

Review of the Fourth Carbon Budget - Call for Evidence

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Question and Response form

When responding please provide answers that are as specific and evidence-based as possible, providing data and references to the extent possible. Please limit your response to a maximum of 400 words per question.

Questions for consideration:

A. Climate Science and International Circumstances

The Committee's advice assumes a climate objective to limit central estimates of temperature rise to as close to 2°C as possible, with a very low chance of exceeding 4°C by 2100 (henceforth referred to as "the climate objective"). This is broadly similar to the UNFCCC climate objective, and that of the EU.

In order to achieve this objective, global emissions would have to peak in the next few years, before decreasing to roughly half of recent levels by 2050 and falling further thereafter.

The UNFCCC is working toward a global deal consistent with such reductions, to be agreed by 2015. Earlier attempts (e.g. at Copenhagen in 2009, before the fourth budget was recommended or legislated) have failed to achieve a comprehensive global deal to limit emissions.

It is difficult to imagine a global deal which allows developed countries to have emissions per capita in 2050 which are significantly above a sustainable global average, implying the need for emissions reductions in the UK of at least 80% from 1990 levels by 2050.

The EU has not yet agreed a package beyond 2020, but the European Commission is consulting on a range of issues relating to development of climate and energy targets for 2030. In its 2011 Roadmap for moving to a competitive low-carbon economy, the Commission suggested a reduction in emissions of 40% on 1990 levels by 2030, as being on the cost-effective path to an 80-95% reduction by 2050. The UK Government has signalled its support for a 40% reduction by 2030, and for an increase to 50% in the context of a global deal.

China has made ambitious commitments to 2020 which would, if delivered, cut carbon-intensity relative to GDP by around 45%.

The United States could achieve its Copenhagen Accord commitment to reduce emissions by 17% on 2005 levels without the need for further federal legislation.

Question 1: Does the scientific evidence justifying the climate objective remain the same as in 2010? In particular, is there new evidence on climate change impacts?

ANSWER: No comment.

Question 2 Have the emissions pathways consistent with achieving this objective changed? In particular, is there new evidence on climate sensitivity to emissions?

ANSWER: No comment.

Question 3 Does the climate objective remain in play given international developments? Has the likelihood of getting global agreement changed significantly since the budget was set, and if so why?

ANSWER: With the gradual emergence from world recession there is an increasing likelihood that some global agreement will be reached though probably not related to absolute emissions targets. Bilateral agreements, e.g. US and China, or limited multilaterals may offer a good way forward. It will remain important that developed countries remain firm in their resolve and their example.

Question 4 How have the prospects for a new EU package for 2030 changed since the Committee's advice and the setting of the budget? What implications do the latest expectations have for the fourth carbon budget?

ANSWER: It is not likely that technology specific targets will be agreed. Nor is it likely that the ETS will be strengthened (however desirable) to the point that it

delivers the necessary levels of new investment. Domestic policies must therefore be robust.

Question 5 *What flexibilities are appropriate to reflect possible future changes in EU and international circumstances?*

ANSWER: Of course, UK policy will need to be adjusted if policy becomes so far out of line with European or International policy that it threatens the competitiveness of industry (e.g. the Carbon Price Floor) and that should be reflected in carbon budgets. However, in the cause of maintaining policy continuity and consequent investment confidence this should be a last resort.

B. Technology and economics

In recommending the level of the fourth carbon budget, the Committee developed scenarios which embodied cost-effective emissions reductions to meet the 2050 target.

These scenarios, set out in detail in the Committee's report *The Fourth Carbon Budget – Reducing emissions through the 2020s*, include substantial investment in low-carbon power generation, roll-out of low-carbon heat (heat pumps and district heating), development of the markets for ultra-low emissions vehicles and a combination of energy efficiency measures and fuel switching in industrial sectors.

They were based on official emissions projections together with an assessment of the cost and feasibility of abatement options. Since 2010, official emissions projections have been significantly reduced in the industry and waste sectors, meaning that meeting the legislated 4th carbon budget would require less effort than originally envisaged.

Question 6 *Is there any new evidence to suggest that the type of scenarios upon which the budget was based are no longer feasible or cost effective?*

ANSWER: There is no significant new evidence.

Question 7 *In particular, does the possibility of shale gas in the UK change the economics of the fourth carbon budget?*

ANSWER: It is too early to tell what impact shale gas will have on the balance of power generation. However, given the commitment to build more gas generation, the need for CCS on gas should be better recognised through a decarbonisation strategy that endures and that CCGTs are built truly capture-ready and optimally located taking account of subsequent storage. The very potential for shale gas must introduce a major risk to the developers of nuclear stations and clearly a lower nuclear build will necessitate a higher base load CCGT/CCS in the mix.

Question 8 *Should the budget be tightened to reflect headroom due to significantly lower emissions projections (e.g. due to slower than expected economic growth) since 2010?*

ANSWER: No! Current policies will very likely not deliver the aggregate emissions reductions as expected. It will be prudent to use the headroom as a contingency to hedge against that eventuality. Furthermore, revising down targets undermines investor confidence not only at the developer level but also at the level of equipment suppliers.

C. Other issues

As required by the Climate Change Act, in designing the fourth carbon budget we considered impacts on competitiveness, fiscal circumstances, fuel poverty and security of energy supply, as well as differences in circumstances between UK nations. Previous high-level conclusions on these were:

- **Competitiveness** risks for energy-intensive industries over the period to 2020 can be addressed under policies already announced by the Government. Incremental impacts of the fourth carbon budget are limited and manageable.
- **Fiscal impacts.** The order of magnitude of any fiscal impacts through the 2020s is likely to be small, and with adjusted VED banding and full auctioning of EU ETS allowances could be neutral or broadly positive.

- **Fuel poverty.** Energy policies are likely to have broadly neutral impacts on fuel poverty to 2020, with the impact of increases in electricity prices due to investment in low-carbon generation being offset by energy efficiency improvement delivered under the Energy Company Obligation. Incremental impacts through the 2020s are likely to be limited and manageable through a combination of further energy efficiency improvement, and possible income transfers or social tariffs.
- **Security of supply** risks due to increasing levels of intermittent power generation through the 2020s can be managed through a range of flexibility options including demand-side response, increased interconnection and flexible generation. Decarbonisation of the economy will reduce the reliance on fossil fuels through the 2020s and thus help mitigate any geopolitical risks of fuel supply interruption and price volatility.
- **Devolved administrations.** Significant abatement opportunities exist at the national level across all of the key options (i.e. renewable electricity, energy efficiency, low carbon heat, more carbon-efficient vehicles, agriculture and land use).

Question 9 *Is there any new evidence to suggest that (incremental) impacts of the fourth carbon budget on competitiveness, the fiscal balance, fuel poverty and security of supply have become unmanageable?*

ANSWER: Aside from the effect of increased energy costs arising from decarbonisation of energy supply energy intensive industries will necessarily need to decarbonise mainly by application of CCS. Current policies will not deliver on this objective. Policies will need to be devised that firstly lay down CO2 transport and storage infrastructure and secondly incentivise capture without impacting negatively on international competitiveness. It is very much in the public interest to address this issue.

Question 10 *Is there any new evidence on differences in circumstances between England, Wales, Scotland and Northern Ireland that suggest the need to change the budget?*

ANSWER: No comment.

Question 11 *Is there anything else not covered in your answers to previous questions that you would like to add?*

ANSWER: Delivery of the Fourth Carbon Budget will inevitably require a large component of CCS. By then, CCS will have proven to be highly cost-effective and necessary. The likely underperformance of various policy measures will necessitate a larger CCS component than DECC currently envisages, e.g. in its central scenario. At present, EMR policy development is principally focused on renewable and nuclear power, there remains considerable uncertainty over the CCS Commercialisation Programme and there generally lacks a strategic approach that is consistent with the Fourth Carbon Budget. The Fourth Carbon Budget will not be deliverable if these matters are not addressed.