

December 2025

# Light vehicle emissions intensity in Australia: trends over time

Research report highlights



# Highlights



## Tracking Australia's progress on reducing light vehicle emissions

Australia's light vehicle fleet is slowly reducing its carbon dioxide emissions intensity. The **National Transport Commission's Light Vehicle Emissions Intensity in Australia: Trends Over Time** report is the most comprehensive of its kind – covering more than 17 million registered vehicles on our roads.

Our report shows that across the light vehicle fleet, the average emissions intensity has fallen to 190.8 g/km – a 1.5 per cent reduction from the year before.

This improvement is being driven by the growing demand for Hybrid Electric Vehicles (HEVs), Battery Electric Vehicles (BEVs), Plug-in Hybrid Electric Vehicles (PHEVs) and more efficient new vehicles. However, 95 per cent of the fleet remains powered only by internal-combustion engines.

For vehicles first registered in 2024, average CO<sub>2</sub> emissions intensity fell by 3.9 per cent.



## Fleet longevity slows transition

**Australia's light vehicles remain on the road for a long time, slowing the uptake of newer, cleaner technologies.**

Our analysis shows that around half of light vehicles remain registered for about 19 years, with 53 per cent of vehicles first registered in 2006 still on the road at 2 January 2025. Around 10 per cent of vehicles exit within their first decade.

While today's new vehicles are significantly cleaner,

the persistence of older, higher-emitting vehicles limits the pace at which improvements flow through the total fleet.

Even so, fleet turnover is heading in the right direction – with strong net inflows of lower-emission vehicles and net outflows of vehicles with emissions intensities above 250 g/km – indicating steady progress toward a cleaner fleet.



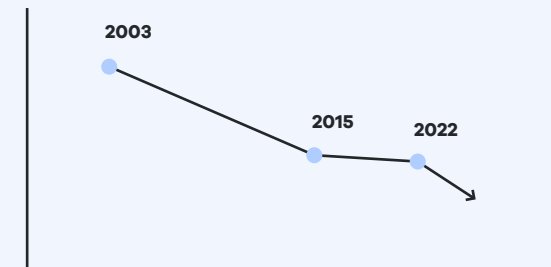
## Newer vehicles and emission intensity

For vehicles first registered in 2024 and still registered as at January 2025, the average emissions intensity was 156.3 g/km, down from 162.7 g/km the year before – a 3.9 per cent improvement. This follows a 5 per cent drop the previous year, highlighting two consecutive years of significant progress.

Two decades earlier, for vehicles first registered in 2003, the average emissions intensity was 252 g/km, showing how far vehicle technology and efficiency have advanced over time.

The decline in 2024 represents one of the strongest year-on-year improvements across our 2003-2024 analysis period.

However, there is a long road ahead; the average new Australian passenger vehicle still emits roughly 35 per cent more carbon dioxide than its European counterpart.





## Bigger cars, bigger challenge

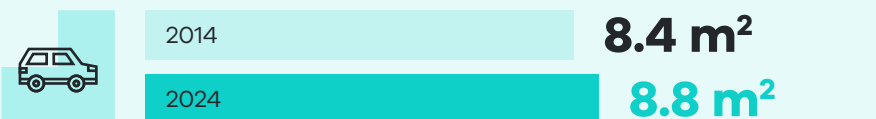
**Australians are driving larger vehicles than ever, and it's shaping our emissions profile. The average light vehicle footprint has grown from 8.4 m<sup>2</sup> to 8.8 m<sup>2</sup> over the past decade, reflecting the steady increase in vehicle size and weight.**

Even so, emissions intensity is falling as cleaner technologies become more common. Hybrid models, in particular, have helped reduce emissions across small, medium

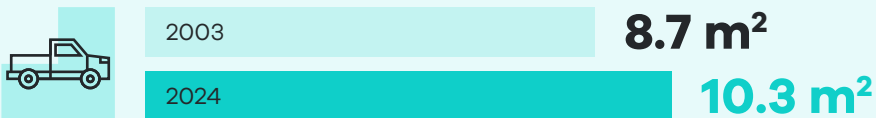
and large SUVs, showing that efficiency gains are possible even as vehicles grow in size.

The increase in footprint is even more pronounced for utes and pick-ups, which have grown by around 1.6 m<sup>2</sup> between 2003 and 2024. Some of the largest utes on our roads now span 15 m<sup>2</sup> and produce over 500 g/km of carbon dioxide – more than three times the average for light vehicles first registered in 2024.

Average vehicle footprint grew by 0.4 m<sup>2</sup> from 2014 to 2024.



1.6 m<sup>2</sup> increase in average ute and pick-up footprint between 2003 and 2024.



## More options, fewer emissions

**Australians are choosing hybrid cars at a rapidly growing rate as new petrol-only vehicle registrations are on the decline. There were more than 600,000 hybrids registered in January 2025, and more than a quarter of them entered the fleet during 2024.**

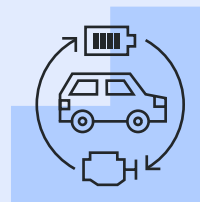
At the same time, new registrations of petrol-only vehicles dropped by 50,000 from 568,000 to 518,000 in 2024

– and a 27 per cent decline from the 715,000 first registered in 2017 (and still registered in 2025).

Australians are also increasingly turning to electric vehicles. As of January 2025, 94 per cent of all the BEVs on our roads were first registered between 2021 and 2024, and there were around 240,000 of them in total – up sharply from around 150,000 only a year earlier.

Vehicles manufactured in China now account for 73 per cent of our BEVs, and Chinese vehicles collectively have the second-lowest average emissions intensity of any source country. Romania ranks lowest overall for emissions intensity but accounts for less than 9,000 vehicles. Japan remains our largest source of light vehicles, with around 6.2 million registered in Australia.

We also have more electric vehicle options than ever, with 173 BEV and PHEV models available, up from 127 the year before. Nonetheless, these vehicles still make up less than 2 per cent of Australia's light vehicle fleet, compared with more than 4.5 per cent globally.



Australians are choosing hybrid cars at a rapidly growing rate as new petrol-only vehicle registrations are on the decline.

## Vehicles where you live

This year's report includes, for the first time, detailed analysis by federal electorate and Local Government Area (LGA), providing a clearer picture of how location and vehicle choice influence Australia's emissions profile.

Among the 518 LGAs analysed, average emissions intensity ranged from 169 g/km in the City of Sydney to 266 g/km in Diamantina, Queensland.

Unsurprisingly, inner-city LGAs with higher shares of electric and newer vehicles recorded the lowest emissions – while remote areas, with a higher share of light commercial vehicles, had the highest – reflecting the types of vehicles chosen for different conditions and driving tasks.

Inner-city areas in Sydney, Melbourne and Perth recorded the highest BEV shares nationally, with the City of Sydney leading at nearly 5 per cent of all registrations.



## Australia in the global context

**Australia's average emissions intensity for new passenger vehicles and SUVs (excluding utes and vans) is 143 g/km, compared with a European average of 107 g/km.**

Our emissions intensity profile also remains higher than the United States and Canada.

Encouragingly, as noted earlier, electric-vehicle uptake continues to grow. EVs across Australia accounted for 13 per cent of new light vehicle registrations in 2024, surpassing rates in Japan, New Zealand, India and the United States – marking a clear shift toward cleaner technologies.

However, this remains below Canada (17 per cent), Europe (22 per cent) and China (48 per cent), showing that while progress is steady, there is still ground to make up.



### Average emissions intensity for new passenger vehicles and SUVs (not including utes and vans)

29 European countries

**107 g/km**

Australia

**143 g/km**

### Average emissions intensity



**181 g/km**  
**inner metro areas**



**202 g/km**  
**rural areas**

## Why this matters

Every litre of petrol burned produces about 2.3 kg of carbon dioxide, roughly the weight of a house brick. With transport contributing around 22 per cent of Australia's total carbon dioxide emissions, understanding and improving the efficiency of our light vehicle fleet is vital for reaching net zero emissions.

This report helps governments, fleet operators and consumers make informed choices about vehicles, policies and infrastructure to accelerate Australia's transition toward a cleaner transport system.



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