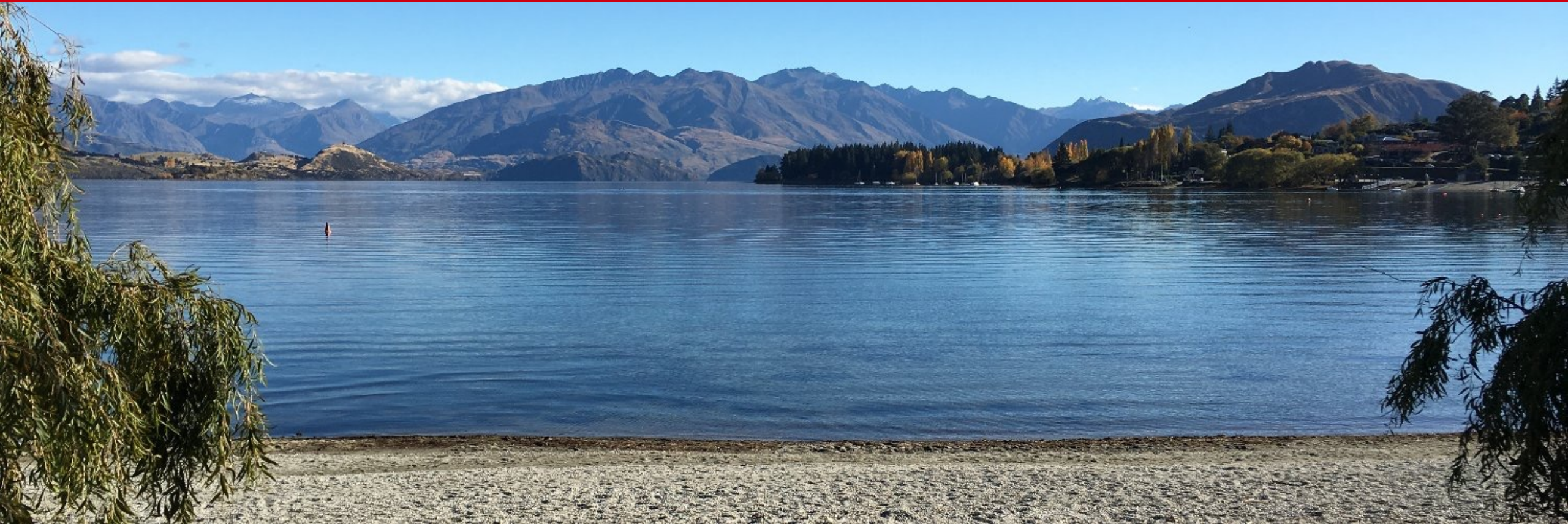


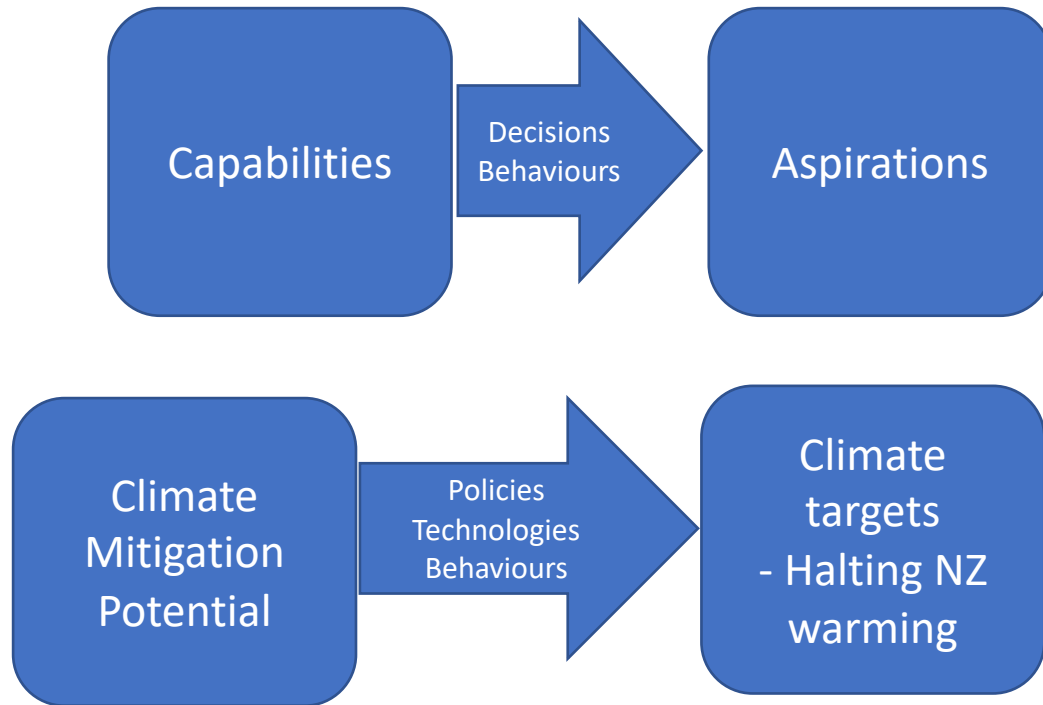
Climate economics (and politics)



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Climate and strategy



X.

Which is what grand strategy is meant to prevent. I'll define that term, for the purposes of this book, as the alignment of potentially unlimited aspirations with necessarily limited capabilities. If you seek ends beyond your means, then sooner or later you'll have to scale back your ends to fit your means. Expanding means may attain more ends, but not all because ends can be infinite and means can never be. Whatever balance you strike, there'll be a link between what's real and what's imagined: between your current location and your intended destination. You won't have a strategy until you've connected these dots—dissimilar though they are—within the situation in which you're operating.

Where, then, does the adjective “grand” come in? It has to do, I think, with what's at stake. Your life as a student won't fundamentally change if you sleep for another twenty minutes tomorrow

John Lewis Gaddis, *On Grand Strategy*, 2018, p21.

Climate change economics

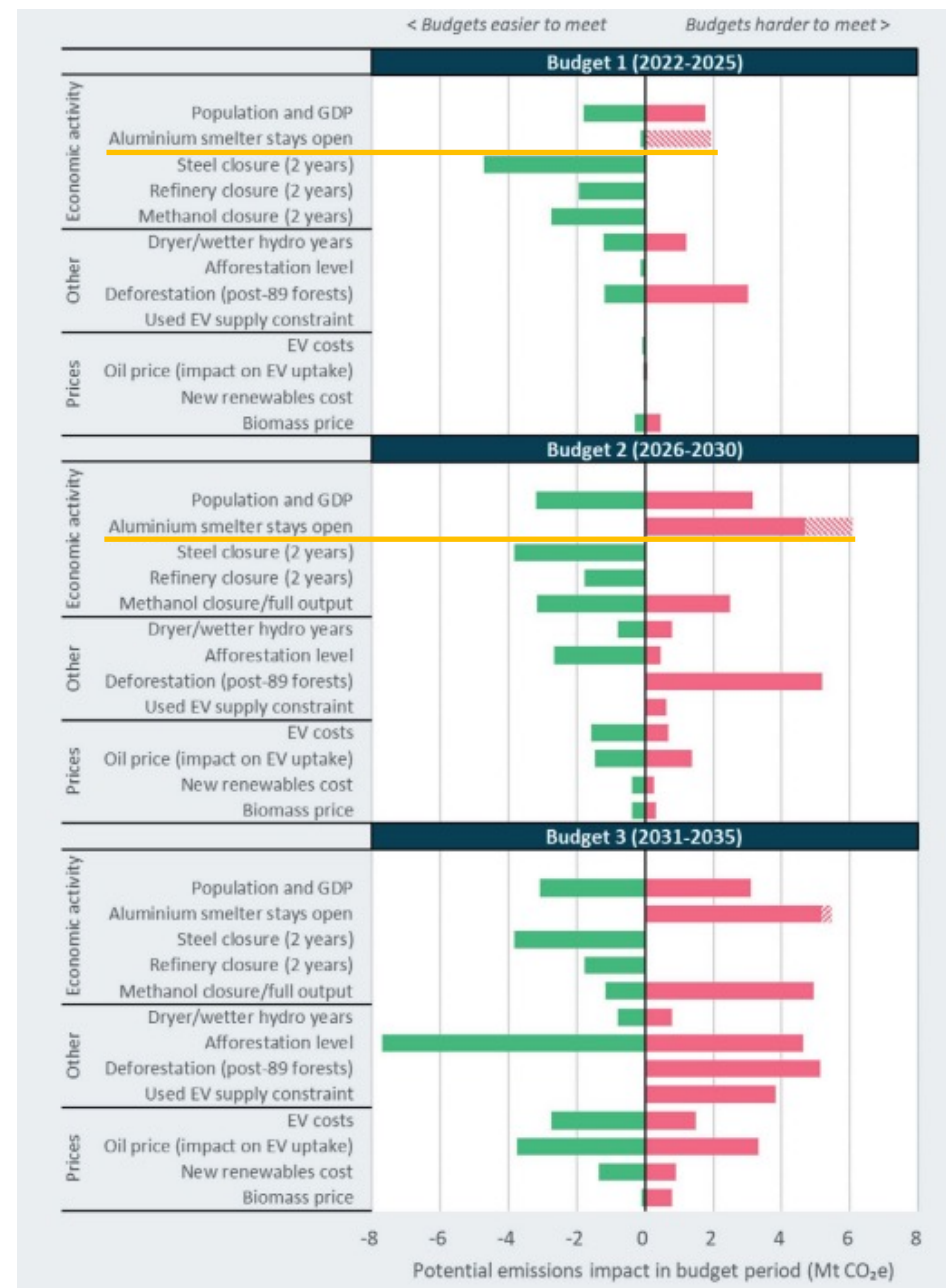
Mitigation

- Refers to efforts to reduce or prevent emission of greenhouse gases.
- Commonly uses energy-economy models to try to understand the impact of different policies on the economy, society, and climate

Adaptation and Impacts

- Refers to adjusting to actual or expected future climate
- Uses a range of tools, including economic models, GIS tools, hazard maps, etc to try to assess the assets (natural, financial, cultural and social) at risk from climate change

- **Uncertainty around the future of the New Zealand aluminium smelter.** If the smelter were to unexpectedly stay beyond its currently signalled closure in 2024, this would lead to more fossil fuel electricity generation in addition to the direct emissions from the smelting process. The continued operation of the aluminium smelter could result in continued baseload thermal generation and new fossil gas peaker plants to meet growth in electricity demand across the economy. However, if this were to be signalled early and with certainty, this would likely bring forward construction of renewable generation projects and minimise the increase in fossil fuel electricity generation. Taking steps to provide greater certainty to the electricity sector could help to mitigate this and other risks. We discuss this further in *Chapter 15: Policy direction for energy, industry and buildings*.

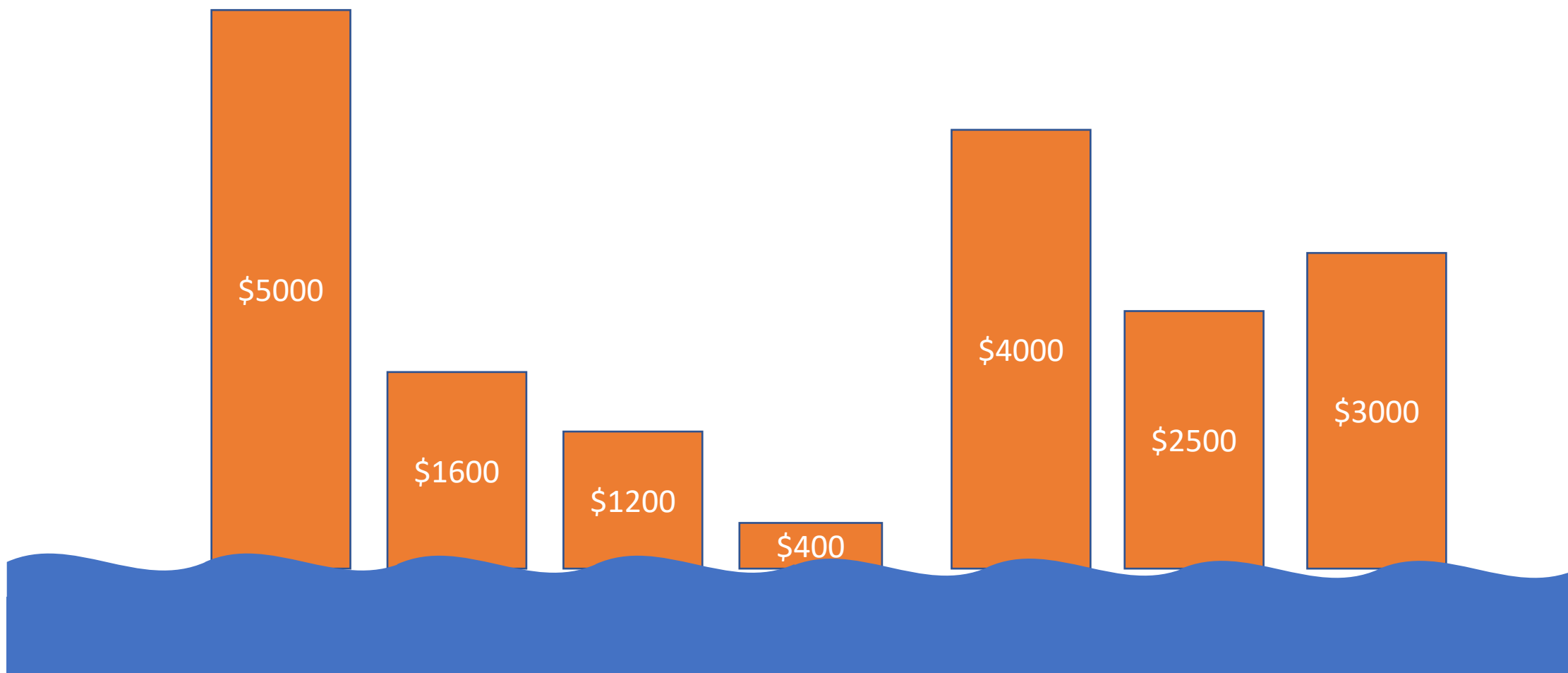


Returns on carbon: revenue per tonne of CO₂

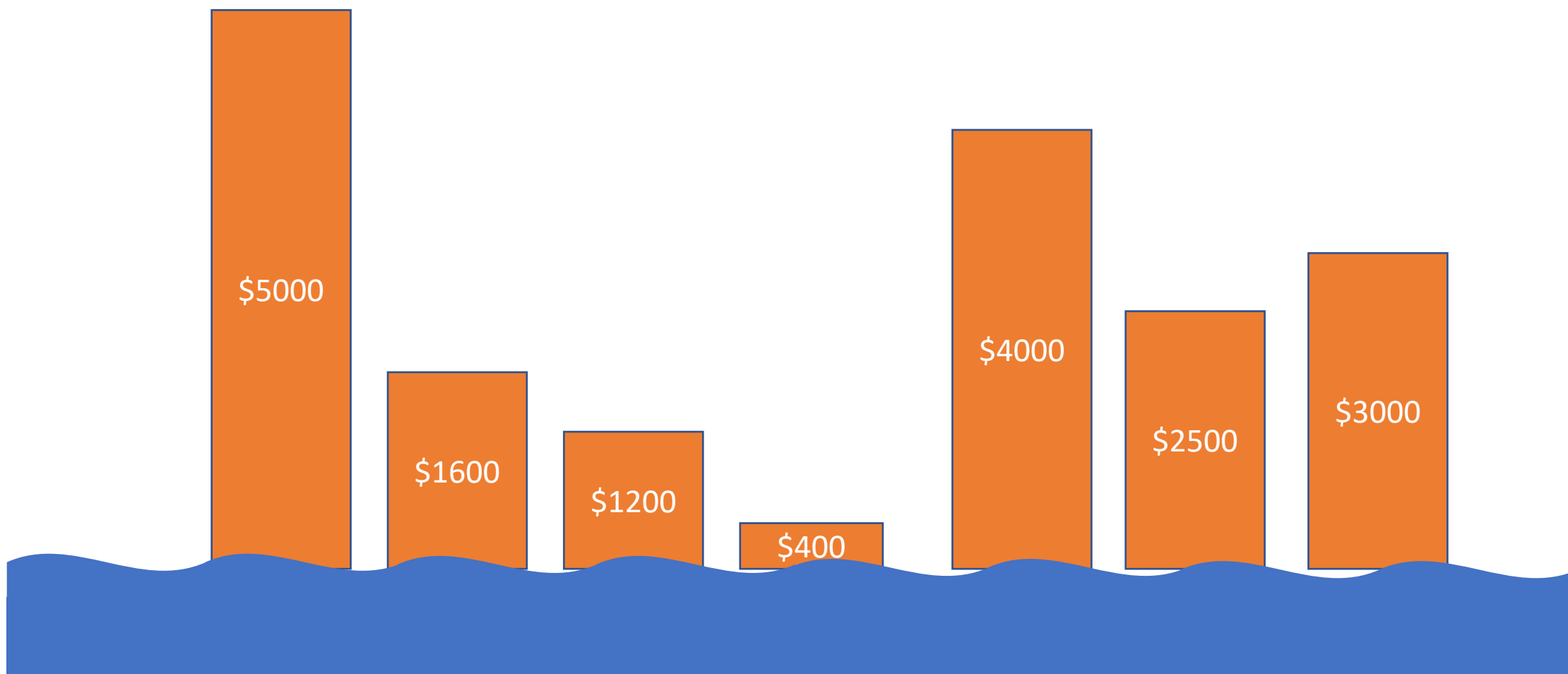
- Keep an eye on the value of products per tonne of CO₂

Good or service	Income per tCO ₂
Full fee-paying tertiary student	\$5000 per tCO ₂
Steel production	\$1600 per tCO ₂
Aluminium production	\$1200 per tCO ₂
Sheep and beef farming	\$400 per tCO ₂

Returns on carbon



Returns on carbon – as CO₂ prices rise



131 Several of the key hard-to-abate sectors are located in specific regions of the country. Aluminium is manufactured in Southland, methanol in Taranaki, pulp and paper in the Bay of Plenty, cement and oil refining in Northland.

132 The structure of a region's economy has a big impact on its emissions, and therefore its exposure to policies put in place to meet our recommended emissions budgets. Regions that are reliant on primary industries, such as Taranaki, Southland, Waikato, and the West Coast, could be more exposed.

Regional employment

133 Regions like Taranaki and the West Coast will be affected by the transition away from coal, oil, and fossil gas. Other regions could be affected by the closure of hard-to-abate industries, such as the closure of Tiwai Point aluminium smelter in Southland. This will have particular impacts on employment.

256 The potential for land-use change from pastoral farming to horticulture and arable is small at the moment, but has potential for growth. Land-use change to horticulture could increase the number of available jobs as horticulture is more intensive and generally requires more workers per hectare. However, many horticultural jobs are seasonal and as a result the sector experiences labour shortages. There are also opportunities for new jobs in food processing, for example in the proposed oat milk plant in Southland.

263 In our ENZ modelling, we assume that Tiwai Point aluminium smelter closes all potlines by the end of 2024 in line with Rio Tinto's recent announcements. The smelter's closure would see about 1,000 direct job losses in Southland between now and the end of 2024. Any job gains from lower wholesale electricity prices could be spread across the country.

Mentions of "Southland" in
Climate Change Commission
Report, Main Body

Just Transitions

- There is plenty coming from Wellington on the need for a Just Transition
- But there are mixed signals
- And some of this is just due to the customary framing of climate policy
 - People talk about our low carbon aluminium smelter as though it's a problem – “we could use those green electrons”
 - But the Govt has just ploughed \$300M of taxpayers money/ETS revenues into a steel plant.

Why is this a problem, but that ok?

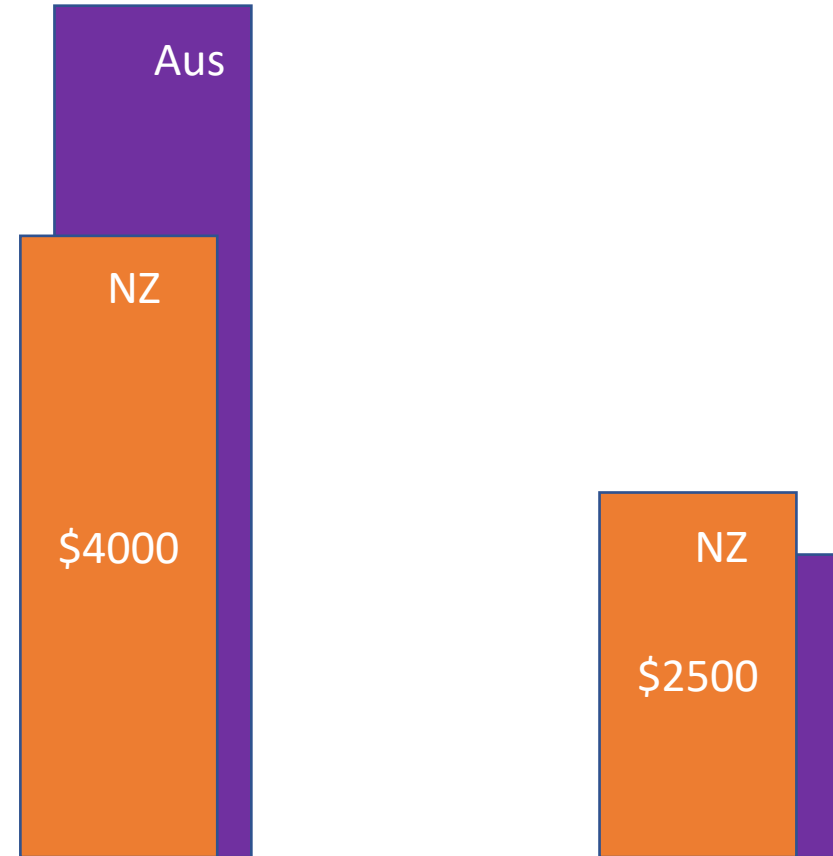


Framings of climate policy

- It has to do with when green investments were made.
- The EU-driven focus has been on reductions of emissions from some baseline level.
- Because the EU had a high baseline (which they don't like to talk about) and had some early reductions (which they do like to talk about).
- But this ignores the preceding context – it ignores the fact that starting from a high level is bad for the climate, and starting from a low level is good for the climate.
- Can create odd behaviours, where you close low carbon industries, and subsidise high carbon ones to decarbonise.

Another lens

- Sectoral progress
- Trying to benchmark domestically against the global best practice in terms of emissions, either per dollar earned or per kg of product produced.
- Basic point is a broad context should matter, and we need to develop this alongside our mitigation potential if our transition is to be just



Adaptation costs

- Scientists and economists are working together on a \$10M programme called *Whakahura: Extreme Events and the Emergence of Climate Change*, in which we are trying to get a better understanding of the costs of extreme events, how these events are likely to change, and how we might minimise future costs to natural, cultural, financial and social assets.