

The Fifth 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

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 CO₂ 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?*

ANSWER: WRAP has no relevant evidence to add here.

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?*

ANSWER: WRAP is not in a position to answer this question.

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?*

ANSWER: WRAP has no relevant evidence to add here.

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?*

ANSWER: WRAP has no relevant evidence to add here.

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 gCO₂/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?*

ANSWER: Establishing a more circular economy, where we value our products differently and create a more robust economy, support economic growth and provide an important contribution to greenhouse gas (GHG) mitigation strategies. For example, DECC (2015) confirmed that 20% of all UK GHG emission reductions between 2010 and 2013 arose from reduced emissions from landfill sites, much of which was due to RE actions. As waste is driven towards the top of the waste hierarchy (i.e. prevention, reduction and reuse), the GHG benefits are even more favourable.

WRAP believes that there is a range of actions which can be taken at no net cost to the UK economy, and which can support job creation and economic growth at the same time. Based on WRAP (2009), the principal opportunities are:

- Lean production – this provides the most significant territorial impact;
- Food waste prevention – this reduces emissions from landfill, and can either make additional food available for export, or additional land available for the production of biofuels;
- Dietary change;
- Increased reuse, remanufacturing and recycling – this reduces emissions from both landfill and from the manufacturing sector.

Further demonstrations of the GHG benefits of a Circular Economy are contained in the other references below. WRAP (2009) considers the cost of implementing these actions.

References:

DECC (2015) 'Final UK greenhouse gas emissions national statistics: 1990-2013', www.gov.uk/government/statistics/final-uk-emissions-estimates .

Green Alliance and WRAP (2015) 'Employment and the Circular Economy', www.wrap.org.uk/content/employment-and-circular-economy .

Defra (2015) 'Resource Management: A Catalyst for Growth and Productivity'. This report demonstrates that recycling has increased while waste industry costs have been reduced and their profits have increased. See www.gov.uk/government/uploads/system/uploads/attachment_data/file/401453/resource-management-catalyst-growth-productivity.pdf .

Wijkman, A and Skånberg, K. (2015) 'The Circular Economy and Benefits for Society' (The Club of Rome). This report shows that the circular economy can reduce GHG emissions whilst supporting economic growth. www.clubofrome.org/?p=8260 .

WRAP (2009) 'Meeting the UK Climate Change Challenge'. This report provides 12 strategies for changing production and consumption activities which provide additional GHG savings beyond those in carbon budgets already. www.wrap.org.uk/content/meeting-uk-climate-change-challenge-0 .

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?*

ANSWER: The IPCC 5th assessment report recognises the key role of changing behaviour and consumption patterns in mitigating and adapting to climate change. DECC (2015) shows that 20% of UK GHG reductions between 2010 and 2013 have come from reducing methane emissions from landfill. Further Circular Economy actions, including waste prevention, reuse and recycling, can take this further still.

Three sources which demonstrate how consumer behaviour change can lead to GHG emission reductions are listed below.

- Reuse: The benefits of reusing products and materials rather than allowing them to become waste are summarised here: www.wrap.org.uk/content/partnerships-are-key-success
- Household food waste has a footprint of over 4 tonnes CO₂e per tonne of food, and there were over 4 million tonnes of avoidable food waste in the UK in 2012. WRAP's food waste prevention programme is dedicated to driving changes in consumer behaviour and in the actions of the food and drink sector. See www.wrap.org.uk/content/household-food-and-drink-waste-uk-2012.
- Glass recycling saves the UK glass manufacturing industry energy and reduces GHG emissions, but the quality of the recycled material needs to be right. We need to collect and recycle materials in the right way to ensure that it can be recycled into new glass bottles and jars (rather than, for example, used as aggregate in road production, which has little or no carbon benefit). See www.carbontrust.com/resources/guides/sector-based-advice/ceramics,-glass-and-cement.

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?*

ANSWER: WRAP has no relevant evidence to add here.

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

ANSWER: There are several circular economy actions that could help to close the ‘policy gap’ to the fourth carbon budget. In WRAP’s view, the top three are:

- Food waste prevention – this could fill 2-10% of the gap. Detailed figures will be in the cost-benefit analysis for WRAP’s ‘Courtauld 2025’ voluntary agreement, currently in development. We would be happy to share this with CCC once published. In the meantime, background information on Courtauld 2025 is at www.wrap.org.uk/content/courtauld-2025 .
- Lean production – could fill 4% of the gap. See WRAP (2009) in Q5.
- Recycling – could fill 2% of the gap, according to WRAP’s calculations. These are not in the public domain at present, but we would be happy to share them with CCC if this would be useful.

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?*

ANSWER: WRAP has no relevant evidence to add here.

C. 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?*

ANSWER: As a charity that promotes resource efficiency, WRAP is already certified to ISO 14001. We aim to achieve or exceed best practice in all areas of environmental management, including our direct carbon footprint, and the indirect impact of our projects. Within our current programmes, we account for the commitments made under carbon budgets in our counterfactual scenarios, and seek to deliver additional savings through our work. We therefore take full account of developments in carbon budgets in our work.

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?*

ANSWER: WRAP has no relevant evidence to add here.

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

ANSWER: WRAP has no relevant evidence to add here.

D. 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?*

ANSWER: WRAP has published, jointly with Green Alliance, a report which demonstrates the potential for circular economy actions to create net jobs and improve the UK's competitiveness.

See Green Alliance and WRAP (2015) 'Employment and the Circular Economy', www.wrap.org.uk/content/employment-and-circular-economy .

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?*

ANSWER: WRAP has no relevant evidence to add here.

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

ANSWER: No.