



2019-IP03: The Committee on Climate Change and their report on the UK's contribution to stopping global warming

The UK's Committee on Climate Change (CCC) is a statutory body established under the Climate Change Act of 2008, upholding the purpose of advising the UK Government with independent advice on building a low-carbon economy and preparing for climate change. The Committee published an advisory report on the 2nd May 2019 to much publicity and interest on social media platforms, with the advice that the UK should phase out greenhouse gas emissions by 2050 to end the UK contribution to global warming.

'Net-Zero – The UK's Contribution to Stopping Global Warming'¹ is responding to a request from the Governments of the UK, Wales and Scotland to reassess the UK's long-term emission targets. The report claims that "net-zero" (being the emissions target of net-zero greenhouse gases by 2050) is not only necessary, but feasible and cost-effective, being a more fundamental aim than previous targets. The CCC have undertaken this effort by compiling an extensive evidence base and developing new emissions scenarios. Although highly challenging, this premise of net-zero emissions by 2050 is not only technically feasible, but also reaches beyond the Paris Agreement's (2015) goal to achieve a balance between global sources and sinks of emissions in the second half of the century. The CCC also highlights the potential large emissions reduction in scenarios using carbon capture and storage (CCS) technologies and stresses the importance of CCS in this net-zero scenario, recommending that a ramp-up effort is required in this particular technology.

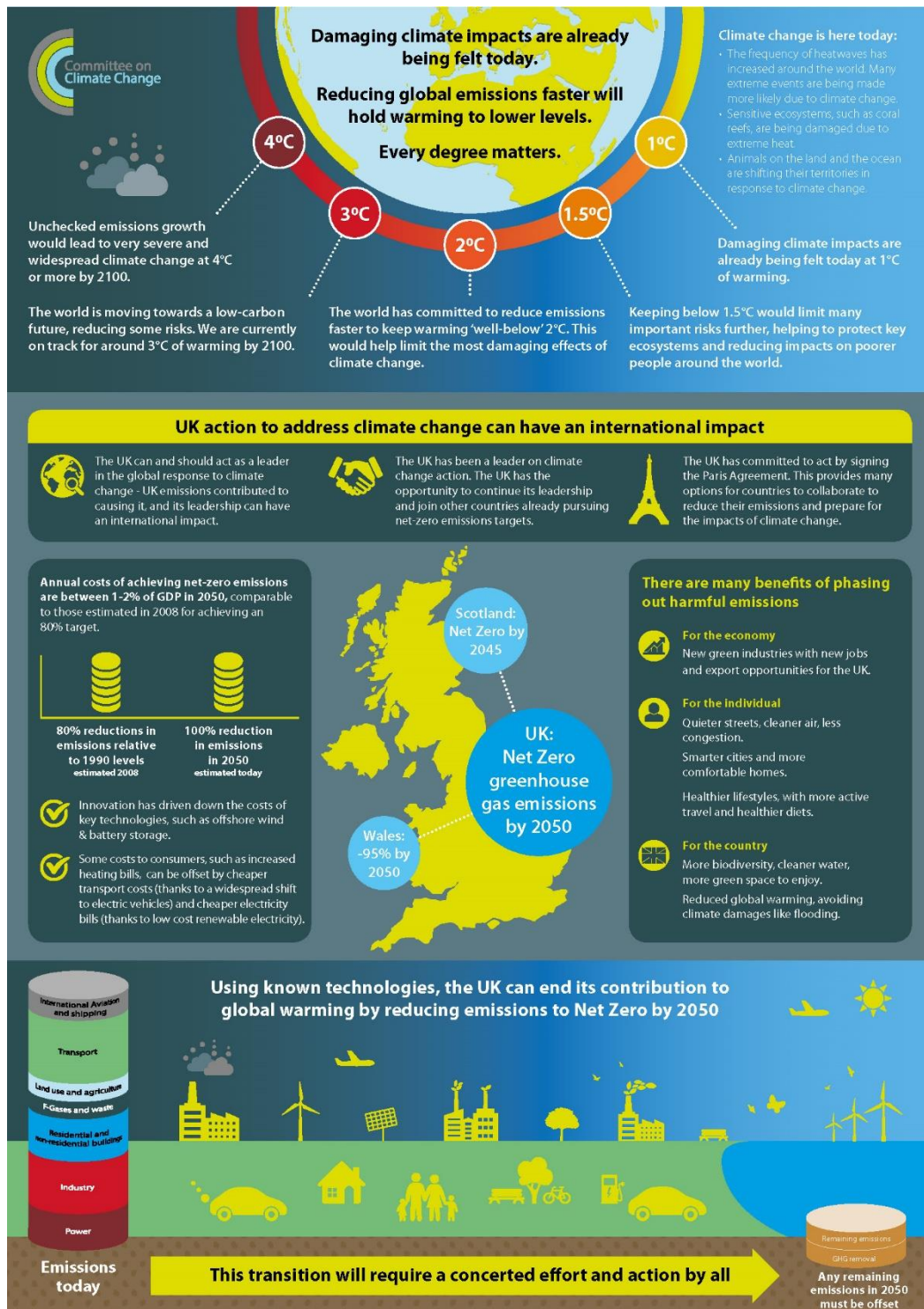
The scenarios that were considered show that "CCS is a necessity not an option", although it is a technology that has under-performed since the CCC's last assessment in 2008. This lack of performance has been due to higher costs, project delays, failed policy etc., but now the economics are improved by the strength of carbon pricing and better regulations. Although there are no current CCS projects in operation in the UK (a result of the aforementioned factors), there is great potential for success with such efforts, due to the country's vast geological storage resources and numerous oil and gas supply chains. These facts should not be ignored and should be exploited to achieve the targets under these new suggestions, and at least to achieve targets set under the Paris Agreement.

Recommendations for CCS operations are made, with the suggestion of the first CCS cluster to be operational by 2026 (with two clusters capturing 10Mt CO₂ by 2030), noting that it is likely that more clusters will eventually be needed to achieve net-zero. Both CCS and CCUS (carbon capture, usage and storage) are going to be key in reaching any emission targets set as highlighted previously, but there is the potential for other, more speculative options too, which research and development should look further into. BECCS (bioenergy with CCS) and DACCS (direct air capture and storage) are two of these somewhat uncertain options which could be used to unlock the greatest potential. However, the costs of DACCS are uncertain as this technology is only in the pilot stage currently, but the UK Energy Research Centre (UKERC) carried out a review alongside this CCC report which says that although the energy requirements are still high, DACCS could see faster cost reductions with mass roll-out.

¹ The UK Committee on Climate Change report, 'Net-Zero – The UK's Contribution to Stopping Global Warming' (May 2019), <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>



The Committee recommends the new greenhouse gas emissions target for the UK of net-zero emissions by 2050. They note that in Wales, the CO₂ storage opportunity is lesser, so a more realistic aim is 95% by 2050, but in Scotland there is a greater potential and so should strive for net-zero emissions by 2045. These targets are achievable only with the inclusion of CCS technologies (albeit with some potential barriers to overcome); thus highlighting the need for CCS policies to be strengthened and to deliver action, and crucial need for early infrastructure development in terms of CO₂ transport and storage.



Infographic summarising the Committee on Climate Change 'Net-Zero – The UK's contribution to stopping global warming' report (May 2019); <https://www.theccc.org.uk/wp-content/uploads/2019/05/CCC-Net-Zero-Infographic.pdf>



Just prior to the UK CCC commentary, the Business, Energy and Industrial Strategy (BEIS) Committee published 'Carbon Capture Usage and Storage: third time lucky?'², also stating that CCUS is necessary to meet not only national but also international targets for climate change.

This report recognises the importance to meet the UK's climate change targets, even stating that failure to deploy such technologies could double the cost of meeting the UK's emission reduction targets under the Climate Change Act 2008. There is a lack of clarity with the UK's plans for CCUS, but that with the potential application to many areas of the economy it will be a useful technology. However, the BEIS Committee recognise that the "exclusion of CCUS from the scope of the National Infrastructure Assessment means the full potential of the technology has not been assessed at the national level", which demonstrates that the Government needs to support CCUS efforts to aid development and to help overcome the commercial barriers that exist. The Committee recommends too that the first CCUS projects should be developed (in at least three clusters) by 2025, and notes that the UK "Government expects to run a third competition to select the first CCUS project" and stresses the importance of collaboration to promote and benefit CCUS nationwide.

Key conclusions:

1. The net-zero greenhouse gas emissions target can be achieved by 2050 in the UK, so long as Government, industry and the public collaborate to work forward;
2. CCS can make one of the largest differences to achieving the set targets;
3. The UK has a vast CO₂ storage potential alongside the world-class oil and gas supply chains available, both of which should be taken advantage of;
4. More research and development is needed into speculative options (including, but not restricted to BECCS and DACCS) to further work towards achieving emission targets;
5. Action is required to move forward:
 - a. CCS policy frameworks should be strengthened
 - b. Government needs to work more toward supporting CCUS efforts and deployment
 - c. CCS infrastructure needs to be developed, and promptly
 - d. The public must be engaged to allow approval and therefore projects moving forward

These two reports coming out in only the past few weeks and the consensus between them goes to show that carbon capture and storage is truly at the helm with mitigating greenhouse gas emissions. As the committees noted, other nations have already set (or are considering) net-zero targets; the UK must strive to adopt a strong target within a reasonable timeline as to not affect the UK's headway on climate leadership – and CCS technologies can surely help to maintain this positive action.

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² The UK Business, Energy and Industrial Strategy (BEIS) Committee report, 'Carbon Capture Usage and Storage: third time lucky?' (April 2019), <https://publications.parliament.uk/pa/cm201719/cmselect/cmbeis/1094/109402.htm>