

**Question 1 – Do you believe it is appropriate to reconsider the 2050 target, in the light of the conclusions of the recent IPCC Special Report on Global Warming? What is the long-term viability of the 2050 target?**

- Yes. The Paris Agreement marked a significant positive step in global action to tackle climate change and the IPCC Special Report gives us good deal more evidence to consider about how the UK can contribute to a global ambition of limiting global warming to 1.5°C above pre-industrial levels.
- The Committee is considering 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.
- Our long-term targets work is in process, we do not yet have a position on what a new 2050 target for the UK should be. We will consider Wales as part of the work to determine their share of the contribution to any UK-wide 2050 target.
- As part of the initial work, our call for evidence<sup>1</sup> asks how the differences in circumstances between England, Wales, Scotland and Northern Ireland should be reflected in the Committee's advice on long-term targets.
- Following our advice in spring 2019, it may be necessary to make the 2050 target and the interim targets more ambitious if evidence supports that these are achievable and necessary.

**Question 2 - What is your assessment of the impact of any such changes on the WG's ability to meet the interim targets for 2020, 2030 and 2040?**

- We need to know the revised 2050 target before any re-evaluation of the cost-effective path to get there.
- The interim targets are currently our best estimate of the cost-effective path to an 80% reduction by 2050 for Wales.
- These should be met as an absolute minimum – any tighter 2050 target may require bigger and faster reductions in emissions.
- Actions taken in the nearer term should keep open the possibility of reductions beyond 80% by 2050 – for example building efficiency measures, low-regret heating options, decarbonising the power sector, switching to EVs, promoting active travel, and planting trees.

**Question 3 – Given that the scientific data is shifting so quickly, do you believe it is appropriate that the WG should, before each carbon budget is set, reconsider the 2050 target, based on advice from the UK CCC?**

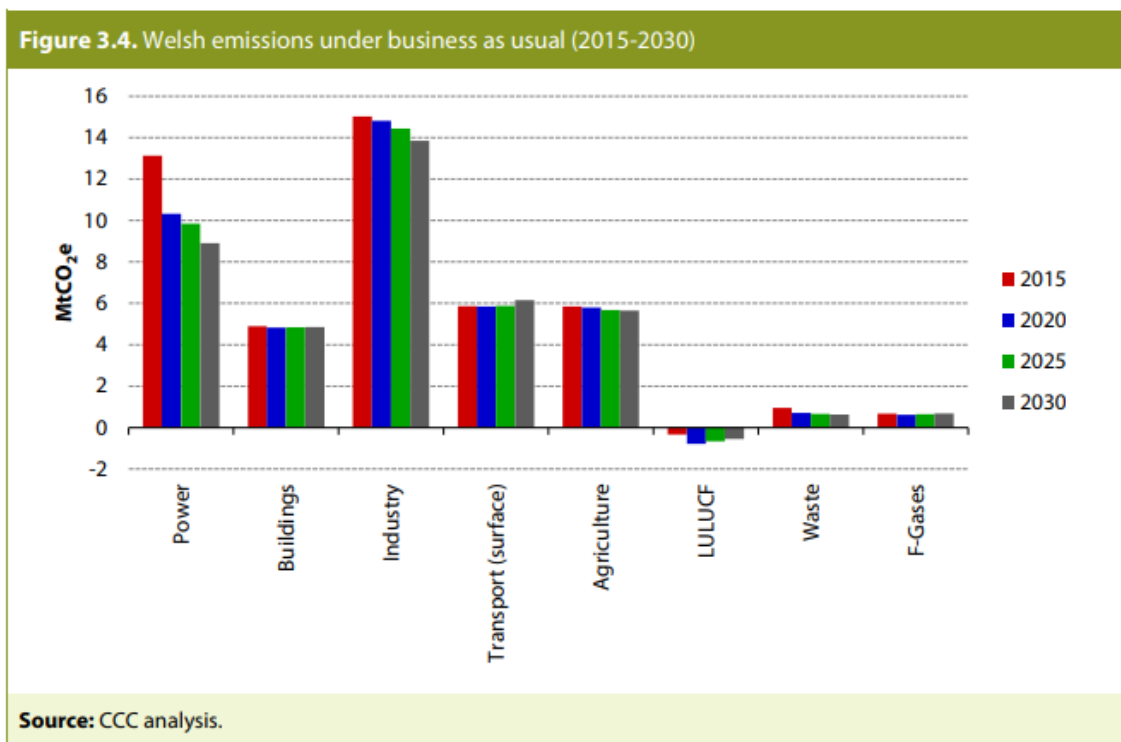
- No. There is merit in maintaining a clear and stable long-term target until major changes in the climate science and/or major events, such as the Paris Agreement, necessitate a review of the targets based on a thorough consideration of the relevant evidence.

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<sup>1</sup> <https://www.theccc.org.uk/2016/12/16/call-for-evidence-welsh-carbon-budgets/>

**Question 4 - Welsh emissions in 2015 were 19% below 1990 levels. Based on the UK CCC's "business as usual projections", what will the estimated level of emissions be in 2020, expressed as a percentage reduction below 1990 levels?**

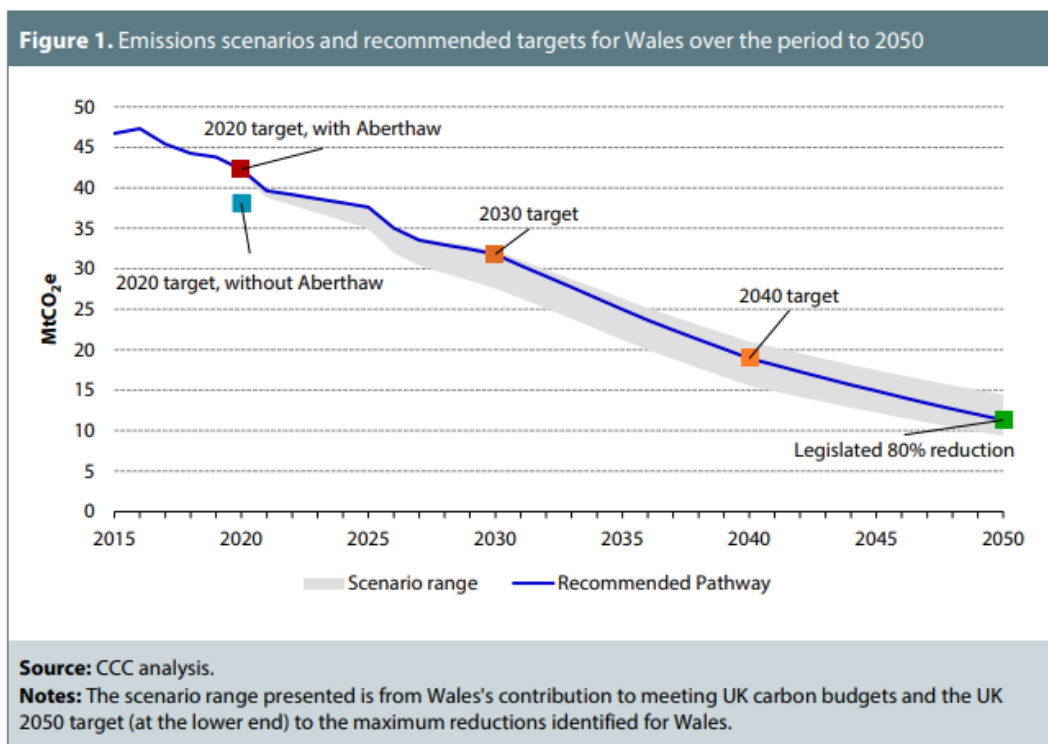
- Based on 2015 NAEI inventory and the BAU scenario used to set original Welsh advice, the BAU scenario would be 23% (excluding international aviation and shipping, as we don't have a BAU for this sector).
- We have not updated this evidence to reflect the latest (NAEI, 2018) inventory, although we note that this has revised downwards estimates of emissions reductions since 1990 (e.g. by 2 percentage points for 2015, from 20% below 1990 emissions to 18%).
- For comparison, our cost effective path for an 80% reduction on 1990 levels by 2050 ("central plus" scenario) suggests a 27% reduction on 1990 levels, or 32% if Aberthaw closes. Much of this policy effort to reach the 27% reduction comes from UK government policies (e.g. the increase in the Renewable Transport Fuels Obligation).



**Question 5 – Your suggested pathway constitutes a smooth trajectory towards the 2050 target. What are the risks of this approach in comparison to, for example, a steeper initial trajectory, constituting a "front-loading" of emissions reductions?**

- The scenario used in our advice is our best estimate of the cost-effective path which meets the legislated 80% reductions target in 2050. This methodology is in line with the Committee's approach to UK-wide targets.
- This is an outcome of looking at the opportunities to reduce emissions across the economy, including how quickly stocks of vehicles and heating appliances can be turned over. For some sectors, such as power, the reductions are front-loaded due to the amount of coal capacity reaching the end of its lifetime and the availability of low-carbon technologies at low cost.

- For other sectors, the reductions might be a little back-loaded, as we need to develop markets for new vehicles or heating appliances so that they can comprise the vast majority of sales by 2030 or 2035. It will then take a further say 15 years once all sales are low-carbon for the stock of vehicles and appliances to fully turn over, as fossil vehicles and boilers come to the ends of their lives and are replaced.
- By definition, we think any deviation from the 'cost-effective' path carries a greater cost to society, however the cost-effective path is not a prescriptive path that must be followed, and is one of a range of possible scenarios (Figure 1).
- Whilst our smooth trajectory is the lowest cost approach compared to a 'front-loaded' trajectory, it could make deep reductions more difficult in the long run if long-term options are not developed in parallel.
- It is important to ensure that long-term options are developed alongside the deployment of low-cost options in the short term. Our cost-effective path is designed to balance these two priorities in a cost-effective way.
- It may be that certain aspects of 'front-loading' could also come with much higher costs than the measures in our cost-effective path or suboptimal decisions from a longer-term perspective (e.g. by diverting lots of biomass to domestic heating).



**Question 6 - Before it is asked to agree the third carbon budget in 2020, the Assembly will not know whether the first two carbon budgets have been met, due to the reporting requirements of the Environment (Wales) Act. Do you have any views on the timescales set out in the Act?**

- It makes sense to set carbon budgets well in advance to encourage long-term planning and provide certainty for government, investors, and consumers.
- This is the same approach as the for the UK-wide carbon budgets. The fifth UK carbon budget (2028-2032) was set in July 2016, twelve years in advance, meaning the outcome of the second, third, and fourth carbon budgets were not certain.
- By June 2020, when the third Welsh carbon budget is set, the Assembly will not know whether the first carbon budget has been met, but will have good evidence from the latest inventory about the level of emissions up to at least 2018.
- It will therefore have a good idea of the trajectory and whether Wales is on track to meet its first and second carbon budgets.
- The CCC will provide advice on the third Welsh carbon budget in 2020, which would take into account our recommendations on long-term targets and any decisions on what that means for legislated emissions targets.

**Question 7: What are the risks and benefits of the Welsh Government's decision to include international aviation and shipping in Welsh emissions targets?**

- International aviation and shipping (IA&S) emissions contribute to climate change and should therefore be included within the scope of national emissions targets, unless there are strong practical considerations which prevent this.
- Given that emissions accounting is based on actual emissions, rather than 'net' emissions used for UK carbon budgets, inclusion of IA&S on the basis of fuel sales presents no practical challenges:
  - For international aviation, the complications that affect inclusion at a UK level relate to emissions targets that are accounted for on a net basis (e.g. the inclusion of aviation in UK targets has been constrained by the geographical scope of aviation included in the EU ETS). As Welsh targets apply to actual emissions, this barrier does not apply.
  - There is no reason to exclude Wales's share of international shipping emissions from the targets. We have recommended inclusion under UK carbon budgets.
- Accounting for IA&S emissions formally within national emissions targets is clearer and more flexible than excluding them from the framework while taking them into account indirectly, as currently happens under the UK carbon budgets.
- The primary risk is that since Wales does not have devolved control of IA&S policy, a target which includes IA&S is more reliant on UK and international action. However, in setting the carbon budgets for Wales we have not assumed any emissions reductions from Welsh or UK unilateral policy action in these sectors.
- Emissions from IA&S in Wales in 2016 were 1% of total emissions, so their inclusion is unlikely to have a major effect on Wales' performance against economy-wide targets.

**Question 8: Given that you have said that unplanned use of emissions credits should be small, what is your view of the appropriateness of the 10% limit proposed by Welsh Government?**

- The Committee previously advised that the Welsh Government should not plan to use emissions credits to contribute towards meeting its emissions targets. However, we accepted that their use might be appropriate should Welsh industrial output turn out higher than was assumed when the targets were set.
- We did not recommend placing any specific limit on the use of emissions credits in legislation to allow maximum flexibility for unforeseen circumstances.
- However, there is a statutory duty to specify a limit under the Environment (Wales) Act 2016. For the first Welsh carbon budget period, the Welsh government suggested a maximum limit on offset credits that is equivalent to 10% of the carbon budget.
- The planned first carbon budget will require an average 23% reduction against the 1990 baseline. Based on the latest available emissions data, this target would require annual emissions between 2016 and 2020 to be below 43.3 MtCO<sub>2</sub>e on average.
- A maximum limit of 10% would therefore permit the use of 4.3 MtCO<sub>2</sub>e of offset credits per year on average. This would allow flexibility for a 30% increase in annual emissions from industry compared to 2016, to levels not seen since 2001. The Committee therefore believes this limit would provide sufficient flexibility.
- This advice is provided in the context of the statutory duty to set a maximum limit on the use of credits, recognising the relative size of the industrial sector in Wales and the more limited corresponding ability of Wales to reduce emissions in the short term.
- However, we our original advice remains - within this legislated limit, it is only appropriate to use credits in specific circumstances such as industrial output being higher than assumed when the targets were set.

**Question 9: What are your reasons for suggesting that the use of credits should require prior advice from the UK CCC?**

- Offset credits should be used only as a last resort in exceptional circumstances, and the Welsh Government should seek advice from the Committee prior to their use towards meeting emissions targets to ensure that it is an appropriate response to unforeseen circumstances.

**Question 10: What are the risks for the first and second carbon budgets if emitters cannot continue to trade under the EU-ETS?**

- The Welsh carbon budgets are based on 'actual' emissions and not adjusted for EU ETS allowances, so there would be no technical impact on the way emissions are accounted for against targets.
- Any changes in emission behaviour due to changes in the EU ETS could directly affect the power, heavy industry, and aviation sectors but also indirectly affect the rest of the economy through changes in electricity prices.
- Any risk would mainly be around whether stopping emitters trading under EU ETS incentivises greater GHG emissions due to a change in the total carbon price.
- The current total carbon price for EU ETS emitters in the UK is the price of EU ETS units (approximately £17/tCO<sub>2</sub>) plus - for the power sector only - Carbon Price Support of £18/tCO<sub>2</sub> (total £35/tCO<sub>2</sub>).
- At present, under either the Draft Agreement on the withdrawal of the UK from the European Union or the UK Government's stated no-deal policy on EU ETS, the carbon price would remain largely unchanged in the short term. This would be either through a transition period followed by the creation of a UK-wide ETS, or a carbon-tax that replaces the cost of EU ETS credits.<sup>2,3,4</sup>
- If the total carbon price were to drop from the current level to the UK Government's previously-stated target level (£24/tCO<sub>2</sub>e), Aurora Energy Research<sup>5</sup> believe that the revival of coal due to increased gas prices and low carbon price could increase gas-to-coal switching and result in 46 million tonnes more CO<sub>2</sub> emissions in 2018–27.

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<sup>2</sup> <https://uk.reuters.com/article/us-britain-eu-carbontrading/uk-signals-plan-to-leave-eu-emissions-trading-scheme-after-brexid-idUKKCN1NK1MX>

<sup>3</sup> <https://www.gov.uk/government/publications/meeting-climate-change-requirements-if-theres-no-brexit-deal/meeting-climate-change-requirements-if-theres-no-brexit-deal>

<sup>4</sup>

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/752202/Budget\\_2018\\_red\\_web.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752202/Budget_2018_red_web.pdf)

<sup>5</sup> <https://www.auroraer.com/wp-content/uploads/2018/10/Aurora-Report-public-Carbon-pricing-options-to-deliver-clean-growth-October-2018.pdf>