

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.

RESPONSE FROM ELEMENT POWER LIMITED.

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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 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:

We agree that the IPCC's Fifth Assessment Report is the most authoritative and therefore the correct source.

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:

We hope for an unambiguous and ambitious outcome at the UN talks in Paris, and legally-binding greenhouse gas emissions targets that send a strong and positive message to investors in the low carbon market, as well as to governments and regulators. The Committee must very quickly thereafter make clear recommendations to the UK government for carbon reduction strategies, including greater visibility on the necessary energy mix post-2020, particularly the role that renewable energy is expected to play and the levels of investment needed.

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:

The EU 2030 package is disappointing. We welcome the EU greenhouse gas target of "at least 40%" reduction and efforts to reform the ETS as a step towards creating an effective carbon price that puts renewables on a level playing field with fossil fuels. However, the ETS has so far been woefully inadequate in setting a high

enough carbon price to drive low carbon investment. In addition the pan-EU renewable energy target of “at least 27% by 2030 is too low as it represents little more than business-as-usual. Analysis by the Commission in its own Impact Assessment prior to the agreement showed that an ambitious 2030 framework including a binding renewable energy target of 30% rather than 27% would deliver more savings in fossil fuel imports and more jobs, as well as being an effective way to make progress to improve Europe’s energy security, competitiveness and climate objectives.

It will be very difficult to provide confidence that the pan EU target will be met without binding national-level targets for Member States. The IEA’s Medium-Term Renewable Energy Market Report published in August 2014, in noting that policy and market risks were increasingly presenting challenges in a number of markets to meeting renewable energy deployment objectives, stated that the absence of a binding renewable energy target at national Member State level in the EU raises questions about how effective the overall target can be because it relies on the voluntary approach. It also noted that national targets and National Renewable Energy Plans for 2020 have driven deployment and cost reduction, particularly for onshore wind.

Given the difficulty of reaching agreement on the 2030 package and resistance to national renewables and energy efficiency targets by some Member States such as the UK, we think it is unlikely that discussion on the package will be opened up again.

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:

Legally-binding targets, such as the UK’s 2050 carbon target, and a mechanism to set interim steps and monitor progress, such as the carbon budgets, put the UK in a strong position to influence and lead ambitious action at an international level, as well as providing a clear domestic framework for action and investment.

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:

In the area of electricity generation, the opportunities available to reduce emissions to 2032 are significant. Clearly, increasing the proportion of renewable energy (RE) within the mix of electricity generation by displacing fossil fuel generation will reduce emissions. One challenge is doing so in the most affordable way, and ensuring that the lowest cost technology is deployed to its maximum potential. This is critical in ensuring that the highest amount of renewable generation is achieved within the inevitable budgetary constraints (i.e. highest CO₂ reduction per pound spent), and that the costs to the UK consumer are minimised. Another key challenge is ensuring there is sufficient resource available to fully exploit the cheapest form of renewable power, given the planning, grid and other constraints faced by developers in the UK.

Assuming that UK based on-shore wind energy is deployed fully within the UK's constraints, one way of addressing both of these challenges is to use co-operation mechanisms permitted and foreseen under the EU Renewable Energy Directive up to and then beyond 2020. From a UK perspective this would mean being able to access more onshore wind energy, as the cheapest form of renewable energy, from its closest neighbour with an abundant wind resource – namely Ireland. A Memorandum of Association (MOU) was signed between the UK and Irish governments in January 2013 that laid the foundation for Joint Projects generating renewable energy in Ireland and importing that through direct connection into the UK grid. Element Power and GE are developing a project of up to 2.5 GW installed capacity in the midlands of Ireland, and have agreements to connect this to the UK grid. This project Greenwire could deliver almost 8 TWhrs of low-carbon electricity (circa 3.4 m tonnes of CO₂) per annum for less than £100/MWh, significantly cheaper than offshore wind energy or tidal power.

Facilitating a project such as Greenwire with the necessary UK policy drivers will provide a foundation on which other similar projects could be developed into the 2030's. However, this will need the current government to take policy action now to provide for the long lead times involved. The significant doubts over projects such as Hinckley Point C will make projects like Greenwire very important for reducing emissions over the coming decades.

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:

Energy efficiency and demand reduction should play a key role in delivering emissions reductions, and hence the behaviour of these groups is critical. Smart grid and other technologies that enable the full benefits to be realised has to be supported with an appropriate regulatory framework that continues innovation cost reduction.

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:

Actions to reduce emissions will inevitably be more challenging after 2032 because “low hanging fruit is always picked first”. Therefore it is critical that investment continues throughout the renewable energy and low carbon sectors, to reduce costs and increase innovation. Transparent and predictable government policy is critical if this is to happen. Encouraging investment in additional interconnection of grid networks is also important.

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:

We support the set of policy options outlined above. We would add that setting a framework and objectives for the growth of ‘enabling technologies’, such as energy storage and demand side management technologies, will also be essential.

In setting a clear objective for EMR beyond 2020, we would include visibility on the LCF.

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:

As a business, carbon budgets are only relevant if they stimulate market behaviour as a result of government, or consumer action. They also have to be sufficiently near term to be relevant.

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:

Long-term visibility with interim objectives; clear signals on the market place size, opportunity and structure for investors; the expected role of government and regulators in meeting the budgets; and detail on what is expected from each energy sector, including targets.

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:

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:

We refer you to the response from British Wind to this question, which we endorse:

The Government's decision to cut subsidies for onshore wind will impact the future energy mix. The Committee should consider how this would cut across the spirit of "devo-max" and the commitments made under the aegis of the Smith Commission to the ability of Scotland to deploy electricity capacity of its own choosing within the Levy Control Framework.

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

ANSWER:

Addressing climate change is one of the biggest challenges facing us. This challenge has been made more difficult over a period of economic distress and austerity, where such matters have been relegated and action to address it treated as a luxury rather than a necessity. This has to be addressed at the root, which is education and public sentiment that will then drive political action. Attracting private sector capital into the renewable energy sector to ensure that the projects and technology of the future are invested in is critical. The lead-time of project development and bringing technology to the market for the 2030's requires investment over many years that needs to start

in the foreseeable future. This in turn requires a clear and stable environment provided by government. Speaking from a business backed by private equity investors who invest billions globally, I have seen first hand how political uncertainty adversely affects investment appetite and at best increases the cost of capital because of a higher perceived risk, which has a knock-on impact on the cost of addressing the problem. The recent actions of the UK government in taking politically driven steps to stop the most economically viable renewable energy technology – onshore wind – and the resulting loss of investment capital will deter future investment. Such actions are not helpful, and threaten positive action against climate change.