Committee on Climate Change

Independent advice to government on building a low-carbon economy and preparing for climate change

Building a zero-carbon economy – Call for Evidence

Background

On 15 October 2018 the governments of the UK, Scotland and Wales asked the Committee on Climate Change (CCC) to provide advice on the UK and Devolved Administrations' long-term targets for greenhouse gas emissions and the UK's transition to a net zero-carbon economy. Specifically: when the UK should reach net zero emissions of carbon dioxide and/or greenhouse gases as a contribution to global ambition under the Paris Agreement; if that target should be set now; the implications for emissions in 2050; how such reductions can be achieved; and the costs and benefits involved in comparison to existing targets.

The advice has been requested by the end of March 2019.

The UK's long-term emissions target is currently for at least an 80% reduction in greenhouse gas emissions from 1990 to 2050. It covers all sectors, including international aviation and shipping and is measured on a 'territorial' basis (i.e. based on emissions arising in the UK). On a comparable basis, emissions in 2017 were estimated to be 38% below 1990 levels.

The current target was set in 2008 based on advice from the Committee. That advice considered that to avoid the worst impacts of climate change, the central expectation of global temperature rise should be limited "to, or close to, 2°C", while the probability of crossing "the extreme danger threshold of 4°C" should be reduced to an extremely low level. That meant global emissions would roughly have to halve by 2050. The 2008 advice made the assumption that the UK should not plan to have a higher level of per capita emissions in 2050 than the global average.

The long-term target guides the setting of carbon budgets (sequential five-year caps on emissions that currently extend to 2032 and require a reduction in emissions of 57% from 1990 to 2030). Both the 2050 target and the carbon budgets guide the setting of policies to cut emissions across the economy (for example as set out most recently in the 2017 Clean Growth Strategy).

Any change to the long-term targets would therefore be expected to have significant implications, not just in the long-term but on current policies to drive the transition.

The CCC will advise based on a thorough consideration of the relevant evidence. We expect that to cover:

- The latest climate science, including as contained in the IPCC Special Report on 1.5°C.
- The terms of the Paris Agreement.
- Global pathways (including those reported by the IPCC) consistent with limiting global average temperature rise in line with the goals of the Paris Agreement.

- International circumstances, including existing plans and commitments to cut emissions in other countries, actions to deliver on those plans and opportunities for going further.
- An updated assessment of the current and potential options for deep emissions reductions in the UK and emissions removals from the atmosphere, including options for going beyond the current 80% target towards net zero.
- An appraisal of the costs, risks and opportunities from setting a tighter long-term target.
- The actions needed in the near term that would be consistent with achieving the long-term targets.

This Call for Evidence will contribute to that advice.

Responding to the Call for Evidence
We encourage responses that are brief and to the point (i.e. a maximum of 400 words per question, plus links to supporting evidence, answering only those questions where you have particular expertise), and may follow up for more detail where appropriate.

You do not need to answer all the questions, please answer only those questions where you have specific expertise and evidence to share. It would be useful if you could use the question and response form below and then e-mail your response to: communications@theccc.gsi.gov.uk using the subject line: 'Zero carbon economy – Call for evidence'. Alternatively, you can complete the question and answer form on the CCC website, available here.

If you would prefer to post your response, please send it to:

The Committee on Climate Change – Call for Evidence
7 Holbein Place
London
SW1W 8NR

The deadline for responses is 12 noon on Friday 7 December 2018.

Confidentiality and data protection
Responses will be published on our website after the response deadline, along with a list of names or organisations that responded to the Call for Evidence.

If you want information that you provide to be treated as confidential (and not automatically published) please say so clearly in writing when you send your response to the consultation. It would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded by us as a confidentiality request.

All information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information legislation (primarily the Freedom of Information Act 2000, the Data Protection Act 1998 and the Environmental Information Regulations 2004).

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.

Part 1: Climate Science

Question 1 (Climate Science): The IPCC's Fifth Assessment Report and the Special Report on 1.5°C will form an important part 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 (CO_2 and GHGs): Carbon dioxide and other greenhouse gas gases have different effects and lifetimes in the atmosphere, which may become more important as emissions approach net-zero. In setting a net-zero target, how should the different gases be treated?

ANSWER:

Part 2: International Action

Question 3 (Effort share): What evidence should be considered in assessing the UK's appropriate contribution to global temperature goals? Within this, how should this contribution reflect the UK's broader carbon footprint (i.e. 'consumption' emissions accounting, including emissions embodied in imports to the UK) alongside 'territorial' emissions arising in the UK?

ANSWER:

Question 4 (International collaboration): Beyond setting and meeting its own targets, how can the UK best support efforts to cut emissions elsewhere in the world through international collaboration (e.g. emissions trading schemes and other initiatives with partner countries, technology transfer, capacity building, climate finance)? What efforts are effective currently?

ANSWER:
More integrated markets are enabling more effective competition and driving costs down, as we have seen in the all-island Single Electricity Market. Continued integration of markets should be a priority, with a specific commitment to this within a European context post-Brexit.

Northern Ireland and Ireland need to act in a consistent, coherent and co-ordinated manner in setting relevant energy and environmental policy frameworks, objectives and targets. This will be important in maintaining a level playing field, avoiding market distortions and enhancing security of supply. It is logical and more efficient that these matters are considered on a cross-jurisdictional basis to avoid a "two speed" electricity

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Question 5 (Carbon credits): Is an effective global market in carbon credits likely to develop that can support action in developing countries? Subject to these developments, should credit purchase be required/expected/allowed in the UK's long-term targets?
ANSWER:

Part 3: Reducing emissions

Question 6 (Hard-to-reduce sectors): Previous CCC analysis has identified aviation, agriculture and industry as sectors where it will be particularly hard to reduce emissions to close to zero, potentially alongside some hard-to-treat buildings. Through both low-carbon technologies and behaviour change, how can emissions be reduced to close to zero in these sectors? What risks are there that broader technological developments or social trends act to increase emissions that are hard to eliminate?
ANSWER:

Question 7 (Greenhouse gas removals): Not all sources of emissions can be reduced to zero. How far can greenhouse gas removal from the atmosphere, in the UK or internationally, be used to offset any remaining emissions, both prior to 2050 and beyond?
ANSWER:

Question 8 (Technology and Innovation): How will global deployment of low-carbon technologies drive innovation and cost reduction? Could a tighter long-term emissions target for the UK, supported by targeted innovation policies, drive significantly increased innovation in technologies to reduce or remove emissions?
ANSWER: The cost-reduction trajectories of renewable electricity generation have been effectively driven by early financial support, clear government targets, coordinated policy and a reasonable timeframe for progress towards competitive auctions. An example is the cost-reduction in offshore wind. LCOE has already reduced by 32% in the last five years and this trend is set to continue: auction results last year indicate a further reduction in LCOE of 33-47% to be achieved in the space of approximately five years. The UK should continue to focus on leading global deployment to ensure that the benefits of both innovation and cost-reduction are maintained for the UK economy and

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technological leadership.

Reductions will be achieved through a combination of innovation-driven cost reduction and significant reductions in the cost of capital as the industry successfully de-risks. We encourage close attention to the ORE Catapult Report into Tidal Stream and Wave Energy- Cost reduction and industrial benefit, and recommend that the UK and NI governments focus on achieving comparable cost-reductions to enable deployment of a more diverse renewables mix https://s3-eu-west-1.amazonaws.com/media.newore.catapult/app/uploads/2018/11/19142426/Tidal-Stream-and-Wave-Energy-Cost-Reduction-and-Industrial-Benefit.pdf

Onshore wind has already brought significant economic benefits to NI: an estimated £1.27Bn investment in the local economy and the technology is now the cheapest form of new generation, bar none.

The offshore wind sector has also seen significant cost reductions, and demonstrates what can be achieved with the right early support, policy guidance and competitive auctions.

Question 9 (Behaviour change): How far can people's behaviours and decisions change over time in a way that will reduce emissions, within a supportive policy environment and sustained global effort to tackle climate change?

ANSWER:

Question 10 (Policy): Including the role for government policy, how can the required changes be delivered to meet a net-zero target (or tightened 2050 targets) in the UK?

ANSWER:

In NI we have outlined how by setting clear government targets the electricity sector could reach 70% RES-E by 2030, which will also include contributions to decarbonised and electrified heat and transport. The modelling can be found here: https://www.iwea.com/images/files/70by30-report-final.pdf

Such targets represent a clear second step to decarbonising the energy sector (the first target in NI – 40% electricity from renewables by 2020 – has nearly been met).

Government needs to set clear targets, ensure that all parts of the UK are obliged to contribute to all future carbon budgets set by CCC, increase funding for innovation in those sectors where the greatest challenges still remain, create clear and long-term policy objectives, facilitate coordination between academic institutions, private, public and third sectors in the delivery of these objectives, implement regular reviews of progress and maintain clear communication with the public and business about the benefits of becoming a net-zero economy.

NIRIG has published a strategy to 2050, outlining some specific recommendations for a

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decarbonised energy sector by 2050. We would be happy to discuss this report further with the CCC: http://www.ni-rig.org/wp-content/uploads/2017/02/NIRIG-2050-Energy-Strategy.pdf

Part 4: Costs, risks and opportunities

Question 11 (Costs, risks and opportunities): How would the costs, risks and economic opportunities associated with cutting emissions change should tighter UK targets be set, especially where these are set at the limits of known technological achievability?

ANSWER:

Question 12 (Avoided climate costs): What evidence is there of differences in climate impacts in the UK from holding the increase in global average temperature to well below 2°C or to 1.5°C?

ANSWER:

Part 5: Devolved Administrations

Question 13 (Devolved Administrations): What differences in circumstances between England, Wales, Scotland and Northern Ireland should be reflected in the Committee's advice on long-term targets for the Devolved Administrations?

ANSWER:

As noted above, the location of NI and participation in an all-island electricity market mean that Northern Ireland and Ireland need to act in a consistent, coherent and co-ordinated manner in setting relevant energy and environmental policy frameworks, objectives and targets.

To deliver a net-zero carbon economy all parts of the UK will need to develop appropriate approaches. For NI this will require a level playing field, avoidance of market distortions and enhanced security of supply. It is logical and more efficient that these matters are considered on a cross-jurisdictional basis to avoid a "two speed" electricity market developing.

The UK must actively facilitate this coordination by ensuring that all policies take account of NI realities as a fully-integrated market with ROI.

Past experience shows that policy decisions made in Westminster can hamper delivery of energy strategies in devolved administrations through, for example, implementing manifesto pledges to 'halt the spread of onshore wind farms' (Conservative manifesto 2015). All supporting policies for the net-zero target should reviewed and assessed through coordinated discussion with relevant departments in all devolved administrations.

Part 6: CCC Work Plan

Question 14 (Work plan): The areas of evidence the Committee intend to cover are included in the 'Background' section. Are there any other important aspects that should be covered in the Committee's work plan?
ANSWER: