The Fifth Carbon Budget - Call for Evidence

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.

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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_2 emissions around 2030, and to make best efforts to do so earlier.

Committee on Climate Change

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:

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:

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:

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:

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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_2/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:

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:

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:

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:

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:

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:

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:

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

ANSWER:

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).

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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:

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:

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

ANSWER: Given your detailed case in 2012 for inclusion of emissions from International Aviation and Shipping in carbon budgets, we have been surprised not to see any questions in this call for evidence specifically addressing this issue. Particularly given the possibility of a new runway in the South East, which is forecast to increase UK aviation emissions, we regard this as a critical issue. Since potential inclusion of IAS raises a number of technical questions that we have been unable to address within the 400 word limit, we have submitted a separate response alongside this form setting out both why and how we believe emissions from international aviation should be included in the fifth and future carbon budgets.

AEF submission to CCC in the context of its call for evidence on the Fifth Carbon Budget

1st June 2015

AEF works exclusively on the environmental impacts of aviation and our comments on this consultation are therefore limited to the future treatment of aviation emissions. CCC has, we believe, a critical role in the debate about the future sustainability of the aviation sector and we have always drawn heavily on CCC's analysis in our own messaging about aviation and climate change policy. The new Government will need to take a decision on two important issues in relation to aviation: whether or not to approve the construction of a new runway in the South East and whether or not emissions from international aviation and shipping should be included in carbon budgets. Consideration about how to account for aviation emissions has important implications for the discussion about airport capacity.

Aviation emissions and the 2050 target

Perhaps the key advantage of including international aviation in carbon budgets would be to provide certainty in relation to what is currently a working assumption namely that aviation must be included in the 2050 160 Mt emissions target for the UK as a whole. This assumption forms the basis both of:

(i) the CCC's advice that the Government should make a planning assumption that aviation emissions in 2050 are no higher in 2005 in gross terms than in 2005, and that the Airports Commission should conduct its analysis, specifically its economic analysis, on the basis of an assumption that air passenger growth does not exceed 60% of the level in 2005, and

(ii) the need to include international aviation in carbon budgets as soon as practicable.

While the two recommendations are separate, they are therefore mutually reinforcing.

While currently legislated carbon budgets reflect the CCC's advice to allow headroom for aviation emissions in the long-term target, there are several reasons why it does not appear safe to us to assume that this assumption will hold in future.

1) Wording in the Government's Aviation Policy Framework, supposed to set out the environmental and economic framing principles within which future decisions including on airport capacity will be taken, states that aviation is not part of the long term target:

> The Climate Change Act 2008 commits the UK to reducing its net greenhouse gas emissions by at least 80% below the baseline by 2050 ('the target'), and requires the Government to set five-yearly carbon budgets, establishing a path towards meeting that target. Emissions from international

aviation (and international shipping) currently do not form part of the target, as defined by the Act.

2) Carbon leakage concerns could, we fear, easily be cited as a reason to exclude aviation from the UK's 2050 target. The Aviation Policy Framework argues against taking action only at a national or regional level on the basis that this "has the potential to create the risk of carbon leakage with passengers travelling via other countries and increasing emissions elsewhere". The Airports Commission has similarly advanced arguments in relation to carbon leakage, namely that any restriction on UK airport capacity could in fact increase global aviation emissions as a result of people travelling more indirectly.

3) If approval were to be granted to a new South East runway – a question likely to be addressed by Government prior to consideration of the issue of aviation's inclusion in carbon budgets, the scale of the challenge in bringing UK aviation emissions to a level compatible with the long term emissions target is forecast to increase significantly, potentially increasing the attractiveness of seeking a reinterpretation of how to 'account for' aviation emissions under the Act.

The carbon leakage argument is, in fact, flawed on two levels we believe.

(i) It assumes that other states fail to take commensurate action on aviation emissions at a national level (despite the focus of the upcoming UNFCCC talks on action by individual states, and despite all members of both the EU and the G8 having made long term economy-wide CO2 commitments at least as stringent as those in the UK), and

(ii) It could be applied as much to other sectors that are unambiguously covered by the Climate Change Act (such as manufacturing, which is traded, and agriculture, which is non-traded) as to aviation.

Regardless of how the CCC decides to proceed in relation to the potential inclusion of aviation in the fifth and future carbon budgets, we consider it critical that CCC clearly restates:

- the importance of aviation being included in the 2050 target,
- the fact that a 2050 emissions level of 37.5 Mt in gross terms is the maximum feasible level for aviation, and
- the value of including aviation emissions in carbon budgets as soon as possible.

Since Government approval for a new South East runway (which could come within months) would, the Airports Commission makes clear, make achieving these outcomes significantly more expensive and/or difficult, we very much hope that the CCC will make its views on these issues clear to the new Government as soon as possible. While we understand that the CCC is reluctant to become involved in what it

considers a political question about new runways, we are currently concerned that the debate about new capacity is taking place outside of the necessary climate framework and feel that the CCC's voice in this debate is critical.

Inclusion of aviation in the fifth and future carbon budgets

We have always strongly supported the inclusion of international aviation emissions in carbon budgets and note that CCC made a strong and detailed case for inclusion in 2012 on the basis of the UK's share of the EU ETS cap. Following the introduction of 'stop the clock' legislation, which suspended application of EU ETS for all but intra-EU flights, the Government postponed a decision on inclusion of aviation and shipping until its consideration of the fifth carbon budget. We were therefore surprised not to see any questions on this issue in your current call for evidence.

We understand that the current policy situation complicates the question of an appropriate methodology for accounting for aviation in carbon budgets, although it is our view that these complications will have been removed prior to the commencement of the fifth carbon budget which begins in 2028. In fact, whatever the outcome of current policy discussions a solution can be drawn up to tackle emissions so there is no reason not to take a decision now to include them from 2028.

International aviation emissions are currently reported to UNFCCC annually as a memo to the UK's national total, based on emissions from all departing flights. UK domestic aviation emissions are already reported in the national totals. This reporting, consistent with the IPCC's guidelines, has always provided a potential basis for the inclusion of international aviation in carbon budgets. The methodology is complicated only by the need to account for any emissions than have been offset through a market-based measure (MBM). At the current time, this is likely to be the result of aviation's continued inclusion, in some form, in the EU emissions trading system (EU ETS), or ICAO's introduction of a global MBM. The following scenarios address potential approaches to accounting for aviation's net emissions in carbon budgets.

Scenario 1: A global market-based measure

ICAO is currently negotiating a global MBM with a proposal expected to go before the Assembly in 2016. If successful, emissions could be included in carbon budgets on the basis of the UK's share of the international baseline. (The UK's share can be determined by calculating UK emissions as a percentage of all international aviation emissions for any given year). UK data can be taken from the UNFCCC reporting requirements (which distinguish between domestic and international emissions – necessary because a global MBM will apply to international aviation only) and global data will be available from ICAO.

Scenario 2: EU ETS continues and resumes its original coverage

The current limitation of the EU ETS to intra-EU flights is due to end on 1 January 2017 when coverage will revert to emissions from all flights arriving and/or departing

from EU airports (pending a review and taking the outcome of the ICAO Assembly into account). If the ETS does "snap back" to its original coverage, emissions could be included in carbon budgets as planned by the CCC in 2012.

Scenario 3: EU ETS continues with limited coverage

In a situation where the EU ETS applies partially to flights departing from the EU, separate emissions data will be required for each component of the total emissions. For example, under the "stop the clock" rules, the EU ETS provisions apply to intra-EU departures only between 2013-2016. This will require a distinction in the data to be entered in carbon budgets between the proportion of UK departures for intra-EU flights and all other flights. In the absence of any specific emissions data, the intra-EU proportion for the baseline year can be modelled using actual flight data.

Scenario 4: No market-based measure

If no MBM exists in 2028, the need to account for net emissions is removed. The methodology for including emissions in carbon budgets should in this case reflect actual emissions based on all departing flights. As noted this is already the reporting requirement for the UNFCCC based on IPCC reporting methodologies and is already the basis for aviation's inclusion in the Scottish Climate Change Act.