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 1 February 2017**. For information about how to submit your response to this call for evidence, see: INSERT LINK

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: With regards to industrial stakeholders, stability of long-term objectives is key for addressing strategies and approaches. Having a carbon budget formatted in a matter that would be at a lower risk to change or realignment, such as being %-based, may then be of greater benefit to all stakeholders. The consistent approach to targets may also provide a simpler message with which to promote the application of carbon budgets to stakeholders and the public

The formulation of the carbon accounting framework and the budgets/targets should include the scope to support the research, development and implementation of techniques and technology to enable step-change improvements in carbon emissions. Tata Steel deploys significant resources and investment on this approach and it may be counter-intuitive to potentially have larger, longer-term emission reduction opportunities stopped or deferred to address smaller, short-term targets. A sustainable mechanism for addressing carbon emissions should be the priority objective.

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

ANSWER: No comment

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: Whilst the issue of Brexit has raised some potential uncertainty in regards to the continuation of UK industry in the EU ETS "as is", this is still some way from being finalised. Indeed it seems likely at this stage that some form of Trading Scheme (linked to EU or other) could continue to be the predominant approach. On that basis the Company has concerns about facing additional costs from meeting any new or revised emission reduction targets based on the stand-alone ambition that Wales may have, if the carbon budgets moved to a "gross basis".

Clearly the basis of trading schemes is that they are designed to allow the most cost-effective emission reduction approach. Therefore some sectors which can more easily (at lower cost) reduce emissions, do so, leaving other sectors to buy allowances rather than reduce emissions at the same rate. The EU ETS does this at an EU level and is not designed to deliver national emission reduction targets

That said, there are potential differences that exist between the power sector, and energy intensive industry. The primary difference being that the power sector can pass on the costs of compliance with EU ETS. The steel sector, has been widely recognised as being subject to high risk of carbon leakage due to both its carbon intensity and exposure to international trade (steel is a commodity). Additionally, following years of improvements in energy-efficiency and process improvements further significant reductions in carbon intensity require a step change through new (and as yet unproven) technology as well as similarly unproven industrial carbon capture and storage (and utilisation) CCS and CCU.

On that basis it may be appropriate to consider different approaches between energy intensive industry and the power sector.

[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/

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: In reference to the question 3 response above, in principle Tata Steel would support Wales continues to use "net basis" for carbon budget and climate targets (in line with UK carbon budgets) . Indeed, it would seem strange to include emissions, over which Wales has no control of the policy levers, in its targets. Attempting to drive additional emission reductions from the traded sector, would make Welsh ETS participants less competitive than their EU counterparts, and would result in less-cost-effective reductions than if the market is allowed to choose from an EU-wide pool of potential projects. The experience of the Carbon Price Support (a UK policy measure which has added to the already significant energy cost differential faced by UK energy intensive industry compared to competitors across the EU) is one example of a unilateral measure that we would wish to avoid. The possibility of any unforeseen and perverse outcomes across the Wales-England border would also need to be understood and avoided. However, it is acknowledged that the split between traded and non-traded sector is significantly different in Wales compared to the other devolved countries and England or UK as a whole, so please refer also to comments to later questions.

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

ANSWER: The targets and budgets should reflect what is in scope that may be subject to control by the appropriate stakeholders and accurately reflect the wider intention of the measure. This should be in line with UK and European strategies and trading schemes to ensure that industry is not unfairly penalised or subject to 'double compliance' for carbon accounting.

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: Responses to question 3 and 4 above have highlighted some of the concerns that Tata Steel has in respect to any move away from carbon accounting on a "net basis" and what that would mean to the competitiveness of energy intensive industry in general, but in particular for the steel sector and Tata Steel. However, it is also acknowledged that Wales with its significantly higher share of industrial and power

emissions (54% covered by EU ETS , compared to 39% for UK as a whole) would face a significant (and possibly impossible) challenge in respect to emission reductions in the non-traded sector.

As has already been mentioned, the steel sector is recognised as being at a very high risk of carbon leakage and therefore faces substantial challenges to its competitiveness already, with global steelmakers operating under regimes without the equivalent carbon costs faced by those in EU. Despite being recognised as at significant risk of carbon leakage, through the imposition of overly stringent benchmarks and the cross-sector correction factor, the steel sector already faces significant shortfall in allocation of allowances in the current EU ETS. Significant improvements in emissions from primary steelmaking require the development of a step change with new technologies and the implementation of industrial carbon capture and storage (CCS) or carbon capture and utilisation (CCU). The development of these new techniques requires levels of investment which are beyond the ability of any one company (or indeed any sector) to fund. In collaboration with BEIS, the steel sector (along with other energy intensive sectors) have been (and continue) to work on 2050 sectoral roadmaps, which look what barriers are preventing de-carbonisation and what enablers and actions are needed (by UK government and industry) to meet the decarbonisation goals. Clearly if the steel sector is part of a "gross basis" Wales carbon budget there needs to be sufficient carbon leakage protection measures in place over the interim short and medium term so that it will still be a viable and sustainable industry here in Wales, and be able to implement the low carbon steelmaking measures that will be needed to meet the longer term carbon budget goals.

This approach would be in line with some of the goals of the Wellbeing of Future Generations (Wales) Act 2015 such as "Prosperous Wales". As well as a referencing climate change, this Act highlights innovation and productivity, the development of a skilled population as well as generating wealth and employment opportunities. These would all be met by a sustainable steel sector in Wales.

Finally, a large proportion of the direct emission reductions since 1990 have been wiped out by increases in the total carbon footprint of imported goods and services. Therefore whilst we recognise that it is reasonable for UK and Wales to focus primarily on direct emissions, as that is where they can have the biggest impact, there must be greater attention applied to ensuring the UK is not effectively exporting emissions (especially to countries with lower emission standards). The goal should be sustainable decarbonisation not de-industrialisation.

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

ANSWER: The mechanism of international offset credits could be a valuable tool for achieving emission targets and supports the principle of global approach to climate change. As such, the system should be available for use but with appropriate controls and framework for management.

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: Tata Steel's operations within Wales does include significant material movements by ship (both supply of raw materials and the distribution of products) on an international scale. The use of alternative freight movements/techniques is extremely limited and landing location (port/dock) is critical in order to reduce movements by rail or road (>8mt/yr). The choice of ship (low carbon fuel source, energy efficiency etc) or transport route is typically outside of Tata Steel's control and related to multiple business deliveries. Therefore the inclusion of international shipping may unfairly penalise Tata Steel UK's operations compared to European counterparts, as described in previous answers.

[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/

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: No comment