Committee on Climate Change

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

The Sixth Carbon Budget and Welsh emissions targets – Call for Evidence

Background to the UK's sixth carbon budget

The UK Government and Parliament have adopted the Committee on Climate Change's (CCC) recommendation to target net-zero emissions of greenhouse gases (GHGs) in the UK by 2050 (i.e. at least a 100% reduction in emissions from 1990).

The Climate Change Act (2008, 'the Act') requires the Committee to provide advice to the Government about the appropriate level for each carbon budget (sequential five-year caps on GHGs) on the path to the long-term target. To date, in line with advice from the Committee, five carbon budgets have been legislated covering the period out to 2032.

The Committee must provide advice on the level of the sixth carbon budget (covering the period from 2033-37) before the end of 2020. The Committee intends to publish its advice early, in September 2020. This advice will set the path to net-zero GHG emissions for the UK, as the first time a carbon budget is set in law following that commitment.

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).

The Act also specifies other factors the Committee must consider in our advice on carbon budgets – the advice should be based on the path to the UK's long-term target objective, consistent with international commitments and take into account considerations such as social circumstances (including fuel poverty), competitiveness, energy security and the Government's fiscal position.

The CCC will advise based on these considerations and a thorough assessment of the relevant evidence. This Call for Evidence will contribute to that advice.

Background to the Welsh third carbon budget and interim targets

Under the Environment (Wales) Act 2016, there is a duty on Welsh Ministers to set a maximum total amount for net Welsh greenhouse gas emissions (Welsh carbon budgets). The first budgetary period is 2016-20, and the remaining budgetary periods are each succeeding period of five years, ending with 2046-50.

The Committee is due to provide advice to the Welsh Government on the level of the third Welsh carbon budget (covering 2026-30) in 2020, and to provide updated advice on the levels of the second carbon budget (2021-25) and the interim targets for 2030 and 2040. Section D of this Call for Evidence (covering questions on Scotland, Wales and Northern Ireland) includes a set of questions to inform the Committee's advice to the Welsh Government.

Question and answer 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 answers to <u>400 words</u> per question and provide supporting evidence (e.g. academic literature, market assessments, policy reports, etc.) along with your responses.

A. Climate science and international circumstances

Question 1: The climate science considered in the CCC's 2019 Net Zero report, based on the IPCC Special Report on Global Warming of 1.5°C, will form the basis of this advice. What additional evidence on climate science, aside from the most recent IPCC Special Reports on Land and the Oceans and Cryosphere, should the CCC consider in setting the level of the sixth carbon budget?

ANSWER:

It is widely acknowledged that the "emissions gap" - between expected global emissions levels which will be achieved through countries' NDCs and agreed emissions reduction targets - remains far too wide. However, a recent report by UN Environment Programme (UNEP) and leading research organisations [1] shows there is also a crucial "production gap": countries' plans and actions to expand the extraction of coal, oil, and gas far exceed the limits of a 1.5-2°C carbon budget.

A major finding of the IPCC's Special Report on 1.5°C is that fossil fuel emissions will need to decline rapidly, by 10% per year, to remain on a pathway for temperatures to stay with 1.5°C. However, the Production Gap report shows that globally, governments are planning to produce about 120% more fossil fuels than would be consistent with a 1.5°C pathway.

This evidence highlights that, as well as reducing fossil fuel consumption, there is a need for governments to reduce extraction too. In fact, the *Overexposed* report we published last year showed any production from new oil and gas fields, beyond those already in production or development, is incompatible with limiting warming to 1.5°C [2]. The analysis compared average oil and gas demand in the IPCC 1.5°C Special Report's scenarios that are not reliant on high levels of future carbon capture or removal with industry production forecasts from Rystad.

This is highly relevant to the UK as another report published in December, by a coalition of organisations including Global Witness, showed the UK is ranked in the top ten of countries with the largest expansion plans for oil and gas extraction over the next five years [3]. The *Sea Change* report last year expanded on this further, pointing out how the UK's 5.7 billion barrels of oil and gas in already operating oil and gas fields will exceed the UK's share in relation to the Paris climate goals – whereas industry and government aim to extract another 20 billion barrels in total. [4].

The above evidence points to the need for the UK government to introduce a managed phase-out of oil and gas extraction as part of its upcoming NDC and long-term low greenhouse gas emission development strategy.

[1] "The Production Gap" UNEP et al (2019).
[2] "Overexposed" Global Witness (2019).

Question 1: The climate science considered in the CCC's 2019 Net Zero report, based on the IPCC Special Report on Global Warming of 1.5°C, will form the basis of this advice. What additional evidence on climate science, aside from the most recent IPCC Special Reports on Land and the Oceans and Cryosphere, should the CCC consider in setting the level of the sixth carbon budget?

[3] "Oil, Gas and the Climate" Global Gas and Oil Network (2019).
[4] "Sea Change" Friends of the Earth Scotland, Oil Change International, Platform (2019).

Question 2: How relevant are estimates of the remaining global cumulative CO_2 budgets (consistent with the Paris Agreement long-term temperature goal) for constraining UK cumulative emissions on the pathway to reaching net-zero GHGs by 2050?

ANSWER:

Question 3: How should emerging updated international commitments to reduce emissions by 2030 impact on the level of the sixth carbon budget for the UK? Are there other actions the UK should be taking alongside setting the sixth carbon budget, and taking the actions necessary to meet it, to support the global effort to implement the Paris Agreement?

ANSWER:

As outlined in question 1, the UK should begin a managed phase-out of oil and gas extraction.

A crucial step is to reform the 2015 Infrastructure Act which places a duty on the BEIS Secretary of State to produce one or more strategies for enabling the Principal Objective of "maximising the economic recovery (MER) of UK petroleum". This contradicts the Paris goals, which require the Government to recover a far lower proportion of its remaining oil and gas than the theoretical economic maximum. [1].

MER should be replaced with legislation that restricts oil and gas recovery to levels that are aligned to keeping global warming within 1.5°C.

A main action to achieve this is a moratorium or ban on the annual issuing of licences to explore for new oil and gas fields or further develop existing ones.

The UK should also phase-out subsidies for oil and gas extraction, and redirect these to a just transition to a decarbonised economy [2]. Successive UK Governments have provided such subsidies, in the form of reduced tax rates and a variety of tax breaks. For example, since the early 1990's, overall tax rates for oil and gas companies have been reduced from above 80% to 40%. This is one of the lowest rates of tax for offshore oil and gas globally, according to industry experts Rystad. In 2015-16 and 2016-17, the Treasury gave more money to oil companies than it took from them in taxes.

This means the UK taxpayer is subsidising fossil fuel companies, instead of renewable energy and energy efficiency companies. There is a huge climate impact too: recent UK oil and gas subsidies will create twice as many emissions as the UK's phase out of coal will save [3].

Question 3: How should emerging updated international commitments to reduce emissions by 2030 impact on the level of the sixth carbon budget for the UK? Are there other actions the UK should be taking alongside setting the sixth carbon budget, and taking the actions necessary to meet it, to support the global effort to implement the Paris Agreement?

The UK should also end financial support to oil and gas projects internationally. Between 2010 and 2017 total UK Government spend for fossil fuel projects abroad was over £4.6 billion [4]. Although the Prime Minister recently announced a ban on support for coal projects, this should be extended to oil and gas projects.

[1] "Sea Change" Friends of the Earth Scotland et al (2019). See also answer to question 1.
[2] See answer to question 24 for details on what a just transition should involve.
[3] Ibid 1, chapter 4, for research on all subsidies statistics.
[4] "UK Support for Energy in Developing Countries", CAFOD, ODI (2019).

Question 4: What is the international signalling value of a revised and strengthened UK NDC (for the period around 2030) as part of a package of action which includes setting the level of the sixth carbon budget?

ANSWER:

A clear warning form the IPCC's 1.5°C report is that governments have less than ten years to act. Emissions need to have reduced by almost 50% by 2030 in order to keeping global warming within 1.5°C. The start of the ratcheting process in the lead up to COP 26 is therefore a crucial opportunity, potentially the last governments have, to put us on course to close the emissions and production gaps [1]. Conversely, if the UK were to lead by example and commit to a managed phase-out of oil and gas extraction this would send a very powerful signal.

In the past few years there has been an initial, but growing interest in restricting investment in and transiting out of fossil fuels. This includes moratoria on new exploration licences by countries such as France, New Zealand, Belize and Costa Rica, and transition plans for workers gaining ground internationally [2]. If the UK announced a managed phase-out of oil and gas extraction this could prove to be the catalyst for exponential momentum. Not least because the UK is one of the biggest contributors to greenhouse gas emissions historically, and one of Europe's top two oil and gas producers. This could begin to address legitimate equity concerns of less developed countries, one reason greater global progress within the UNFCCC process has stalled.

The UK government can also lead by example by announcing supply-side policies which support the achievement of the Paris goal, outlined in our answer to question 3. If it did this through either its NDC or long-term low greenhouse gas emissions development strategy, in advance COP26, the UK would help to establish a new standard of climate leadership, and crucially one required by climate science. This could help to establish a vital global norm on transitioning away from oil and gas, in tandem to the Powering Past Coal Alliance.

In addition, it would provide a vitally important signal to markets. As outlined in question 1, research has shown that oil and gas companies are planning capital expenditure of over $4 billion to explore for new oil and gas fields and further develop existing ones, yet none of this is compatible with realistic pathways to stay within 1.5°C [3]

Question 4: What is the international signalling value of a revised and strengthened UK NDC (for the period around 2030) as part of a package of action which includes setting the level of the sixth carbon budget?

[1] See answer to question 1
[2] "Aligning Fossil Fuel production with the Paris Agreement. Insights from the UNFCCC Talanoa Dialogue" SEI (2018).
[3] See question 1 and "Overexposed" Global Witness (2019).

B. The path to the 2050 target

Question 5: How big a role can consumer, individual or household behaviour play in delivering emissions reductions? How can this be credibly assessed and incentivised?

ANSWER:

Question 6: What are the most important uncertainties that policy needs to take into account in thinking about achieving Net Zero? How can government develop a strategy that helps to retain robustness to those uncertainties, for example low-regrets options and approaches that maintain optionality?

ANSWER:

Question 7: The fourth and fifth carbon budgets (covering the periods of 2023-27 and 2028-32 respectively) have been set on the basis of the previous long-term target (at least 80% reduction in GHGs by 2050, relative to 1990 levels). Should the CCC revisit the level of these budgets in light of the net-zero target?

ANSWER:

Question 8: What evidence do you have of the co-benefits of acting on climate change compatible with achieving Net Zero by 2050? What do these co-benefits mean for which emissions abatement should be prioritised and why?

ANSWER:

C. Delivering carbon budgets

Question 9: Carbon targets are only credible if they are accompanied by policy action. We set out a range of delivery challenges/priorities for the 2050 net-zero target in our Net Zero advice. What else is important for the period out to 2030/2035?

ANSWER:

Question 9: Carbon targets are only credible if they are accompanied by policy action. We set out a range of delivery challenges/priorities for the 2050 net-zero target in our Net Zero advice. What else is important for the period out to 2030/2035?

The significant focus for industry related goals In the CCC's 2019 Net Zero report is the development of Carbon Capture and Storage (CCS). However, as set out in our answer to question 1, the 5.7 billion barrels in oil and gas fields already in operation in the UK will exceed the UK's share in relation to the Paris climate goals, and yet the ambition of the government and industry is to extract a total of 20 billion. Therefore, a managed phase-out of oil and gas extraction is required with a number of steps, as we outlined.

The CCC's Net Zero advice suggests the need for the government to assess how a transition to a decarbonised economy is perceived as fair, and that vulnerable workers should be protected. It highlights the needs for analysis at a regional level and for specific industrial sectors.

The government's response to developing renewable energy industries should match the extensive support provided to the North Sea industry to enable its rapid expansion. From the first discovery of oil in 1969, the UK was an oil exporter within just twelve years, and by 1985 the world's fifth largest producer of oil.

This is particularly crucial for jobs. Approximately 40,000 existing oil workers may need a different job by 2030, as shown by modelling outlined in the *Sea Change* report [1]. This shows that in a scenario representing the current trajectory of minimal government support for renewable energy, the growth of jobs in wind energy alone exceeds the number of oil workers affected by the transition, but will not result in enough power to meet UK demand nor in enough jobs to credibly support large scale re-employment of oil industry workers.

In a scenario implementing proposed ambitious targets from industry and policymakers, at least three times as many new jobs will be created in wind power, marine renewables and energy efficiency retrofits. In a "fully renewable" scenario, with a full transition to renewables by 2050, there are over four times as many jobs created [2].

There needs to be a clear process for the participation in the design and implementation of a just transition by affected works, communities and the public sector. The government should also support major scaling-up of education, retraining and re-skilling to help workers succeed in these new industries.

[1] "Sea Change" Friends of the Earth Scotland, Oil Change International, Platform (2019).

[2] Ibid.

Question 10: How should the Committee take into account targets/ambitions of UK local areas, cities, etc. in its advice on the sixth carbon budget?

ANSWER:

Question 11: Can impacts on competitiveness, the fiscal balance, fuel poverty and security of supply be managed regardless of the level of a budget, depending on how policy is designed and funded? What are the critical elements of policy design (including funding and delivery) which can help to manage these impacts?
ANSWER:

Question 12: How can a just transition to Net Zero be delivered that fairly shares the costs and benefits between different income groups, industries and parts of the UK, and protects vulnerable workers and consumers?
ANSWER:

D. Scotland, Wales and Northern Ireland

Question 13: What specific circumstances need to be considered when recommending an emissions pathway or emissions reduction targets for Scotland, Wales and/or Northern Ireland, and how could these be reflected in our advice on the UK-wide sixth carbon budget?
ANSWER:

Question 14: The Environment (Wales) Act 2016 includes a requirement that its targets and carbon budgets are set with regard to:

- The most recent report under section 8 on the State of Natural Resources in relation to Wales;
- The most recent Future Trends report under section 11 of the Well-Being of Future Generations (Wales) Act 2015;
- The most recent report (if any) under section 23 of that Act (Future Generations report).

a) What evidence should the Committee draw on in assessing impacts on sustainable management of natural resources, as assessed in the state of natural resources report?

b) What evidence do you have of the impact of acting on climate change on well-being? What are the opportunities to improve people's well-being, or potential risks, associated with activities to reduce emissions in Wales?

c) What evidence regarding future trends as identified and analysed in the future trends report should the Committee draw on in assessing the impacts of the targets?

d) Question 12 asks how a just transition to Net Zero can be achieved across the UK. Do you have any evidence on how delivery mechanisms to help meet the UK and Welsh targets may affect workers and consumers in Wales, and how to ensure the costs and benefits of this transition are fairly distributed?

ANSWER:

Question 15: Do you have any further evidence on the appropriate level of Wales' third carbon budget (2026-30) and interim targets for 2030 and 2040, on the path to a reduction of at least 95% by 2050?

ANSWER:

Question 16: Do you have any evidence on the appropriate level of Scotland's interim emissions reduction targets in 2030 and 2040?

ANSWER:

Question 17: In what particular respects do devolved and UK decision making need to be coordinated? How can devolved and UK decision making be coordinated effectively to achieve the best outcomes for the UK as a whole?

ANSWER:

E. Sector-specific questions

Question 18 (Surface transport): As laid out in Chapter 5 of the Net Zero Technical Report (see page 149), the CCC's Further Ambition scenario for transport assumed 10% of car miles could be shifted to walking, cycling and public transport by 2050 (corresponding to over 30% of trips in total):

a) What percentage of trips nationwide could be avoided (e.g. through car sharing, working from home etc.) or shifted to walking, cycling (including e-bikes) and public transport by 2030/35 and by 2050? What proportion of total UK car mileage does this correspond to?

b) What policies, measures or investment could incentivise this transition?

ANSWER:

Question 19 (Surface transport): What could the potential impact of autonomous vehicles be on transport demand?

ANSWER:

Question 20 (Surface transport): The CCC recommended in our Net Zero advice that the phase out of conventional car sales should occur by 2035 at the latest. What are the barriers to phasing out sales of conventional vehicles by 2030? How could these be addressed? Are the supply chains well placed to scale up? What might be the adverse consequences of a phase-out of conventional vehicles by 2030 and how could these be mitigated?

ANSWER:

Question 21 (Surface transport): In our Net Zero advice, the CCC identified three potential options to switch to zero emission HGVs – hydrogen, electrification with very fast chargers and electrification with overhead wires on motorways. What evidence and steps would be required to enable an operator to switch their fleets to one of these options? How could this transition be facilitated?

ANSWER:

Question 22 (Industry): What policy mechanisms should be implemented to support decarbonisation of the sectors below? Please provide evidence to support this over alternative mechanisms.

a) Manufacturing sectors at risk of carbon leakage

b) Manufacturing sectors not at risk of carbon leakage

c) Fossil fuel production sectors

d) Off-road mobile machinery

ANSWER:

Question 22 (Industry): What policy mechanisms should be implemented to support decarbonisation of the sectors below? Please provide evidence to support this over alternative mechanisms.

a) Manufacturing sectors at risk of carbon leakage

b) Manufacturing sectors not at risk of carbon leakage

c) Fossil fuel production sectors

d) Off-road mobile machinery

c) There should be a set of policies to ensure a managed phase-out of UK oil and gas extraction, which is achieved through a just transition for affected workers, communities and regions. See our answers to questions 1, 3, 9 and 24 for the details of this.

In addition the government should end its support for overseas oil and gas projects currently provided through a range of government departments, and agencies it provides funding to. The Prime Minister announced in January that the UK would no longer provide financial support for coal mining and coal-fired power stations abroad. This should be extended to oil and gas.

Research by CAFOD and the Overseas Development Institute shows that the UK spent £4.6 billion on fossil fuel energy projects overseas from 2010-17, with support spread across a range of departments [1].

UK Export Finance (UKEF), a Government agency tasked with assisting UK business abroad, gave 97% of its energy support from 2010-17 to fossil fuel projects [2]. A study of UKEF's latest annual report suggested it provided a full £2 billion in support to fossil fuels in 2017/18 alone [3]. Following an inquiry, Parliament's Environmental Audit Committee recommended last year that the UK Export Finance (UKEF) should end all support for fossil fuels [4].

UK support overseas should be spent on clean energy, avoiding carbon lock-in in developing countries.

[1] 'Analysis – UK Support For Energy", CAFOD, Overseas Development Institute (2019)
[2] Ibid
[3] 'UK Government Agency's Annual Support for Overseas Fossil Fuel Rises to £2 billion,' DeSmog, (2019).

[4] See the Committee's report: https://www.parliament.uk/business/committees/committees-a-z/commons-select/environmental-audit-committee/news-parliament-2017/uk-export-finance-report-published-17-19/

Question 23 (Industry): What would you highlight as international examples of good policy/practice on decarbonisation of manufacturing and fossil fuel supply emissions? Is there evidence to suggest that these policies or practices created economic opportunities (e.g. increased market shares, job creation) for the manufacturing and fossil fuel supply sectors?

ANSWER:

Question 24 (Industry): How can the UK achieve a just transition in the fossil fuel supply sectors?

ANSWER:

It is essential that a just transition strategy for fossil fuel supply sectors is guided by climate change targets set out in the Paris Agreement.

It is equally important to ensure the process is right for determining a strategy. As outlined in question 9, to be successful this must involve the participation of key stakeholders. They include affected workers (for supply chains as well as direct fossil fuel related jobs) communities, and the public sector.

The concept of a just transition was established by the International Trade Union Congress. Its resolution on a just transition should serve as an important guide. This includes consultation between trade union representatives, government and voluntary organisations; investment in green technologies and infrastructures; democratic decision-making and worker participation; and strong social protection systems [1].

The concept of equivalent conditions is an important element too. Affected workers in the fossil fuel supply sectors should be offered jobs on at least equivalent terms and conditions and permanent contracts. Support should include paid time off for education, fully paid-for relocation and retraining, wages protected for five or more years, and protecting pensions [2]. This means the public sector will need to take an active role in developing clean sectors, which should lead to an industry-wide agreement with employers regarding redeployment, job matching and upskilling.

In addition to measures to support workers, support for oil-dependent regions is vital. This support could include investment schemes for community development, and reinvesting locally while supporting businesses to do the same.

[1] “Sea Change” Friends of the Earth Scotland, Oil Change International, Platform (2019).

[2] Ibid.

Question 25 (Industry): In our Net Zero advice, the CCC identified a range of resource efficiency measures that can reduce emissions (see Chapter 4 of the Net Zero Technical Report, page 115), but found little evidence relating to the costs/savings of these measures. What evidence is there on the costs/savings of these and other resource efficiency measures (ideally on a £/tCO2e basis)?

ANSWER:

Question 26 (Buildings): For the majority of the housing stock in the CCC's Net Zero Further Ambition scenario, 2050 is assumed to be a realistic timeframe for full roll-out of energy efficiency and low-carbon heating.

a) What evidence can you point to about the potential for decarbonising heat in buildings more quickly?

b) What evidence do you have about the role behaviour change could play in driving forward more extensive decarbonisation of the building stock more quickly? What are the costs/levels of abatement that might be associated with a behaviour-led transition?

ANSWER:

Question 27 (Buildings): Do we currently have the right skills in place to enable widespread retrofit and build of low-carbon buildings? If not, where are skills lacking and what are the gaps in the current training framework? To what extent are existing skill sets readily transferable to low-carbon skills requirements?

ANSWER:

Question 28 (Buildings): How can local/regional and national decision making be coordinated effectively to achieve the best outcomes for the UK as a whole? Can you point to any case studies which illustrate successful local or regional governance models for decision making in heat decarbonisation?

ANSWER:

Question 29 (Power): Think of a possible future power system without Government backed Contracts-for-Difference. What business models and/or policy instruments could be used to continue to decarbonise UK power emissions to close to zero by 2050, whilst minimising costs?

ANSWER:

Question 30 (Power): In Chapter 2 of the Net Zero Technical Report we presented an illustrative power scenario for 2050 (see pages 40-41 in particular):

a) Which low-carbon technologies could play a greater/lesser role in the 2050 generation mix? What about in a generation mix in 2030/35?

b) Power from weather-dependent renewables is highly variable on both daily and seasonal scales. Modelling by Imperial College which informed the illustrative 2050 scenario suggested an important role for interconnection, battery storage and flexible demand in a future low-carbon power system:

   i. What other technologies could play a role here?

   ii. What evidence do you have for how much demand side flexibility might be realised?

ANSWER:

Question 31 (Hydrogen): The Committee has recommended the Government support the delivery of at least one large-scale low-carbon hydrogen production facility in the 2020s. Beyond this initial facility, what mechanisms can be used to efficiently incentivise the production and use of low-carbon hydrogen? What are the most likely early applications for hydrogen?

ANSWER:

Question 32 (Aviation and Shipping): In September 2019 the Committee published advice to Government on international aviation and shipping and Net Zero. The Committee recognises that the primary policy approach for reducing emissions in these sectors should be set at the international level (e.g. through the International Civil Aviation Organisation and International Maritime Organisation). However, there is still a role for supplementary domestic policies to complement the international approach, provided these do not lead to concerns about competitiveness or carbon leakage. What are the domestic measures the UK could take to reduce aviation and shipping emissions over the period to 2030/35 and longer-term to 2050, which would not create significant competitiveness or carbon leakage risks? How much could these reduce emissions?

ANSWER:

Question 33 (Agriculture and Land use): In Chapter 7 of the Net Zero Technical Report we presented our Further Ambition scenario for agriculture and land use (see page 199). The scenario requires measures to release land currently used for food production for other uses, whilst maintaining current per-capita food production. This is achieved through:

- A 20% reduction in consumption of red meat and dairy
- A 20% reduction in food waste by 2025
- Moving 10% of horticulture indoors
- An increase in agriculture productivity:
  - Crop yields rising from the current average of 8 tonnes/hectare for wheat (and equivalent rates for other crops) to 10 tonnes/hectare
  - Livestock stocking density increasing from just over 1 livestock unit (LU)/hectare to 1.5 LU/hectare

Can this increase in productivity be delivered in a sustainable manner?

Do you agree that these are the right measures and with the broad level of ambition indicated? Are there additional measures you would suggest?

ANSWER:

Question 34 (Agriculture and Land use): Land spared through the measures set out in question 33 is used in our Further Ambition scenario for: afforestation (30,000 hectares/year), bioenergy crops (23,000 hectares/year), agro-forestry and hedgerows (~10% of agricultural land) and peatland restoration (50% of upland peat, 25% lowland peat). We also assume the take-up of low-carbon farming practices for soils and livestock. Do you agree that these are the key measures and with the broad level of ambition of each? Are there additional measures you would suggest?

ANSWER:

Question 35 (Greenhouse gas removals): What relevant evidence exists regarding constraints on the rate at which the deployment of engineered GHG removals in the UK (such as bioenergy with carbon capture and storage or direct air capture) could scale-up by 2035?

ANSWER:

Question 36 (Greenhouse gas removals): Is there evidence regarding near-term expected learning curves for the cost of engineered GHG removal through technologies such as bioenergy with carbon capture and storage or direct air capture of CO_2?

ANSWER:

Question 37 (Infrastructure): What will be the key factors that will determine whether decarbonisation of heat in a particular area will require investment in the electricity distribution network, the gas distribution network or a heat network?

ANSWER:

Question 38 (Infrastructure): What scale of carbon capture and storage development is needed and what does that mean for development of CO_2 transport and storage infrastructure over the period to 2030?

ANSWER: