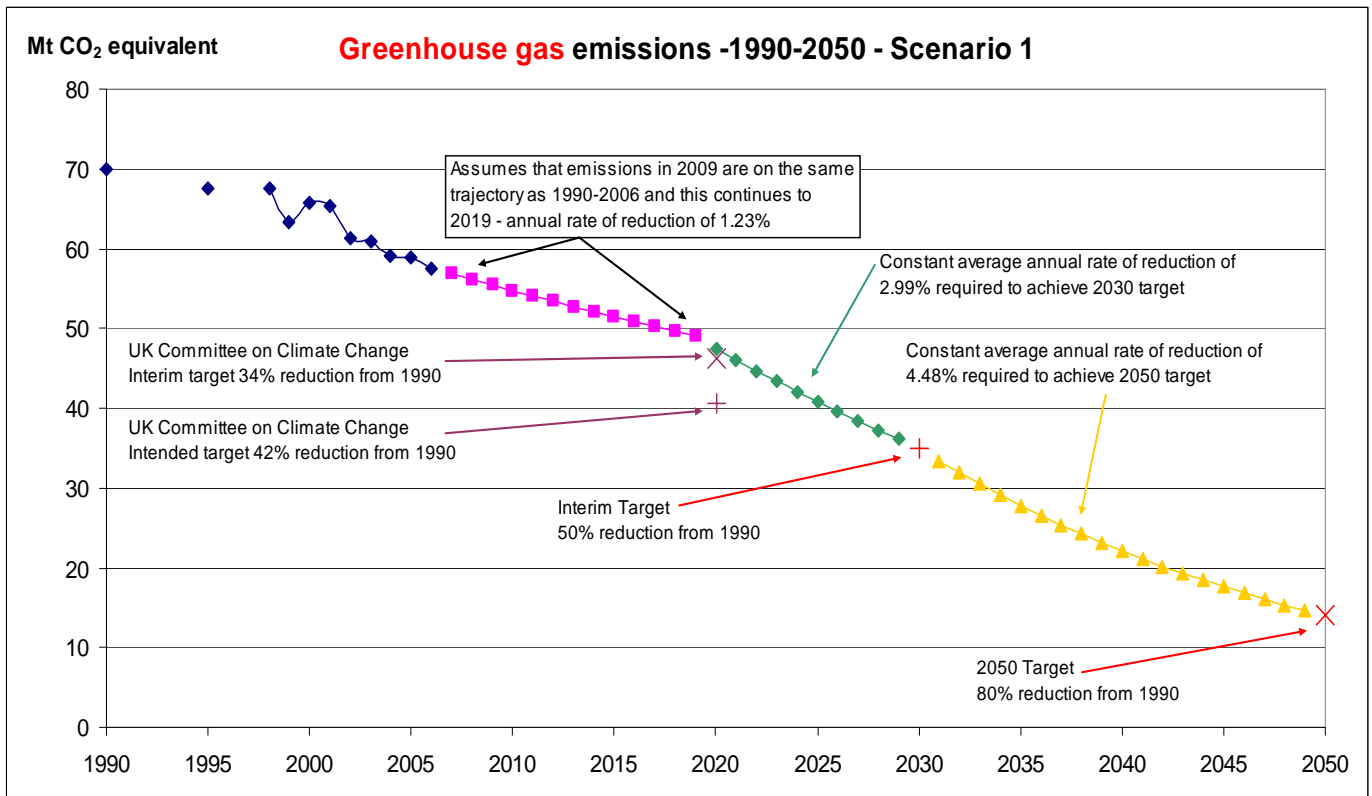


WWF Scotland is working with colleagues in Stop Climate Chaos Scotland and across the political parties in Parliament on our shared priorities to ensure that in 2009, such a critical year for action on climate change with the new global deal, Scotland takes a bold lead and delivers world class legislation.

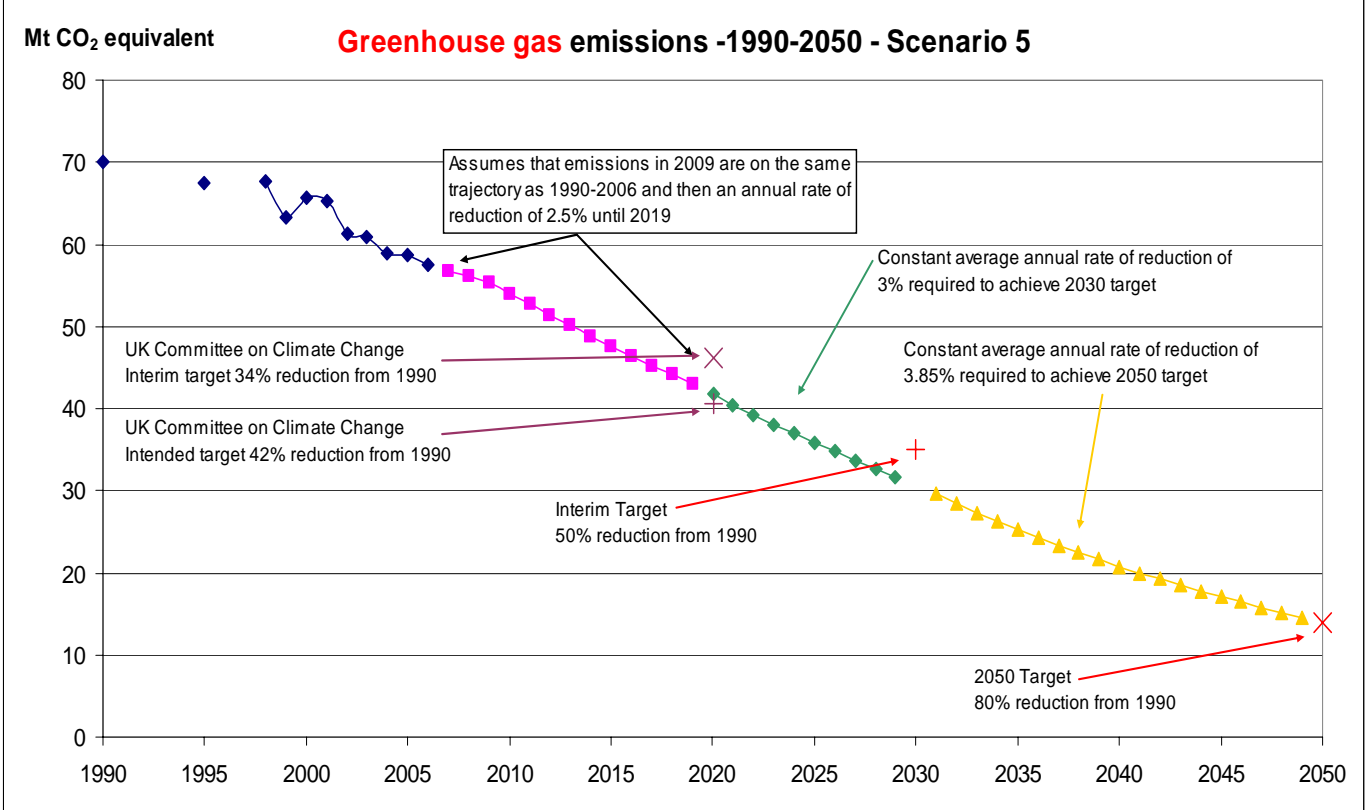
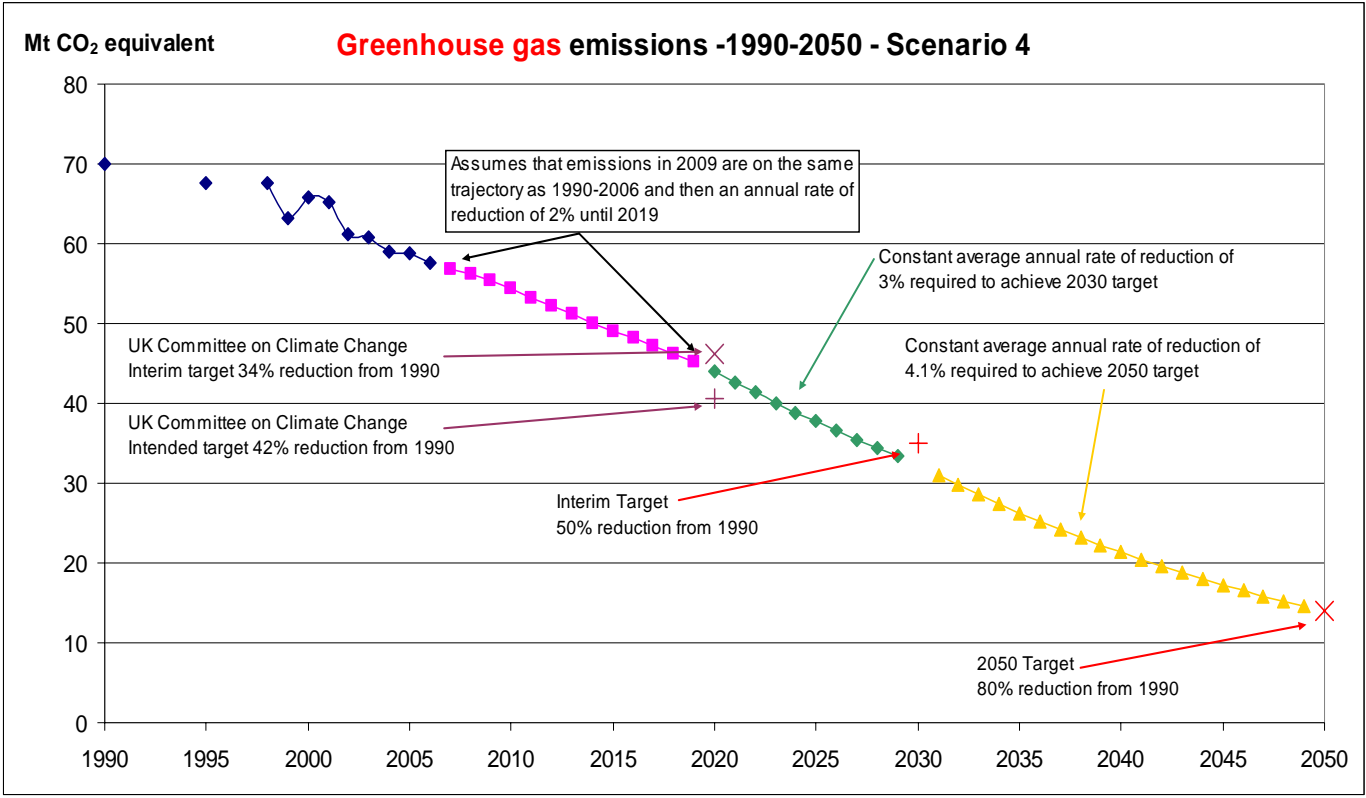
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Appendix: the Scenarios as graphs



N.B. Scenario 2 is virtually identical to Scenario 3 and so is not displayed.



Mt CO₂ equivalent

Greenhouse gas emissions -1990-2050 - Scenario 6

