

## The Fifth Carbon Budget - Call for Evidence

[www.theccc.org.uk/call-for-evidence](http://www.theccc.org.uk/call-for-evidence)

### 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

Climate science and international circumstances are important criteria in setting carbon budgets.

- The science indicates the impacts associated with different levels of climate change and the limit on emissions globally if these risks are to be contained.
- International circumstances inform the prospects of future action to reduce emissions globally, potential requirements of the UK to contribute to those actions, and prospects for low-carbon technology development and carbon pricing.
- The EU places obligations on Member States to reduce emissions to contribute to reductions in the bloc as a whole. These imply a minimum level of effort for the UK's carbon budgets.

The Committee intends to draw primarily on the work of the IPCC, as published in the Fifth Assessment Report, in assessing the implications of climate science for the budget advice

The Committee's advice is based on 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 around 2020, 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. Individual parties are submitting pledges for effort beyond 2020, with the details of the agreement to be discussed in Paris late in 2015.

The EU has agreed a package that requires a reduction in emissions of at least 40% on 1990 levels by 2030, on the way to an 80-95% reduction by 2050. The UK Government supported this package, while arguing for an increase to 50% in the context of a global deal.

The US and China have jointly made pledges for the period beyond 2020. The US has pledged a reduction of 26-28% by 2025 versus 2005, requiring a doubling of the rate of carbon reduction compared to 2005-2020 and on a trajectory to economy-wide cuts of the order of 80% by 2050. China has pledged to peak CO<sub>2</sub> emissions around 2030, and to make best efforts to do so earlier.

*Question 1 The IPCC's Fifth Assessment Report will form the basis of the Committee's assessment of climate risks and global emissions pathways consistent with climate objectives. What further evidence should the Committee consider in this area?*

The IPCC's report provides a sound evidence base on which policy makers can make their decisions, it is considered sufficiently robust and reflects the range of uncertainty, as well as the established science according to leading climate scientists in the UK and abroad.

It is based on a comprehensive review and rigorous assessment of the state of climate science by some 850 scientists, who reviewed over 9000 scientific articles from all sides of the issue.

Only similarly robust further evidence should be considered.

The UNEP Emissions Gap reports provide a range of options for countries to cut their emissions and stay within the carbon budget and are suitably authoritative to also be considered.

There's a gap between the emissions cuts countries say they're going to make and what needs to be done to avoid the worst impacts of climate change and UNEP's pathways and budgets give some good options.

In particular, UNEP suggest that energy efficiency could be responsible for up to a fifth of the cuts countries need to make to meet the carbon budget and deliver a range of benefits that go beyond avoiding the worst impacts of climate change.

**Question 2** *To what extent are the UN talks in Paris likely to have implications for the Committee's advice beyond the pledges and positions announced in advance of the talks?*

With the right political leadership and agreement, the talks could lead to ambitious outcomes that could have a real impact on tackling climate change, which would obviously have implications for the Committee's advice.

**Question 3** *Based on the available evidence, does the EU 2030 package reflect the best path to its stated 2050 ambition? How might this package change, specifically its targeted emissions reduction, either before the end of Paris or after Paris?*

No, the EU 2030 package does not reflect the best path to its stated 2050 ambition. The fourth carbon budget was at the low end of the range of ambition for emissions pathways through the 2020s.

Currently there is an "emissions gap" between where we're globally headed and where we globally need to be. Unfortunately the current climate objective implies an unacceptably high risk of exceeding 2 degrees of warming this century.

To get back on track, Europe will need to revise its 2020 targets and be bolder in its ambitions for 2030.

**Question 4** *How does the UK's legislated 2050 target affect its ability to support international efforts to reduce emissions, including its position in negotiations? Does the level of UK carbon budgets have any additional impact (over-and-above the 2050 target) for the UK in international discussions?*

The UK's legislated targets serve as a strong precedent for others to follow and gives targets against which we can benchmark progress, but there is a danger that just looking at the financial costs rather than the overall benefits, may result in the UK's current commitments being used as a yardstick against which we just do the minimum.

The current legislated targets and carbon budgets represent a solid starting point towards meeting the UK's obligations, but it's not enough to just do the minimum and then blame others when globally we fail to achieve the aims.

The global climate objective currently involves an unacceptably high chance of exceeding 2 degrees of global warming. More needs to be done to ensure that globally the aim is achieved. We therefore need to increase the ambition of the current carbon budgets as part of a global deal

## **B. The cost-effective path to the 2050 target**

The carbon budgets need to set a path that is achievable from today without being over-optimistic about what is achievable in later periods to prepare for the 2050 target.

The Committee has previously set out scenarios for 2030 that balance effort before 2030 with potential opportunities from 2030 to 2050. The scenarios aim to include ways of reducing emissions that are likely to be relatively low cost and actions that will develop options that may need to be deployed at scale by 2050.

These scenarios, reviewed in detail in the Committee's report *The Fourth Carbon Budget Review – the cost-effective path to the 2050 target*, 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.

The scenarios also reflect detailed assessments of what is practically deliverable, and the Committee monitors progress towards them as part of its statutory duties. The *2014 Progress Report to Parliament* indicated that current policy would not be

enough to meet the fourth carbon budget, but that the 'policy gap' could be closed at affordable cost.

The set of policy options required to close the gap include:

- Strengthening the EU Emissions Trading System.
- Setting a clear objective for Electricity Market Reform (EMR) beyond 2020.
- Focusing on low-cost residential energy efficiency.
- Simplifying policies targeting commercial energy efficiency.
- Tackling financial and non-financial barriers to low-carbon heat.
- Pushing for strong EU targets for new vehicle efficiency in 2030.

The Government has subsequently published various documents, including its formal response, as required under the Climate Change Act, and the National Infrastructure Plan. The Plan includes investments of around £100 billion in low-carbon power generation in the 2020s, in line with the scenarios from the EMR Delivery Plan that reach 100 gCO<sub>2</sub>/kWh by 2030. It also has significant investments in offshore oil and gas and in the road network. This includes £15 billion of new spending on roads and around £50 billion on offshore oil and gas.

**Question 5** *In the area(s) of your expertise, what are the opportunities and challenges in reducing emissions to 2032, and at what cost? What may be required by 2032 to prepare for the 2050 target, recognising that this may require that emissions in some areas are reduced close to zero?*

A combination of policies will be needed; In particular, the government needs to acknowledge that just focusing on 'low-cost' residential energy efficiency won't go far enough to achieving the necessary emissions savings required to help limit temperature rise to below the targeted levels,

To make wide ranging new energy efficiency policies cost effective, there will need to be a strong carbon price, considerably beyond its current level in Europe. Currently excess carbon allowances are undermining emission reduction targets.

The benchmark EU carbon price is currently trading at around 7.30 euros per metric tonne and it is anticipated that this could rise to an average price of 18.40 euros a metric tonne from 2020 to 2030. However for wide ranging energy efficiency policies to be cost effective, a minimum figure of 29 euros per metric

tonne has been suggested as needed to drive low-carbon investment and many measures, such as upgrading solid walled properties would require a much higher value for carbon

Germany's policies have been effective through substantial grants and loans to improve energy efficiency. In contrast, the UK's energy efficiency schemes have struggled and been scaled back in aspiration, which has shaken Industry confidence.

The execution of more stringent minimum energy performance standards for all buildings should be a national infrastructure priority.

The report, 'Building the Future: The economic and fiscal impacts of making homes energy efficient' by Verco & Cambridge Econometrics, details potential benefits of such a designation and details various benefits as:

- It represents a "High" Value for Money.
- Improved air quality, warmer and more comfortable homes will improve health and allow for reduced healthcare expenditure.
- An energy efficiency programme will contribute towards economy wide emissions reductions of 23.6MtCO<sub>2</sub> pa by 2030,
- Investment in energy efficiency in the domestic sector will result in 26% reduction in imports of natural gas in 2030 worth £2.7bn in that year.
- As the economy becomes less gas intensive, the more resilient it becomes to shock changes in gas prices.

Improving the energy efficiency of UK homes is an effective way to bring down energy bills, and offers a long term solution to fuel poverty. In addition, it is important to drive carbon emissions reductions, with buildings responsible for almost 37% of all UK carbon emissions.

Existing dwellings and in particular those with solid walls are in need of significant additional assistance to encourage improvement of the existing building stock and to counter the perceived hassle factor and expense of improving such properties.

Energy efficiency needs to be at the very top of everyone's agenda; to reduce carbon emissions and help to combat climate change; to reduce energy bills and to help lift people out of fuel poverty. Reduction in demand increases our energy security and reduces our requirement for more power generation, helping to keep the lights on when demand stretches available supply. Energy efficiency measures can drive economic growth and create jobs and warmer homes in the winter, helping towards better health and wellbeing for those living in poorer performing housing.

**Question 6** *What, if any, is the role of consumer, individual or household behaviour in delivering emissions reductions between now and 2032? And, separately, after 2032?*

Behaviour change is essential for a cost-effective transition to a low carbon UK economy.

People need to value energy efficiency in order to play their part in helping reduce demand and therefore emissions.

This requires a degree of incentivising and easier access to finance.

Rolling out energy efficiency policies on a large scale requires people and businesses to participate.

**Question 7** *Is there evidence to suggest that actions to further reduce emissions after 2032 are likely to be more or less challenging to achieve than actions in the period up to 2032?*

Decarbonisation of the grid needs to pick up the pace, or there won't have been much progress before the 2050 target approaches let alone 2032. The section above on 'The cost-effective path to the 2050 target' talks about rolling out 'low-carbon heat' (heat pumps and district heating), but it's only low carbon if electricity is low carbon – which is currently still not the case.

Better to reduce and limit heat and electricity demand as the first priority via whole house retrofits.

A failure to address energy efficiency as the first step, makes actions afterwards more challenging.

We need to step up the pace of reducing carbon emissions now and build the industry and supply chains to reduce carbon further in future, otherwise the task for 2032 will be far more challenging.



**Question 8** *Are there alternatives for closing the 'policy gap' to the fourth carbon budget that could be more effective? What evidence supports that?*

The execution of more stringent minimum energy performance standards for all buildings should be a national infrastructure priority. See answer to Question 5.

**Question 9** *Are the investments envisaged in the National Infrastructure Plan consistent with meeting legislated carbon budgets and following the cost-effective path to the 2050 target? Would they have wider implications for global emissions and the UK's position in international climate negotiations?*

The National Infrastructure plan needs to include a requirement for energy efficiency and distributed generation of renewable energies.

Making buildings energy-efficient stimulates economic activity, strengthens international competitiveness and creates thousands of jobs, mostly with small local businesses. It lowers costs for businesses and householders, and reduces the burden on the NHS. More cost-effective than increasing generation, it safeguards Britain's energy security

## **A. Budgets and action**

The UK's statutory 2050 target requires actions across the economy to reduce emissions. Many of these actions will be driven by (UK and devolved) Government policy and implemented by businesses and consumers. There will be an important role for Local Authorities in successful delivery.

Although the carbon budgets do not require specific actions, they provide an important indication of the overall direction that policy will take in future. Once set, carbon budgets can only be changed if there has been a significant change in the relevant circumstances set out in the Climate Change Act.

Feedback from businesses as part of the Committee's 2013 Call for Evidence for the review of the fourth carbon budget was that stability is an important and valuable characteristic of carbon budgets

**Question 10 *As a business, as a Local Authority, or as a consumer, how do carbon budgets affect your planning and decision-making?***

Carbon budgets give options and recommendations to government who then decide on policy – the downside to this is that policy can change after every election (and occasionally mid-term even).

Confidence would be much improved and measures could be provided more cost effectively (with investment in new products and assurance of installations), if there were clearer long term commitments to policies and targets.

Building regulations standards developed and known to industry years in advance; policies properly supported and developed with firm targets that companies can plan for and be confident in investing to assist, developed through proper consultation with Industry to develop broad support and allowing for proper investment.

**Question 11 *What challenges and opportunities do carbon budgets bring, including in relation to your ability to compete internationally? What evidence do you have for this from your experience of carbon budgets to date?***

See Question 10 answer.

**Question 12** *What would you consider to be important characteristics of an effective carbon budget? What is the evidence for their importance?*

From open letter to the chancellor

<http://www.telegraph.co.uk/comment/letters/11628729/Less-carbon-more-cash.html>

“First it should recognise energy efficiency as a national infrastructure priority and allocate infrastructure funds for a national retrofit programme.

Secondly, it should fulfil its commitment to make all new homes zero carbon from 2016 and all new non-domestic buildings so from 2019.

Thirdly, minimum energy efficiency standards for the private rented sector from 2018 should be effectively enforced.

Lastly, the Government should outline how it intends to meet the third and fourth “carbon budgets”, and introduce an ambitious fifth carbon budget which is in line with the recommendations from the Committee on Climate Change.”

## B. Other issues

The Climate Change Act requires that in designing the fifth carbon budget we consider impacts on competitiveness, fiscal circumstances, fuel poverty and security of energy supply, as well as differences in circumstances between UK nations. High-level conclusions on these from our advice on the fourth carbon budget 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 13** *What evidence should the Committee draw on in assessing the (incremental) impacts of the fifth carbon budget on competitiveness, the fiscal balance, fuel poverty and security of supply?*

See answer to Question 5.

**Question 14** *What new evidence exists on differences in circumstances between England, Wales, Scotland and Northern Ireland that should be reflected in the Committee's advice on the fifth carbon budget?*

England, Wales, Scotland and Northern Ireland are now in a regulatory landscape where they each have differing standards for energy efficiency of buildings, with policies in Scotland being in advance of those for Wales, which in turn are ahead of England's, with those for Northern Ireland lagging behind.

That said, the different parts of the UK do have differences that account for some of these differences. The percentage of renewable contribution to energy in Scotland is much higher than in the rest of the UK, Northern Ireland has a much higher level of off-gas (primarily oil) heated dwellings. There are numerous differences between the regions that can make a one stop policy less workable, but the differing regions should be able to learn from one another what is achievable and what could be done.

**Question 15** *Is there anything else not covered in your answers to previous questions that you would like to add?*

No additional comments.