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Memo

To:	BusinessNZ and BEC Members
From:	Tina Schirr
Date:	9 June 2021
Subject:	**Briefing on the Climate Change Commission's final advice**
Action Required:	For information

Purpose

The purpose of the following is to provide you with a brief overview of the Climate Change Commission's final advice and what has changed from the draft.

Further to this brief, we will an overview of how the CCC has incorporated our feedback into its final advice.

General Comments:

- The emissions budgets have increased slightly. The total reduction each year (compared with 2019) in the draft advice was: 9% (2025), 26% (2030) and 44% (2035). In the final advice the reductions were 12% (2025), 27% (2030) and 42% (2035).
- The CCC has undertaken further sensitivity analysis to test how further uncertainties could impact the ability to meet the recommended emissions' budgets:
    - <u>Slower or faster rates of population and GDP growth.</u> The CCC tested population growth rates 0.4 percentage points faster or slower, and GDP growth rates 0.3 percentage points higher or lower, based on government projections.
    - <u>Continued operation of the New Zealand aluminium smelter.</u> The CCC tested what happens if the smelter continues to operate beyond 2024. Two variants have been modelled to highlight different potential outcomes for the electricity sector. The first assumes full certainty that the smelter will continue to operate (solid bars in Figure 7.18). The second assumes ongoing

uncertainty around whether the smelter will continue to operate, resulting in lower investment in new renewable generation (hatched bars in Figure 7.18).

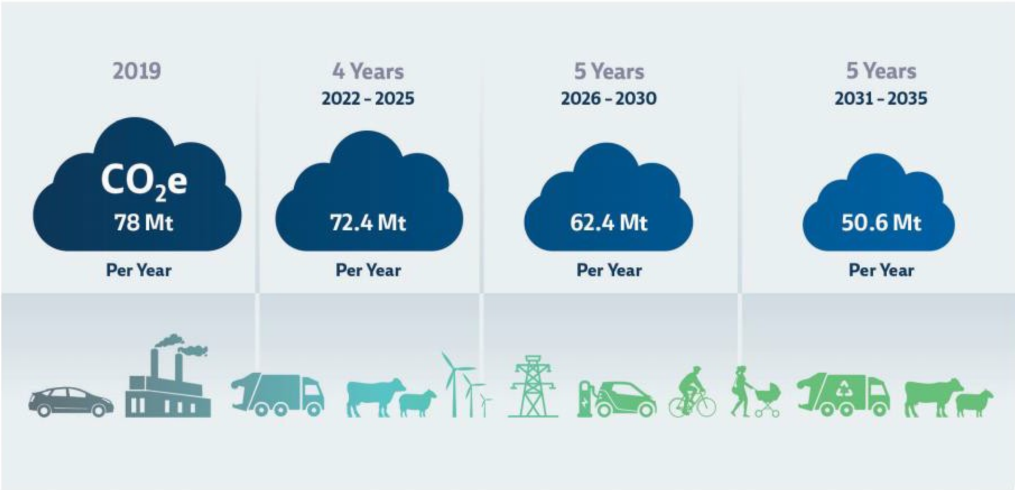
  - Potential closure or continued operation of other large industrial emitters. For illustrative purposes, the CCC tested the impact if steel production, oil refining ormethanol production were to close for the last two years of each budget period. For methanol, we have also tested a case where full output resumes from 2026 with the reopening of the mothballed Waitara Valley methanol production train.
  - Variability in hydro in-flows. The CCC estimated the variability in emissions that could occur with drier or wetter hydro years occurring in the budget period, compared with mean hydro years as assumed in our modelling.
  - Uncertainty in projected levels of afforestation and deforestation. The CCC tested these using the high and low bounds of the Ministry of Primary Industries' projections for exotic afforestation and deforestation of post-1989 forests.
  - Potential for constrained supply of used EVs. The CCC tested what happens if imports of used EVs are constrained to the same level as in the Current Policy Reference case (assuming there are no other changes in the vehicle market).
  - Uncertainty around projected energy and vehicle costs. The CCC tested high andlow values for EV costs, the oil price, capital cost reductions for renewable generation, and biomass prices. Note that in our transport modelling, the price of oil only affects the choice of vehicle technology – it does not affect travel demand or choice of travel options.

- The final advice also includes an update on expected job losses. See more below under the sectoral overview as well as in the chapter 8.7, page172 of the advice.
- The final advice puts a greater emphasis on collaboration between Government and Business. CCC also stresses the importance of continuing cross-party support.
- The final advice suggests New Zealand is ready for change and there are multiple affordable pathways. It suggests the advice is equitable but ambitious and while actions are needed now, there are several 'achievable' pathways.

Key changes in the advice

Changes to the level of emissions budgets: budget levels have increased slightly due to the updatingof CCC modelling and assumptions based on new evidence received through consultation, an increase in baseline emissions following new measurements in New Zealand's Greenhouse Gas Inventory 1990-2019, and a change to theway emissions are measured. The increase means Aotearoa has a slightly harder job ahead.

- 1st budget (steeper cut from 9% GHG emission reduction to 12% by 2025)
- 2nd budget (from 26% GHG emission reduction to 27% by 2030)
- 3rd budget (from 44% GHG emission reduction to 42% by 2035)



Emissions budgets 2022 - 2035 (AR5) annual average emissions

	Change in emissions compared to 2019 from our modelling		
	2025	2030	2035
Long-lived gases (net)	-15%	-38%	-63%
Biogenic methane	-8%	-12%	-16%
Total	-12%	-27%	-42%

Further analysis of the cost of budgets and the impact on GDP, including additional sensitivities: The CCC has assessed that recommended emissions' budgets are achievable at an overall reduction to the level of GDP of around 0.5% by 2035 and 1.2% by 2050. However, the overall impact on the level of GDP could be around 1% in 2035 and 2.3% in 2050 if New Zealand fails to achieve the number of EVs needed and improve agricultural emissions efficiency at adequate rates.

More detailed analysis of distributional impacts, more emphasis on co-benefits, such as health, and more detail on how the transition could affect employment: the Commission has placed greater emphasis on health benefits and strengthened its advice on the need to consider all New Zealanders, for example people with disabilities. There will be inevitable changes to employment and jobs as New Zealand moves towards a low emissions' society. This will flow through to the skillsets that are needed, and there is further analysis of the types of jobs that might be affected and the types of jobs that are likely to be needed to support the transition.

Further integration of Te Tiriti o Waitangi/Treaty of Waitangi partnership: The CCC has included a new chapter with three specific recommendations focused on upholding Te Tiriti partnership. The CCC has strengthened consideration of Te Tiriti o Waitangi/Treaty of Waitangi across its other recommendations to embed Treaty principles further into its advice and reflect feedback from Iwi/Māori.

Further explanation of alternative paths to show budgets can be met under a range of circumstances: The CCC indicates there are multiple ways to meet the recommended budgets and has undertaken additional sensitivity analysis to test how different factors could impact on whether the budgets can be met. The CCC is confident the budgets *can* be met.

Reflected feedback around cost and pace of transition: The CCC has re-examined the evidence around the pace of technology and behaviour changes to make sure these are as ambitious as possible in each sector, while ensuring the options are technically feasible and economically affordable. This has resulted in some changes to the level of ambition – for example the CCC has increased its ambition in respect to waste and decreased its initial ambition regarding the number of used EVs that will be available in the early budget periods.

Checked compatibility of NDC and recommended domestic budgets with the global 1.5 C degree effort: The CCC has clarified that the budgets are compatible with global efforts to limit warming to 1.5 C above pre-industrial levels. Setting the NDC remains a political and ethical issue, which will require elected representatives to make decisions on the importance of the factors that contribute to the global 1.5 C degree effort.

Sectoral overview

Heat, Industry, and Power (HIP)

- HIP emissions sat at around 21.4 Mt CO2-e in 2019 but to keep New Zealand on track they must fall to 12 Mt CO2-e by 2035.
- The final advice still suggests the elimination of gas connections but provides no setdate, which will need to be considered by government. However, there is now more emphasis on repurposing infrastructure and on alternative emission gases.
- The assumptions around Tiwai and Methanex have changed. The CCC's final advice now includes a scenario where Methanex continues to operate until 2040. The CCC also tested what happens if the smelter continues to operate beyond 2024. Two variants have been modelled to highlight different potential outcomes for the electricity sector. The first assumes full certainty that the smelter will continue to operate, the second assumes ongoing uncertainty as to whether the smelter will continue to operate, resulting in lower investment in new renewable generation.
- Electricity price assumptions have changed to reflect short-term pricing conditions. Electricity wholesale market prices now start relatively high and will stabilise at 70-80 NZD MWh by 2035. If Tiwai stays, the wholesale market price will be 20 NZD higher.
- Gas household bills will increase by 300NZD by 2035 (assumed to be 150 NZD in the draft). Electricity bills are unlikely to change for households.
- The final advice shows up to 1400 job losses in the Oil, Gas and Coal sector by 2035.
- The final advice suggests dropping the 100 % renewable electricity target to 95-98% by 2030.
- The final advice suggests the development of an energy strategy and is also calling for the creation of a strategic plan to decarbonise industries such as steel making, cement and petrochemicals, with greater effort to develop low-emission fuels, such as biofuels and hydrogen.

Transport

- Transport emissions sat at around 16.2 Mt CO2-e in 2019 but to keep us on track they must fall to 9.5 Mt CO2-e by 2035.
- The final advice suggests that we can cut almost all emissions in Transport by 2050. The model shows that 36% of light vehicles will be electrified by 2035.

- 50% of light vehicle imports in 2029 will be EVs. The commission recommends that no more light ICEs should come into the country from 2035.
- The final advice suggests a freight strategy should be developed by the Government inconjunction with business
- The bioeconomy is now placed in the multi-sectoral section.
- Petrol costs are predicted to increase by 30 cents/litre by 2035.

Agriculture

- Methane emissions sat at around 30.6 Mt CH_4 in 2019 and to keep New Zealand on track will need to go down to 26 Mt CH_4 by 2035.
- The final advice is less ambitious about any improvement in sheep and beef numbers compared with the draft report.
- The final advice shows up to 2600 fewer jobs in sheep, beef and grain by 2035.

Forestry

- Captured 7.4 Mt CO_2-e in 2019 and to keep New Zealand on track this will have go up to 15.5 Mt CO_2-e by 2035.
- Overall, the mix of native and exotic forest stays the same in the final advice, however, there are changes in how native forests might be established.
- The final advice sees pine still playing an important, but declining, role.

Waste

- Waste emissions sat at around 3 Mt CO_2-e in 2019 but to keep on track will have to go down to 1.9 Mt by 2035.
- The final advice shows more potential of emissions' reductions in waste, with the CCC pushing for a circular approach to waste.
- Recommendations seek to reduce waste where possible, convert waste and capture leftover waste.

Last but not least, here is some advice on how to read the information provided:

- The final advice runs to just under 400 pages (excluding support evidence).
- Start by reading our brief, providing you with an overview and changes.
- Read the executive summary, this has all the key points in quite some detail.
- The main report is structured according to sectors – Transport, Heat, Industry, and Power (HIP), Land (Agriculture and Forestry) and Waste.
- The coloured boxes in the main report refer to the report's recommendations.
- Emissions budgets are also organised by sector.

Please find further information **HERE**.