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WWF Scotland response to the UKCCC call for evidence on 'zero carbon economy'

Part 5: Devolved Administrations

Question 13 (Devolved Administrations): What differences in circumstances between England, Wales, Scotland and Northern Ireland should be reflected in the Committee's advice on long-term targets for the Devolved Administrations?

SUMMARY

As there are unique circumstances in Scotland that touch on several questions posed, we have answered them in relation to Q13 but they should be considered more widely. We have provided a summary overview here but there is more detail below.

- 1. Scotland, with abundant renewable resource, carbon storage potential and large land area, plays a pivotal role for the wider UK to reach net zero emissions and can go significantly further than the UK overall in emissions reductions.** It has a particularly significant contribution to make to UK greenhouse gas removal to achieve net zero.
- 2. The 90% target proposed in the Climate Change Bill currently before the Scottish Parliament needs to be updated considering the latest IPCC 1.5°C report. Reaching -90% GHGs by 2050 (equivalent to net zero carbon) would place Scotland only at a global average level of effort by 2050 to reach 1.5°C,** and does not take sufficient account of Scotland's huge potential, its stated leadership aims and, most significantly, equity. Additionally, the 90% target was based on overshoot scenarios that we cannot afford if we want to protect and restore global nature populations.
- 3. The debate on the Bill in Scotland has been dominated by feasibility conversations and the new Bill proposes to set a net zero target only when the CCC advises it is 'achievable' – i.e. this is the sole criterion for net zero rather than the usual balance of target setting criteria. 'Achievability' has not been defined in the new legislation and we have concerns about it trumping other criteria or being poorly understood. In WWF Scotland's view, feasibility is clearly an important consideration, together with other considerations, but ultimately any 'feasibility' assessment on a 32-year time horizon is a judgment call based on available predictions. However, its status in the political debate means it is incumbent on the CCC to consider the scope for socio-political feasibility and innovation as well as techno-economic feasibility in its recommendations is spring 2019.** The Scottish Parliament Committee, the ECCLR Committee, responsible for the Climate Change Bill have received evidence on the multi-layered approach to feasibility that the IPCC took in their Special Report on 1.5°C, ascribing different feasibility judgements to different sub-

definitions of feasibility (e.g. in relation to geophysics or techno-economic or social-political).

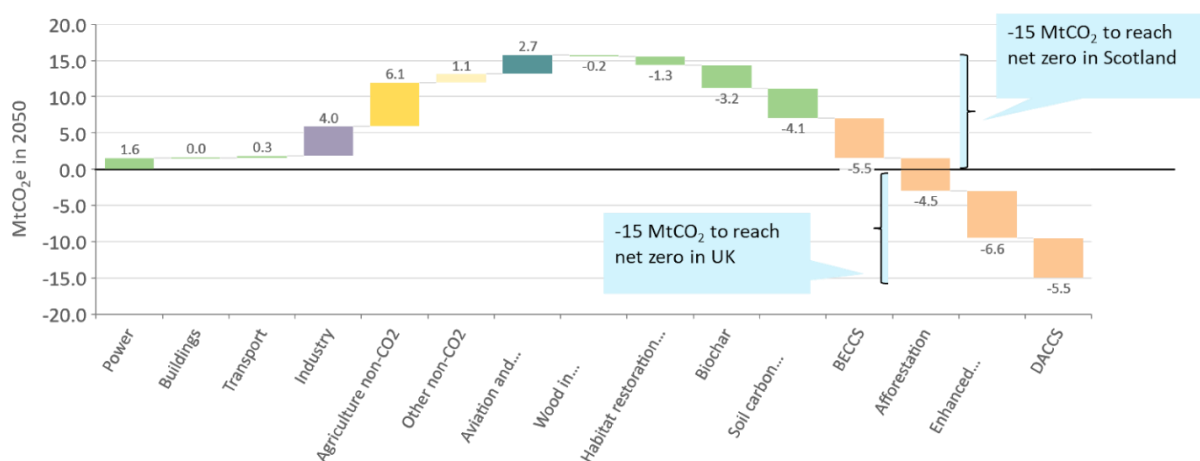
4. **A forthcoming report for WWF Scotland by Vivid Economics shows that Scotland could reach at least -120% emissions reduction by 2050**, with deep emissions reduction across all sectors, and a portfolio approach to greenhouse gas removal, with up to 30MtCO₂e available to Scotland in a conservative scenario – enough to go well below net zero before 2050 and to contribute significantly to UK efforts to hit net zero.
5. Several new pathway analyses have been conducted showing more scope for net zero either sectorally or economy wide since the CCC published its advice for Scotland in 2017. They show scope to reduce positive emissions and increase negative emissions. These include the ECF [Net Zero, From Whether to How](#) analysis, the Royal Society [Greenhouse Gas removal](#) report, [Keeping it Cool: How the UK can end its contribution to climate change by 2045](#) by Vivid Economics for WWF-UK, The Energy Transitions Commission [Mission Possible](#) work on 'Hard to Treats' and [The Potential for implementation of negative emissions technologies in Scotland](#) paper by Alcade et al, in addition to the EU's Climate Neutral 2050 Roadmap. The WWF-UK submission provides more detail on the Vivid UK work. Additionally, the ECF study is particularly useful in its analysis around the significant potential for demand reduction through social practice innovation and new circular economy models.
6. The Scottish Government has requested the CCC to provide advice on the pathways to 2050. We are confident that a higher target than 66% is feasible. **WWF Scotland has conducted analysis showing that 73% is possible by 2032 or up to 79% in a stretch scenario**, using only publicly available scenarios from the Climate Change Plan and CCC. We argue that the 2030 target should be 77%.
7. Scotland is already midway through a legislative process to set new target consistent with the Paris Agreement and **it is the Scottish Parliament that will now determine the targets and ambitions in the Bill**, especially important in a minority government. The advice that the CCC provides will therefore be of great import to Parliament. **The CCC advice will therefore be landing in an informed, live legislative process – likely during Stage 2 of the Bill currently before Parliament. There has been extensive evidence taking at the ECCLR committee which the CCC may wish to explore more fully.**
8. There are several bespoke questions in the Scottish legislation that the CCC may need to consider in addition to what is already described above including
 - a) The appropriate pathway (the legislation is currently a linear, mechanistic pathway rather than a curve)
 - b) Scotland's share of international aviation and shipping
 - c) The need to update Scotland's fair and safe cumulative emissions budget in line with the latest IPCC science on 1.5°C.
 - d) The role of Scotland in delivering overall net zero emissions for the UK.
9. As long ago as April 2018, well before the IPCC Special Report on 1.5 degrees, and before the net-zero concept had such profile in the scientific and civic communities, a dozen of the world's leading climate scientists and mitigation experts [wrote to the Sunday Herald newspaper](#) setting out the case for Scotland to build on its record of climate leadership by setting a net-zero emissions target

New Analysis on Feasible Pathways to Net Zero in Scotland

WWF Scotland recently commissioned Vivid Economics to assess pathways to net zero GHGs in Scotland by 2050, as a sister report to the wider Vivid/WWF report '[Keeping it Cool: How the UK can end its contribution to climate change by 2045](#)' which is dealt with comprehensively in a separate WWF-UK response to this call for evidence.

The Scotland report will be launched early in 2019 and we will provide the Committee with the full report at the earliest possible opportunity. However, provisional key messages that have so far emerged from the report include:

1. Scotland, with abundant renewable resource, carbon storage potential and large land area, plays a pivotal role for the wider UK to reach net zero emissions and can go significantly further than the UK overall in emissions reduction. It has a particularly significant contribution to make to UK greenhouse gas removal to achieve net zero.
2. By 2050, Vivid have calculated that Scotland could reach approximately -120% emissions reduction on a 1990 baseline (equivalent to approximately -15MtCO₂e).
3. To reach net zero, deep emissions reductions are necessary across all sectors. Deploying currently known emission reduction measures across its economy, Scotland would still emit around 15 MtCO₂e per year in 2050, mostly from agriculture (6 MtCO₂), industry (4 MtCO₂) and aviation and shipping (3 MtCO₂).
4. Remaining Scottish emissions can, with relative certainty, be compensated for through greenhouse gas removal. Scotland's significant potential for natural climate solutions and technological GGR's allows net zero to be realised more easily than in the UK. Taking a cautious portfolio approach to negative emissions deployment, Vivid have shown up 30MtCO₂e can be removed, enough to go well below net zero by 2050. This draws heavily on a conservative application of scenarios in recently published analysis by [Alcade, Smith, Haszeldine and Bond](#) (2018). The Alcade et al paper itself shows that it is possible to offset up to 90% of present day emissions in Scotland through land-based GGR, many times the scale assumed by the CCC in its 2017 advice to Scotland.
5. A portfolio approach suggests that there are several different routes to achieving net zero and not all GGRs in the scenario (e.g. BECCS, DACCS) are essential to achieving net zero *in Scotland*. The portfolio includes habitat restoration, biochar, soil carbon restoration, afforestation, enhanced weathering, wood in construction, BECCS and DACCS.
6. Vivid have not yet run a stretch Scotland scenario comparable to the 'International collaboration' scenario in the Vivid UK work, which focusses more on behaviour change (e.g. diet) and wider collaboration. This would likely lead to further emissions reduction beyond those described here.
7. Emissions for 2050 are set out in the table below drawing on CCC (2017) and Alcade et al (2018)



New analysis supports a stronger interim target for 2030

The Climate Bill as introduced does not significantly step up short-term action on the pathway to 2050, setting a target of 66% by 2030 on a linear trajectory to 90% by 2050, based on the 2017 CCC advice to Scotland. However, WWF Scotland believes that **there is both a top-down need and significant bottom-up technical potential to set a more ambitious target for 2030.**

We note that the 2018 CCC progress report points to the need for Scotland to set out “*where further carbon savings could be made across sectors, as a contingency should a more stretching target be set (whether now or later), revisions to the LULUCF sink make current targets harder to achieve, or policy measures underperform against targets in some sectors.*” We also note that the CCC has identified additional policy effort in underperforming sectors such as agriculture and transport beyond the Climate Change Plan which implies additional scope for a higher 2030 target.

The needs case: WWF Scotland’s position is that the 2030 target should be 77%, based on the Rockstrom Carbon Law principle of halving emissions every decade. The ECCLR committee has heard evidence that urgent, early action is needed to reduce cumulative emissions, avoid the likelihood of overshoot and for consistency with the latest IPCC report.

The feasibility case: The Scottish Government’s own analysis indicates that a 71% target by 2030 would be consistent with a net zero target by 2050 on a linear trajectory. WWF has found that this target is eminently realistic and could even be exceeded, based on a cautious analysis of published CCC and Scottish Government scenarios through to 2032.

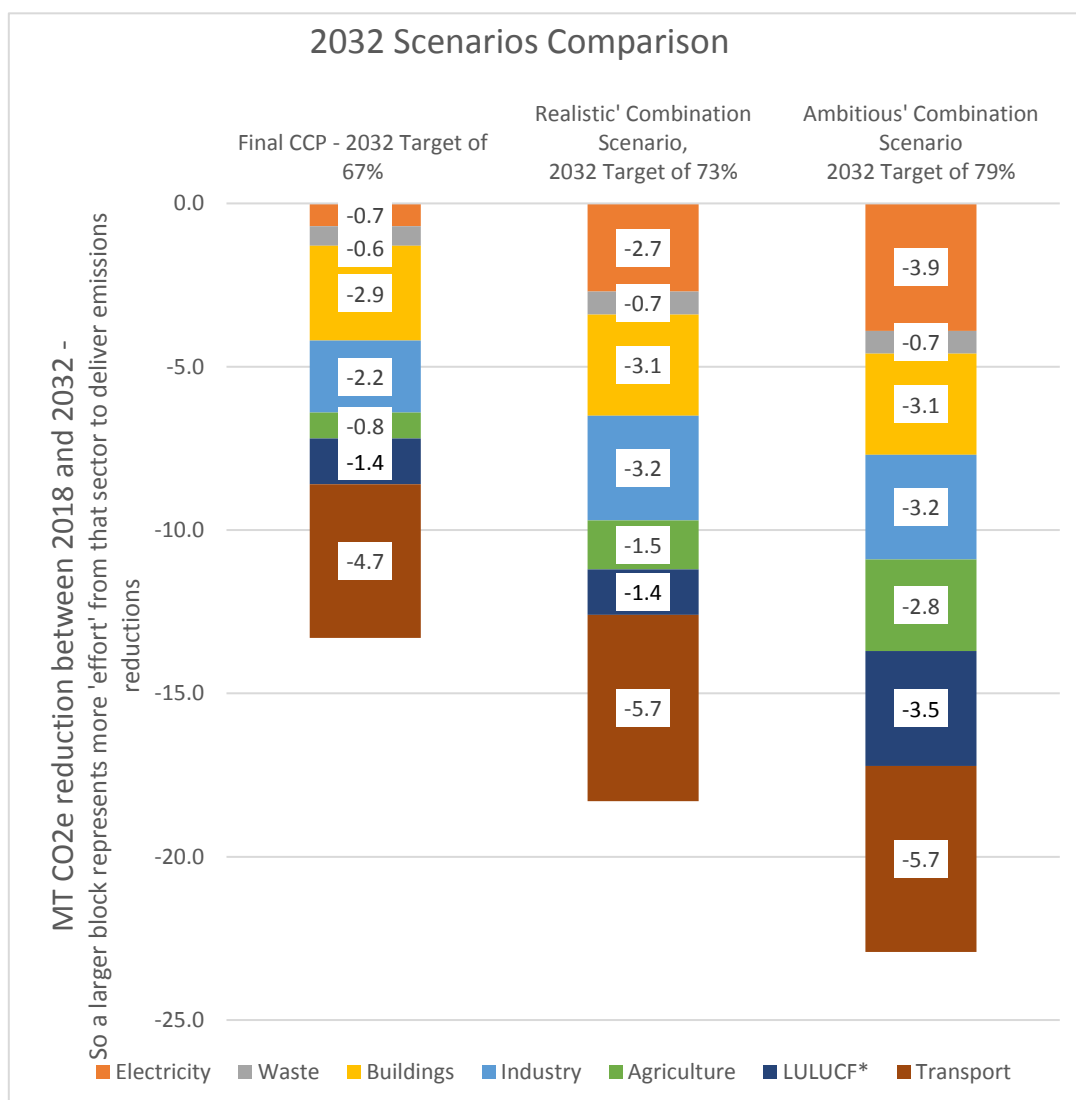
We combined the most ambitious but credible envelopes for each sector, as well as building on the envelopes and policy recommendations that the four Parliamentary committees made in relation to the draft Plan. Envelopes were taken from three sources:

1. The Scottish Government’s draft Climate Change Plan.
2. The Scottish Government final Climate Change Plan.
3. The CCC’s own ‘High Ambition Scenario’ for emission reductions through to 2032, presented in their 2017 Scotland Progress Report.

From this WWF created two further scenarios, a ‘Realistic Combination Scenario’ and an ‘Ambitious Combination Scenario’. **The ‘Realistic’ scenario achieves a 73% emissions reduction by 2032, and the ‘Ambitious’ scenario a 79% reduction by 2032.** This suggests that if Scotland continues credible policy momentum across all sectors, without using the additional emissions reductions windfall provided by the LULUCF sector in the most recent inventory to reduce policy momentum, a higher interim target than currently proposed is eminently feasible.

Achieving these envelopes would require substantial new policy effort, but well within the boundaries of what is technically, economically and socially feasible and already modelled. The kinds of policies it embodies include not building any new large-scale gas power generation in Scotland, compulsory soil testing for farmers and a nitrogen balance sheet to improve nitrogen use efficiency in Scotland. The scenarios seek only to combine existing sectoral envelopes from Scottish Government and the CCC, and therefore do not necessarily result in a recommendation of how WWF believes targets through to 2032 should be met.

Scottish Government's Final Climate Change Plan	'Realistic' Combination Scenario	'Ambitious' Combination Scenario
Achieves 67% emissions reduction compared to 1990 levels by 2032	Achieves 73% emissions reduction compared to 1990 levels by 2032	Achieves 79% emissions reduction compared to 1990 levels by 2032
<ul style="list-style-type: none"> • Scottish Government determined objectives for each sector. • A 'windfall' of additional natural emissions reductions was created by changes to accounting in the land use sector. Instead of 'banking' these emissions reductions, the Scottish Government chose to use this windfall to reduce the effort required by other sectors, with less ambitious objectives for most of the other sectors compared to the Scottish Government's Draft Climate Change Plan and CCC advice. 	<ul style="list-style-type: none"> • CCC recommended scenarios used for Waste, Buildings, Industry and Transport. • A completely low carbon electricity system for 2032, with no new gas power plant. • CCC recommendations followed about the scale of emissions reductions achievable from the agriculture sector by 2032. • The latest inventory for land use emissions, as per the final Climate Change Plan. 	<ul style="list-style-type: none"> • As per 'Realistic' scenario, with additional: • Some negative emissions in the electricity sector created through Bioenergy Carbon Capture and Storage technology (BECCS). • Additional agricultural emissions reductions achieved by creation of a Nitrogen Balance Sheet. • Climate-smart forestry to increase natural negative emissions.



The Climate Change Bill: The Political and Policy Context in Scotland is different from the UK

Scotland already has a separate legislative framework for its targets, a different current emissions inventory and a different potential for respective sectoral emission reductions. There is also a live debate in relation to the Climate Change Bill (Emissions Reductions Targets) (Scotland) Bill that is currently being considered by the Scottish Parliament, particularly in relation to 1.5°C and a net-zero target.

This debate has placed huge significance on the advice of the CCC to resolve outstanding questions there is a great deal of anticipation of the advice from Scottish Government, politicians generally, and from NGOs and other civic stakeholders. **The CCC has a responsibility therefore to provide distinct and comprehensive advice in relation to Scotland.**

Though this advice has been commissioned by the Scottish Government, the Climate Change Bill has been introduced into the Scottish Parliament and **it is now primarily the Parliament's responsibility to determine what targets will ultimately be in the Bill**, especially given that the Scottish Government is governing from a minority position. The CCC needs to be cognisant of this in how it delivers its expert and scientific advice on the Bill into a live legislative process.

In terms of the net zero discussion, three political parties have already supported net zero before 2050 and the remaining two parties have indicated that they will adopt the CCC advice in full. In particular, the pathway to 2050 and the role of interim targets for 2030 has been the subject of much debate at the ECCLR Committee, which is the lead Committee on the Bill.

On a practical level, the Bill in front of the Scottish Parliament defines in legislation interim targets for 2020, 2030 and 2040, and ascribes consequential annual targets for all years between now and 2050. Whilst these targets reflect a revised accounting methodology, they do not increase the amount of emissions reduction ambition for Scotland between now and 2030. As has been widely pointed out in evidence to the Scottish Parliament this is not in keeping with the clear messages about urgency and increased short-term action from the IPCC's Special Report on 1.5 degrees.

On a political level, there has been a great deal of interest from MSPs scrutinising the Bill in achieving the right level of target for the 2030 timescale - two political parties have committed to higher figures (Labour, Greens - 77%), and others have expressed an interest in further short-term action. The Scottish Government has already committed to renewing the Climate Change Plan (a new one would be likely to deal with emissions reductions through to around about 2035) on the earliest possible timescale following the passage of the Bill. It is important that the CCC's advice pays close attention to this broad political and civic interest.

Allied to Scotland's long tradition of leadership and collective cross-party action on climate change policy, this should give the CCC confidence that there is strong political will to implement ambitious advice from the CCC, and put in place the necessary political decisions to deliver on ambitious targets.

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