

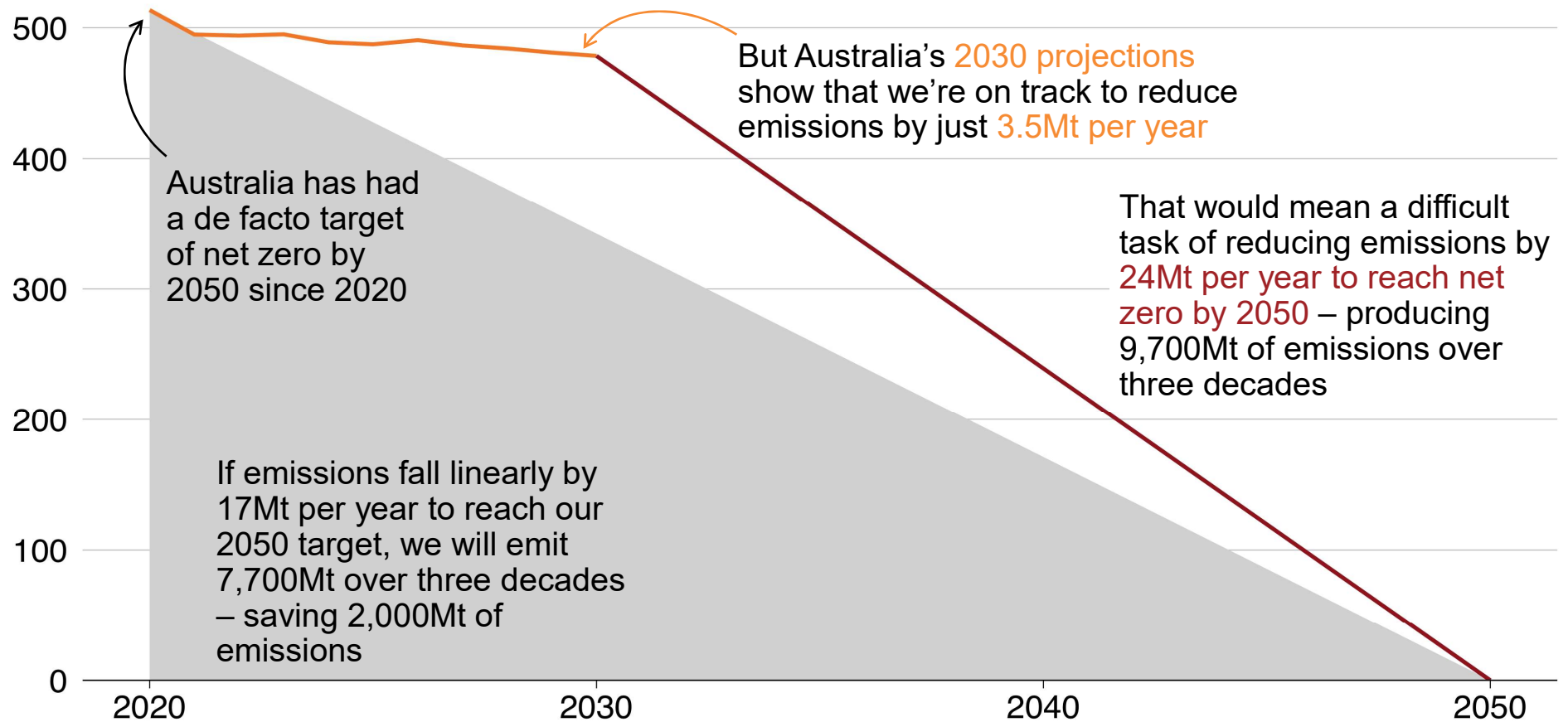


Hawthorne Club thought leadership series

September 2021

Reaching net zero will be much easier if we start now

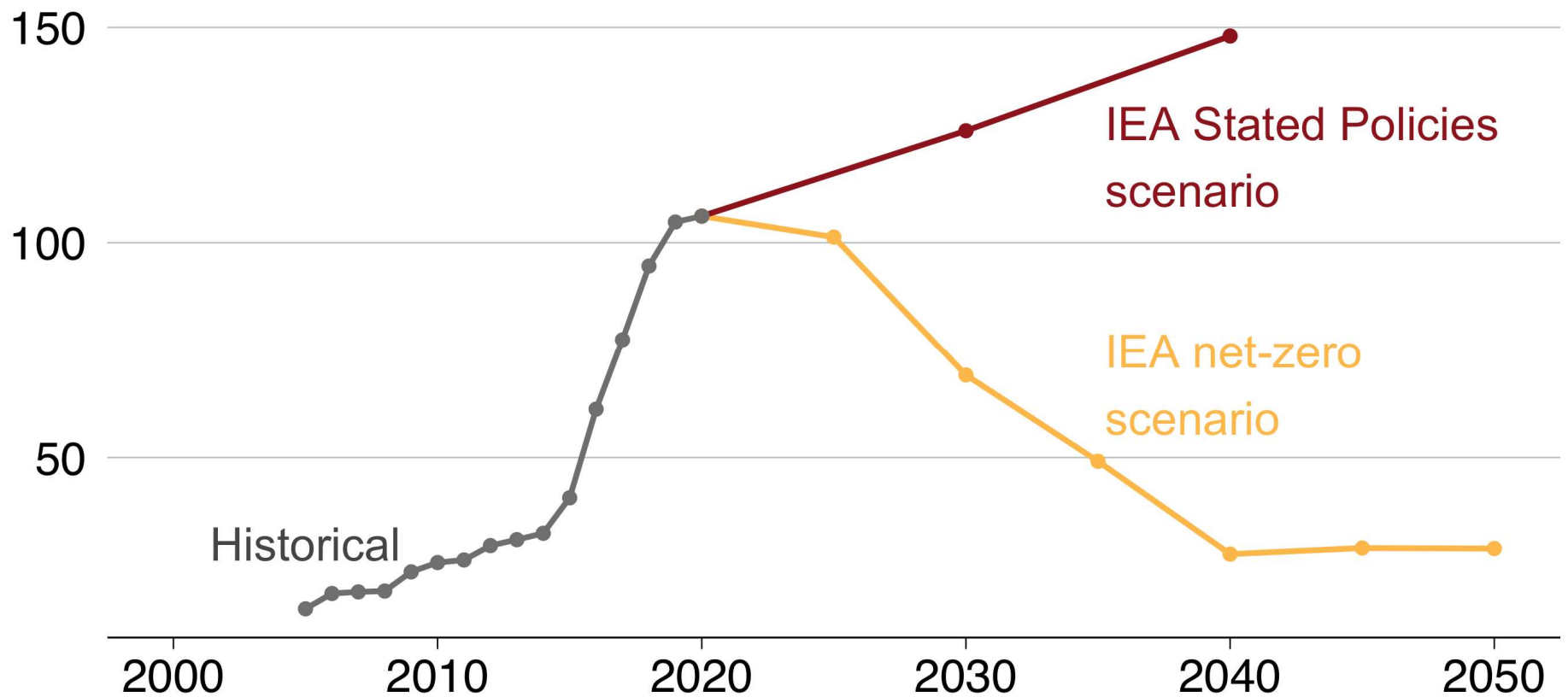
Emissions per year (millions of tonnes)



Notes: Emissions are 'carbon-dioxide equivalents'. The two trajectories depicted do not have an equal effect on the climate, despite both reaching net zero by 2050 – it is the total amount of emissions in the atmosphere, not the annual contribution, that drives climate change. Source: Grattan analysis of DISER (2020a).

If the world pursues strategies to reach net zero, domestic emissions from Australian fossil fuel exports could shrink dramatically

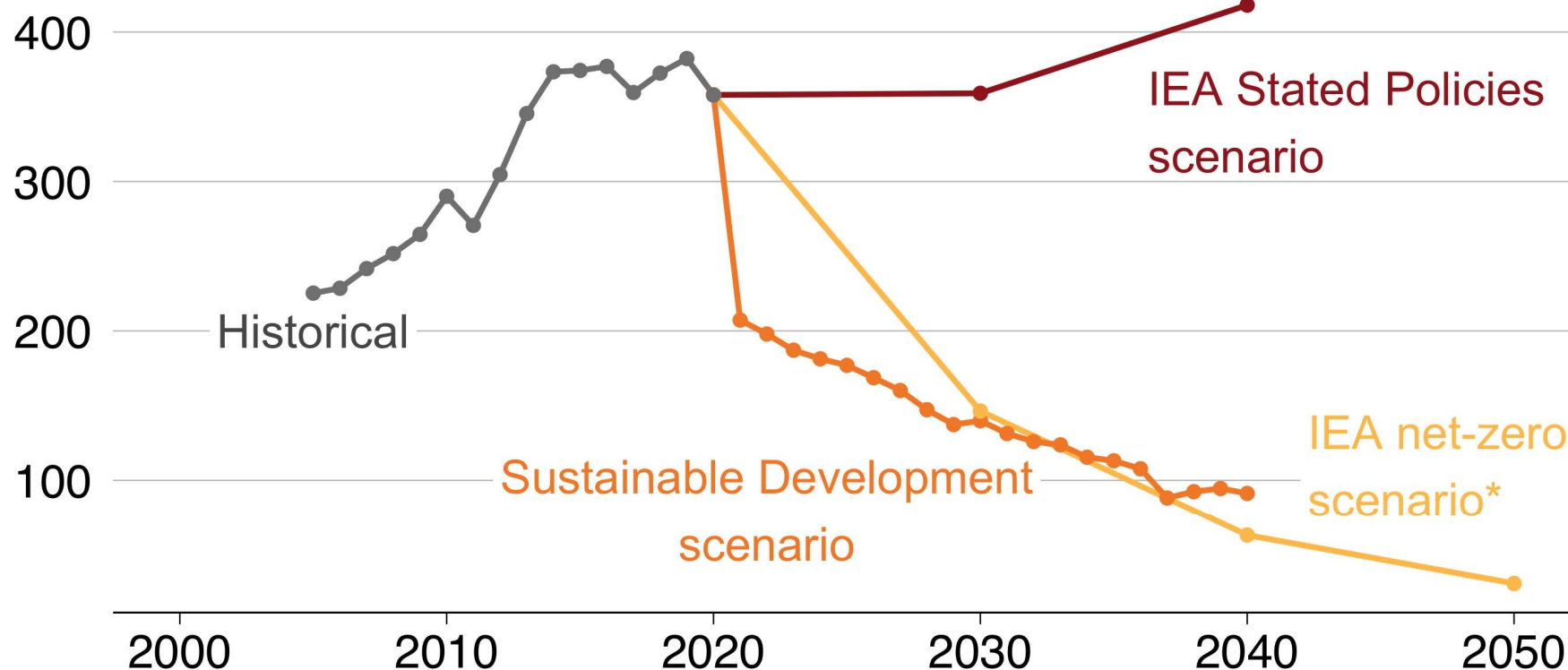
LNG exports (billions of cubic metres)



Notes: The Stated Policies scenario is based on 2019 forecasts in the absence of any further global policy to reduce emissions.
Source: Grattan analysis of DISER (2020b), DISER (2021c), IEA (2021) and IEA (2019)

If the world pursues strategies to reach net zero, domestic emissions from Australian fossil fuel exports could shrink dramatically

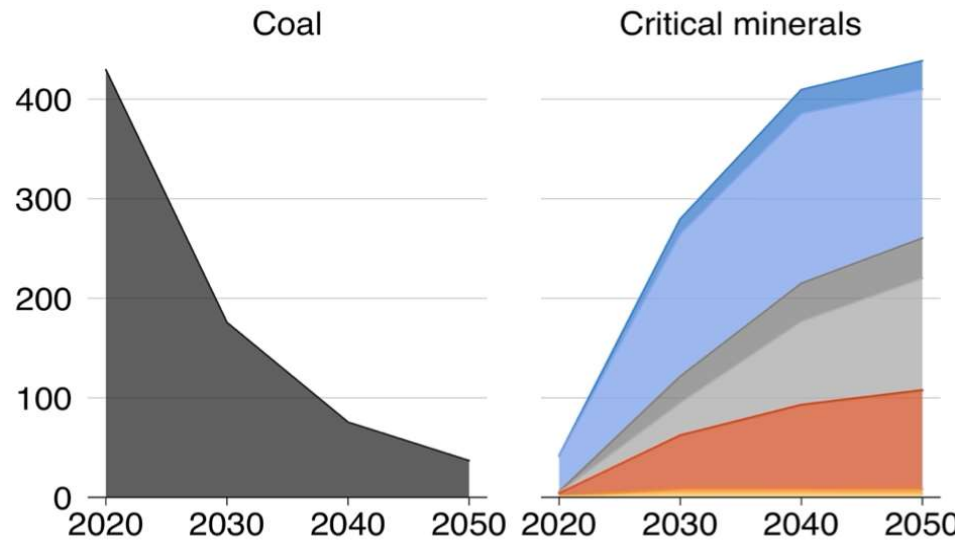
Coal exports (million tonnes of coal-equivalent)



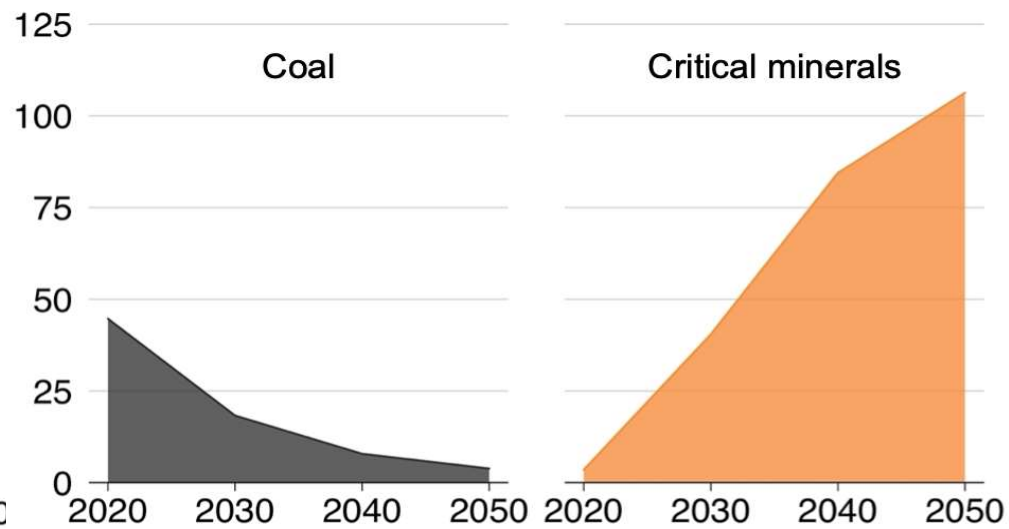
Notes: (*) International Energy Agency (IEA) net-zero scenario includes forecasts for the global market value of coal – this path assumes Australia's coal exports fall at the same rate as the global market. Australian coal exports are forecast explicitly to 2040 in the Sustainable Development scenario (which would limit warming to well-below 2° C) from Auger et al (2021). The Stated Policies scenario is based on 2019 forecasts in the absence of any further global policy to reduce emissions.
Source: Grattan analysis of Auger et al (2021), DISER (2020b), DISER (2021c), IEA (2021) and IEA (2019)

Net-zero is also an opportunity for Australia

Global market value (US\$billion)



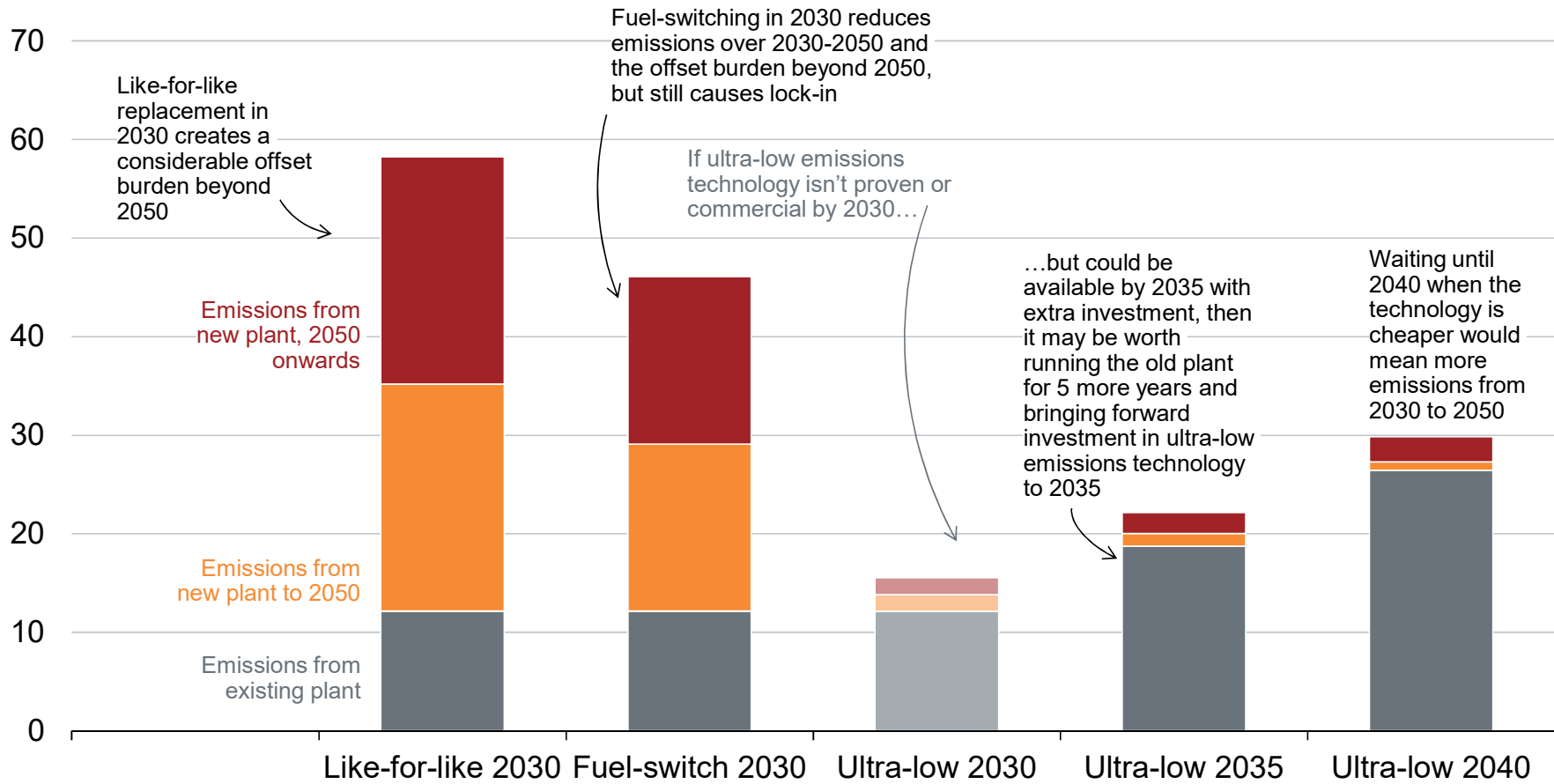
Australian revenue (A\$billion)



Notes: Includes total revenue for coal and for selected critical minerals used in clean energy technologies. The prices of critical minerals are based on conservative assumptions about cost increases (about a 10-to-20 per cent increase from current levels to 2050). Australia's share of the global coal market is taken from IEA (2020), and minerals from Bruce et al (2021). Exchange rate is assumed to be 0.73 USD per AUD. Global market value figures are inflation-adjusted to 2019 dollars. Australian revenue assumes a constant market share.
Source: Grattan analysis of IEA (2021, p. 163).

Aligning asset replacement cycles, and technology and commercial readiness, can slash emissions lock-in

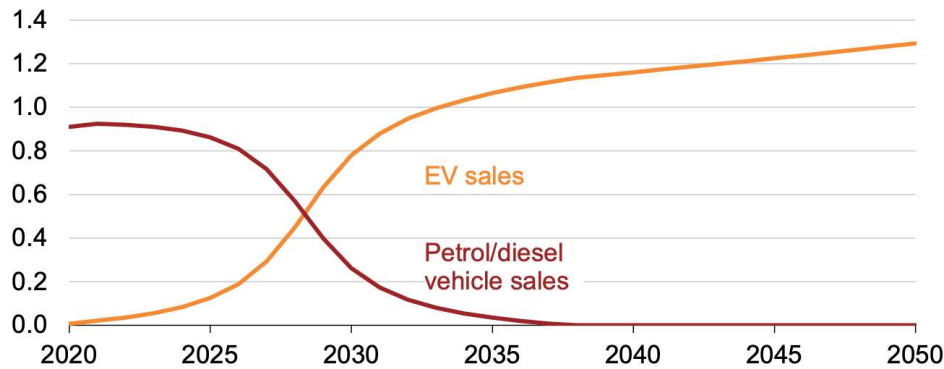
Emissions from 2021 to the end of the asset's life (millions of tonnes)



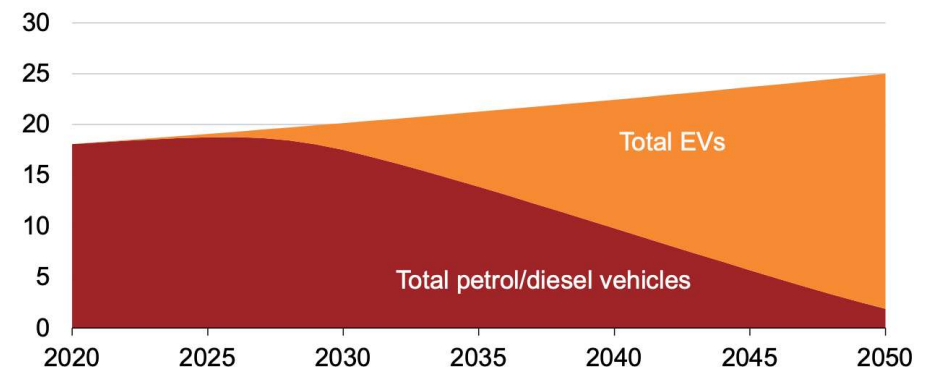
Note: Theoretical example for a cement plant currently using coal, facing an asset renewal decision in 2030.
Source: Grattan analysis of public data for various Australian cement facilities.

Achieving 75 per cent electric vehicle sales by 2030 and near-100 per cent by 2035 would get the light vehicle fleet mostly on track for net zero, with just a few million petrol and diesel cars still on the road in 2050

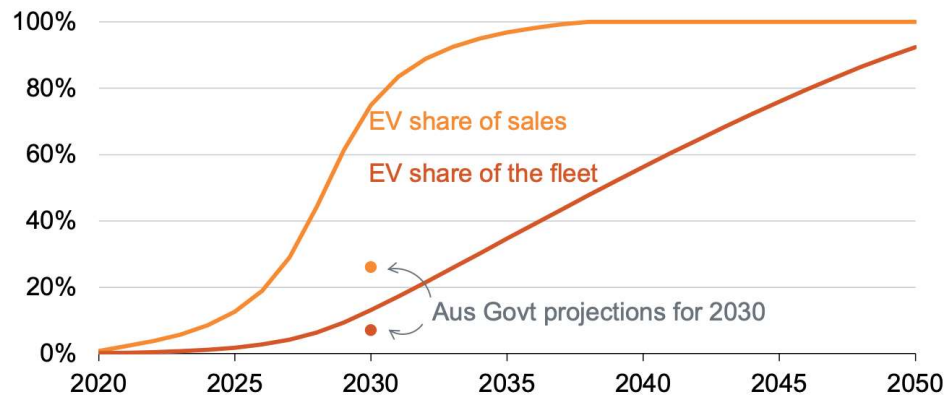
Light vehicle sales (millions)



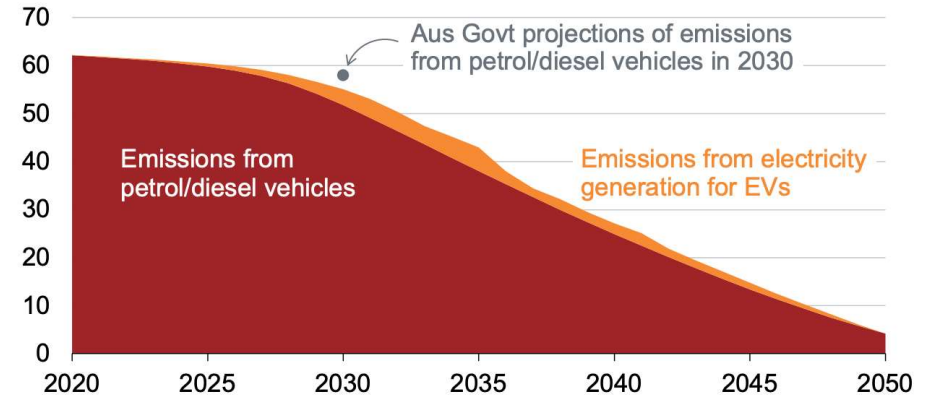
Total light vehicle fleet (millions)



EV share



Annual emissions from the light vehicle fleet (millions of tonnes)



Notes: Adoption curve is stylistic only. Electricity emissions intensity is assumed to decline nationwide at the same rate as the National Electricity Market over 2021-2042, according to AEMO's Step Change Scenario, and then linearly to zero emissions by 2050: AEMO (2020a). 4.1 per cent of the vehicle fleet is scrapped each year, in line with the attrition rate over 2015-2020: ABS (2020b). Based on data from VicRoads (2020), one-fifth of the turnover is assumed to be due to random crashes, with the rest due to vehicle age. Source: Grattan.

More info

Grattan reports:

- *Towards net zero: practical policies for the transport sector*
- *Towards net zero: practical policies for the industrial sector*

These reports are the first in a series of five on reaching net-zero emissions. Future reports will cover agriculture, offsets, and electricity.

Stay in touch:



Hear about our reports before they hit the headlines.



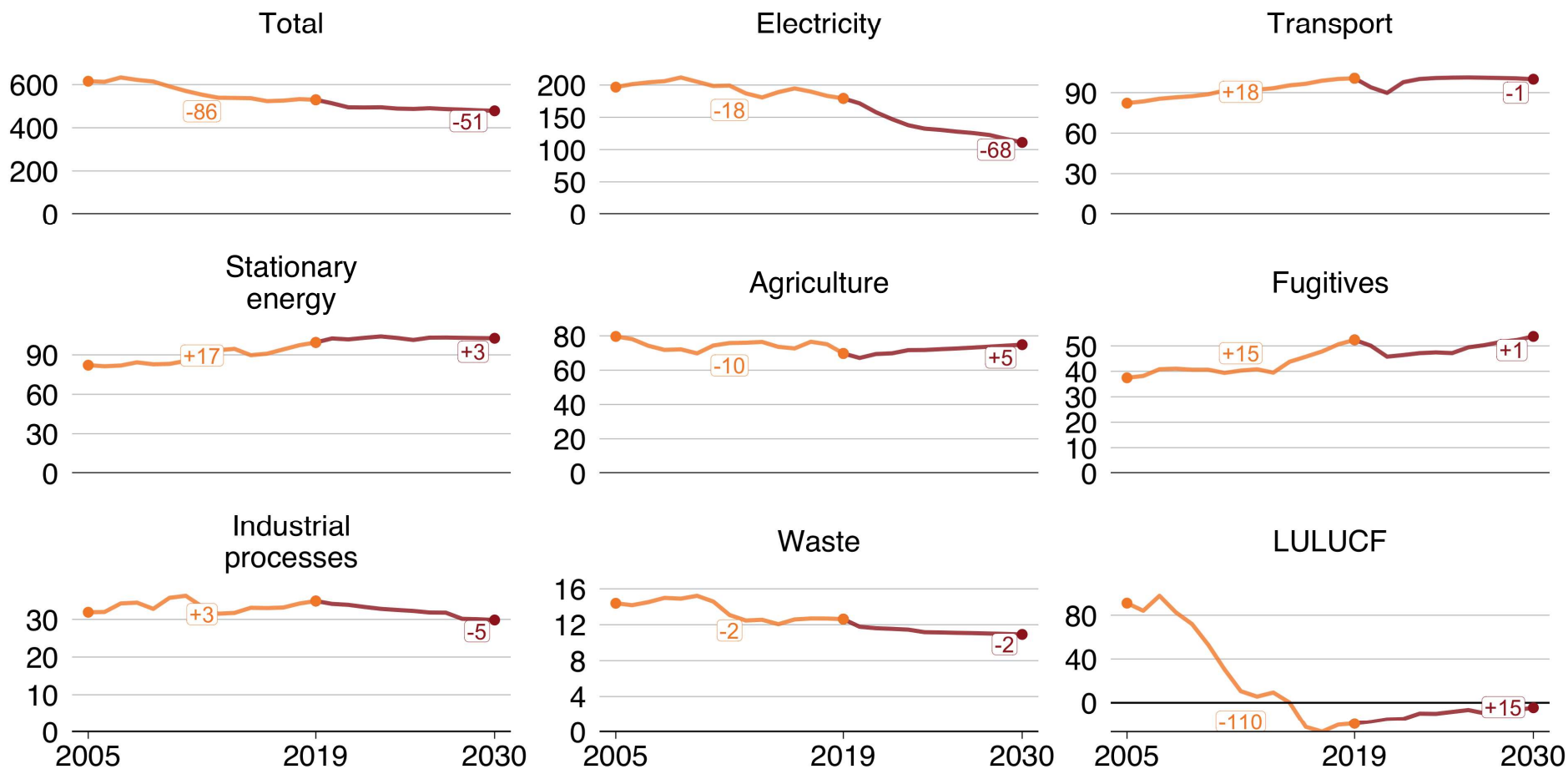
@GrattanInst | @alison_reeve



Wherever you get your podcasts.

Apart from electricity, there's very little emissions reduction expected in Australia over the next decade

Emissions per year (millions of tonnes)



Source: Grattan analysis of DISER (2020a).