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Re: Strengthening setting of emission targets in Bill C-12: Canadian Net-Zero Emissions Accountability Act

I am pleased to submit this brief to the Standing Committee on Environment and Sustainable Development as part of the review of Bill C-12. My submission makes recommendations to strengthen the Bill with regard to setting emission targets to ensure Canada's roadmap to net-zero emissions is consistent with attaining the long-term climate goal set by the Paris Agreement.

I am a Distinguished Professor of Climate Science in the Geography Department at Simon Fraser University. My primary research interests are in the long-term effects of human activities on climate and I am internationally recognized for my research on the irreversibility of human-induced climate change and carbon budgets consistent with climate goals. I served as Lead Author of the Special Report on the Global Warming of 1.5 degrees of the Intergovernmental Panel on Climate Change (IPCC) and am Lead Author of the upcoming IPCC Sixth Assessment Report.

Recommendations to strengthen Bill C-12

Bill C-12 makes important strides by setting a net-zero emission target for 2050, requiring milestone targets for interim years, and by requiring that target setting take into account "the best scientific information available". However, to ensure Canada's contribution is commensurate to the global effort required for the attainment of the Paris Agreement temperature goals, Bill C-12 needs to be strengthened in several respects.

1. Set 2025 emission target

To achieve the deep greenhouse emission reductions that are required to attain the temperature goals of the Paris Agreement, greenhouse emission need to peak immediately and decline steeply between now and the year net-zero emissions are reached¹. National plans need to reflect this near-term ambition by setting targets for the immediate future.

¹ IPCC, 2018: Summary for Policymakers. In: *Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the*

Recommendation: Require the Minister to set a greenhouse gas emission target for 2025.

2. *Ensure emission targets are consistent with national carbon budget*

The carbon budget represents the total amount of carbon dioxide that can be emitted in the future while limiting global warming to a given temperature goal². The most important implication of a finite carbon budgets is the need to reach net-zero emissions, a requirement honoured by this Bill. A second implication of the finite nature of the carbon budget is that failure to achieve necessary emission reductions in the near-term will require steeper emission reductions in the future. To ensure Canada’s national roadmap to net-zero is consistent with the temperature goals of the Paris Agreement, annual greenhouse gas emission targets need to be set in accordance with a national carbon budget. Such a national carbon budget should be allocated based principles of fairness and equity.

Recommendation: Require the Minister to set emission targets in accordance with a national carbon budget.

3. *Set fair and equitable emission targets*

The benchmarks of 45% global greenhouse emission reductions from 2010 levels by 2030 and net-zero emissions by 2050 for limiting warming to 1.5°C set by the Intergovernmental Panel on Climate Change³ apply at the global scale. National targets consistent with these benchmarks need to honor equity and fairness principles in accordance with the principles established in the UNFCCC⁴. As a wealthy nation with large historical and per capita greenhouse gas emissions Canada is expected to set more ambitious emission targets than required on a global average to limit warming to the Paris Agreement goals.

Recommendation: Include equity among the guiding principles the Minister must take into account when setting emission targets.

4. *Set separate targets for emission reductions and carbon dioxide removal*

Anthropogenic carbon dioxide removal from the atmosphere is an important measure in the majority of emission scenarios that limit warming to 1.5°C or 2°C. Carbon dioxide removal is used in these scenarios to compensate for residual emissions that are difficult to eliminate, or to generate “net-negative” emissions to bring down warming from a peak level that exceeds the Paris Agreement temperature limits⁵. In these scenarios, carbon dioxide removal is *additional* to

context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate. World Meteorological Organization, Geneva, Switzerland, 32 pp.

² Matthews et al., 2020, Opportunities and challenges in using remaining carbon budgets to guide climate policy, *Nature Geoscience*, 13, pp. 769–779, <https://doi.org/10.1038/s41561-020-00663-3>.

³ See footnote 1.

⁴ United Nations Framework Convention on Climate Change (United Nations, 1992); <https://unfccc.int/resource/docs/convkp/conveng.pdf>. The Convention states that countries should participate in responding to climate change “in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions”.

⁵ See footnote 1.

ambitious decarbonization; it is not intended as an alternative to deep decarbonization. To avoid overreliance on carbon dioxide removals in Canada's roadmap to net zero, separate targets should be set for emissions reductions and carbon dioxide removals. Separation would help to address the negative impacts that promises and deployment of carbon dioxide removal could have on greenhouse gas emissions reductions⁶.

Recommendation: Require the Minister to set separate targets for greenhouse emission reductions and carbon dioxide removal.

⁶ McLaren et al., Beyond "Net-Zero": A Case for Separate Targets for Emissions Reduction and Negative Emissions, *Front. Clim.*, 21 August 2019, <https://doi.org/10.3389/fclim.2019.00004>.