

# **CLIMATE CHANGE (EMISSIONS REDUCTION TARGETS) (SCOTLAND) BILL**

[AS AMENDED AT STAGE 2]

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## **SUPPLEMENTARY FINANCIAL MEMORANDUM**

### **INTRODUCTION**

1. As required under Rule 9.7.8B of the Parliament’s Standing Orders, this supplementary Financial Memorandum is published to accompany the Climate Change (Emissions Reduction Targets) (Scotland) Bill (“the Bill”), introduced in the Scottish Parliament on 23 May 2018. The contents of the Memorandum are entirely the responsibility of the Scottish Government and have not been endorsed by the Scottish Parliament. It should be read in conjunction with the original Financial Memorandum published to accompany the Bill as introduced.

### **BACKGROUND**

2. This Supplementary Financial Memorandum addresses the financial impact of Stage 2 amendments. The majority of the amendments do not substantially alter any of the costs in the original Memorandum and this document only addresses those amendments with anticipated or potential cost implications.

3. The main amendments at Stage 2 which are likely to give rise to altered costs relate to the changes to the emissions reduction targets. These affect the whole economy cost estimates. As outlined in the original Memorandum, the situation whereby policies and proposals for delivery of the targets must be set out in Climate Change Plans will remain the case, and as such the Bill does not specify how the targets must be achieved. Future Governments will decide what actions to take to deliver the targets, the overall costs of which will be affected by future scientific understanding and the availability of technology, and the distribution of which will be determined by whether the actions are to be delivered by Government, business or the public sector and what funding arrangements are put in place to support those actions. It is therefore not possible to describe with accuracy what the cost of achieving higher targets will be or by which bodies these will be borne. However, this supplementary Memorandum provides an updated economy-wide cost estimate of meeting the targets, in line with independent analysis published by the UK Committee on Climate Change (“the CCC”).

4. Further amendments agreed at Stage 2 will impose small additional direct costs on the Scottish Administration and the CCC, arising from additional administrative duties in relation to including estimates of costs and benefits in Climate Change Plans and advisory duties in relation to the fair and safe Scottish emissions budget and the multiplier to reflect the direct and indirect non-carbon dioxide climate change impacts of emissions at altitude from international aviation.

## **ECONOMY-WIDE COSTS OF MEETING EMISSIONS REDUCTION TARGETS**

5. On 2 May 2019, the CCC published its advice to the Scottish, Welsh and UK Governments on each jurisdictions' long-term emissions targets, including the possibility of setting a new 'net-zero' target<sup>1</sup>. The CCC advised that Scotland should legislate for a net-zero emissions target year of 2045 and increase its interim targets for 2030 and 2040 to 70% and 90% emissions reduction respectively, noting that the feasibility of these targets is contingent on the UK adopting the recommended 2050 net-zero GHG target. The Scottish Government lodged amendments to give effect to the targets as recommended by the CCC at Stage 2, which were accepted by the Environment, Climate Change and Land Reform Committee.

6. Therefore, the Bill as amended sets 2045 as the target year for net-zero emissions of all greenhouse gases (equivalent to 100% reduction in net emissions from baseline levels), as opposed to the Bill as introduced which set a target for 90% reduction in emissions by 2050. The Bill as amended sets interim targets for 2030 and 2040 of 70% and 90% emissions reduction respectively, as opposed to the Bill as introduced which set targets of 66% and 78% respectively. The Bill as introduced set a target for 2020 of 56% emissions reduction, and this remains unchanged.

7. The Bill as amended retains the regulation making power to allow the Scottish Ministers to modify the net-zero emission target year or interim targets but now requires that the change is in line with the most-up-to-date advice from the CCC and that the advice is based on either scientific knowledge about climate change and/or current international reporting practice.

8. The CCC advised, as part of its May 2019 report, that its recommended targets to 2050 could be met at an annual resource cost to the UK of 1-2% of Gross Domestic Product (GDP) in 2050, with a central estimate of 1.3% of GDP. The CCC note that this was the same cost estimate it had previously given for achieving 80% emissions reduction by 2050. The CCC report explains that falls in the cost of key technologies permit net-zero to now be achieved within the same cost envelope as it previously estimated were necessary to achieve 80% emissions reduction at the UK level.

9. The central estimate is based on the CCC's 'Further Ambition' scenario, which achieves a 96% reduction in emissions at the UK level by 2050. It assumes the remaining 4% is abated using Bioenergy with Carbon Capture and Storage and Direct Air Capture of CO<sub>2</sub> with Carbon Capture and Storage, at a cost of around £300/tCO<sub>2</sub>e (with a total cost of around 0.3% of GDP in 2050). The CCC note that if the extra 4% of abatement could be achieved with cost-neutral speculative options (e.g. a further shift towards healthier diets, reduction in aviation demand and additional afforestation), then the estimated annual cost of reaching net-zero would reduce to 1% of GDP in 2050.

10. The CCC also note that if GDP growth were to be lower than it has assumed for its central estimate (i.e. continuing the Office for Budget Responsibility (OBR)'s medium-term trend of 0.6% p.a. in the longer term, instead of assuming annual GDP growth of 2.2% from 2027 to 2050 - which is the OBR's baseline GDP growth assumptions from the 2018 Fiscal

Sustainability Report), then the annual cost of achieving a net-zero target would be 1.5% of GDP in 2050.

11. If fossil fuel prices were lower (towards the lower end of the estimates from the UK Government Department of Business, Energy and Industrial Strategy, rather than the central values, which the CCC assume for its central cost estimate), the relative costs of low-carbon technologies would be higher. That would increase the annual cost estimate to 1.8% of GDP in 2050.

12. The CCC advise that 10-13% of the total UK cost in the Further Ambition scenario would go towards reducing emissions in Scotland. Up to 11% of the cost of the Speculative options to achieve net zero could be spent on actions to reduce emissions in Scotland. However, where costs fall will depend on the policies used to deliver the measures. The CCC's analysis does not include estimates of the total, or average annual, cost of meeting the new targets over the period to 2045.

13. The current analysis of economy-wide costs has been based on the CCC's May 2019 advice, rather than further simulations with the Scottish TIMES model, which was used to provide the estimates in the original Memorandum. Independent estimates of costs, from the CCC or otherwise, were not available at the time of preparation of the original Memorandum. At the time of this supplementary Memorandum, the Scottish Government is in the process of updating the TIMES model, including reviewing all input assumptions and incorporating new evidence on a range of greenhouse gas removal technologies, as recommended by the CCC.

## **GLOBAL COSTS AND BENEFITS OF MITIGATING CLIMATE CHANGE**

14. The original Memorandum also set out high-level global estimates of the costs of mitigating climate change, compared to the cost of inaction, based on work commissioned through ClimateXChange, synthesising existing global assessments. The changes to the Scottish Bill targets at Stage 2 are not considered to directly materially affect the global estimates of such costs. However, the CCC's May 2019 advice does note that achieving net-zero GHG emissions in the UK will result in significant benefits to human health from better air quality, less noise, more active travel and a shift to healthier diets. Changes to land use and farming practices that cut GHG emissions can also improve air quality and water quality, and benefit biodiversity, resilience to climate change and bring recreational benefits. Whilst the CCC's advice does not include a full cost-benefit calculation, it does note that the overall net economic impact of cutting emissions to net-zero is likely to be small globally and in the UK could turn out to be positive (given the potential for co-benefits, which it suggests could be up to 1-2% of GDP in 2050).

## **DIRECT COSTS ON THE SCOTTISH ADMINISTRATION**

15. As outlined in the original Memorandum, the direct costs, and savings, for the Scottish Administration relate to the duties placed on the Scottish Ministers which are created or removed by the Bill.

16. As a result of a Stage 2 amendment, future Climate Change Plans will be required to set out estimates of the costs and benefits associated with the policies in those Plans, which will involve additional administrative work to prepare and compile such information.

17. Further changes relate to the Scottish Ministers' duties to seek advice from the CCC, at least every 5 years, on certain matters. As a result of Stage 2 amendments, advice must now also be requested on matters including whether the fair and safe Scottish emissions budget and the multiplier to reflect the direct and indirect non-carbon dioxide climate change impacts of emissions at altitude from international aviation are appropriate. The Scottish Government provides the CCC with funding to provide advice, which may need to increase as a result of the additional matters now being requested.

18. The cumulative effect of these Stage 2 amendments is estimated to be additional direct costs on the Scottish Administration of around £3,000 per annum on average. Therefore, adding to this to the net effect of the changes to the current legislation in the Bill as introduced leads to a net additional cost under the Bill as amended of around £28,000 per annum on average.

## **SUMMARY**

19. This supplementary Memorandum updates the estimates of:

- the economy-wide costs of meeting the emissions reduction targets, to an annual resource cost to the UK of 1-2% of GDP in 2050 of which 10-13% would go towards reducing emissions in Scotland.
- the direct costs on the Scottish Administration, to around £28,000 per annum on average.



*This document relates to the Climate Change (Emissions Reduction Targets) (Scotland) Bill  
(SP Bill 30A) as amended at Stage 2*

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