



POSTbrief

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Measuring Performance for the Carbon Budgets

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Summary

Part 6 of the Energy Bill 2015-16 proposes an amendment to the Climate Change Act to adjust the performance measure used in the UK's statutory carbon budgets. The new measure would include UK territorial emissions only. With this change, credits or debits from the EU Emissions Trading System would not contribute towards the UK's performance against its carbon budgets from 2028 onwards.

This POSTbrief introduces the carbon budgets, explains the proposed change and outlines the implications of the proposed change.

The Carbon Budgets

The Climate Change Act 2008 established a target for the UK to reduce its greenhouse gas emissions by at least 80% from 1990 levels by 2050. To ensure that regular progress is made towards this long-term target, the Act also established a system of five-yearly carbon budgets. The level of the first four carbon budgets, leading to the end of 2027, have been set in law, while the fifth budget is currently under discussion:

Carbon budget and year	Carbon budget level	Approximate % reduction below 1990 levels
1 st carbon budget (2008-2012)	3,018 Megatonnes of CO ₂ equivalent (MtCO ₂ e)	26%
2 nd carbon budget (2013-2017)	2,782 MtCO ₂ e	32%
3 rd carbon budget (2018-2022)	2,544 MtCO ₂ e	37%
4 th carbon budget (2023-2027)	1,950 MtCO ₂ e	52%
5 th carbon budget (2028-2032)	The Committee on Climate Change has recommended the level is set at 1,725 MtCO ₂ e, a 57% reduction. ¹	
2050	-	80%

Table 1 : Carbon budgets and 2050 carbon target

The Fifth Carbon Budget

The Committee on Climate Change (CCC - an independent statutory body established to advise Government and Parliament) published its advice to Government on the fifth carbon budget² in December 2015, as required under Section 4 of the Climate Change Act. The budget level covers the period 2028-2032 and is indicated in Table 1 and Figure 1. The government will propose draft legislation for the fifth budget in summer 2016.

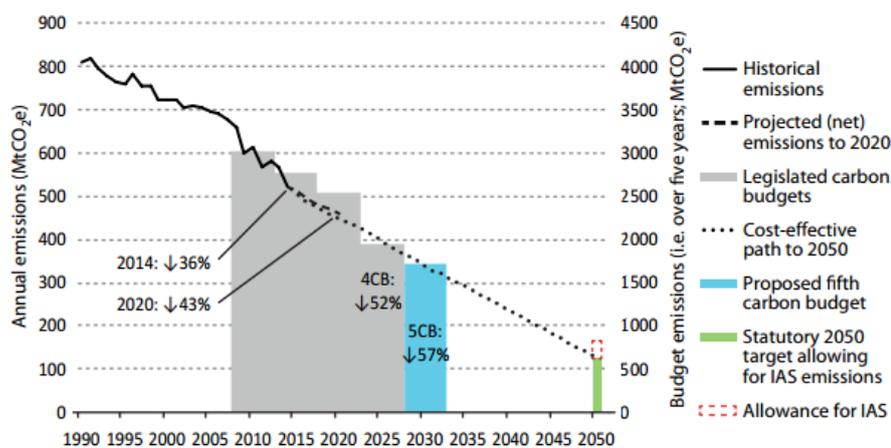


Figure 1: Carbon budgets and progress against budgets. Data labels show reductions in annual emissions relative to 1990. Historical emissions are UK territorial emissions. Projections and carbon budgets are on the current budget accounting basis (explanation below). Cost effective path to 2050 minimises the overall cost to consumers of reducing emissions by 80% by 2050. IAS = International Aviation and Shipping. Source: CCC²

Measuring Performance for the Carbon Budgets

The Current Emissions Measure

Under the Climate Change Act, performance against carbon budgets is measured by the 'net UK carbon account'. The net UK carbon account factors into its calculations the trading of 'carbon credits' from the EU emissions trading system (ETS),³ a mandatory cap-and-trade scheme for greenhouse gas emissions. Carbon credits bought via the EU ETS can improve the UK's performance against its targets. Box 1 outlines how the 'net UK carbon account' measure is calculated in more detail.

Box 1. The Net UK Carbon Account

As required in the Climate Change Act, the net UK carbon account is made up of the sum of emissions from the 'traded' and 'non-traded' sectors. The 'traded' sector refers to those sectors of the economy covered by the EU Emissions Trading System (EU ETS), primarily electricity generation and energy-intensive industry. The 'non-traded' sector refers to the sectors of the economy not covered by the EU ETS, including transport, heating in buildings, agriculture, waste and some industry. Emissions from these two sectors are measured for the net UK Carbon account as follows.

- The emissions attributed to the non-traded sectors corresponds to the actual territorial emissions from the UK in those sectors.
- The emissions attributed to the traded sectors does not correspond to the actual UK territorial emissions in those sectors. Instead it corresponds to the UK's share of EU ETS cap (the total emissions permitted in the European traded sector).²

The "net UK carbon account" does not correspond to the UK's actual territorial emissions. Existing legislation does not place a limit on UK territorial emissions from the traded sector, which primarily consists of power generation and energy-intensive industry.

Proposed Change in the Energy Bill

Part 6 of the Energy Bill 2015-16 seeks to adjust the performance measure used in the carbon budgets.

In section 27 (net UK carbon account) of the Climate Change Act 2008, after subsection (2) insert—

"(2A) No carbon units deriving from the operation of the EU Emissions Trading System may be credited to or debited from the net United Kingdom carbon account for any period commencing after 31 December 2027."

The new measure would use UK territorial emissions only. With this change, credits or debits from the EU ETS would no longer contribute towards the UK's performance against its carbon budgets.

Implications of the proposed change

The proposed change in Part 6 of the Energy Bill could affect future greenhouse gas emissions, investor confidence and energy costs for consumers.

Future Greenhouse Gas Emissions

UK Emissions

The proposed change of performance measure would legislate against UK territorial emissions going above the specified carbon budget level. As a result, in a scenario where power sector investment in the 2020s was all in gas-fired power stations (see higher territorial emissions scenario in Table 2) emissions would no longer meet the level recommended in the CCC's fifth carbon budget. In this scenario UK territorial emissions for the period 2028-2032 are 20% above the CCC's cost-effective path.

The proposed change would also require the CCC to produce a new fifth carbon budget recommendation based on the new measure. The new budget recommendation would, in all likelihood, be based on the cost-effective path for territorial emissions that the CCC have already outlined (but not recommended) in their fifth carbon budget report.² This would lead to a lower figure than the current recommended budget, as shown in Table 2. If the Government were to accept the CCC's new recommendation it would lead to a tighter constraint on emissions in the traded sector. There would not be a direct impact on the recommended emissions budget for the non-traded sector, although a tighter constraint on the traded sector could lead to more pressure on non-traded emissions to be reduced.

EU-wide Emissions

Emissions from the traded sector in the EU as a whole would not change as a result of Part 6. Any resulting reduction in UK emissions would create spare EU ETS credits, which would be used elsewhere in the EU, offsetting the UK emissions reductions.

Investor Confidence

The low-carbon electricity sector has argued that the proposed change would support investor confidence in the UK by improving confidence about the pathway to decarbonisation of the UK power sector. However, other parts of the energy sector argue that this further change would undermine investor confidence, without reducing emissions in the EU from the traded sector.

		CCC cost-effective emissions path (MtCO ₂ e) for 2028-32	Higher emissions scenario (MtCO ₂ e) for 2028-32
UK emissions in each scenario	Territorial emissions from non-traded sector	1135	
	Territorial emissions from traded sector	450	770
	UK's share of EU ETS for traded sector	590 ⁴	
UK carbon budgets	Budget under current legislation – using UK's share of EU ETS*	1725 ¹	
	Likely budget recommendation under changes proposed in Part 6**	1585 ¹	
UK results	Total territorial emissions	1585	1905
	Total emissions, accounting for EU ETS credits or debits	1725	1725
	Carbon budget results	Would both meet carbon budget under existing legislation.	
		Would meet carbon budget under changes proposed in Part 6.	Would not meet carbon budget under changes proposed in Part 6.

Table 2 : The table shows emissions under two scenarios and explains the subsequent result in terms of meeting or not meeting carbon budgets, using the two different performance measures. The first scenario outlines emissions according to the Committee on Climate Change's estimate of a cost-effective pathway for emissions reduction. The second scenario assumes investment in the 2020s is all in gas-fired power plants⁵ and there is no policy on industrial emissions⁶. * If the Government accept the CCC's recommended carbon budget level. ** If the CCC recommended its cost-effective level as the carbon budget level and the Government accepted this recommendation.

Energy Costs for Consumers

The impact of the proposed change on costs would depend on the final level of fifth and subsequent carbon budgets. These would depend 1) upon the final level that the CCC recommend and 2) whether the Government choose to accept this level. If the budget is set at the CCC's 'cost effective' level, the CCC estimate that the cost to consumers would be minimised over the long term.

However, the proposed change may not result in short term costs to consumers being minimised and electricity costs may rise.

Endnotes

¹ The CCC has also recommended that emissions from international shipping are also budgeted for in the fifth carbon budget. It was not included in the previous budgets. The budget recommendation for international shipping is 40 MtCO_{2e}, which would add onto existing budget recommendations.

² Committee on Climate Change, November 2015, [The fifth carbon budget](#)

³ The EU ETS is explained further on the European Commission website http://ec.europa.eu/clima/policies/ets/index_en.htm (accessed 14 January 2016)

⁴ The Committee on Climate Change estimate that the UK's share of the EU ETS cap will be 590 MtCO_{2e} for the fifth budget period (2028-32). The best estimate for the UK's share constantly varies, so it is likely that different levels will be used when the fifth carbon budget is set and also when it comes measuring performance in the period 2028-32.

⁵ Based on Committee on Climate Change, October 2015, [Power Sector Scenarios Report](#)

⁶ Based on DECC's baseline 'no policy' projections for industrial emissions