

Net Zero, Energy and Transport Committee
Tuesday 9 September 2025
26th Meeting, 2025 (Session 6)

Note by the Clerk on Scottish Carbon Budgets evidence

Introduction

1. The Scottish Parliament agreed to move to a system of carbon budgets (similar to the system used in UK legislation) when it passed the [Climate Change \(Emissions Reduction Targets\) \(Scotland\) Act 2024](#).
2. Carbon budgets set limits on the amount of greenhouse gas emitted over a given time. The Scottish Government must now set four five-yearly carbon budgets, to cover the period 2026-2045, when Scotland has committed to achieve net zero emissions. This replaces an approach of basing interim targets on a percentage reduction in greenhouse gases following a straight line towards net zero emissions in 2045. Net Zero is the point when carbon emissions entering the atmosphere are balanced by removals out of the atmosphere.
3. Regulations setting carbon budgets have now been laid and the Committee is considering these during meetings in September. On 9 September, the Committee is taking evidence first from a panel comprising—
 - a. Professor Fabrice Renaud - Director, National Centre for Resilience, University of Glasgow,
 - b. Dr Andrew Russell – Director, Environmental Change and Communities Research Centre,
 - c. Dr Ellie Murtagh - Postdoctoral researcher, Maynooth University,
 - d. Professor Gabi Hegerl - Professor of Climate System Science, University of Edinburgh,and then from the Cabinet Secretary for Climate Action and Energy and Scottish Government officials.
4. A debate on the Regulations will then follow (agenda item 2).

Carbon budget regulations

5. Carbon budgets are to be set by the Scottish Government under a new power created by the 2024 Act. The Regulations come into force only if the Scottish Parliament approves them. (See Clerk's Paper 2, covering the formal debate on the instrument for more procedural information.). In outline—

- The Scottish Government laid [The Climate Change \(Scotland\) Act 2009 \(Scottish Carbon Budgets\) Amendment Regulations 2025](#) on 19 June,
- In doing so, the Scottish Government decided to follow the [21 May advice on budget levels](#) provided to them by the Climate Change Committee (CCC), the UK's independent advisory body
- At the same time as laying the Regulations, the Scottish Government (as it is required to do under the 2024 Act) also [published a statement](#) setting out in indicative terms, the policies and proposals that can be expected in the upcoming draft Climate Change Plan (CCP). The CCP is a strategy document which outlines how the Scottish Government intends to meet the carbon budget levels and the 2045 net zero target. (See further below on scheduling).
- The statement also indicates a small number of areas (peatland restoration and agriculture) where, whilst the Scottish Government accepts the CCC's headline advice on carbon budget levels, it indicates it is likely to depart from some specific aspects of the CCC's advice in the draft CCP.

The Committee's scrutiny of the Regulations

6. Where a committee is considering Regulations, such as these, that are laid under the affirmative procedure (see Paper 2 for more information), it is customary to have a short evidence session with the relevant Minister and officials before moving to the formal debate. There is also the option of doing additional scrutiny work in the time available where the Regulations are considered particularly important.
7. In the case of these Regulations, the Committee agreed (during discussion of its work programme on 24 June) to have an extended evidence session with the Scottish Government and, in addition, to schedule two further pre-debate evidence sessions—
 - with the CCC. This took place on 2 September.¹ The main focus of the session was on the detail of the CCC's advice to the Scottish Government and its views on the Scottish Government's indicative statement; and
 - with a panel of climate science experts, as listed above, so as to explore the bigger picture behind the detail of the carbon budget: so as to gauge the level of ambition required, nationally and globally, to address climate change, and the amount of work required to address the impact of climate change on housing, transport, agriculture, etc, and on public health and safety. The [Climate Change \(Scotland\) Act 2009](#) requires the Scottish Government, when preparing a draft CCP to consider 'scientific knowledge about climate change' and to request the views of people with such knowledge.

¹ The Official Report of the meeting will [shortly be available via this link](#)

Written evidence on the Regulations

8. The Committee also agreed at its 24 June meeting to launch a targeted Call for Views on the Regulations. This ran from 27 June to 18 August. Stakeholders were asked:
 - a. What are your views on whether the carbon budget regulations set the right level of ambition between 2026 and 2045?
 - b. What are your views on the content of the Scottish Government's Indicative Statement to accompany the regulations?
9. The Committee received 12 responses from—
 - a. [Soil Association Scotland](#)
 - b. [Royal Scottish Geographic Society](#)
 - c. [Friends of the Earth Scotland](#)
 - d. [National Farmers Union Scotland](#)
 - e. [Scotland Beyond Net Zero](#)
 - f. [Scottish Environment LINK](#)
 - g. [Institute for Public Policy Research Scotland](#)
 - h. [Climate Emergency Response Group](#)
 - i. [James Hutton Institute](#)
 - j. [WWF Scotland](#)
 - k. [Stop Climate Chaos Scotland](#)
 - l. [Confederation of British Industry](#)
10. A summary of these responses by the Scottish Parliament Information Centre (SPICe) is annexed to this paper.

The science of climate change

11. The Intergovernmental Panel on Climate Change, the United Nations body for assessing the science related to climate change, produce regular 'Assessment Reports' on the science of climate change. The latest report, the Sixth Assessment is [summarised for policy makers](#) and states (with "high confidence") that—

"Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850-1900 in 2011-2020. Global greenhouse gas

emissions have continued to increase, with unequal historical and ongoing contributions arising from unsustainable energy use, land use and land-use change, lifestyles and patterns of consumption and production across regions, between and within countries, and among individuals”

and that—

“Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred. Human-caused climate change is already affecting many weather and climate extremes in every region across the globe. This has led to widespread adverse impacts and related losses and damages to nature and people”.

12. The [World Meteorological Organization’s State of the Global Climate 2023 report](#) assessed that the average global temperature for 2014–2023 was 1.20 ± 0.12 °C above the 1850–1900 average “making it the warmest 10-year period on record.”
13. The UK is a signatory of [The Paris Agreement](#), which was adopted by 195 UN Members at the UN Climate Change Conference (COP21) on 12 December 2015 and came into force on 4 November 2016. The main aim of the agreement is to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels” and to pursue efforts “to limit the temperature increase to 1.5°C above pre-industrial levels.”
14. Under the Paris Agreement, the UK, as a Member State, submits a Nationally Determined Contribution (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC). [The UK’s latest NDC](#), published in January 2035 commits to reducing greenhouse gas emissions by at least 81% by 2035 compared to 1990 levels.²
15. In July 2021 the Scottish Government published “[Scotland’s Indicative Nationally Determined Contribution](#)”. This was based on Scotland reducing emissions by at least 75% by 2030, in line with the statutory target at the time. The 2024 Act removed that target when it brought in 5-year carbon budgeting.

Adaptation to climate change

16. The CCP is not required to set out the Scottish Government’s proposals for actions to respond to the impact of climate change. These are instead set out in the [Scottish National Adaptation Plan 2024-2029](#).
17. However, emissions reduction and adaptation are linked: the more rapidly emissions can be reduced the more likely it seems that the impacts of climate change could be reduced, in turn reducing the need for adaptation measures, some of which could be costly or disruptive in the short term. The 9 September evidence session is an opportunity to explore these and other issues relating to

² The NDC does not include emissions from international aviation and shipping, whereas the carbon budget levels do. Therefore, the percentage reductions between the UK’s NDC and Scotland’s carbon budgets cannot easily be directly compared.

international and national climate change science with a panel of experts, before proceeding to final evidence on the Regulations with the Scottish Government.

Next steps and Climate Change Plan

18. Following the two panels of evidence, the Committee will then debate a motion in the name of the Cabinet Secretary inviting the Committee to recommend approval of the Regulations also during this meeting. (Again, see Paper 2).
19. The Committee must then report to the Parliament on the Regulations before 1 October 2025. A draft report will be considered by the Committee at its 23 September meeting.
20. If the Parliament agrees to the Regulations, they will come into force one day later. The Scottish Government then have a statutory deadline of up to two months to lay a draft CCP. The [Cabinet Secretary for Climate Action and Energy](#) has told the Committee that if the Regulations are approved before October recess, specifically on 8 October, the Scottish Government aims to lay the draft by late October or early November.
21. Under the 2009 Act, the Scottish Parliament has 120 days to scrutinise and report on the draft CCP. The NZET Committee would lead this scrutiny work, with other committees scrutinising particular strands of work. The Scottish Government must then publish and lay a final Climate Change Plan within 90 days. They must also respond to Scottish Parliament Committee reports within three months of them being published.

**Clerks to the Committee
September 2025**

Annexe – Summary of responses to the Call for View

SPICe

The Information Centre
An t-Ionad Fiosrachaidh

Scottish Carbon Budget regulations

Analysis of Call for views

Respondents

1. Soil Association Scotland: SAS
2. Royal Scottish Geographic Society: RSGS
3. Friends of the Earth Scotland: FOES
4. National Farmers Union Scotland: NFUS
5. Scotland Beyond Net Zero: SBNZ
6. Scottish Environment LINK: SEL
7. Institute for Public Policy Research Scotland: IPPRS
8. Climate Emergency Response Group: CERG
9. James Hutton Institute: JHI
10. World Wide Fund for Nature Scotland: WWFS
11. Stop Climate Chaos Scotland: SCCS
12. Confederation of British Industry Scotland (CBIS)

The full responses, for which permission to publish was given, can be found on [the Scottish Parliament website](#).

1. What are your views on whether the carbon budget regulations set the right level of ambition between 2026 and 2045?

Some responses support the level of ambition (SAS, IPPR, CERG, WWFS, SBNZ, CBIS) and SBNZ state that it is in line with ‘most other developed economies’. Several responses make reference to the fact that it follows the CCC advice (SAS, RSGS, SEL, CBIS) although JHI highlight that despite this there is uncertainty remaining due to pledges to diverge from the advice in the Indicative Statement (IS) (more on this in the summary of responses to Q2).

RSGS set out that the actual ambition will only become clear when actions are taken (as opposed to targets being set). CERG, WWFS and CBIS also highlight that the emphasis should be on delivery, and what is needed to achieve the carbon budgets.

SAS welcomed the clarity brought by the proposed carbon budget levels. Both RSGS and IPPRS, set out that the budgets should be a minimum level of achievement rather than the final target.

NFUS expressed support for the principle of five-year carbon budgets but were concerned about the level of change. The NFUS explicitly oppose policy on livestock reduction and dietary change.

Some responses took issue with the rate of progress prior to the arrival of the regulations which had been too slow, that targets had not been met, and said that a 'step change' in action is needed (SEL, SAS).

While IPPRS implicitly support the move to net zero by around mid-century, they suggest that the proposed budgets will ultimately require a similar pace of change to what they have replaced. They go on to argue that the Scottish Government need to be more honest about the scale of the challenge and to present a 'compelling vision' to the Scottish public. IPPRS and SCCS make reference to the fact that emissions have essentially 'flat-lined' since 2019.

FOES set out their view that the 2045 target has always been inadequate and that 2030 should be the target date for net zero. They state that developed nations like Scotland should take the lead on emission reductions due to their capacity to do so and their historical emissions. They view the change to carbon budgets as unnecessary and as resulting in an 18-month delay in climate policy making.

Whilst most responses explicitly or implicitly support the views of the CCC as being the most suitable pathway to follow, FOES explain that the advice places 'too much emphasis on expensive, inefficient, unreliable and unproven technologies, such as carbon capture and storage and so-called sustainable fuels'. SBNZ also believe that there is too much reliance on the 'untested and underspecified solutions' e.g. negative emission technologies and sustainable aviation fuel. They make particular reference to the relevance of these options in the fourth carbon budget. SCCS highlight the 'unnecessarily significant reliance on 'techno-fixes'.

The CBIS support the new level of ambition but highlight some 'enabling conditions' needed for progress; planning reform, workforce training, electricity grid upgrade, and clear long term investment frameworks.

Some responses to Q1 pick up on aspects of the IS (the subject of Q2). The JHI response focuses on agriculture and peatlands, and highlights some of the reasons that it thinks there is uncertainty around the assumed contribution of peatlands to emission reductions, including whether there is sufficient investment. They also highlight, what they see, as some of the barriers to peatland restorations such as the remote locations and the limited seasonal window. Finally, they raise the risk of climate change impacts – water scarcity and wildfires - inhibiting sequestration from peatlands.

SAS, SEL and JHI state that it is not clear what is intended for policy in Agriculture. They raise concerns about how the lost emission savings, from the pledge in the IS not to develop policy which limits livestock numbers, will be compensated for. They suggest that tree planting is the area where change will be needed.

JHI highlight some of the uncertainties around the effectiveness of 'technical' measures to reduce emission in Agriculture i.e. methane reducing feeds additives.

They also point out that in land use policy there is the need to balance carbon saving goals with those of biodiversity.

As a result of these reservations, the JHI call for the publication of particular details in the climate change plan (CCP) including on peatland restoration targets, the quantification of mitigation measures in Agriculture and contingency options for if there is a delay in emission reductions. A contingency plan or Plan B is also supported by SCCS (with reference to the Environment Climate Change Land Reform [\(ECCLR\) Committee proposal in 2021](#)).

The NFUS assert that sequestration activities in peatlands, woodlands etc. should be incorporated in the Agricultural emission inventory.

SBNZ highlight that consumption-based emissions (also accounting for the emissions that result from the goods and services consumed in a country, but not produced there) are not currently included in Scottish targets and that these should be monitored.

2. What are your views on the content of the Scottish Government's Indicative Statement to accompany the regulations?

Various responses express disappointment with the overall level of detail in the Indicative Statement (RSGS, SBNZ, IPPR, JHI, WWFS). RSGS again highlight that target setting is easy but implementing policies to make change is more difficult, and that the IS gives them no confidence that this state of affairs will change. SBNZ highlight that the lack of detail forces scrutiny to shift from the setting of the carbon budgets to the CCP.

The JHI seek greater clarity on various points in the forthcoming CCP, including quantified annual peatland targets, the modelled emission savings from agricultural efficiency measures, contingency plans if measures don't deliver and information on monitoring. The CBIS welcomed the transparency of the IS but say that it would be strengthened by delivery timelines and funding certainty, integration with economic strategy, resolving planning delays and securing public engagement. They go on to assert that reducing emissions 'is not only an environmental imperative but a route to sustainable economic growth'.

Criticism of the overall approach comes from the IPPRS, on the grounds that MSPs have to 'decide to approve the budgets ... effectively in ignorance of the policies they would then have to support in order to see the budgets delivered.'

Many responses highlight the Scottish Government's pledge in the IS to not implement any livestock number reduction policy (JHI, SCCS, WWFS, SAS), with most raising questions as to how this will affect the country's overall emission reductions. The JHI highlight that this loss of emission reductions will have to be made up elsewhere and there will be a need to better integrate trees and woodland into farming systems. SEL and SAS also highlight tree planting as a means of compensating for the lost savings. SCCS raise various questions around what this statement might mean, including whether it means a proactive policy to maintain /

increase numbers or simply the absence of a policy to reduce numbers? SAS and SEL highlight that if current trends on livestock numbers continue emissions may reduce 'even without specific government policies'. WWFS believe that the IS does not offer much alternative to a policy of not reducing livestock numbers.

NFUS welcome the IS and in particular the statement on livestock policy. They make reference to the importance of the CCP focusing on the 'integration' of land use change with existing land uses like agriculture. While supporting the pledge not to support livestock number reduction, the NFUS want more detail on the alternative of reducing emission through 'efficiency and innovation'. They also call for sufficient detail to be contained in the CCP.

Elsewhere in land use, SEL have policy suggestions to increase the rate of woodland creation, including a national deer management programme, and increasing the Forestry Grant Scheme to previous levels. Following on from their response to the first question, JHI and SCCS highlight the importance of factoring in other policy goals such as those around biodiversity, when thinking of climate policy. SCCS highlight the potential for implications for biodiversity policy from the pledge to not commit to livestock reductions.

Some responses (SCCS, RSGS, JHI) highlight the uncertainty of the IS wording on peatland restoration targets and although it states that the CCP will diverge from the CCC it is not clear how. On forestry, SCCS welcome the implied increase in ambition for afforestation in the IS and associated press release. JHI highlight that while it is needed, tree planting will not be able to compensate for the livestock policy in the timeframe available.

SEL, IPPR, and SCCS highlight the trade off in agriculture and land use policy and that if livestock numbers are not reduced, then woodland creation will need to be integrated into farmland as opposed to being planted on former agricultural land.

Responses that focus on the Energy Supply section, include those from FOES and SCCS, which both suggest that the wording used in the IS to describe the proposed new CCS gas plant in Peterhead implies support for gas power plants with CCS in some form. They highlight that this diverges from CCC assumptions in their Balanced Pathway; that there are no gas plants with CCS in Scotland. FOES also assert that energy from waste plants should be shut down rather than attempting to decarbonise them with CCS. The CBIS highlight the importance of electricity grid upgrades.

Responses that focus on Transport, include those from FOES and SCCS which suggest there is too much emphasis on electric vehicles - and that these still result in pollution - as opposed to reducing overall car-kms. This view applies to both the IS and the CCC advice. The SCCS also take issue with the mention of sustainable fuels in some forms of transport e.g. aviation, and suggest that these should be subject to scrutiny on the grounds of their availability, and their low carbon potential.

Part of the SCCS response addresses the limited content in the IS on Buildings decarbonisation and raises questions as to how the Heat in Buildings Bill might interact with the draft CCP. WWFS highlight a perceived abandonment of key

measure for heat in buildings, and question how building decarbonisation can deliver the expected reductions in this context.

In Waste Management, FOES outline that they support reduction in landfill but that they oppose further waste incineration.

While some responses (FOES, SCCS) that take aim at the use of CCS in the Scottish Government's plans, on the basis that it is an unproven technology at scale, the JHI consider the alternatives to reduced livestock numbers, such as low methane breeding and feed additives, as also being 'unproven' technology.

SCCS and WWFS both highlight the IS's reference to internal analytical work and that the Scottish Government should be questioned on the details of this.

Contingency planning or a Plan B is recommended by various organisation (FOES, SCCS, WWFS), particularly with respect to the emission savings associated with CCS (with reference to the ECCLR committee report from 2021). SCCS highlight that there are contingency options in the CCC advice, which are not mentioned in the IS.

Niall Kerr, SPICe