# Ināia tonu nei:

## Our advice on emissions budgets

June 2021

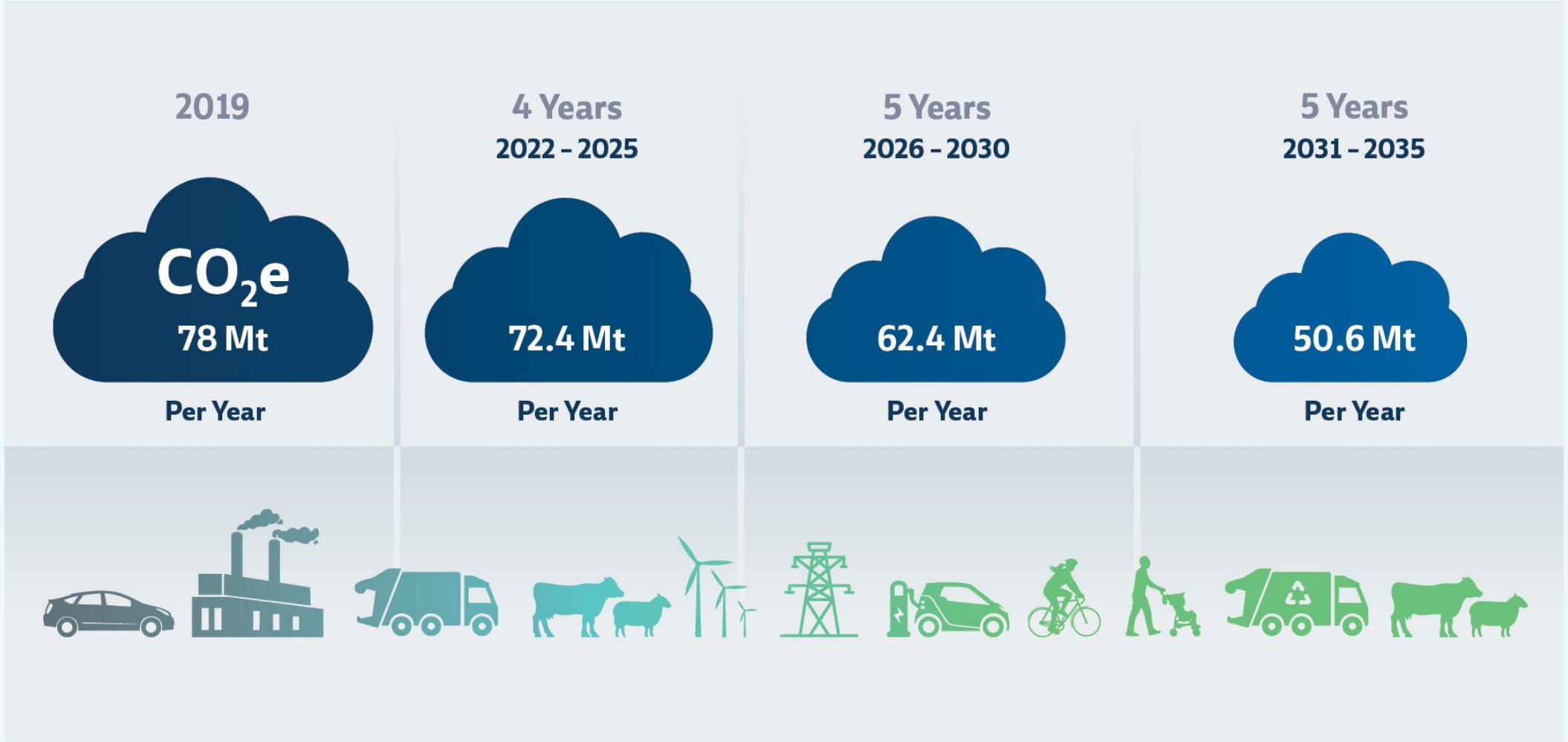
He Pou a Rangi
Climate Change Commission

# Ināia tonu nei: a low emissions future for Aotearoa

**Our independent, evidence-based advice and analysis shows:**

- There are ambitious, achievable and equitable paths
- Enduring climate action is affordable
- Transformational and lasting change is necessary and possible

# Our recommended budgets



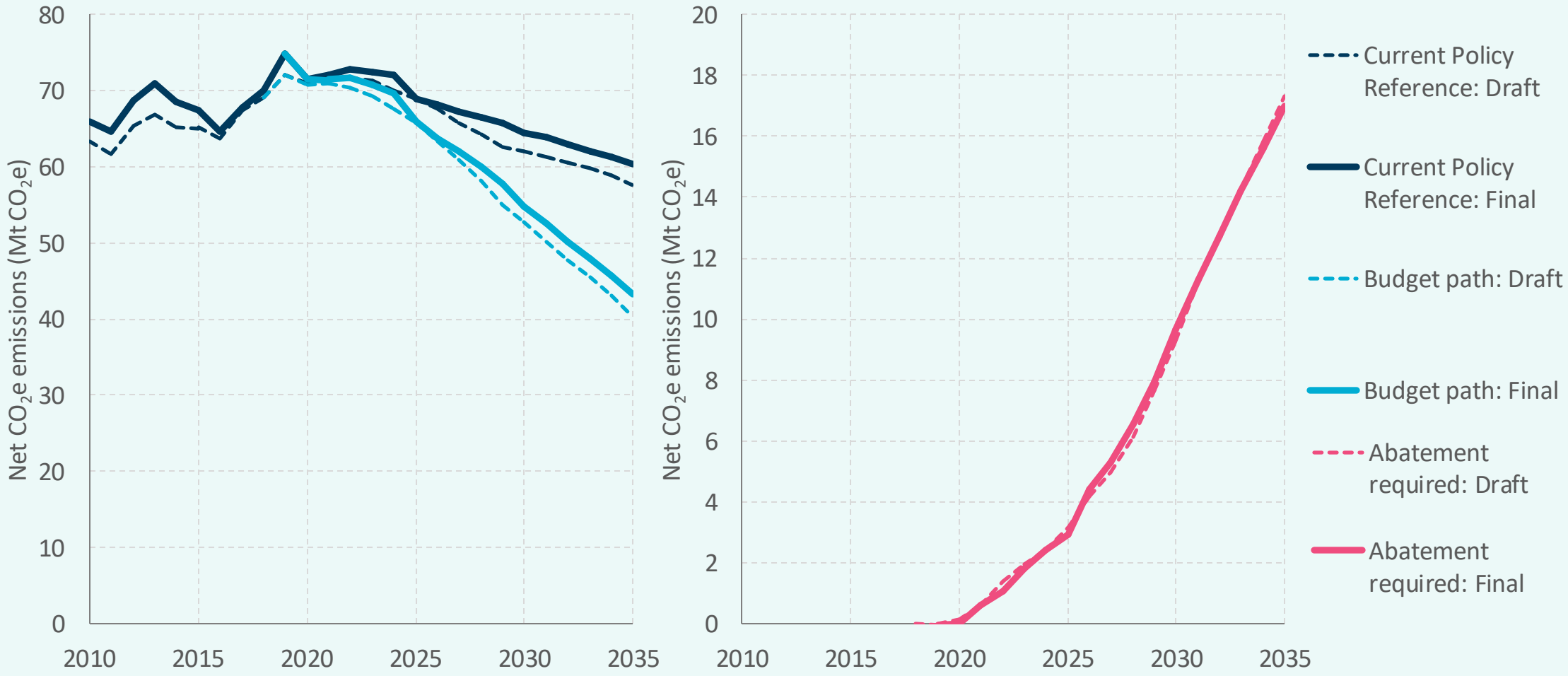
# Budget numbers

*Table 5.2: The levels of the first three emissions budgets in our draft advice and our final recommendations*

| | 2019 | Emissions budget 1 (2022 – 2025) | Emissions budget 2 (2026 – 2030) | Emissions budget 3 (2031 – 2035) |
|---|---|---|---|---|
| Draft emissions budgets (*AR4*)<br>Annual average | 72.1 Mt $CO_2e$/yr | 271 Mt$CO_2e$<br>67.7 Mt $CO_2e$/yr | 286 Mt$CO_2e$<br>57.3 Mt $CO_2e$/yr | 223 Mt$CO_2e$<br>44.6 Mt $CO_2e$/yr |
| Final emissions budgets (*AR4*)<br>Annual average | 74.9 Mt $CO_2e$/yr | 278 Mt$CO_2e$<br>69.5 Mt $CO_2e$/yr | 298 Mt$CO_2e$<br>59.7 Mt $CO_2e$/yr | 240 Mt$CO_2e$<br>47.9 Mt $CO_2e$/yr |
| Final emissions budgets (*AR5*)<br>Annual average | 78.0 Mt $CO_2e$/yr | 290 Mt$CO_2e$<br>72.4 Mt $CO_2e$/yr | 312 Mt$CO_2e$<br>62.4 Mt $CO_2e$/yr | 253 Mt$CO_2e$<br>50.6 Mt $CO_2e$/yr |

*Ināia tonu nei*, Chapter 5, p. 74

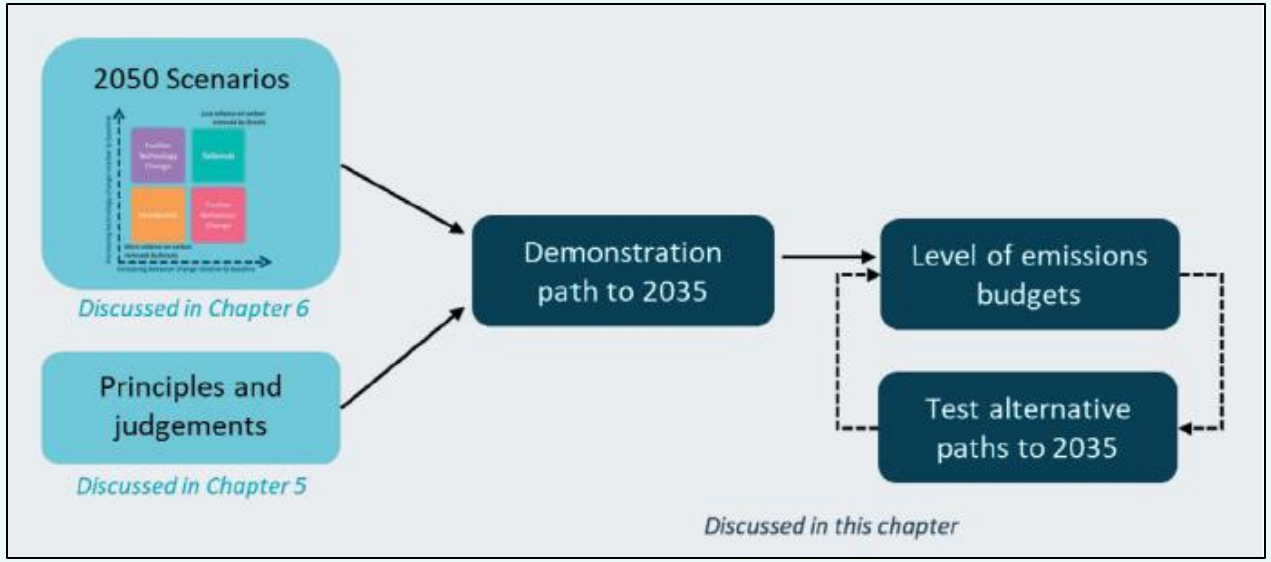
# Budgets are higher due to inventory and baseline changes



# How we made judgements

| Outcomes we are seeking | Judgements in budgets |
| --- | --- |
| **Fair, Equitable, Inclusive**<br>Emissions budgets that can be achieve in a way that is affordable, manages negative impacts and supports those most affected and least able to adjust, maximises broader opportunities to improve health and environmental outcomes, and ensures intergenerational equity | • A well-signalled transition allows time to plan in a fair, inclusive and equitable way<br>• Decarbonise where possible<br>• Build a long-term carbon sink<br>• Contribute to the global 1.5°C effort<br>• Move as fast as real world constraints allow<br>• Develop emissions budgets that can be delivered in light of uncertainty |
| **Ambitious**<br>Emissions budgets that are ambitious and put Aotearoa on track to meet its emissions reduction targets, sustain those targets and contribute to the global goal of limiting warming to within 1.5°C of pre-industrial levels | |
| **Achievable**<br>Emissions budgets that are technically and economically achievable in light of uncertainty | |

# Pathways



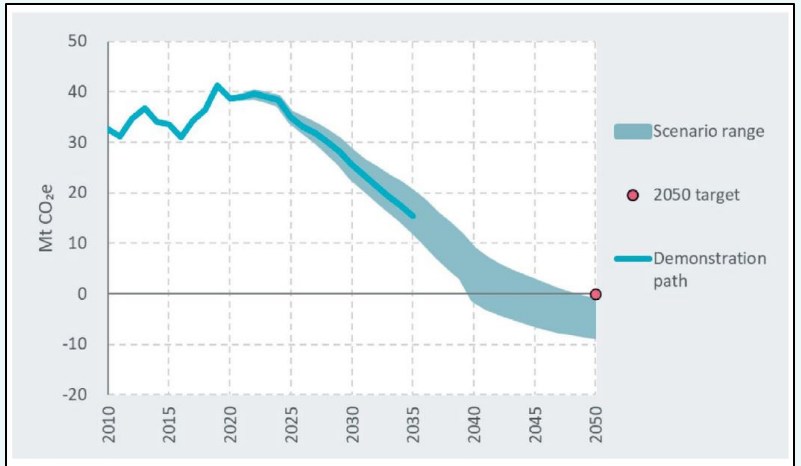




*Figure 7.3: Long-lived greenhouse gas emissions in the demonstration path to 2035 compared with the long-term scenario range*

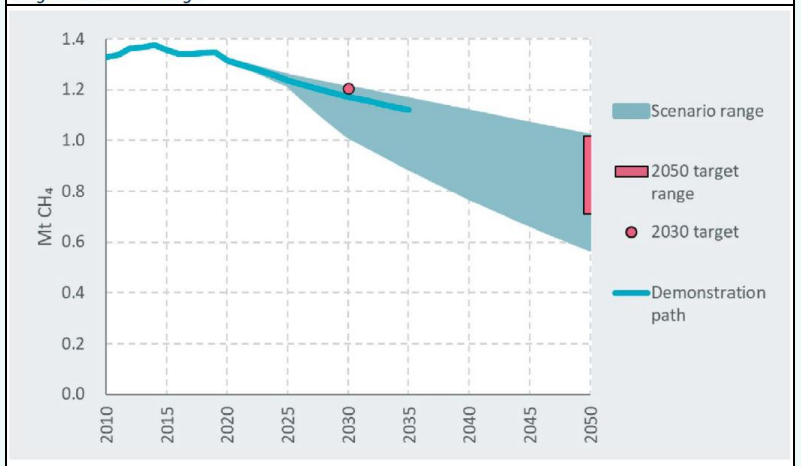



*Figure 7.4: Biogenic methane emissions in the demonstration path to 2035 compared with the long-term scenario range*

*Ināia tonu nei*, Chapter 7, p. 99 & 104

# We made several changes to our assessment and modelling

- We have refined our modelling and assumptions based on evidence received in consultation and subsequent analysis
- Key examples:
  - Sheep and beef farming – revised down potential productivity improvements.
  - Road transport – slower used EV uptake, faster electrification of trucks, and more.
  - Energy – higher electricity prices, revised industrial activity assumptions, continued operation of higher emissions geothermal generators.
  - Waste – increased level of landfill gas capture and waste diversion.
- Places to look for more detail:
  - *Ināia tonu nei*, Chapter 7, Box 7.3 (pp. 132-137)
  - *Supporting evidence*, Part 3 front matter (pp. 5-9)

# We tested alternative paths to meet the budgets

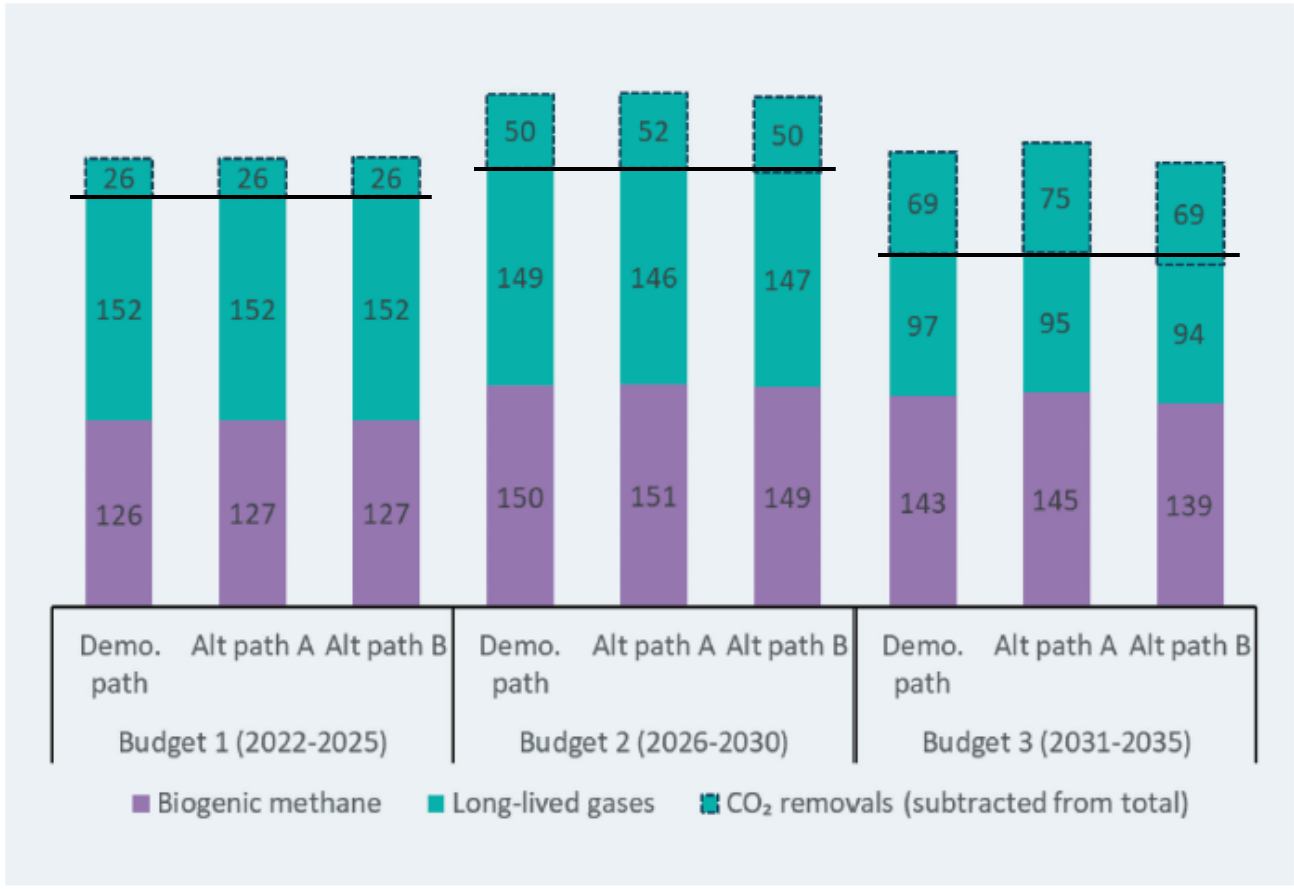



*Figure 7.17: Emissions and removals by budget period in the demonstration path and alternative paths A and B*

Source: Commission analysis

*Māia tonu nei*, Chapter 7, p. 126

# We tested sensitivity to a range of uncertainties

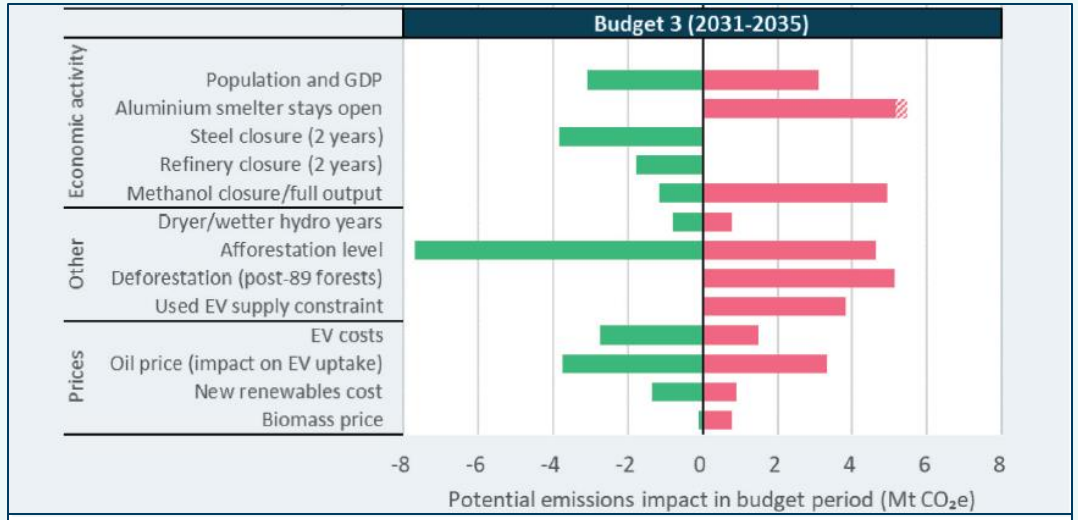




*Figure 7.18: Sensitivity analysis of budget period emissions to selected factors or events*
Source: Commission analysis

*Ināia tonu nei*, Chapter 7, p. 128

# Cost savings from the transition

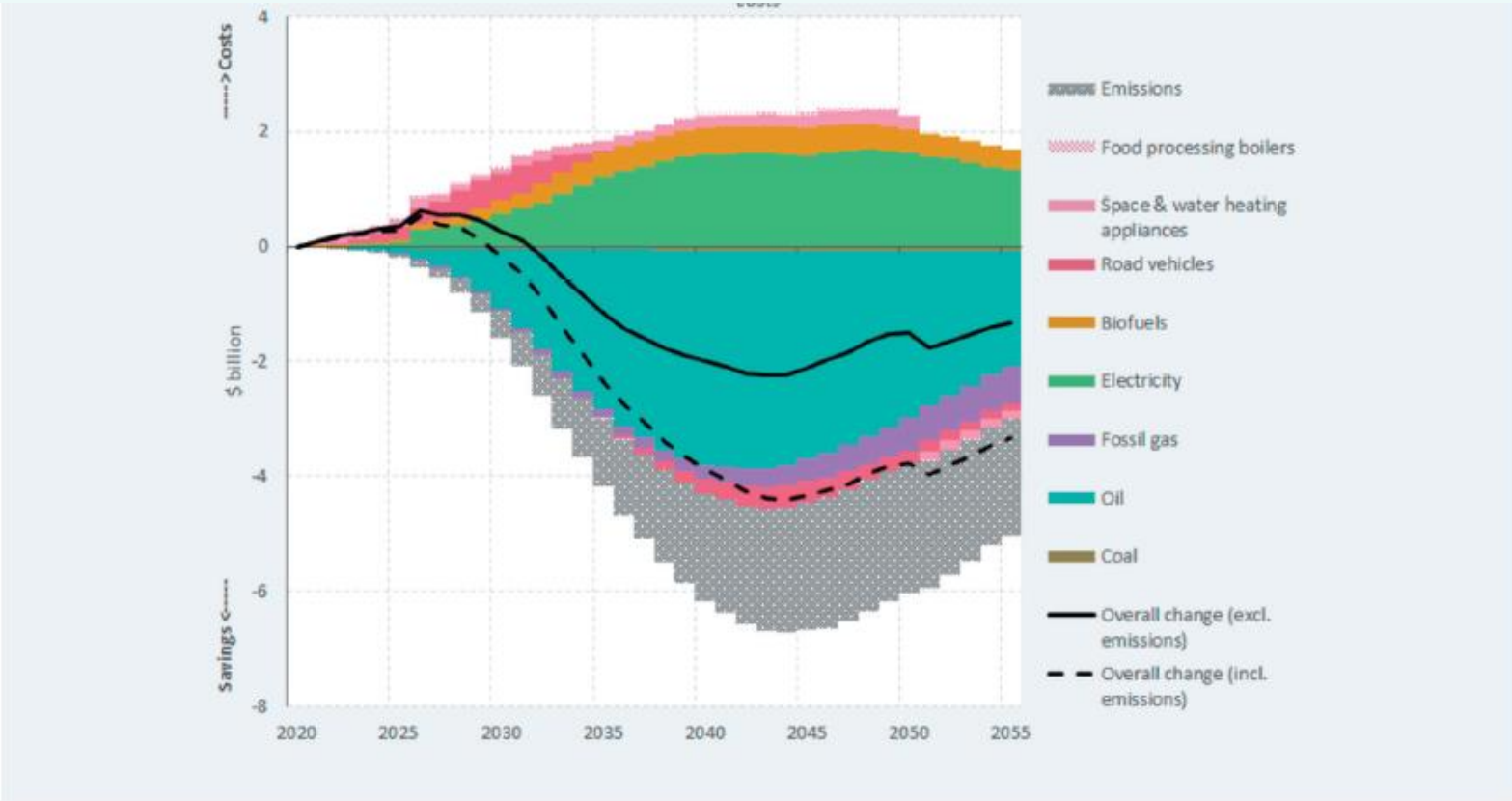



*Figure 8.1: Projected annual increase and decrease in costs from fuel switching across the road transport, buildings and food processing sectors in the demonstration path compared to the current policy reference. This excludes the effects of improved energy efficiency, mode shift and reduced travel demand.*

Source: ENZ modelling

# The economy will continue to grow

- Emissions budgets are achievable with a reduction in GDP of 0.5% in 2035 and 1.2% in 2050.
- Meeting 2050 targets at lower cost to the economy relies on the successful roll out of EVs and on-farm practice changes. Otherwise, the reduction in GDP could be up to 1.0% in 2035 and 2.3% in 2050.
- This assessment does not factor in co-benefits or the costs of delaying action.

# Health benefits from acting on climate change

- **Warmer drier homes:** Low-income households can save around $800 each year in health costs after installing insulation.
- **Reduced air pollution:** Social cost of air pollution costs Aotearoa $4.28 billion each year – 22% is from vehicles.
- **Reduced indoor air pollution:** Children are 42% more likely to develop asthma if they live in a house that uses gas for cooking.
- **Increased walking and cycling:** Walking trips less than 1km and cycling trips less than 5km could save $2.1 billion over NZers lifetime.

# Jobs will change over time

About 1400 fewer jobs in oil, gas and coal by 2035

About 900 - 2300 fewer jobs in vehicle maintenance by 2035

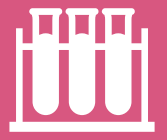
About 2600 fewer jobs in sheep, beef and grain farming by 2035

1000s more jobs in renewable electricity by 2035

About 1000 more jobs to bring 120,000 homes up to healthy standards

About 230 – 350 jobs to divert 0.5 million tonnes of waste from landfill

Opportunity for jobs by developing a native forestry industry



Opportunity for jobs by developing bioenergy and hydrogen industries

# Over to government

# Thanks

Want to get in touch?
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# Wholesale electricity prices