FUTUREPROOF

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Welsh Carbon Budgets – Call for Evidence

Futureproof is a research, strategy and public affairs consultancy promoting real-world policy solutions to climate change and other existential threats.

Please find enclosed our response to the Committee's Call for Evidence on Welsh Carbon Budgets. Our evidence chiefly concerns our recommended carbon accounting framework for Wales, especially as regards the treatment of the EU Emissions Trading Scheme. Our main recommendations are as follows:

- We propose a system of targets and budgets set as relative, percentage-based reductions on the Welsh emissions baseline. This would allow the emissions baseline and targets to "float" up and down together with greenhouse gas inventory changes. This should help preserve the level of effort intended when budgets and targets are set.
- We propose that international aviation and shipping be included within Wales' 2050 target and incorporated into the interim targets and budgets from the outset. Under our proposed carbon accounting framework there should be no barriers to including these sectors.
- We propose a system of simplified net carbon accounting be pursued which allows the government to make use of international credits under exceptional circumstances. However, we strongly advise that credits traded by private firms operating under the EU ETS should not be credited or debited from the Net Welsh Emissions Account (i.e. when implementing Section 33(2) of the Environment (Wales) Act 2016). This would prevent a notional Welsh ETS cap from substituting-in for actual Welsh emissions in the power and manufacturing sectors. That, in turn, would prevent unpredictable changes in the supply of EU carbon allowances from affecting the delivery of Welsh climate targets and would help keep target-delivery under Welsh control.
- In keeping with the above, we advise that the government use of EU ETS credits should be made subject to the limitation on credits described under Section 33(4) of the Environment (Wales) Act 2016. Private EU ETS trades would remain exempt from the credit limit, but only because they would not be credited or debited to the Net Welsh Emissions Account in any way. Moreover, we recommend that the credit limit should be set at zero whenever practicable, and that, following Scotland's example, domestic action should always contribute at least 80% of the effort towards a given target or budget.

We hope our submissions is helpful to the Committee, to the Welsh government and to other stakeholders following the discussion.

Yours sincerely,

Damien Morris
Director

Committee on Climate Change

Independent advice to Government on building a low-carbon economy

Call for Evidence - Welsh Carbon Budgets

The Environment (Wales) Act received Royal Assent in March 2016. It sets a 2050 target to reduce emissions by at least 80% and provides the legislative framework for establishing a carbon budgeting approach in Wales.

The Act requires that before the end of 2018, Welsh Ministers must set in regulation interim emissions targets for 2020, 2030 and 2040, together with 5-year carbon budgets for the periods 2016-2020 and 2021-2025.

The Committee on Climate Change has been asked by the Welsh Government to provide advice on these emissions targets and is seeking evidence to help with that task.

The Committee will provide advice in two stages:

- Stage 1: Advice on carbon accounting and design of Welsh carbon budgets/targets (March 2017)
- Stage 2: Advice on the level of ambition embodied within the targets and budgets and sectors in which there are particular opportunities to decarbonise (October 2017)

This Call for Evidence focuses on the first of these stages. Responses to this Call will help inform the Committee's advice to the Welsh Government, to be published in March 2017. This Call contains questions relevant to the Act, including the emissions accounting framework, scope of the targets and role for emissions trading.

Our subsequent advice on the level of the targets and budgets will be the focus of a second Call for Evidence later in 2017. **The deadline for responses is 12 noon on 6 February 2017**. For information about how to submit your response to this call for evidence, see: https://www.theccc.org.uk/2016/12/16/call-for-evidence-welsh-carbon-budgets/

a. Form of emissions targets and carbon accounting framework

The Environment (Wales) Act requires interim targets to be set for 2020, 2030 and 2040, as a percentage reduction against baseline (essentially 1990) emissions. It also requires carbon budgets to be set as a maximum amount of emissions produced in Wales over a 5-year period (initially 2016-2020 and 2021-2025).

When targets are set, they are done so on the basis of the latest understanding of climate science and the best estimates of recent and historical emissions. However, over time methodological changes are made to how emissions under the greenhouse gas inventory are estimated, in order to improve the quality of these estimates.

The revisions to the emissions estimates reflect an updated understanding of actual levels of emissions, and therefore of their contribution to climate change. These revisions affect both recent and historical

estimates of emissions, and can make targets harder or easier to meet without reflecting actual progress in reducing emissions.

Budgets set on an absolute basis, specifying the allowed quantity of emissions, retain a link to the underlying climate science regarding the extent to which they affect the climate. However, they would be more vulnerable to changes in inventory estimation practices, potentially making budgets much harder or easier to meet.

An alternative approach would be to base budgets on percentage reductions relative to the base year (1990). These would be less affected by such revisions, as estimates of current emissions and those in the base year would, in general, move in the same direction. However, budgets on a percentage basis are less strongly linked to the absolute level of emissions, which are the fundamental driver of climate change.

Question 1: Is it better for carbon budgets be set on percentage or absolute terms, given that the interim targets are set as percentages?

ANSWER:

Welsh Climate Targets and Welsh carbon budgets should be set in relative terms (i.e. as a % of baseline emissions) in order to preserve intended levels of effort and to protect the targets against greenhouse gas inventory changes.

Both the UK and the Scottish carbon budgets have experienced shifts in the level of effort required as a result of GHG inventory changes, e.g.

- The 4th UK carbon budget (2023-2027) which was set at 1,950 Mt with a view to cutting emissions by 50% below 1990 levels. Five years later that same budget represented emissions reductions 52% below 1990 levels.
- Scotland has set itself both absolute annual carbon targets (in tonnes) and relative interim climate targets (in % reduction vs a 1990 baseline). GHG inventory changes have resulted in a drift between the two measures creating an inconsistency between the two target types.

We note that it is possible for inventory changes to cause some modest change in the relative distance between the 1990 baseline and subsequent historical emissions. Nevertheless, for the most part, inventory change will see the 1990 baseline and subsequent historical emissions rise and fall together, leaving the relative distance between them largely unchanged. It is therefore preferable to allow the 1990 baseline, the targets derived from this and historical emissions inventories to “float” up and down together. In the table below we show, as an example, how emissions inventories have changed in the six years between the

1990-2008 inventory and the 1990-2014 inventory in Scotland.

COMPARISON OF EMISSIONS REPORTED AGAINST SUCCESSIVE GHG INVENTORIES (MtCO2e)

	Baseline Period	1990		1995		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
1990-2008	70.2	70.1		67.8		67.7	63.3	65.5	64.8	60.9	60.5	58.5	57.8	61.5	57.8	56.1						
1990-2009	71.8	71.6		68.6		68.5	64.3	66.0	65.4	61.2	60.7	58.5	57.5	61.2	56.9	54.8	51.0					
1990-2010	72.3	72.2		69.8		70.0	65.8	67.5	67.0	62.6	62.0	59.8	58.7	62.6	58.3	56.6	52.7	55.7				
1990-2011	73.0	72.9		70.9		70.3	66.8	69.0	68.2	63.8	63.3	61.1	60.3	63.9	59.4	58.1	54.2	56.9	51.3			
1990-2012	75.6	75.5		75.4		74.2	70.3	72.0	71.3	67.0	66.7	64.4	63.1	66.8	62.2	60.2	56.3	58.3	52.5	52.9		
1990-2013	80.8	80.7		81.2		80.1	76.5	78.0	77.0	72.4	72.3	69.9	68.4	71.4	66.6	64.3	59.8	61.5	54.8	54.9	53.0	
1990-2014	77.3	77.2		77.6		76.9	73.1	74.7	73.9	69.5	69.5	67.2	65.9	69.0	64.2	61.9	57.2	59.0	52.3	52.7	51.1	46.7

ANNUAL PROGRESS (%) MEASURED AGAINST FLOATING EMISSIONS BASELINE (I.E. RELATIVE TARGETS)

	Baseline Period	1990		1995		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
1990-2008	0%			-3%		-4%	-10%	-7%	-8%	-13%	-14%	-17%	-18%	-12%	-18%	-20%						
1990-2009	0%			-4%		-4%	-10%	-8%	-9%	-15%	-15%	-19%	-20%	-15%	-21%	-24%	-29%					
1990-2010	0%			-3%		-3%	-9%	-7%	-7%	-13%	-14%	-17%	-19%	-13%	-19%	-22%	-27%	-23%				
1990-2011	0%			-3%		-4%	-8%	-5%	-6%	-13%	-13%	-16%	-17%	-12%	-19%	-20%	-26%	-22%	-30%			
1990-2012	0%			0%		-2%	-7%	-5%	-6%	-11%	-12%	-15%	-17%	-12%	-18%	-20%	-25%	-23%	-31%	-30%		
1990-2013	0%			0%		-1%	-5%	-3%	-5%	-10%	-11%	-14%	-15%	-12%	-18%	-20%	-26%	-24%	-32%	-32%	-34%	
1990-2014	0%			0%		0%	-5%	-3%	-4%	-10%	-10%	-13%	-15%	-11%	-17%	-20%	-26%	-24%	-32%	-32%	-34%	-40%
MAX DIFFERENCE	0%			5%		4%	5%	5%	5%	5%	5%	6%	5%	4%	4%	4%	3%	2%	3%	2%	1%	0%

ANNUAL PROGRESS (%) MEASURED AGAINST FIXED 1990-2008 EMISSIONS BASELINE (ABSOLUTE TARGETS)

	Baseline Period	1990		1995		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
1990-2008	0%			-3%		-4%	-10%	-7%	-8%	-13%	-14%	-17%	-18%	-12%	-18%	-20%						
1990-2009	2%			-2%		-2%	-8%	-6%	-7%	-13%	-14%	-17%	-18%	-13%	-19%	-22%	-27%					
1990-2010	3%			-1%		0%	-6%	-4%	-5%	-11%	-12%	-15%	-16%	-11%	-17%	-19%	-25%	-21%				
1990-2011	4%			1%		0%	-5%	-2%	-3%	-9%	-10%	-13%	-14%	-9%	-15%	-17%	-23%	-19%	-27%			
1990-2012	8%			7%		6%	0%	3%	2%	-5%	-5%	-8%	-10%	-5%	-11%	-14%	-20%	-17%	-25%	-25%		
1990-2013	15%			16%		14%	9%	11%	10%	3%	3%	0%	-3%	2%	-5%	-8%	-15%	-12%	-22%	-22%	-25%	
1990-2014	10%			11%		10%	4%	6%	5%	-1%	-1%	-4%	-6%	-2%	-9%	-12%	-18%	-16%	-26%	-25%	-27%	-33%
MAX DIFFERENCE	15%			19%		18%	19%	18%	17%	16%	17%	16%	16%	15%	14%	14%	13%	8%	5%	3%	3%	0%

Source: Scottish Greenhouse Gas Emissions 2014 *(*Tables*) and Futureproof Calculations*
Emissions reported are gross GHG emissions not the net account adjusted for carbon trading.
The emissions scope and baseline values used here may not correspond to baseline and scope currently used for Scottish target setting.

In the table above, we observe that if the emissions baseline (and corresponding targets) in Scotland are fixed at the original 1990-2008 value, emissions reported against that baseline have varied by as much as 19% as a result of inventory change. By contrast, if the baseline (and corresponding targets) is allowed to "float" with inventory changes, emissions reported against that baseline have varied by a maximum of just 6%. Relative targets can therefore be said to more reliably preserve the intended level of effort.

Relative targets still ultimately need to be translated into absolute targets at some point in order to evaluate compliance. In practice, then, our recommendation for relative targets implies that the translation of the relative target into a specific volume of emissions (in t CO2e) should be deferred until the first year of the relevant compliance period (year x), or even potentially deferred until emissions are

reported against the first year of the relevant compliance period (year x +2). This approach would protect the relative effort required to meet the target much more than fixing an absolute target a dozen years in advance as we currently see in the UK carbon budgets. Of course, the adoption of a relative (%) target approach instead of an absolute (tCO2e) approach should not be an excuse for reduced specificity of those targets when assessing them for compliance purposes. The percentage changes required for annual targets should be provided in sufficient detail to appropriately differentiate them from adjacent years, and to calculate annual compliance to the tonne. This may require providing percentage reduction targets to several decimal places when enshrining them in law.

Question 2: What else can be done to make targets resilient to future revisions to the greenhouse gas inventory?

ANSWER:

b. Role for emissions trading and implications for the competitiveness of Welsh industry

There are various different ways to account for emissions under domestic climate targets. The primary questions relate to their interaction with wider frameworks for emissions reduction. In the case of Wales, this means interaction with the EU emissions trading system (EU ETS) and UK carbon budgets .

There are two main ways of accounting for emissions:

- **'Gross' basis**. Emissions could be accounted for on a 'gross' basis, with actual emissions counting towards the targets for all sectors, as with the existing target to reduce Welsh emissions by 40% by 2020. This would reward action to reduce emissions in sectors covered by the EU ETS (the 'traded sector'), for example through reducing the carbon-intensity of electricity generation or from reduced emissions at Welsh carbon-intensive industrial facilities (whether from improvements in carbon intensity or reduced output).

- **'Net' basis**. Accounting for emissions on a 'net' basis, as under the UK carbon budgets, also counts actual emissions for sectors outside the EU ETS (the 'non-traded sector'). However, the traded sector would be reflected in the Welsh Account as a cap reflecting Wales's share of the overall EU ETS cap. This means that investment in low-carbon power generation – or other emissions reduction in the traded sector – would not directly affect the level of emissions accounted within the Welsh Account. From a carbon budgeting perspective, a 'net' approach effectively fixes the EU ETS contribution to the targets and removes the variability from the EU-ETS sector.

Policy levers available to the Welsh Government currently have very limited influence on the level of emissions from EU ETS installations.

Emissions in Wales (on a gross basis) have fallen 18% since 1990. However, since 2009 they have risen 1% per year largely due to average rises in emissions from power and industry. Industry emissions account for a much larger share of total emissions in Wales than other areas of the UK with 34% from the sector (compared to 22% at a UK-wide level). Power emissions account for 28% of total. Both of these sectors are largely traded in the EU ETS and therefore the split between traded and non-traded emissions is significant in Wales, with 56% of total emissions covered by the EU ETS.

Depending on the future relationship with the European Union, participation in the EU Emissions Trading System (EU ETS) may or may not continue.

For those sectors where emissions are accounted for on a gross basis, there is the potential to make up shortfalls in emissions reduction by buying international 'offset credits' (i.e. resulting from overseas action to reduce emissions) to make up the difference. This could provide additional flexibility in how nearer-term targets are met. Credit purchase could imply costs to the Welsh Government and would need to be procured through a programme that meets a required standard.

However, the Committee's position is that we should plan now for the 2050 target at UK level to be met through domestic action, given that emissions credits may be unavailable or expensive.[1] Nearer-term reliance on offset credits would be inappropriate if it meant that domestic action is insufficient and is not on track to meet the 2050 target.

Question 3: What is the role of the EU ETS or other trading schemes in contributing to Welsh emission reductions and could this differ between sectors (power, industry)?

ANSWER:

In our view, neither the Welsh share of the ETS cap, nor the units transferred to/from private firms should be considered in the Net Welsh Emissions Account. We recommend that a system of net carbon accounting should still be pursued in Wales, but one affected by state-level emissions trades only and remaining firmly under State control. This approach preserves some of the flexibilities of net accounting, but without many of the perverse effects of the current system in the UK carbon budget and the Scottish carbon budget.

It's worth taking a moment to revisit some of the issues which make current UK and Scottish carbon

[1] CCC (2015) *The fifth carbon budget – The next step towards a low-carbon economy*, https://www.theccc.org.uk/publication/the-fifth-carbon-budget-the-next-step-towards-a-low-carbon-economy/

accounting deeply problematic.

1) **Efforts to reduce real territorial emission from power stations and factories do not count towards the targets and budgets.** The current carbon accounting approach in the UK and Scotland completely ignores actual emissions from the power and manufacturing sectors covered by the EU ETS. This is because it substitutes a notional ETS cap for actual ETS emissions. An important consequence of this is that the closure of coal power stations and other efforts to reduce emissions from large stationary polluters will, counterintuitively, have no effect on performance against their targets. Only actions to mitigate emissions in the non-ETS sectors (e.g. transport, heat, agriculture) can make a difference.
2) **The ETS cap changes unpredictably, wreaking havoc on targets and target compliance.** Not only have the UK and Scotland lost the ability to control roughly half of the emissions reported against their targets (i.e. for power stations and factories), they have no certainty over what the ETS cap will be from year to year. The notional ETS cap which will be reported in place of ETS emissions is an unknown quantity. There are several layers of unpredictability in determining the notional ETS cap for the UK or Devolved Administrations:
    - First it is difficult to determine what the EU ETS cap will be in advance of EU legislation being finalised and even harder to determine what the share of that cap will effectively be for the UK and Devolved Administrations, e.g. the ETS cap and the distribution of Member State auctioning rights for 2021-2030 will not be known until the Phase IV ETS cap is finalised later in 2017. Further detail on how ETS allowances will be distributed across industrial facilities in each EU Member States over 2021-2025, and 2026-2030 probably will not be known until the onset of each of those Phase IV sub-periods.
    - Second, EU decisions implemented after the legal cap has been agreed, such as the Backloading Decision, can significantly change the supply of ETS allowances with only a few year's notice. The Backloading Decision affects the volume of allowances auctioned by the UK government affecting the UK's net carbon account. This in turn has affected the Scottish notional cap (or "specified amount"), and therefore impacts the Net Scottish Emissions Account. The Backloading Decision came into effect in 2014 and is responsible for the outperformance of Scotland's 2014 target. It will also significantly effect target delivery in 2015 and 2016.
    - Third, another EU decision, the Market Stability Reserve, which is effective from 2019, will modify the annual supply of EU carbon allowances on an ongoing and unpredictable basis. The effects of the MSR on both the UK's net carbon account and the Net Scottish Emissions Account will be difficult to predict more than a year in advance.
    - Fourth, changes in the activity levels of ETS facilities in the UK or Devolved Administrations can affect the level of free allocation they receive, affecting the notional ETS cap and the net carbon account.

In the case of the UK, issues with forecasting the ETS cap have led to the problem of "phantom emissions reductions" flagged by then Secretary of State Ed Davey. This problem has only grown more acute throughout the 2nd carbon budget, and threatens to deliver phantom emissions cuts greater than the total emissions of Wales over that period. A similar carbon accounting framework in Scotland has also led to an unpredictable see-sawing of under and over-delivery against their annual targets.

3) **The ETS cap might not fall fast enough to make achievement of the 2050 target possible.** As noted above the current UK accounting framework takes the decline of UK ETS emissions fully outside of national control. If the EU fails to agree an EU ETS cap that declines at an adequate rate, the UK's notional ETS cap may remain stubbornly high in 2050, requiring punishingly costly reductions from the non-ETS sectors, or making the 2050 climate target unachievable.

4) **The carbon accounting framework is counterintuitive and needlessly opaque.** The current accounting approach for ETS emissions used in both the UK and Scotland is highly complex and is understood by a very small community of carbon accounting experts. Even seasoned environmental journalists are prone to make inaccurate claims that decisions regarding the electricity sector threaten the delivery of carbon budgets. Moreover, it tends to provoke outrage in environmentally concerned citizens and policymakers when it is explained to them that some of the largest emitting sectors (e.g. electricity generators and factories) are not strictly required to cut their emissions, so long as they comply with the EU ETS. A simpler framework would be more accountable and inspire more public trust.

These perverse effects do not follow from net accounting as such. Rather, they follow from the substitution of ETS emissions for a notional ETS cap when calculating the net carbon account. This substitution is, in turn, a direct consequence of counting carbon trades from *private firms* towards the net carbon account. Excluding these private credit transfers from the Net Welsh Emissions Account, would enable the Welsh government to keep control of its compliance with its own climate targets while still maintaining some of the flexibilities of purchasing and importing credits where appropriate.

In our preferred scenario, the Net Welsh Emissions Account would be calculated in the following fashion:

a) Authorities would calculate Wales' net greenhouse gas emissions (i.e. actual territorial emissions adjusted down to account for sinks).
b) From that figure, they would then subtract any carbon units corresponding to credits purchased by the Welsh government (see answer to Q7 below for more detail).
c) Finally, to that figure, they would add any carbon units corresponding to emissions rights sold by the Welsh government to other countries – including a representative Welsh share of any units sold by the UK (this would, for example, help to take account of emissions rights potentially sold by the UK to other EU countries under the Effort Sharing Decision/Regulation, however it is important to

specify that this would not include ETS allowances auctioned by the UK government).

The critical shift from UK and Scottish net accounting is that the import or export of carbon units towards net carbon account relates only to *government* activities, not to emissions trading by firms in the private sector. Most of the counterintuitive and problematic elements of both the Scottish and the UK carbon accounting regime would be addressed by enforcing this distinction between public sector and private sector emissions trades. **Note that this approach is fully concordant with Section 33 of the Environment (Wales) Act 2016.** We will go into more detail about the regulations implementing limits on imported credits in Q7 below).

Question 4: Given that UK carbon budgets cover all of Wales's emissions and are set on a net basis, does this influence how accounting should be approached for Welsh climate targets?

ANSWER:

It should not. The cracks in the current UK accounting framework were spotted early by the Secretary of State and have only widened since. Given the weaknesses (detailed in Q3 above), we feel it is only a matter of time before the UK carbon accounting framework is overhauled. Indeed, were the UK to leave the EU ETS as part of Brexit, this could happen sooner rather than later.

So far, Scotland provides the only precedent for carbon budgets adopted in a Devolved Administration. After experimenting with an ETS accounting approach based loosely on the current UK approach, the Scottish government is now looking to jettison that in favour of an approach that reflects "actual emissions". This will make Scottish progress on emissions cuts more accountable to Scottish parliament and to Scottish citizens. Welsh policymakers are well positioned to take advantage of Scotland's experience.

Moreover, if Wales and Scotland were *both* to adopt our recommended carbon accounting approach, it would not only benefit them but would hopefully expedite reform of the UK carbon accounting system. This is an opportunity for Wales to lead from the front. In any case, it behoves the Welsh authorities to protect their nascent carbon budgets regime from the prospect of the UK's departure from the EU ETS post-Brexit.

Question 5: Given the UK context, should the design of welsh targets and budgets reflect devolved

competence?

ANSWER:

Question 6: Are there any competitiveness implications for current traded sector business (e.g. industry) in having gross emissions targets in Wales, and if so how could they be minimised?

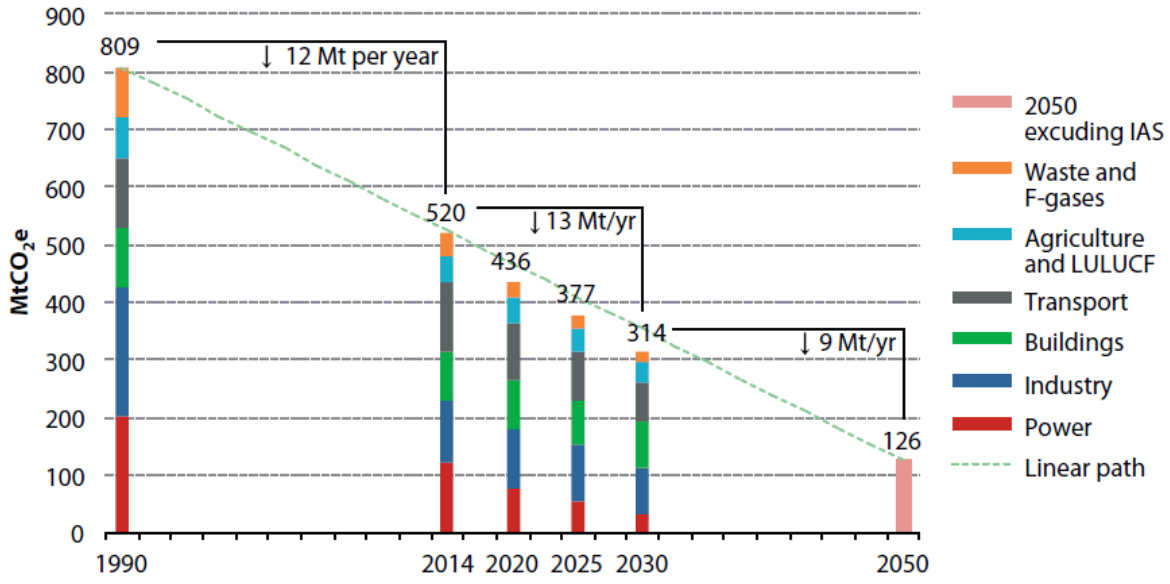
ANSWER:

Question 7: What is the role for purchase of international offset credits to supplement action to meet Welsh emissions targets?

ANSWER:

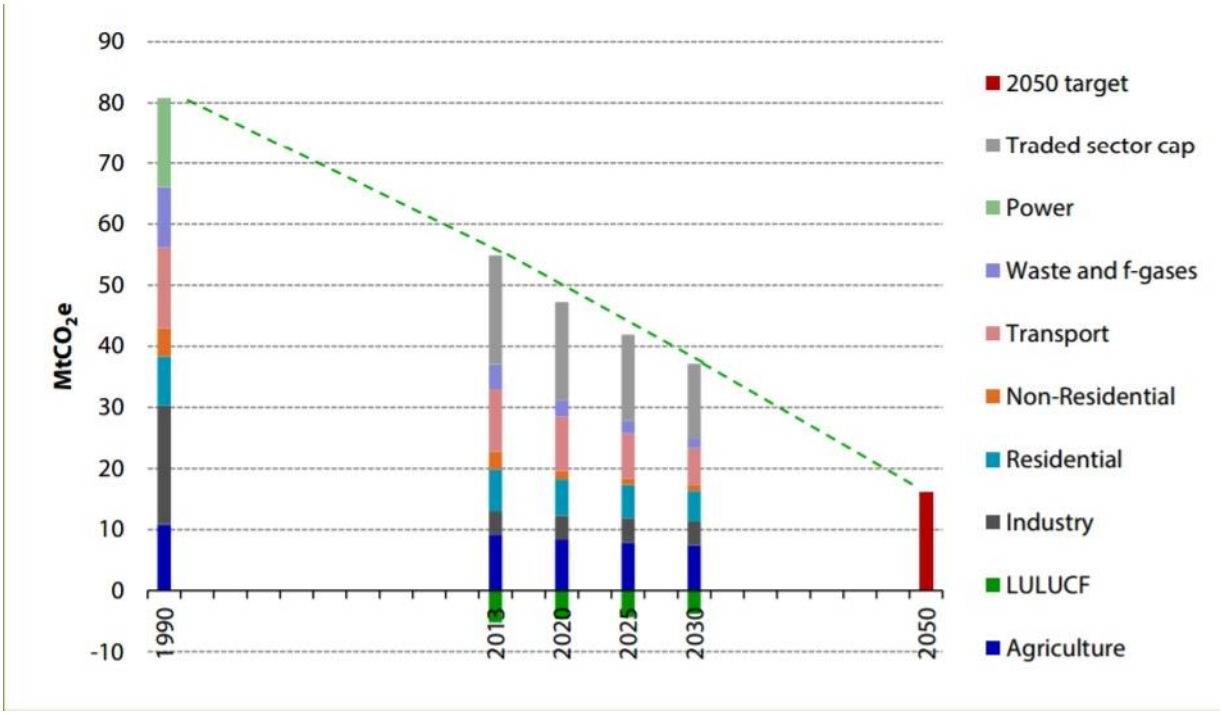
By definition, the inclusion of international credits within Welsh greenhouse gas reporting would establish a form of net carbon accounting, rather than a gross emissions framework. As indicated in Q3 above, we support a limited form of net accounting, but with important departures from the current UK approach. We believe there could potentially be an important role for credit purchases within the Welsh carbon accounting framework, however this should be strictly curtailed so that appropriate *domestic* emissions reductions take place over the short and mid-term which can ensure the safe and cost-effective delivery of the 2050 target.

The Committee on Climate Change (quite rightly) uses gross UK emissions when calculating the appropriate emissions trajectory towards the 2050 climate target, as can be seen for example in the chart reproduced below (i.e. Figure 3.12 from the 5th Carbon Budget Report).



Source: CCC analysis.

Similar analysis can be found in the Committee's advice for Scotland's emissions pathway (reproduced from Figure 3.11 from the 2016 report on Scotland's 2028-32 climate targets).



Excessive use of offsets could easily drag Wales (and the UK and Scotland) off the cost-effective path to 2050. Indeed, this is one of the principle arguments for excluding private EU ETS credit transfers from the net carbon account (because this effectively allows for unregulated and unlimited credit purchases).

The Committee has itself made a clear case for limiting the contribution from credits in Box 3.3 of its advice for the 5th UK carbon budget:

> *"The accounting for the 2050 target under the Climate Change Act allows emissions trading to contribute (i.e. the target is set on a 'net' basis). However, as we set out when we recommended the 2050 target, it is not sensible to rely upon being able to purchase emissions credits, given that all countries would need to be pursuing stretching targets and any available credits would be likely to be very expensive.*
> *A more reasonable approach is to plan now to meet the 80% target via domestic effort (i.e. on a 'gross' basis), while retaining the flexibility to use credits as we approach 2050 if they turn out to be available and less costly than domestic action at the margin. This is the basis on which our scenarios to 2050 have been constructed." [Emphasis added.]*

Any credits used for target compliance between now and 2050 will take Wales no closer to meeting its 2050 target. In this respect, credits are a financially wasteful form of compliance, despite their superficially low cost. **For this reason, purchased credits should remain a compliance measure of last resort, i.e. an emergency fall-back measure which is only employed if, despite its best efforts, the government has failed to achieve the legislated greenhouse gas targets for reasons outside of its control**. Fortuitously, unexpected compliance failures should be less frequent and more avoidable if ETS credit transfers by private entities are ignored in the Net Welsh Emissions Account for reasons we describe above (in our answer to Q3).

Independent of the 2050 *target-delivery* perspective, it might be countered that, from a *cumulative emissions* perspective it is irrelevant whether the emissions reductions take place in Wales or overseas. However, the Welsh 2050 target – like the UK target – was set with a particular global climate objective in mind, i.e. the stabilisation of global temperatures at levels of 2°C or less above pre-industrial levels. Until carbon markets start to deliver carbon prices consistent with that temperature goal, Wales cannot be assured that sufficient collective responsibility is being shouldered to outsource emissions reductions elsewhere.

Under Section 33 (4) of the Environment (Wales) Act 2016 it states that "The Welsh Ministers must by regulations set a limit on the net amount of carbon units by which the Net Welsh Emissions Account for a period may be reduced". This paragraph paves the way for a system of Credit Limit Orders similar to those established in the UK and Scotland. We make the following practical recommendations when desigining those regulations:

- **Welsh Ministers should set the credit limit at zero wherever practicable, and heed the Committee's advice in this regard.** The Scottish government has so far shown welcome restraint in setting its near-term credit limit at zero. However, the UK government has set two consecutive credit limit orders well above zero despite Committee's advice this was not currently necessary.
- **Welsh authorities should seek to introduce a permanent upper limit on the volume of international credits that can be imported to ensure a minimum level of domestic effort towards each target or budget.** The Scottish Climate Change Act requires that 80% of the effort towards its targets be achieved through domestic effort. Wales should seek to install a similar or even more challenging domestic requirement on a permanent basis.

The subsequent paragraph of the Environment (Wales) Act 2016, Section 33(5), adds: "The regulations may provide that carbon units of a description specified in the regulations do not count towards the limit." This is a key opportunity to implement the modified net carbon accounting regime we have laid out throughout this this evidence submission to avoid repeating the mistakes of the UK and Scottish framework. When designing those regulations, we also strongly recommend that:

- **EU ETS credits imported by the Welsh government should be subject to the credit limit**. The current credit limit orders in the UK and Scotland exempt EU ETS credits, which means they're contribution to the net carbon account is effectively unlimited. In the Scottish system ETS allowances are even allowed to bypass their requirement for 80% emissions reductions to be achieved domestically. For Wales to ensure sufficient domestic emissions reductions take place to remain on target, EU ETS credits need to be proscribed in the same manner as other international credits.
- **EU ETS credits imported or exported by private firms should neither be subject to this credit limit nor counted towards the Net Welsh Carbon Account**. As we described in Q3, there are several perverse consequences from counting the ETS trades of private firms toward the net carbon account. Welsh Ministers are advised, therefore, to exclude private ETS credits and debits from consideration under the Net Welsh Carbon Account when implementing Section 33(2) of the Environment (Wales) Act 2016. It follows, then that these private ETS credits should not be limited under Section 33(5)

c. Scope of emissions targets

The Welsh Government has asked the Committee whether or not emissions from Wales's share of international aviation and international shipping (IAS) emissions should be included within the targets and budgets.

Under the Climate Change Act at UK level, IAS emissions are currently outside the scope of the 5-year carbon budgets, but are taken into account in their setting. The Committee's approach has been to include IAS emissions within the scope of the target to reduce emissions by at least 80% by 2050, and examine what levels of reductions are required in the other sectors in order to meet this target. This has been part of the analytical work that has gone into recommending the first five UK carbon budgets, which to date have all been legislated in line with CCC advice.

The Committee has previously set out a principle that IAS emissions should be included within the scope of UK carbon budgets if it is practical to do so. On this basis, alongside our recommendation on the level of the fifth carbon budget, the Committee recommended that the scope of UK carbon budgets be expanded to include international shipping.[2] However, the UK Government rejected this aspect of our recommendations.

Inclusion of international aviation within carbon budgets is complicated by carbon accounting regulations relating to their inclusion with the European emissions trading system. As UK carbon budgets are accounted for on a net basis and the EU ETS covers flights within Europe but not those outside (i.e. only a subset of international flights), we recommended that inclusion of international aviation is not currently practical. However, it could be included were the basis of carbon accounting to be gross (i.e. actual) emissions, by using estimates of fuel sales.

Question 8: In principle, should international **shipping** be included within Welsh emissions targets, and if so are there any practical difficulties with doing so?

ANSWER:

Yes, international shipping emissions should be included within the Welsh emissions targets. It is important that this significant source of global greenhouse gas emissions be captured within Wales's 2050 target and that it is limited by interim targets and budgets as soon as possible.

We foresee no practical difficulties in doing so. Even if maritime emissions were incorporated under the EU ETS or another similar emissions trading scheme devolved to private entities, the modified (state-

[2] CCC (2015) *The fifth carbon budget – The next step towards a low-carbon economy*, https://www.theccc.org.uk/publication/the-fifth-carbon-budget-the-next-step-towards-a-low-carbon-economy/

level) net carbon accounting framework we recommend would not be adversely affected by this.

Question 9: In principle, should international **aviation** be included within Welsh emissions targets, and if so are there any practical difficulties with doing so?

ANSWER:

Yes, international aviation emissions should be included within the Welsh emissions targets. Again, it is important that this significant source of global greenhouse gas emissions be captured within Wales's 2050 target and that it be limited by interim targets and budgets as soon as possible.

As with international shipping, we foresee no practical difficulties in doing so. As mentioned in the CCC preamble to this question, international aviation emissions "could be included were the basis of carbon accounting to be gross (i.e. actual) emissions, by using estimates of fuel sales." The same remains true under the modified (state-level) net carbon accounting framework we have recommended throughout this consultation response.