Committee on Climate Change

The Fifth Carbon Budget - Call for Evidence

RESPONSE FROM RWE

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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.

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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.

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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 have no comment on this question.

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:

The Committee will need to take into account how the UN talks in Paris impact on EU targets for greenhouse gas reductions. In particular if the outcome of the talks resulted in a more challenging target for reductions in the traded sector this would need to be reflected in the advice provided to Government.

Further consideration may need to be given to monitoring and reporting, the role of off-sets or other mechanisms and whether it is likely that there will be further integration of carbon trading schemes and a global carbon price by 2030. In this context it will be necessary to ensure that accounting for carbon under UK budgets continues to be consistent with global commitments.

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 reflects the outcome of negotiations between Member States and any changes as a result of the Paris negotiations would also need to be negotiated between Member States. While the UK may set separate targets under the carbon budgets there will be links through both the ETS and the Effort Sharing Decision that will need to be taken into account. The Committee will therefore need to consider how to take account of any divergence in targets and how to account for any future changes in EU level targets for 2030 (particularly in the traded sector) and any impacts as a result of agreement of burden sharing that may occur after the 5th carbon budget has been set.

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:

While the fact that the UK has a legislated target has no doubt been seen as important in underlining the UK's commitment to emissions reductions effort, it is difficult to judge whether this also extends to the individual carbon budgets. However, the Committee should also consider what potential impact there could be if the UK were to not achieve the level of ambition set out in the carbon budgets.

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.

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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:

The Committee has advised that an appropriate target for the power sector for 2030 would be a range of 50-100gCO2/kWh. While we agree that it may be useful to have clarity about the direction of travel, we are concerned that a target may be seen by some stakeholders as an end in itself, and would counter that on its own it will not deliver the overall objectives. The objective must be to reduce emissions across the whole economy in the most cost-effective way that takes account of emissions reductions in all sectors and recognises the role of the European Emissions Trading Scheme in delivering cost-effective reductions across Europe as a whole.

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We believe there is a danger that the carbon budgets are seen primarily as a target for the power sector whereas by far the greatest challenge is likely to be in delivering emissions reductions in the non-ETS sectors which will require significant emissions reductions from the heating and transport sectors in particular. While technology improvements may deliver some of these reductions there is a significant challenge in changing individuals' behaviour.

However, we believe that there continue to be challenges to the renewable industry. There are already significant challenges in delivering the UK 2020 RES targets, and in addition there is a lack of visibility of long term deployment (post 2020), changes in technology specific ambition to 2020 and the associated finance. For example in the last 4 years the 2020 ambition for offshore wind has fallen from 18GW to circa 10GW, creating uncertainty in the industry that has undermined both development and supply chain investment. There needs to be a swift announcement of the next Levy Control Framework budget and post 2019 CfD strike prices, to provide certainty to stimulate the supply chain and project development required to reduce technology cost. Renewable heat support needs to be maintained or increased or there is a danger that even if RES targets are met the renewable energy contribution to meeting carbon budgets (in the non-traded sector) will not be achieved.

Delivering increased electrification of transport and heating will be a key challenge in meeting emissions reduction targets for 2030. Clarification on future funding and policy support for electrification of transport and heating is urgently required, for example the future budget for RHI. There needs to be an equalisation of policy costs (particularly for domestic energy) to ensure that the carbon associated with fossil fuel heating systems (particularly gas and oil) is accounted for – to support the longer term transition required. Further detail is provided in the Eurelectric report on the benefits of electrification.[1]

In addition there needs to be continued focus on energy efficiency. The biggest challenge to be addressed is the ongoing lack of consumer demand for energy efficiency measures. While there is still significant scope for energy efficiency improvements – particularly low cost measures, such as loft Insulation and cavity wall insulation, which must be acted upon in the short to medium term, there is also a need for continued targeted funding for solid wall insulation. Driving demand for energy efficiency has to be a key priority for the new Government, especially the Able to Pay sector.

Energy efficiency standards will also need to play a role. Improvements in building standards and enforcement of these standards are needed. In addition, Minimum Energy Efficiency standards for private sector landlords

[1] Report to be published shortly

will need to be significantly tightened over time (and the scope for exemptions reduced) in order to ensure the necessary improvements are made.

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 role of consumer, individual and household behaviour to deliver emissions reductions between now and 2032 cannot be underplayed. Households and individuals must be encouraged to use their energy more efficiently, including changing basic patterns of behaviour. Such changes do not necessarily require any new equipment but do require behavioural change. Consumers need to be incentivised and long term regulatory signals are also important.

Secondly, individuals and households must want to improve the energy efficiency levels of their properties – either on the basis of reducing cost and or carbon emissions, and then take steps to do so.

Thirdly, once more energy efficient measures have been installed, customers may still need to amend their behaviour to maximise the potential of the measure.

Behavioural change post smart meter roll out will also potentially encourage and facilitate more demand side response amongst householders; both reducing peak demand and also supporting use of lower carbon technologies (such as wind) through greater flexibility, provided customers are properly engaged to take full advantage of the benefits of smart.

Consumers will need to both want and value energy efficiency improvements before innovative financing schemes (such as Green Deal) can become part of a mainstream solution, the current take up rate of Green Deal remains disappointingly low and will be insufficient to deliver the necessary improvements require for a lower carbon future.

Policy support (achieved through a mix of nudges, fiscal incentives and regulation) is required to encourage behavioural change and also create the necessary level of consumer demand in the "able to pay" sector to invest in improving the energy efficiency of their homes. Linking energy efficiency to the property value is a key

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part of this.

Pay As You Save schemes (such as the Green Deal) are a necessity, assessments provided to householders add value but the process needs to be made more attractive.

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:

The costs for emerging technologies are falling, for example the cost of energy from offshore wind farms has fallen by almost 11% over the past three years based on the report[1] published by the Offshore Renewable Energy (ORE) Catapult in February 2015. However new technologies and further innovation will be required to deliver the more ambitious levels of carbon reduction required post 2032 in particular CCS for both electricity generation and industry will be needed by the 2030's.

Deployment of new and emerging technologies at volume and at least cost to the consumer, will require investment and support in the short term to cultivate the necessary innovation and industrial commercialisation. While competitive allocation of subsidies for established technologies is essential, separate support will need to be maintained for emerging technologies (for example maintaining a separate CfD pot for less established technologies). Without this interim support the cost of delivering post 2032 emissions targets could rise steeply. R&D support for new technologies will be critical.

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

[1]https://ore.catapult.org.uk/documents/10619/110659/ORE+Catapult+report+to+the+OWPB/a8c73f4e-ba84-493c-8562-acc87b0c2d76

ANSWER:

The policy gap to the fourth carbon budget is a significant challenge for the non-traded sector and the Committee's projections suggest that while low risk and at risk policies may deliver emissions reductions of 38 Mt there is a policy gap of 45 Mt beyond this that will be required to meet the fourth carbon budget. Confidence is needed that the identified policies will deliver these reductions in the fourth budget before it is possible to judge what targets and policies will be needed or appropriate for the fifth budget.

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:

Investments in energy infrastructure will be important in achieving decarbonisation of the power sector but will not help to deliver the legislated carbon budgets which are driven by the need for emissions reductions in the non-ETS sectors.

Energy efficiency is key to delivering these reductions and improving the energy efficiency of the UK's housing stock will be a long term commitment. Mechanisms are needed equivalent to the National Infrastructure Plan that will continue to oversee improvements in the energy efficiency of UK buildings (both domestic and non-domestic). There also needs to be a means to ensure that energy efficiency is included in any future deliberations regarding future housing needs, decarbonisation of heat and broader impacts on improving energy efficiency for transport.

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:

The current differential of policy costs applied to gas and electricity does not support the required transition to a lower carbon economy and the differential will widen further in the period to 2030. Electricity prices contain policy costs for decarbonisation, bringing new generation on stream and ensuring security of supply through the new capacity mechanism.

Within the domestic sector, although the costs of energy efficiency (primarily ECO) are spilt 50% between gas and electricity, most of the improvements delivered through energy efficiency measures reduce demand for space and water heating (primarily delivered through gas),

We note that many energy intensive customers continue to be concerned at the impacts on competiveness, given the policy costs (particularly the indirect policy costs on electricity). Whilst the UK will now provide compensation for related policy costs (from ETS and Carbon Price Floor) and (pending State Aid approval) and from the costs of the RO and Feed In Tariff costs, concern remains that the process for handling exemptions is being done differently across Europe, which could disadvantage UK energy intensive manufacturers. Therefore the impacts on the competitiveness of the UK manufacturing sector must remain under review.

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:

To date the focus of carbon budgets (in terms of how they are perceived by the media and other commentators) has been predominantly around decarbonisation of the power sector but this is misleading as the power sector is covered by the ETS in carbon accounting terms. There will need to be a move to a greater focus on how to achieve reductions in the non-traded sector and in particular a greater focus on energy efficiency, low carbon heat and transport.

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

ANSWER:

A stable, predictable and appropriate policy framework together with long term visibility of carbon budgets is required to provide certainty for investment in projects with long lead times. In particular where investment is needed to stimulate the supply chain and deliver technology cost reductions. For example the development of renewables projects can take 5-10 years from design to operation. An effective carbon budget should also help limit supply chain volatility if it is consistent with steady progress.

Clarity is also needed on what is expected from each sector to be able to deliver the necessary carbon reductions.

In addition there needs to be a certain amount of flexibility under specific circumstances – in particular to take account of that part of the carbon budgets that is linked to European targets and in particular the ETS targets where future commitments may not have been fully agreed at the time the budget has been set.

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:

In England, the new fuel poverty target (to ensure as many fuel poor homes as is reasonably practicable achieve a minimum energy efficiency rating of Band C by 2030) will present a significant challenge. The recently published fuel poverty strategy sets out the interim milestones (E rated by 2020 and D rated by 2025). The proposals (as set out in the fuel poverty strategy) to ensure regular reporting of the fuel poverty target KPIs will provide valuable evidence for the 5th carbon budget, as well as tracking the impacts of the likely additional gap closing actions required to meet the 4th carbon budget.

Given the interim targets, there will need to be a significant improvement in the targeting of support at those in the most severe fuel poverty, particularly for those households that are off the gas grid and living in the most inefficient properties.

Given the finite level of funding and the size of the problem, funding for energy efficiency should be targeted at those customers in or at higher risk of fuel poverty. Given the scale of the actions needed to achieve both closure of the gap with the 4th carbon budget and the fuel poverty targets it may be appropriate for the Committee to review funding mechanisms and in particular whether a move to funding energy efficiency measures through general taxation would be more appropriate .

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?***

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We would note the different approaches to fuel poverty and carbon reduction in the devolved administrations. The definition, deadlines for associated targets and prevalence of fuel poverty are all very different, therefore any impact assessment of fuel poverty for the UK as a whole must take these differences into account.

In addition, the current devolved administrations continue to provide tax-payer funded support for increased energy efficiency and fuel poverty initiatives within their areas.

As a consequence it is difficult to judge at present what progress will have been made across the UK as a whole in meeting 4th budget targets and what further policies, likely to be needed to address the remaining hard to treat properties, will be able to deliver in terms of further carbon reductions by 2032.

Similarly there are differences in approach between England and Wales and Scotland in both on-shore wind and nuclear development that may need to be considered in setting the level of the 5th carbon budget.

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

ANSWER:

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