Dear Committee,

Thank you for the opportunity to submit views on the Climate Change (Emissions Reduction Targets) (Scotland) Bill. In terms of general comments on the Bill, its scope, and its structure. The below views are my own and do not represent those of my employer.

I thoroughly endorse the advice given by the Committee on Climate Change (CCC) and am heartened to see that their key recommendations on accounting and reporting have been incorporated. These will be a great aid to clarity and consistency in the coming years and decades.

On the increase to a 90% reduction in greenhouse gas (GHG) emissions by 2050 target (on 1990 baseline), this is very welcome and helps maintain Scotland’s leading position on climate change action through legislation. The provision in the Bill to enhance this at some future date to 100% (i.e. net zero) ‘when the evidence becomes available’ is understandable but, in my view, unjustified. Mapping the policies and proposals that can achieve a net zero emission Scotland is already possible. Yes, it is difficult – some sectors, such as agriculture (see additional comments below), will remain net GHG sources post-2050 – but these unavoidable emissions can and should be balanced by net sequestration. In land use management for net carbon (C) sequestration and use of CCS in conjunction with biomass energy (BECCS), we already have strategies that could deliver a net zero Scotland.

Just as the 42% by 2020 target in the 2009 Climate Change (Scotland) Act was world-leading, so a 100% target would position Scotland as an exemplar for all developed nations on how to reduce GHG emissions in a way that is compatible with the aims of the Paris Climate Agreement. Setting such an ambitious target is the first vital step in achieving it. In Scotland we have the expertise, the track record of success, and the public and political will to set this global benchmark for climate action in the 21st century.

We should not passively wait for evidence on how to achieve a ‘net zero Scotland’, we should actively request. Doubtless advisory bodies such as the CCC will find that mitigation efforts across all sectors will need to be redoubled. That short-term costs will increase, and that unpopular decisions will need to be made. More importantly, they will likely flag the urgency of action. As the recent evidence form the CCC on a 90% target showed, the foundations of success or failure are built today, not tomorrow. If Scotland delays establishment of a net zero target then we risk locking-in failure for 2050, leaving some sectors just too much to do in too little time.

As a Scottish climate scientist and expert in carbon management I applaud our nation’s efforts to address climate change over the last decade. The rapid decarbonisation of our
energy sector has been a notable achievement, and the cross-party political will for tough, evidence-based action has been hugely encouraging. **In this Bill we have a short-lived opportunity to set our nation on a path to a truly sustainable climate future.** I dearly hope we take this chance.

**Climate Change (emissions Reductions Targets) (Scotland) Bill – Implementation**

As stated above, agriculture and land use represent crucial sectors for Scotland its climate change mitigation ambitions. The former is a major source of GHG emissions, now representing around a quarter of the national budget and having seen relatively little progress over the last decade. The latter is central to achieving a net zero Scotland and, again, progress on enhancing our land carbon sinks in Scotland has been disappointing to date. Below I provide some more specific views and suggestions on these sectors in the context of implementation of the new Climate Change Bill:

The Agriculture and Land-use sectors hold huge potential for helping us achieve our climate change targets while simultaneously increasing profitability and delivering wider ecosystem services. However, in both sectors progress to date has been disappointing. Scotland’s forestry targets include an increase in new planting from 10,000 to **15,000 ha** per year by 2024, with **100,000 ha** of new forest by 2022. Current rates (as reported for 16/17) are less than one-third of this: **4,800 ha**. Support mechanisms, such as the SRDP and ‘sheep and trees’ now need to rapidly boost tree planting activity to the required levels. **To deliver on our climate change targets an aggressive expansion in tree planting to target levels is urgently required given the lag between planting of maximum C sequestration.**

Likewise, upland peatlands represent a huge carbon stock and their post-war drainage and degradation has resulted in substantial CO₂ emissions. Peatland restoration is quite rightly a focus of land use mitigation policy – peatland restoration can deliver 0.5 tonnes carbon (C) per ha per year and 10,000 ha have already received some restoration activity. However, switching many of these degraded peatlands from C sources to C sinks will take many years, meaning the overall Scottish emissions budgets is set to see a significant short-term increase when upland peat is included, rather than a reduction. **The agriculture sector in Scotland will play a crucial role in supporting climate change action via both forestry and peatland restoration** (e.g. by agroforestry and reduced grazing pressure approaches) – there are major opportunities here to align efforts across multiple land uses to deliver a sustainable and well-integrated contribution to our climate change targets in a post-CAP world.

Agriculture itself is a large source of GHG emissions in Scotland. As we make more progress in reducing emissions in other sectors, so the relative importance of agriculture in the Scottish budget grows further. It currently comprises around one-quarter of the national total through direct emissions and due to agriculture-related land use change. Methane (57%) and nitrous oxide (32%) are the main GHGs emitted by agriculture, with livestock and arable agriculture, respectively, being the main sources. **Since 1990 emissions from this sector have fallen by 14%, but since 2008 there has been little change.**
emissions targets for this sector are unambitious. More progress is now urgently required.

Scottish farmers are a diverse group having to cope with a wide range of soil types, weather conditions and food production systems, along with a rapidly changing market, policy and regulatory landscape. They also face risks and opportunities from climate change itself.

The UK’s exit from the EU and replacement of the CAP represents an opportunity to improve support for farmers in Scotland which simultaneously raises profitability, long-term sustainability of Scottish farming, and helps Scotland achieve its climate change targets. Central to this will be support and incentives that derive from a robust evidence base, avoid unintended consequences, and that are applicable to local contexts. Current support mechanisms focussed on climate-smart farming practice in Scotland include the Farming For a Better Climate (FFBC) programme designed to encourage voluntary uptake of good practice through support and demonstration. Since its inception this programme has directly involved around a dozen farms, but this is nothing like the scale required for sector-wide progress.

Awareness and application of such climate-smart farming practices is low right across the UK. For instance, only around half of farms currently use nutrient management plans, calibrate their spreaders or attach any importance to GHG emissions (Farm Practices Survey 2017). With the replacement of the CAP there is likely to be a renewed emphasis on support for farming practice that delivers on climate change and environmental protection targets alongside increases profitability. Scotland has an opportunity to set the standard for such a transition given the overall ambition of its targets and the greater importance of the agriculture sector compared to England.

Recommendations

- Development of a Scotland-specific post-CAP strategy that fully aligns with our climate change targets, acknowledges the diversity of local contexts, and integrates with wider land-use policy such as forestry.

- Assess the impact of existing voluntary measures to support climate-smart farming in the context of the above, identifying successes and overtly question whether their speed and scale is fit for purpose in the context of the Climate Change Bill

- Consider whether mandatory measures are required and appropriate, and how any such measures could be integrated with emerging financial and extension support programmes

- Ensure that agriculture (i.e. our farmers) in Scotland are not treated as the problem in delivering on our climate change targets, but actually the solution. Invest in capacity-building that focuses on the multiple benefits to farmers and the nation,
through increased profitability, resilience, and reduced emissions at the same time (i.e. the climate-smart approach).

- Take a systems approach, that integrates environmental regulation (e.g. biodiversity and air & water quality) with policies designed to deliver climate-smart farming.
- Fully utilise the wealth of academic, policy and farming expertise in Scotland to develop and implement the Scottish replacement of the CAP.