

Charting a course for New Zealand's low-emission future

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Transition to a low-carbon economy for New Zealand

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the ROYAL
SOCIETY of
NEW ZEALAND
TE APĀRANGI

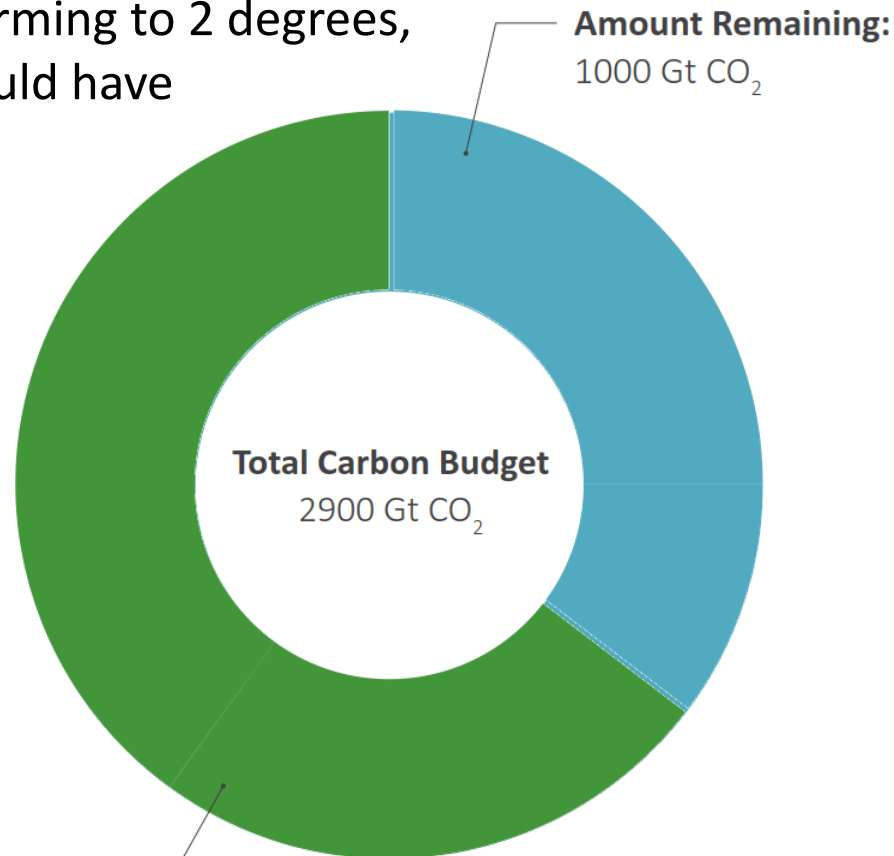


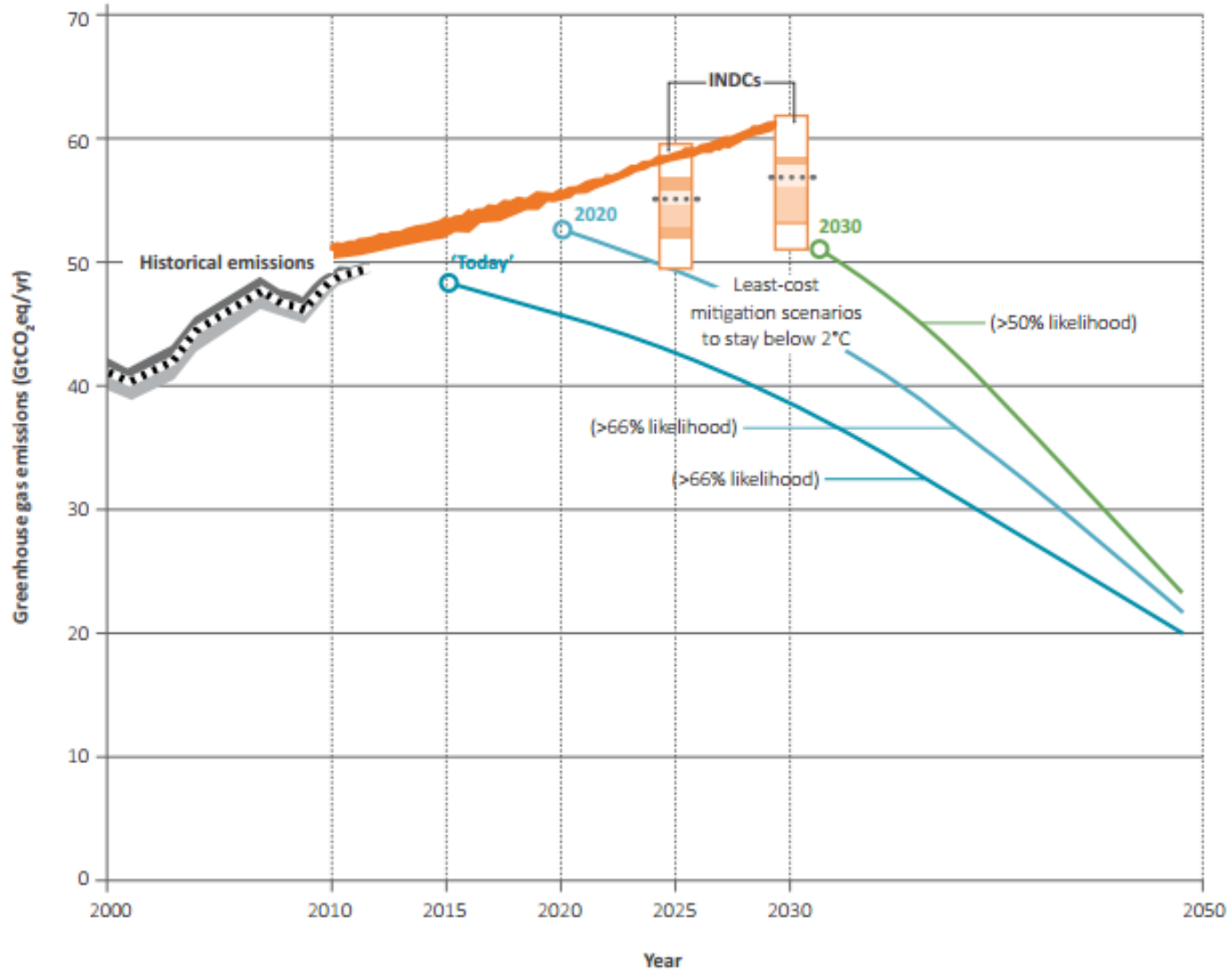
Stabilising climate change requires net emissions of long-lived GHGs to drop to zero

If we want to limit warming to 2 degrees, net CO₂ emissions would have to drop to zero well before 2100, and even faster in developed countries

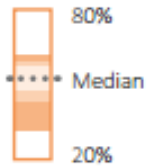
At current rates, the remaining carbon budget will be exhausted within the next 30 years

Amount Used 1870–2011:
1900 Gt CO₂





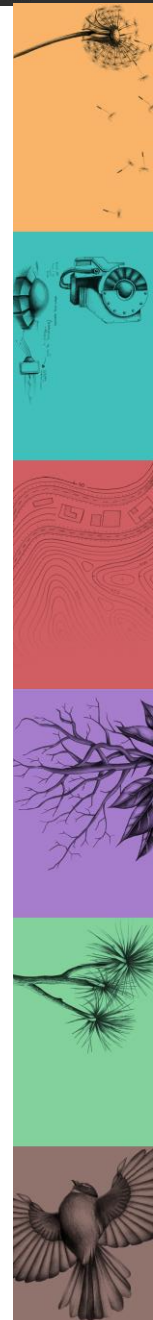
Ranges



- Pre-INDC Cancun 2010 pledge scenarios
- Conditional and unconditional aggregated INDC ranges
- Immediate action scenario to stay below 2°C
- Delay-2010 IPCC scenario to stay below 2°C
- Delay-2030 IPCC scenario to stay below 2°C

Change is continuous

- Alternative is not status-quo.
- Bring in the new – and usher out the old.

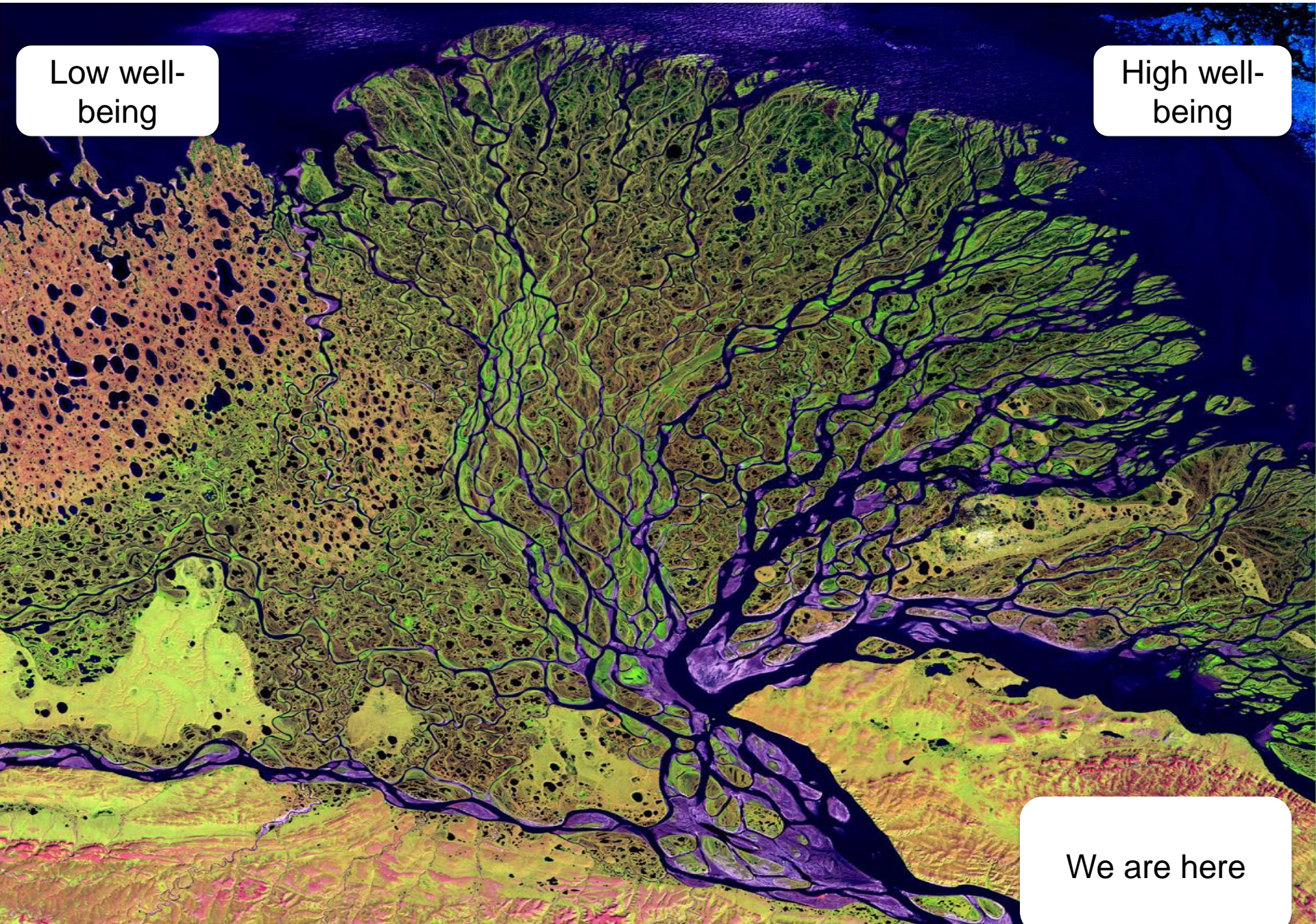


Net-Zero-Emissions Future

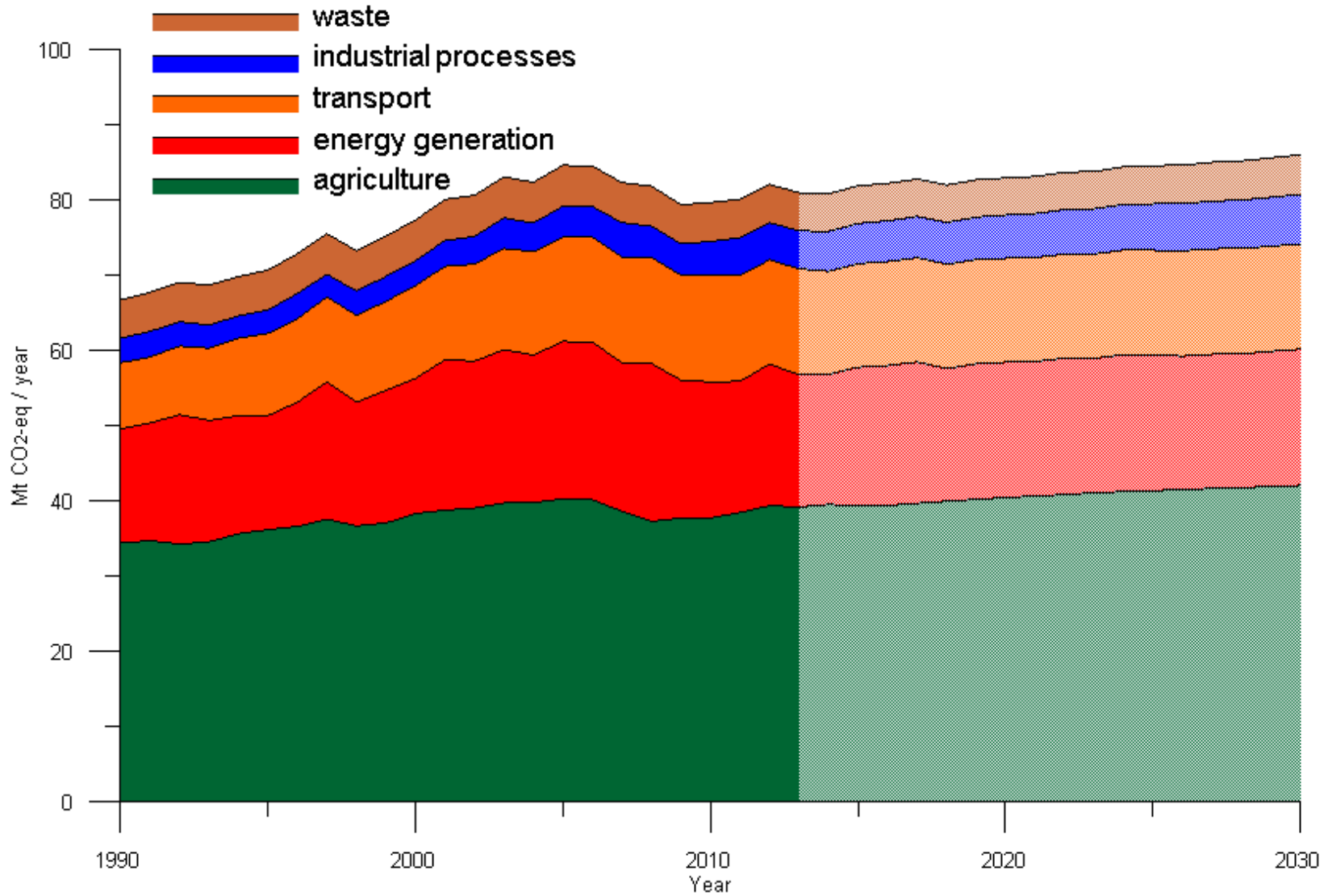
Low well-being

High well-being

We are here

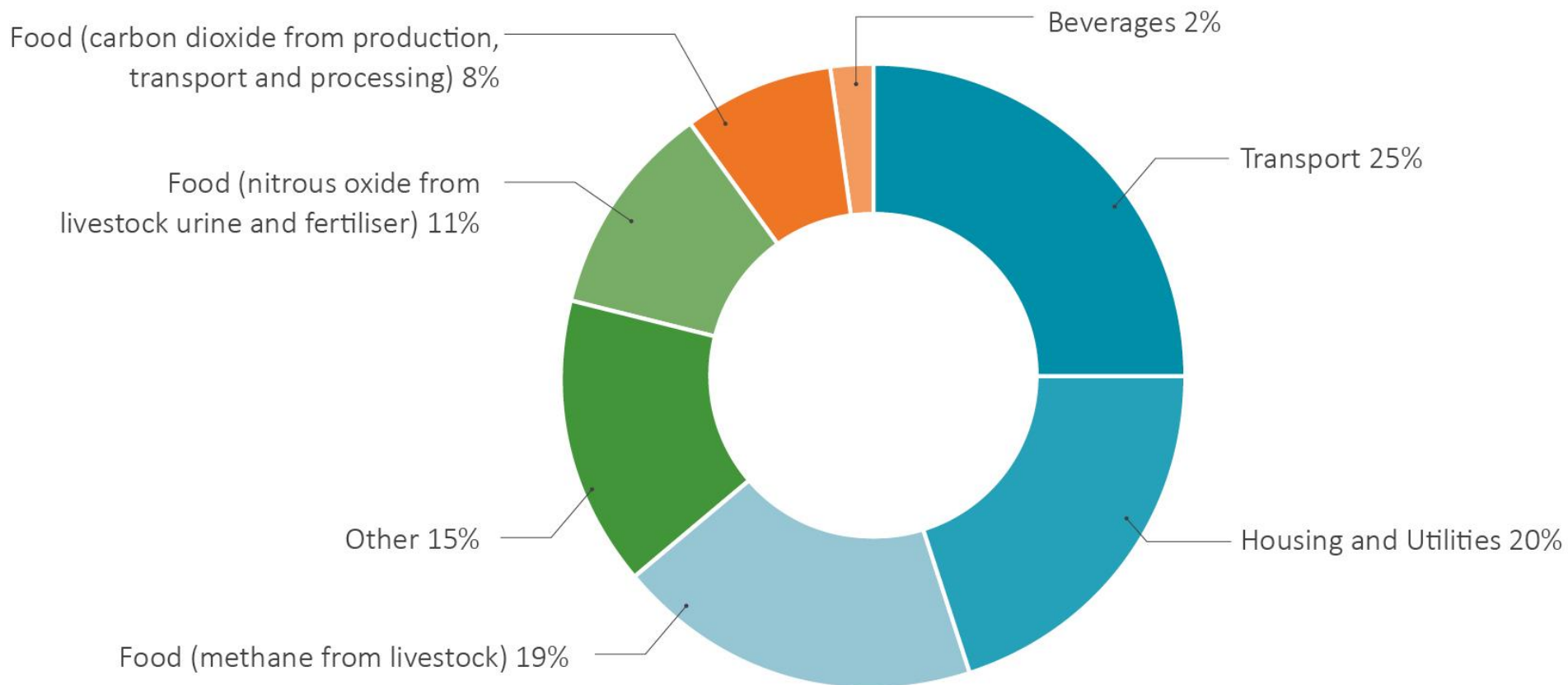


New Zealand's annual gross and net GHG emissions continue to increase. ('Net' accounts for CO2 removed by forests.)



Multiple entry points – no silver

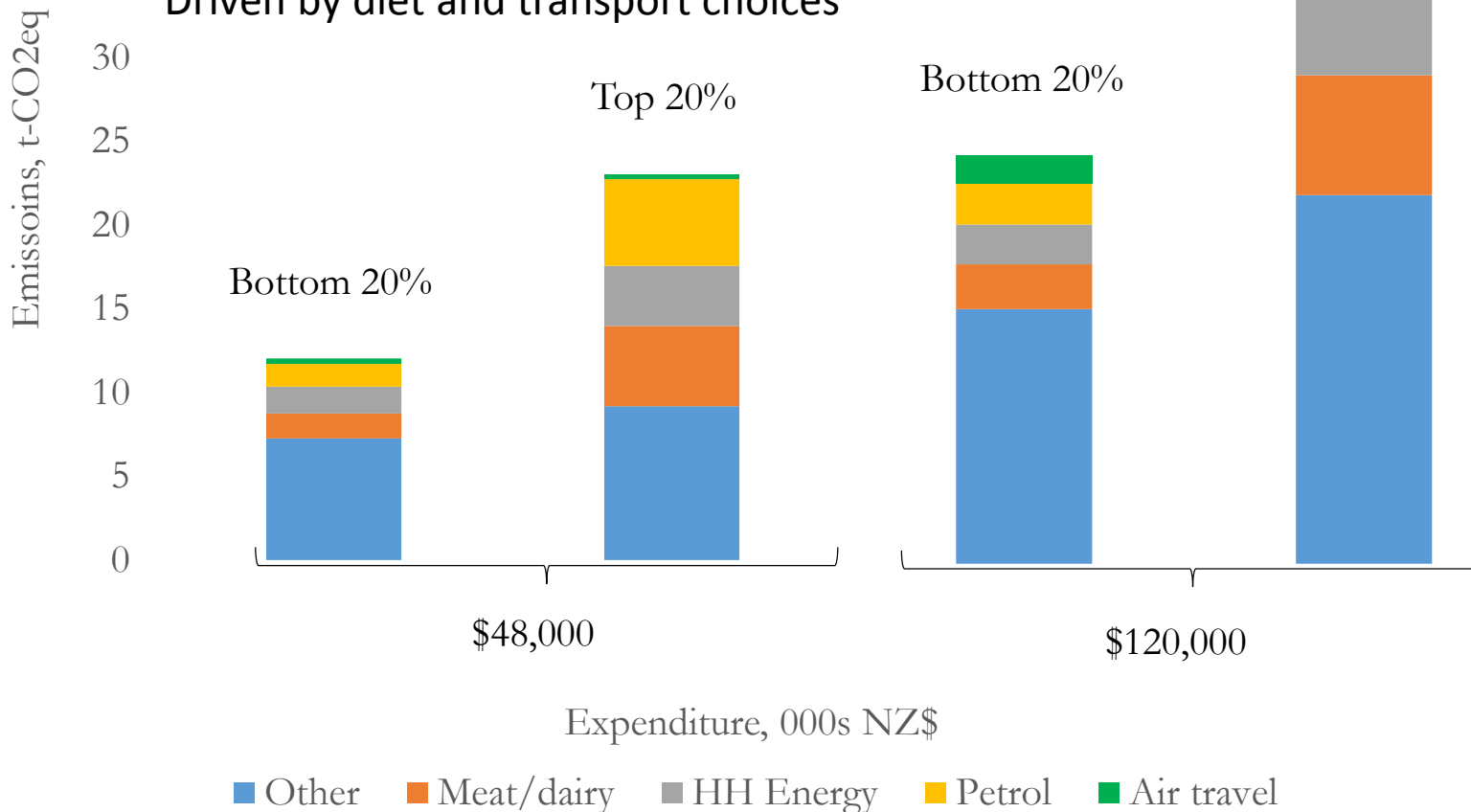
bullet: Composition of average household emissions



What we buy also has an impact...

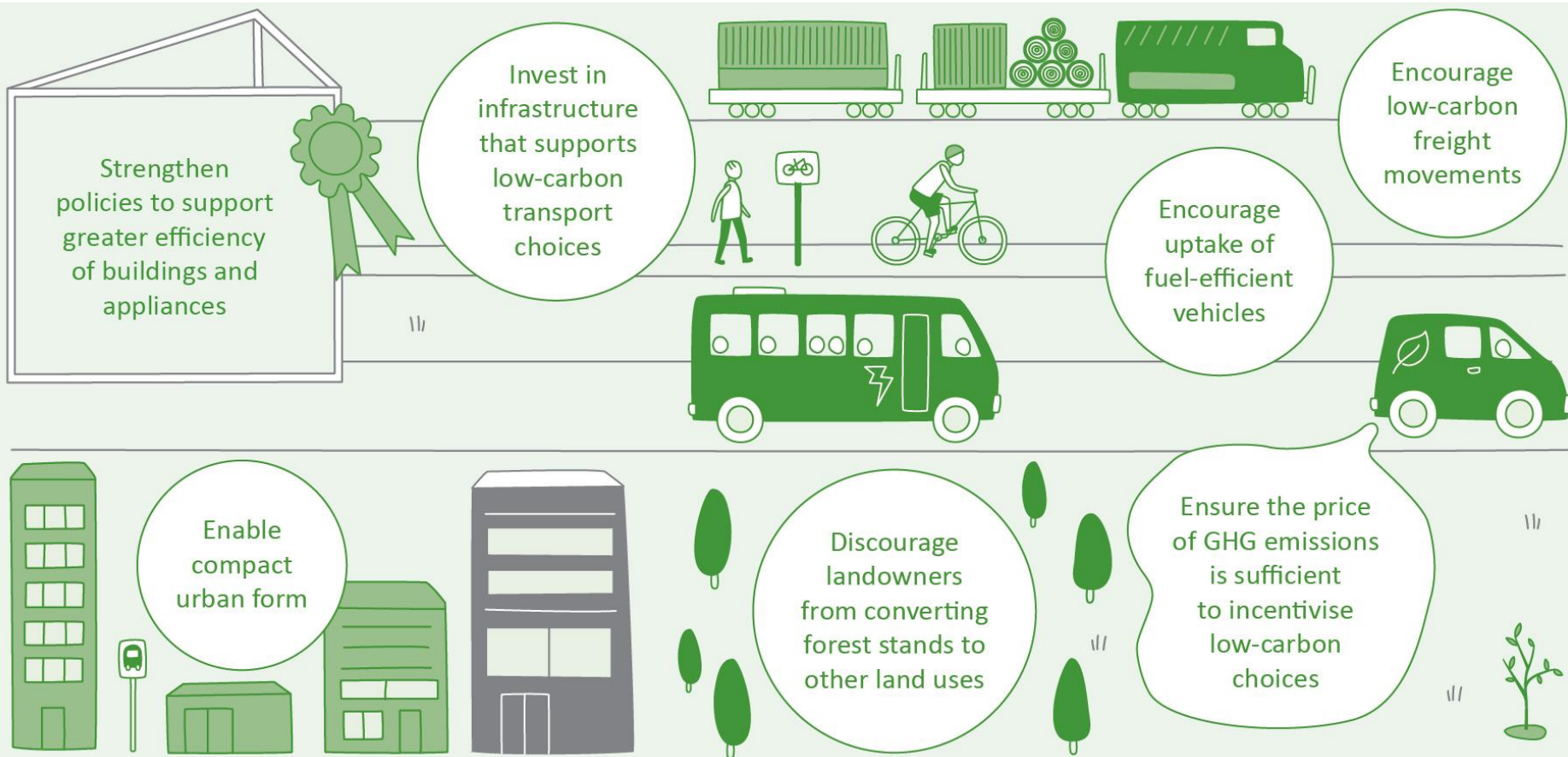
50 Top 20% of emitting households at
 45 each level of expenditure have
 40 emissions 80-90% higher than bottom
 20% of households

Driven by diet and transport choices



Achieving a transition relies on carefully planned policy interventions and behaviour changes at individual, business, city, organisational levels.

CENTRAL AND LOCAL GOVERNMENT

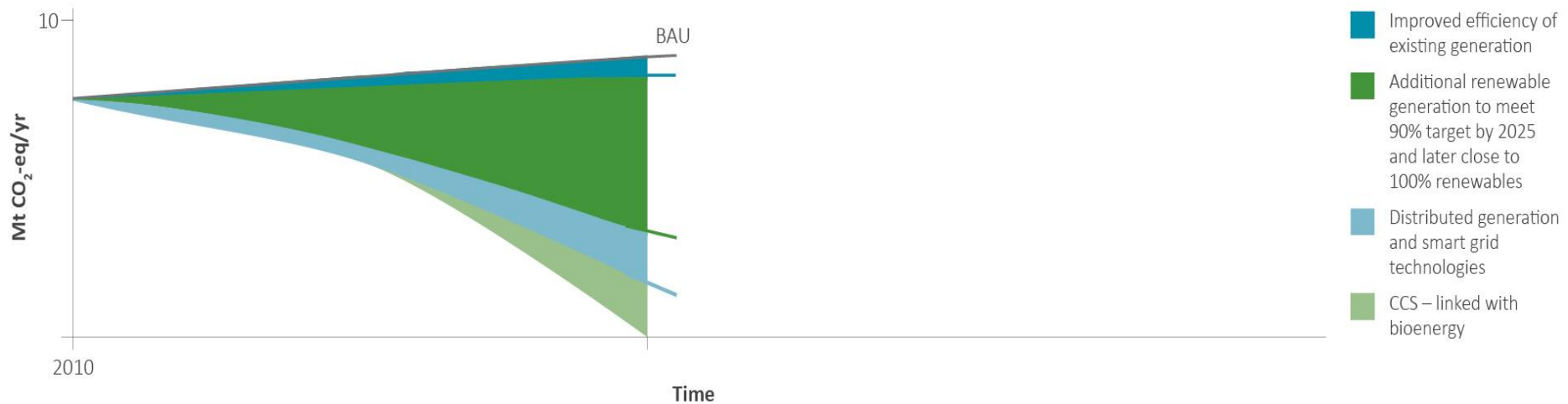


Increasing renewable electricity

Increasing the share of renewable electricity generation to reach New Zealand's 90% target by 2025 is technically and economically possible.

Electricity Supply

Zero emissions by medium term



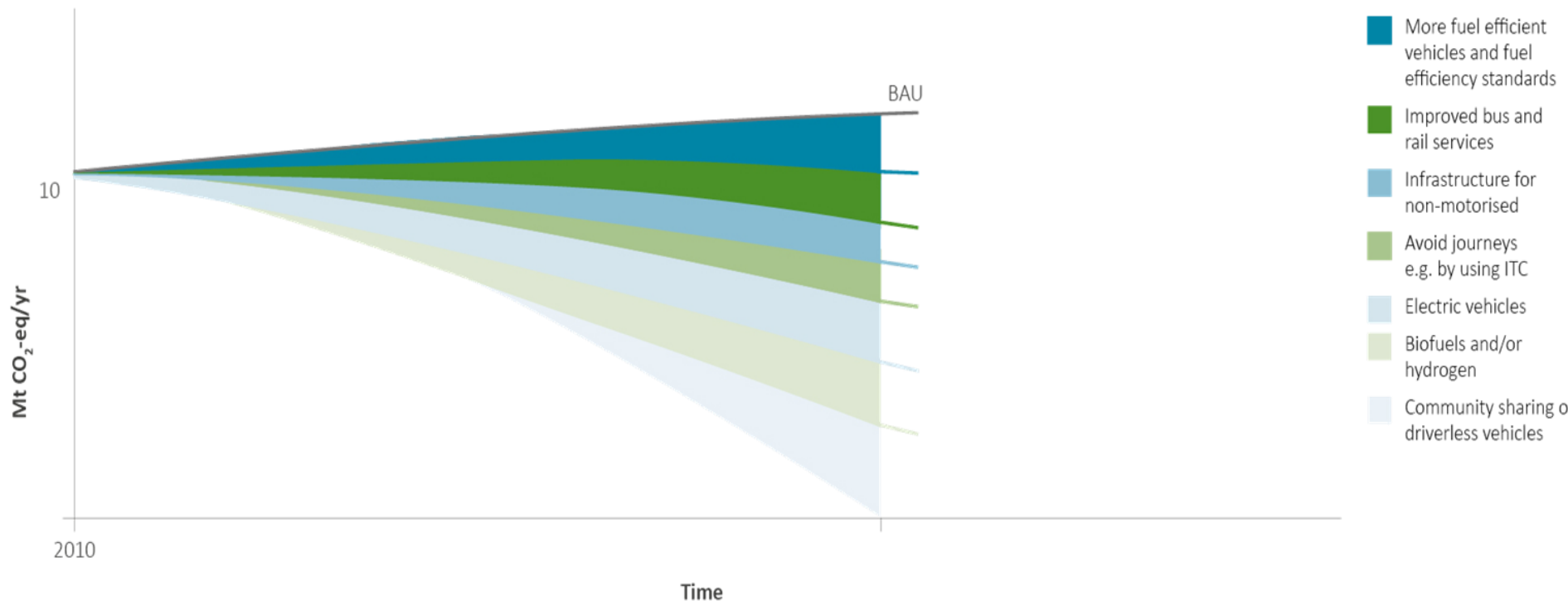
Low emission electricity enables other reductions

Reduction will involve many different actions

As technologies evolve, the 'best' reduction path will also evolve

Passenger transport (domestic excluding international aviation)

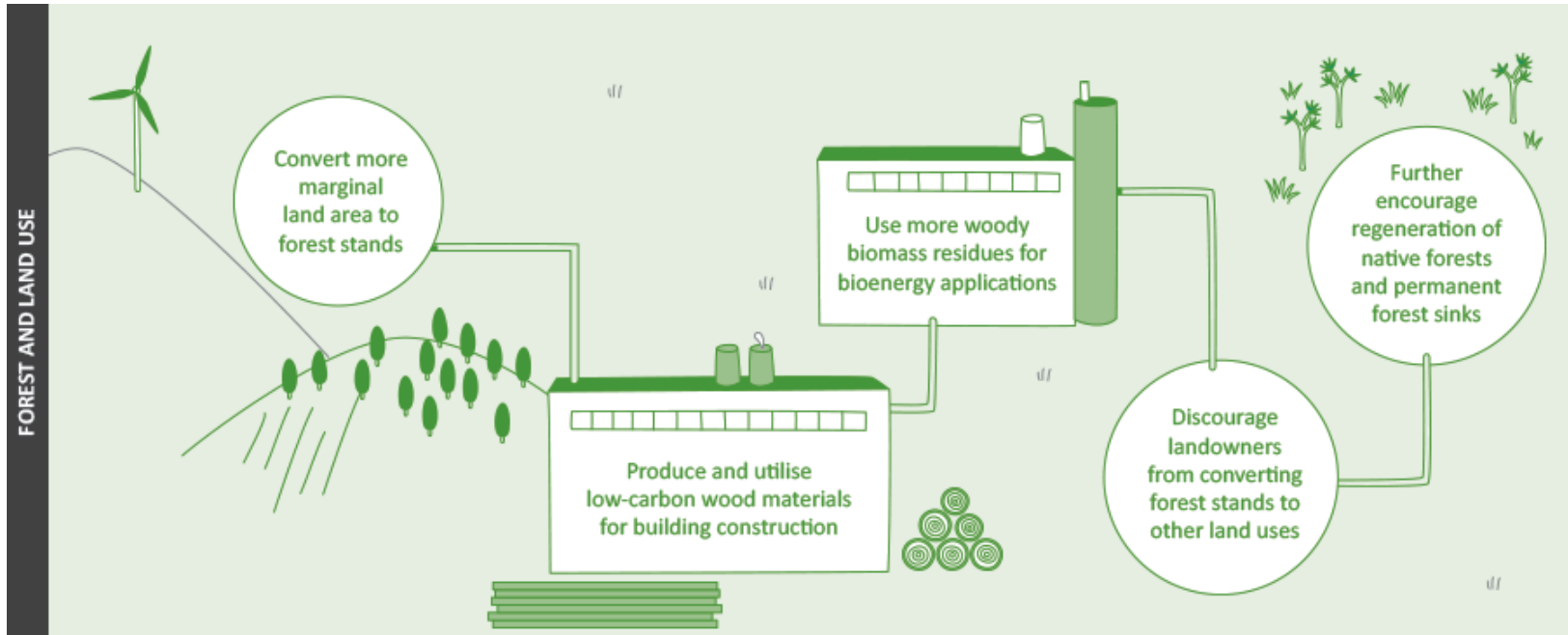
Zero emissions by long term



Forest planting and harvesting

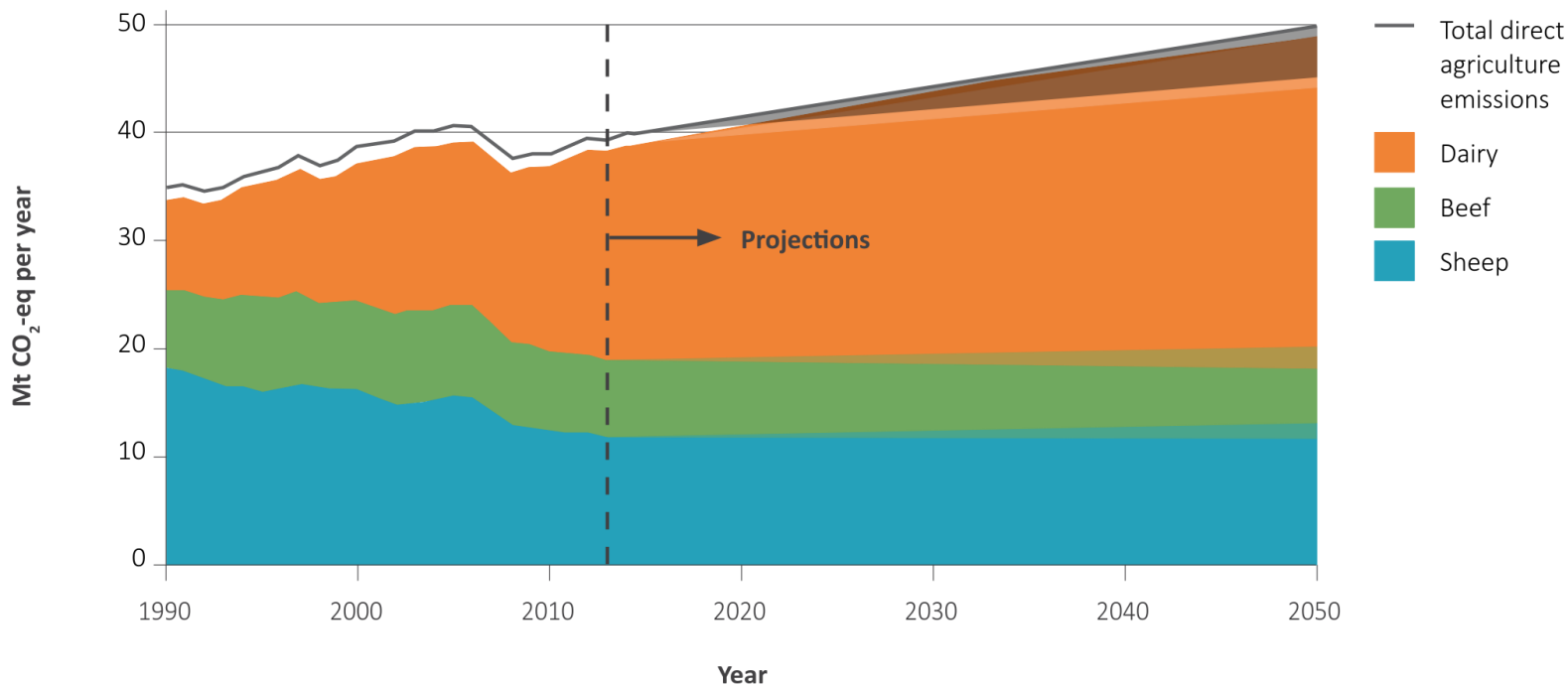
Significantly increasing the land area of plantation forests could offset up to a quarter of our total GHG emissions over the next two to three decades.

Forest sinks can only be an interim solution because there is a limit to the area of available land.



Agriculture

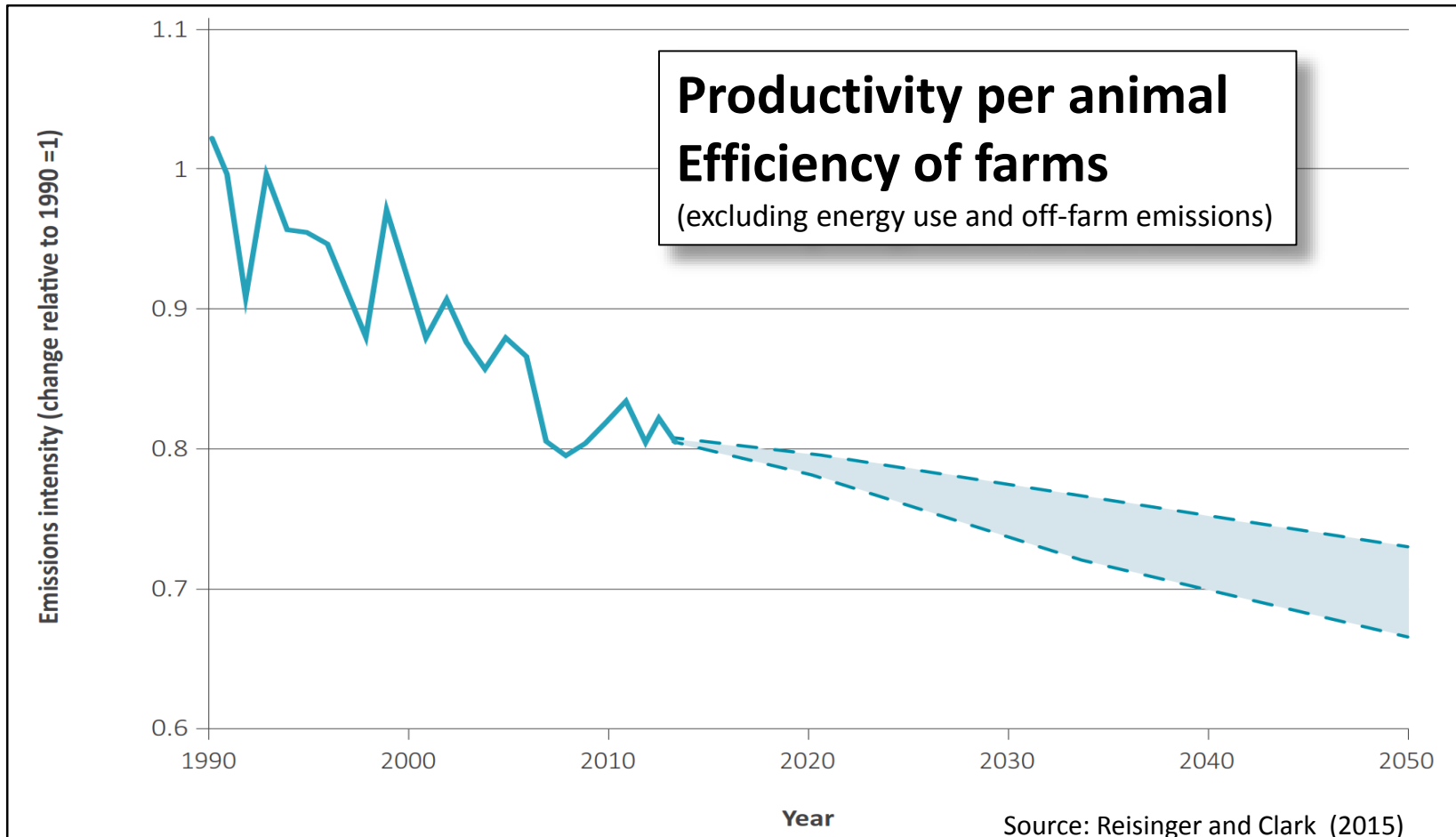
Absolute emissions are projected to continue to increase, while emissions intensity falls



Source: Reisinger and Clark (2015)



Agriculture



Supporting low-carbon choices

We can start immediately by deploying low-risk mitigation actions whilst planning for and trialling more ambitious emission reductions options and system changes to commence the necessary transition to a low-carbon economy.

An effective emissions trading system is one essential part of any policy package.

Other important roles for government include:

- Support for identifying and trying new ideas

- Meeting infrastructure needs and helping coordinate major shifts

- Removing barriers to change



Enabling societal engagement

Evidence for mitigation pathways for New Zealand is deficient. This limits effective public engagement and debate about our future options.

Investment in data gathering and deeper analysis will help refine early mitigation actions and support a transparent public debate about longer term desirable and feasible mitigation pathways.

An independent board or entity to provide evidence-based advice to Parliament and the public would be valuable.

