NFU Cymru Response – Call for Evidence – Welsh Carbon Budgets

NFU Cymru welcomes the opportunity to respond to the Committee on Climate Change Call for Evidence on Welsh Carbon Budgets, specifically the level of ambition embodied within the targets and budgets and sectors in which there are particular opportunities to decarbonise.

NFU Cymru champions Welsh farming and represents farmers throughout Wales and across all sectors. Our vision is for a productive, profitable and progressive Welsh agricultural industry and our aim is to establish the background conditions in which farm businesses can be profitable and develop.

The importance of the farming industry in rural Wales cannot be over-stated. Welsh farming businesses are the backbone of the Welsh rural economy, the axis around which rural communities turn. The raw ingredients that we produce are the cornerstone of the multi million pound Welsh food and drink industry which is Wales' largest employer employing over 222,400 people.

Welsh farmers manage over 80% of the land area of Wales and play a key role maintaining and enhancing our natural environment – Wales' key asset. Farming activity supports a diverse range of species, habitats and ecosystems, provides a range of ecosystem services including flood alleviation, carbon sequestration, climate change mitigation; and delivers the significant backdrop for Wales' tourism and recreation sector worth an estimated £2.5bn annually.

Overall Welsh farming makes a unique contribution to the social, economic, environmental and cultural well-being of Wales in line with the Well-Being of Future Generations Act summarised in Annex 1.

Climate science and international circumstances

Q1 Does the Paris Agreement mean that Welsh emissions targets should keep open a deeper reduction in emissions than 80% by 2050? Are there implications for nearer-term targets?

The 2050 target under the Environment (Wales) Act establishes an emissions reduction of **at least** 80%. There is a need to recognise that achievement of 80% reductions will be a challenging target, without going beyond this. For some sectors, including agriculture, the path to decarbonisation is unclear and will be particularly difficult and challenging.

The process of establishing carbon budgets and targets must recognise and ensure that emissions reductions in Wales are not achieved by 'off-shoring' food production and associated emissions to other parts of the world and an increased reliance on imports. Whilst such imports would not be included within carbon budgets and targets for Wales, such a practice would effectively 'export' production related emissions. An over-reliance on such an approach would not be in line with the aspiration of being a 'globally responsible Wales' as enshrined in the Well-Being of Future Generations Act. It is also important that Wales does not become over reliant on overseas production given the potential risks to food production globally as a result of a changing climate.

Q2 Do you think that leaving the EU has an impact on the targets or how they can be met?

Brexit means that farm businesses across Wales are operating in a period of profound uncertainty. Whilst the sector recognises its emissions reductions obligations and responsibilities these need to be achieved alongside (and not at the expense of) a productive, profitable and progressive agricultural industry - vital for the economic, environmental, social and cultural well-being of Wales.

The development of a post Brexit Domestic Agricultural Policy should ensure that we maintain our productive agricultural capacity, continuity of supply to the food supply chain whilst at the same time maintaining and enhancing the quality of our environment and improving our carbon footprint.

It is reasonable to expect that a lengthy transition period will be required.

The path to 2050

Q3 In the area(s) of your expertise, what are the opportunities and challenges in reducing Welsh emissions in the nearer term (e.g to 2030)?

Emissions from agriculture make up 13% of Wales's total emissions currently. There are a number of key opportunities for mitigation from the sector. This includes efficiency gains and reducing the GHG intensity of Wales's agricultural production (i.e reducing GHG per unit production); managing existing stores of carbon on farm (trees and soils); establishing new carbon stores, for example, tree planting, as well as energy efficiency and renewable energy generation.

With over 80% per cent of national land area in the agricultural sector, farmers have a significant interest in land-based renewable energy production, where they can benefit directly as energy producers themselves or as hosts for energy plant developed by others. There is huge potential of land-based renewables to deliver clean energy to contribute to energy security, diversify farm businesses and bring additional benefits to the economy, society and the environment.

We believe that domestic land-based renewable energy can deliver up to a quarter of UK clean energy needs by 2020, faster and cheaper than many other low-carbon energy options. We see the emerging bio-economy as part of the global transition from a 20th-century fossil-fuel based culture to a 21st-century sustainable system. We believe that farmers can make more effective use of the substantial land-based renewable energy and material resources available in Britain. Photosynthetic primary production offers one of the largest and most flexible renewable resources, providing the raw materials for a wide range of bio-based products, including food, feed, fibre and many different kinds of fuels. Bio-based renewables are particularly intimately tied into agricultural operations, since they involve the integration of cropland for non-food as well as food purposes, as well as the mobilisation of agricultural residues and the recovery of organic nutrients.

More credit should be given for agriculture's potential to decarbonise the rest of the economy through land-based renewables. Both of the likely lowest-cost renewables in the next decade (onshore wind and solar) are being deployed extensively in the agricultural sector.

Well-managed production systems contribute to enhanced carbon storage in end-products, vegetation and soils. Bio-based industries such as transport biofuels are already growing rapidly worldwide, and international trade in densified bioenergy feedstocks (pelletised and torrefied agricultural residues, wood and energy crops) will also become increasingly important in the next decade. In the longer term, other new decarbonisation services will emerge such as carbon capture from energy and industrial processes, offering 'negative emissions' where coupled to biomass-derived carbon dioxide (so-called BECCS).

However, a number of significant challenges exist in reducing Welsh emissions from agriculture. This includes the sheer number, diverse nature and complexity of farming systems in Wales together with the complexity of mitigation measures, many of which deliver marginal gains.

In addition limitations with the inventory for agriculture and mechanisms that facilitate the monitoring of measures that mitigate GHG emissions from Welsh agriculture currently are not conducive to obtaining accurate data and recognition of progress and efforts to decarbonise within the sector.

We are awaiting publication of the new agricultural GHG inventory expected in 2018. This will be a significant step forward in estimating emissions from farming but gaps, as well as uncertainty, will remain. As a result care will be required in basing decisions around targets on the new inventory to ensure that such decisions fit with the aspiration for a vibrant and sustainable rural economy in Wales. It should also align with the aspirations for a globally responsible Wales as enshrined in the Well-Being of Future Generations Act. Exporting emissions must be avoided and emissions reductions from cuts in production in Wales should not be balanced by corresponding increases in production elsewhere in the world, who may or may not sign up to the aspiration of the Paris Agreement.

If the role of agriculture in contributing to emissions reduction is to be properly recognised, it is vital that other indicators of progress, beyond the inventory are considered. Similarly abatement measures taking place across farms in Wales such as on-farm renewable energy generation, woodland creation should also be included as part of agriculture's contribution.

In the longer term, there is a need to recognise that scientific evidence amassed so far indicates that there is an ultimate limit to GHG reductions from agriculture, bearing in mind the physical and biological constraints of what will remain a predominantly outdoor production process as well as consumer concerns about the shape of the countryside. Climatic impacts may also limit abatement by both agriculture and land-use, land-use change and forestry (LULUCF). We highlight there is limited understanding of the mitigation potential for both 'sectors' under the range of potential future climates at this stage.

It is important for Welsh carbon budgets to reflect practicable but stretching interim goals; production sectors should be incentivised to lead without being placed at an unreasonable disadvantage from our competitors.

Q4 What is required by 2030 to prepare for the 2050 target for an emissions reduction of at least 80% on 1990 levels, recognising that this may require that emissions in some areas a reduced close to zero? Is there any impact of the need to go beyond 80%, either in 2050 or subsequently?

We understand that the new inventory will explicitly reflect progress on some mitigation measures, others will be captured implicitly. We are concerned that the inventory may be insensitive to some beneficial changes in practice e.g precision farming in grassland, and that there will still be gaps. The Climate Smart Agriculture project funded via the Wales Rural Development Programme has the potential to increase our understanding of how information on the full range of measures on-farm that contribute to emissions reductions can be captured.

As above, emissions targets are particularly challenging for the agricultural sector. Consequently agriculture may face a steeper trajectory of GHG emissions reduction after 2030. There is a need to recognise that additional mitigation measures may well be fewer in number with generally less certainty about their applicability or mitigation potential.

Q5 What are the respective roles of UK Government, Welsh Government, the wider public sector, business, third sector and individual or household behaviour in delivering emissions reductions between now and 2030? And, separately, between 2030 and 2050?

In the context of the new legislative framework including the Well-Being of Future Generations Act and the Environment (Wales) Act, Welsh Government has a role in establishing budgets and targets for emissions reductions as well as the policy mechanisms to incentivise reductions for the farming sector whilst ensuring the economic, environmental, social and cultural well-being of Wales and global responsibility in line with the Act.

Government could also have a key role in establishing policy mechanisms that facilitate payment for ecosystem services/off-setting approaches to allow agriculture to assist other sectors in decarbonising, through for example, sequestration measures or renewables deployment.

Welsh Government must ensure that rates for achieving emissions reductions are feasible, cost effective and not disadvantaging to the farming sector here in Wales. The farming sector will require support and incentivisation towards decarbonisation. Whilst farmers in Wales recognise their responsibilities in contributing to emissions reductions in Wales, the potential to bring about measurable reductions will continue to be challenging given the inevitable limitations of the inventory. As a result a Carbon accounting tool, that is able to capture and monitor information at farm-level on the full range of mitigation measures, would be helpful so that progress can be measured.

Government should explore the marketing advantage that such a tool could deliver as an indicator of a sustainable food production system, building on what has occurred in Ireland with the Origin Green concept. Crucially, communication to consumers of achievements gained in a way that is clearly understood and valued within the food supply chain (including processors and retailers) is required and could be viewed as contributing to behavioural change in wider society. We identify that education has a key role in influencing consumer attitudes in areas such as food miles and food waste. Government has to take the lead here, also leading by example through public procurement etc.

Emissions targets and action

Q6 As a business, as a Public Sector Body, or as a citizen, how do emissions targets affect your planning and decision-making?

Welsh farmers produce food to world leading environmental and animal welfare standards and they understand that this is important to engender public trust in food produced domestically. Minimising the impact of production, including emissions, is central to this. It is also important to note that a number of key mitigation measures including those that deliver reduced emissions per unit of production often deliver an improvement in farm business performance and are , therefore, win-win outcomes. Major retailers and processors increasingly require farmers to engage with emissions at a farm-level through carbon audit/footprinting processes and many farmers across Wales readily engage with environmental schemes which contribute to emissions reductions though woodland/hedgerow creation, management etc.

The key challenge lies in accounting for the full range of measures being deployed at the farm level in a way so that farmers recognise the contribution they are and can make to emissions reductions. This would greatly facilitate behavioural change within the sector. As above, educating the consumer to understand and favour this in the market place has the potential to drive and incentivise further progress towards decarbonisation.

Q7 In your area(s) of expertise, what specific circumstances need to be considered when setting targets and budgets for Wales and how could these be reflected in the targets?

The Inventory for Agriculture has been referred to above. In addition, it should be noted that results from the UK GHG Research Platform suggest that emissions from some agricultural sources may be significantly lower than currently estimated. In establishing targets and budgets it is important that the latest scientific and technical evidence is utilised. Uncertainties continue to exist, for example, about the impact of climate change on biological systems, time lag effects etc.

It is also important that estimates of potential emissions reductions are made at the most economically effective rate, particularly for agriculture, reflecting the realities and practicalities of implementation at the farm scale. Agriculture is one sector where some changes to deliver mitigation will require a long lead-in time e.g. livestock breeding cycles.

Q8 The power and industry sectors in Wales are dominated by a small number of large emitters. What are the key challenges and opportunities that this presents in setting the levels of carbon budgets and how should the process of setting them reflect these?

No comment.

Wider considerations

Q9 What evidence should the Committee draw on in assessing impacts on sustainable management of natural resources, as assessed in the state of natural resources report?

Decisions around Carbon budgets and targets for Wales should be based on robust scientific evidence and should recognise the current limitations and gaps in evidence identified within the SoNaRR report. Policy driven on the basis of weak or unsubstantiated data would be extremely concerning to us. We would further highlight that at this stage the interplay/role of Carbon targets and budgets within the development of Area Statements is not at all clear. The parameters of both need to be clearly defined.

The Committee is also referred to the evidence source provided in the Glastir Monitoring and Evaluation Programme.

In addition the Committee should consider broader sources of evidence. The challenges to our global food production system are now well documented (see for example Foresight Report, 2011). Challenges include climate change, growing UK and global populations, dietary changes and increasing demand for protein, together with scarcity of resources such as land and water. Given our climate and rainfall, Wales is predicted to be an area favoured for agricultural production in the future. It is important to note that whilst the climate may well get warmer, the topography and soil types in Wales means that livestock systems are likely to predominate in future.

It is vital that the importance of agricultural production and maintaining our agricultural productive capacity in Wales is recognised through the process of carbon budgets and targets.

Importantly, the fundamental priority of safeguarding food security and ending hunger, and the particular vulnerabilities of food production systems to the adverse impacts of climate change are recognised in the 2015 Paris Agreement. The Agreement includes a commitment to strengthen the global response to the threat of climate change 'in a manner that does not threaten food production'.

Q10 What evidence regarding future trends as identified and analysed in the future trends report should the Committee draw on in assessing the impact of the targets?

Whilst the report refers to the findings of the latest UK Climate Change Risk Assessment and areas for priority action including risk of shortage of water for public supply and for agriculture…; the Future Trends report makes no reference to food production and the capacity of Wales to feed itself in the future as our global food production system becomes increasingly challenged. This is a significant shortcoming.

Annex 1 - The Contribution of Agriculture to the Well-Being of Wales

The Welsh Government Well-Being of Future Generations (Wales) Act 2015 is designed to improve the social, economic, environmental and cultural well-being of Wales. The Act establishes seven goals that all public bodies, including Welsh Ministers, must work to achieve. The contribution that farming makes to achievement of all seven goals is unparalleled by any other industry, as highlighted in the following below:

Well Being of Future Generations Act: **Well-being Goals**	**NFU Cymru: Agriculture is the Answer**
A prosperous Wales	• 60,000 employed full or part time in farming in Wales • £1.5bn Gross Output • Farming underpins a food supply chain worth over £6bn • Over 220, 000 people in Wales are employed in the agri-food sectors – that's 17% of the workforce and Wales's biggest employer • The Welsh countryside managed by farmers provides the backdrop for the tourism industry worth over £2.5bn • **The Welsh agricultural industry is a key generator of wealth and employment for the people of Wales**
A resilient Wales	• Farmers care for 81% of total land area of Wales – that's over 1.84m hectares • 600,000 ha of environmentally designated areas • Almost 560,000 ha managed under Glastir Entry Sustainable Land Management Scheme designed to combat climate change, improve water management and maintain and enhance biodiversity • Farming supports a diverse range of species, habitats and ecosystems • Farmers provide a range of ecosystem services including carbon sequestration and management, water quality and water quantity management for flood alleviation • Low carbon, local energy installations have the potential to meet 57% of Wales's electricity consumption and the evidence shows a large proportion of projects are located within Wales's rural local authorities • GHG emissions from agriculture have declined by 20% since 1990 and further decreases are being achieved through production efficiency measures • **Welsh farmers play a key role maintaining and enhancing our natural environment and supporting the provision of a full range of ecosystem services**
A healthier Wales	• Welsh agriculture is a key provider of safe, nutritious, high quality Welsh food which plays a fundamental contribution in supporting the physical and mental well-being of the people of Wales • Welsh farmers are known to operate to some of the highest standards of welfare and production in the whole world • Welsh farming also delivers a significant proportion of Wales's access provision which includes 16000 miles of footpaths, 3000 miles bridleways, 1200 miles of cycle network, and 460,000 ha of open access land • **Welsh farming makes a key contribution to the physical and mental well-being of the people of Wales**
A more equal Wales	• Rural Wales is home to 33% of the Welsh population. • The vitality and potential of rural areas is closely linked to the presence of a competitive and dynamic farming sector. The

	NFU Cymru 'Why farming Matters to the Welsh Economy' shows that each family farm is typically economically linked to some 40-80 other businesses in the region • **Through direct and indirect employment in rural communities, Welsh farming underpins the rural economy and contributes to a more equal Wales**
A Wales of cohesive communities	• Local communities in rural Wales are heavily dependent on agriculture for financial and social prosperity. • Leadership and voluntary roles in rural communities • **Welsh farmers make a key contribution towards the provision of attractive, viable, safe communities in rural areas**
A Wales of vibrant culture and thriving Welsh language	• Agriculture has the highest proportion of Welsh speakers of any sector. • Farming is the bedrock of rural communities across Wales which have been shaped by farming activity spanning hundreds of years. Farmers continue to maintain these traditions, preserving rural culture and sense of place • **Welsh farmers are key promoters and protectors of our culture, heritage and the Welsh language**
A globally responsible Wales	• Current levels of self-sufficiency at a UK level are at 62% • Future challenges to our global food production system include climate change, a growing UK and global population, water scarcity. Given its climate and rainfall, Wales is predicted to be an area of favoured production in the future • **Welsh farmers have a key role to play feeding the people of Wales and in contributing to global food security now and in the future.**