The current and future state of the New Zealand vehicle fleet and industry

Prepared for the Motor Trade Association by NZIER.

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New Zealand Institute of Economic Research (NZIER) is an independent, notforprofit economic consultancy that has been informing and encouraging debate on issues affecting Aotearoa New Zealand for more than 65 years.

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Key points

This report examines the current state of the vehicle fleet in New Zealand, its usage, and the industry that services it, and how this situation is expected to change over the next 10 to 20 years. The information in the report has been drawn from New Zealand Government data and forecasts, as well as publications from New Zealand and overseas, and interviews with subject matter experts within the motor vehicle industry.

The New Zealand vehicle fleet continues to grow, and there is no sign that New Zealanders are giving up on vehicle ownership or driving

By 2025, it is estimated that the New Zealand vehicle fleet will comprise 4.75 million vehicles, with light passenger vehicles (LPVs) accounting for approximately 75% of the fleet. The fleet has grown at a rate of 2.3% annually since 2015. The growth rate outstrips population growth, resulting in total vehicles per capita increasing over that time. This is despite a decrease in new vehicle registrations over the last four years. The proportion of New Zealanders with a licence has remained stable over the last ten years, with 941 licence holders per 1,000 people in New Zealand aged over 16. There has actually been a growth in the proportion of 16- to 24yearolds with a driver's licence, increasing from 777 per 1,000 people aged 16 to 24 in 2015 to 850 per 1000 people aged 16 to 24 in 2024.

Although the New Zealand vehicle fleet has grown, the electrification of the fleet has been slow

At the end of 2025, it is estimated that only 101,000 vehicles, or 2% of the total fleet, will be electric vehicles (EVs), and a further 48,000 vehicles will be plugin hybrid vehicles (PHEVs). There are, however, 429,000 petrol hybrids in the fleet, with these vehicles making up a large proportion of the imported used LPVs currently being brought into New Zealand. The slow rate of electrification of light vehicles has been a result of the total cost of ownership (TCO) and purchase price of EVs not yet being less than that of internal combustion engine (ICE) vehicles, as well as a lack of options, until recently, for LCVs. In the heavy fleet, there is still a significant TCO and purchase price premium for EVs, which is also limiting their takeup. This is exacerbated by the differing usage requirements of various types of heavy vehicles, which are suited to the currently available technology. The only exception to this is the metropolitan bus fleet, where a relatively high proportion of the fleet is electric.

The New Zealand vehicle fleet is old and getting older, limiting the rate at which new vehicle technology is taken up in the New Zealand fleet

The average age of a vehicle in the New Zealand fleet was 15 years in 2023, compared to 14.3 years in 2015. The age of the fleet is heavily influenced by the high prevalence of imported used LPVs in the New Zealand fleet, which on average enter the fleet aged 9.3 years old. Vehicles are also getting older when they exit the fleet, which could be due to the annual average mileage of vehicles in New Zealand dropping. New vehicles continue to advance in their use of Automated Driver Assistance Systems (ADAS) and their construction, which makes them safer. This is reflected in the decreased likelihood of New Zealand drivers being killed or seriously injured in collisions; however, the age of the fleet slows the rate of technological advancement. At the same time, the failure rates of Warrant of Fitness and Certificate of Fitness are increasing.

The sectors represented by MTA continue to grow at the same pace as the New Zealand economy, although growth rates have slowed since 2022

The sectors represented by MTA employ over 65,000 people and have close to 16,000 separate geographic business units. Together they produce $6.8 billion of gross domestic product (GDP). This represents 1.9% of New Zealand's total GDP, the same share of New Zealand's GDP that the industry contributed in 2019. Since 2015, the industry has experienced an 18% growth in employee numbers and a 9% increase in the number of business units. These growth rates slowed from 2022 to 2024, as the industry faced tougher economic conditions. However, profitability margins have generally increased slightly from 2023 to 2024.

The industry dynamics are changing as the technology in vehicles increases and new business models emerge

The increasing use of ADAS, as well as the integration of computer systems and proprietary software in vehicles, is complicating diagnosis and repair. Access to manufacturerspecific tools, diagnostic equipment, and repair manuals is either restricted or requires a costly investment in diagnostic tools, subscriptions, or licences. This is making it difficult for independent businesses, in particular, and is leading to advocacy for 'right to repair' regulations that oblige manufacturers to give access to repair information for independent service providers. The increased investment required, combined with owners of these businesses reaching retirement age, is leading to consolidation in the general repair and collision repair sectors, as consolidators, larger chains, and franchise operations acquire independent service providers. In the collision repair sector, the entry of insurers into the collision repair market is also changing the industry dynamics.

Looking forward, the rate of growth of the vehicle fleet slows and may decrease, together with less vehicle kilometres travelled (VKTs) being forecast

The Ministry of Transport forecasts that the total vehicle fleet will grow to 5.07 million vehicles in 2035, a growth rate of 7% from 2025. In the following decade, this growth rate more than halves to 3% with a total fleet of 5.23 million vehicles forecast for 2045. This is explained by an ageing population changing the travel requirements of households, increased intensification of cities, better public transport and the growth in shared mobility. The Ministry of Transport forecasts that VKTs will grow in line with population growth and economic growth over the next twenty years. However, the introduction of timeofuse or congestion charging, as well as a mode shift of people from cars to public transport and freight from road to rail and coastal shipping, could see VKTs fall over the next 20 years. This is a scenario that the Climate Change Commission is forecasting.

The fleet will electrify at an increasing pace, especially after 2035, but ICE vehicles continue to make up a large proportion of the fleet even in 2045

Only 13% of the vehicle fleet is forecast to be fully electric by 2035, increasing to 46% by 2045, meaning 54% of the fleet is still powered by liquid fuel, at least in part in the case of hybrids and PHEVs. The Climate Change Commission previously forecast that the total cost of ownership of a new EV LPV will be less than that of an ICE LPV by the end of 2025, with the purchase price premium between an EV and ICE disappearing by 2028 under some scenarios. This will lead to an increase in the proportion of new EVs being sold. This cost and price decrease is the result of decreased manufacturing costs resulting from cost reductions in battery technology and economies of scale, especially in China, which currently accounts for 70% of the world's EV manufacturing and nearly 50% of New Zealand's new EV imports. For other vehicle types, this cost reduction for EVs is slower. In the case of heavy trucks, this does not occur until 2045 on average. However, some types of usage for heavy and medium trucks, such as those that regularly stop and start, have predictable routes, and can charge overnight, will make EVs more attractive to operators in an earlier timeframe. This is the case with buses, where metropolitan bus fleets in particular are rapidly being electrified.

Three future trends have implications for the industry over the next twenty years

Three major trends will shape the industry over the next twenty years. These include electrification of the fleet, increased technology in vehicles, and a reduction in vehicle ownership, potentially leading to a decrease in VKTs due to mode shift. The electrification of the fleet will result in reduced demand for liquid fuels and a shift from liquid fuel retailing to the provision of charging infrastructure. It will also see a reduction in demand for general repairs due to EVs having fewer moving parts and a shift in the skills required to deal with high-voltage systems. However, the change is relatively gradual over the next decade, before accelerating thereafter. The increasing technology in vehicles will continue to make them less likely to be involved in collisions and more reliable, with faults being able to be identified earlier. However, when they do need to be repaired, it will be more costly. The investment required to undertake repairs, as well as the need for access to proprietary data and information, will continue to put pressure on independent service providers. Possible reductions in both ownership and VKTs reduce demand for new vehicles, resulting in vehicles staying in the fleet longer and leading to fewer service requirements.

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01/ Introduction

This report examines the current state of the vehicle fleet in New Zealand, its usage, and the industry that supports it. This situation is expected to change over the next 10 to 20 years. The information in the report has been drawn from New Zealand Government data and forecasts, as well as publications from New Zealand and overseas, and interviews with subject matter experts within the motor vehicle industry.

02/ Current state of the vehicle fleet

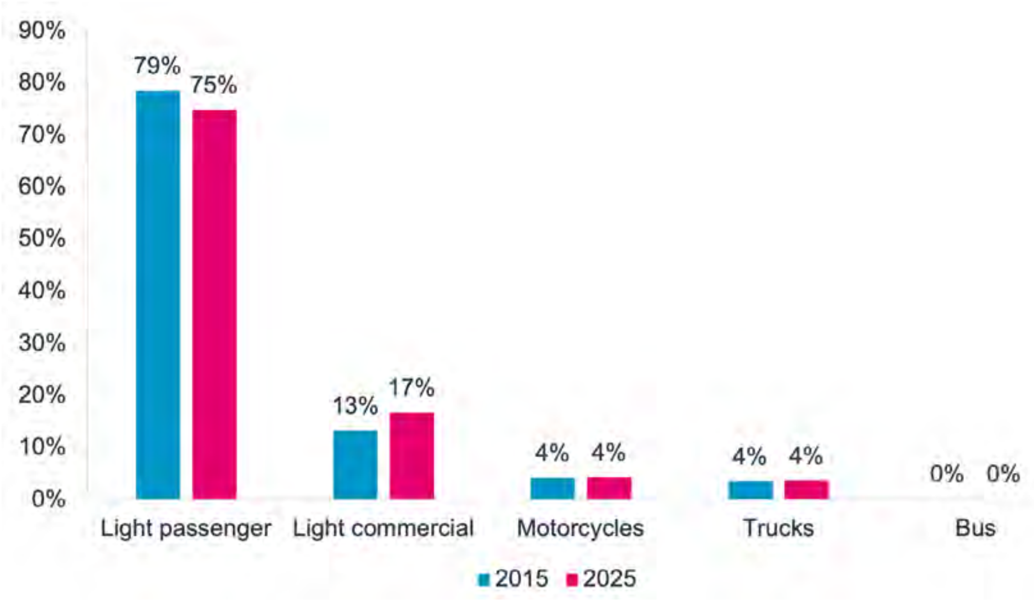
2.1 Composition of the fleet

By the end of 2025, the vehicle fleet in New Zealand is forecast by the Ministry of Transport[1] to total 4.75 million vehicles, an increase of 961,000 or 24.5% from 2015. Of the total vehicle fleet, light passenger vehicles (LPVs), which are cars and SUVs that have a gross vehicle mass (GVM) up to 3.5 tonnes, account for 75% of the vehicle fleet (or just over 3.55 million vehicles). In contrast, light commercial vehicles (LCVs), which include utes, goods vans, light trucks, motor caravans and minibuses, account for a further 800,000 vehicles or 17% of the fleet. An important point to note is that a light vehicle is defined as either an LPV or an LCV based on its body type, not its usage. A vehicle being defined as an LCV does not imply it is being used for commercial purposes. There are 117,000 trucks in the New Zealand vehicle fleet and just under 12,000 buses. The New Zealand vehicle fleet also contains 208,000 motorcycles.

[1] All Ministry of Transport statistics referenced in this report are drawn from the Ministry of Transport's 'Vehicle Fleet Model' spreadsheets https://www.transport.govt.nz/statistics-and-insights/vehicle-fleet-model.

Figure 1 The New Zealand vehicle fleet by vehicle type

Percentage of total vehicle fleet, 2015 and 2025



Source: Ministry of Transport

Over the past decade, the total vehicle fleet has expanded at a compound annual growth rate (CAGR) of 2.3%. By contrast, the population of New Zealand has grown at a CAGR of 1.5% over that period, resulting in a growth in the total number of vehicles per capita.

The growth in the New Zealand fleet has been uneven. LCVs have grown the most with a CAGR of 4.7% while LPVs have only grown at 1.8% a year. This reflects the growing popularity of utes with New Zealand drivers, given their versatility, durability and possibly tax advantages for small business owners. Although it is off a very low base, the next biggest growth rate from 2015 to 2025 is buses at 3.1%, reflecting an increase in public transport usage.

Table 1 Change in the composition of the New Zealand vehicle fleet

CAGR, 2015 to 2025

Vehicle type	2015	2025f	CAGR
Light Passenger Vehicle	2,979,194	3,556,109	1.8%
Light Commercial Vehicle	504,066	796,398	4.7%
Motorcycles	158,914	207,778	2.7%
Trucks	136,832	177,469	2.6%
Bus	8,760	11,918	3.1%
Total	**3,787,766**	**4,749,673**	**2.3%**

Source: Ministry of Transport

Although the size of the total fleet has grown consistently over the last 10 years, there has been significant variation in the number of vehicles entering the fleet. Economic conditions heavily influence vehicle sales. Between 2015 and 2024, the average annual addition to the fleet was 300,000 vehicles. However, this ranged from a high of 351,000 in 2017 to a low of 244,000 in 2024. The impact of COVID-related supply shortages was apparent in 2020, and despite a bounce back in 2021, total additions to the fleet each year between 2022 and 2024 were lower than in any year between 2015 and 2019.

Figure 2 New vehicle registrations

000s vehicles per annum, 2015 to 2024

Source: New Zealand Transport Agency

2.2 The motive power of the New Zealand fleet

The most significant change to the composition of the fleet in the last 10 years has been the decrease in the proportion of the light fleet that is powered solely by petrol. In 2015, light vehicles powered solely by petrol totalled 2.86 million vehicles. In 2025, despite the light vehicle fleet growing by 868,000 vehicles, the Ministry of Transport estimates that the number of light vehicles powered by petrol is 2.83 million. The proportion of the light fleet powered solely by petrol has reduced from 82% in 2015 to 65% in 2025. Over this period, the main reason for the decrease in the proportion of the light fleet powered solely by petrol has been the growth in the number of petrol hybrids in the fleet. The number of petrol hybrids has grown from 14,000 in 2015 to 429,000 in 2025, or 10% of the light vehicle fleet. By contrast, electric vehicles (EVs), which were essentially unknown in 2015, still only total 101,000 vehicles or 2% of the fleet in 2025, while petrol plug-in hybrids (PHEVs) account for another 48,000 vehicles or 1% of the fleet.

Diesel also remains an important power source for the New Zealand light vehicle fleet. In 2025, there are estimated to be 939,000 diesel-powered light vehicles in the fleet, totalling 22% of the fleet. Although this number has stabilised in the last two years, the lack of viable electric options historically in the fast-growing LCV fleet explains this growth.

Table 2 Change in the composition of the New Zealand light vehicle fleet by fuel type

CAGR, 2015 to 2025

Vehicle type	2015	2025	CAGR
Petrol	2,859,482	2,829,878	-0.1%
Petrol Hybrid + Electric Hybrid	14,349	428,622	40.5%
Diesel	606,878	939,021	4.5%
Petrol plug in (PHEV)	463	47,778	59.0%
Electric (EV)	518	100,648	69.4%
Total	**3,481,690**	**4,345,947**	**2.2%**

Source: Ministry of Transport

By contrast, New Zealand's heavy vehicle fleet is overwhelmingly powered by diesel even in 2025. The Ministry of Transport estimates that of the 189,000 heavy vehicles in the New Zealand fleet in 2025, 186,000 of them are powered by diesel (with a further 2,000 powered by petrol).

2.3 Current vehicle sales by motive power

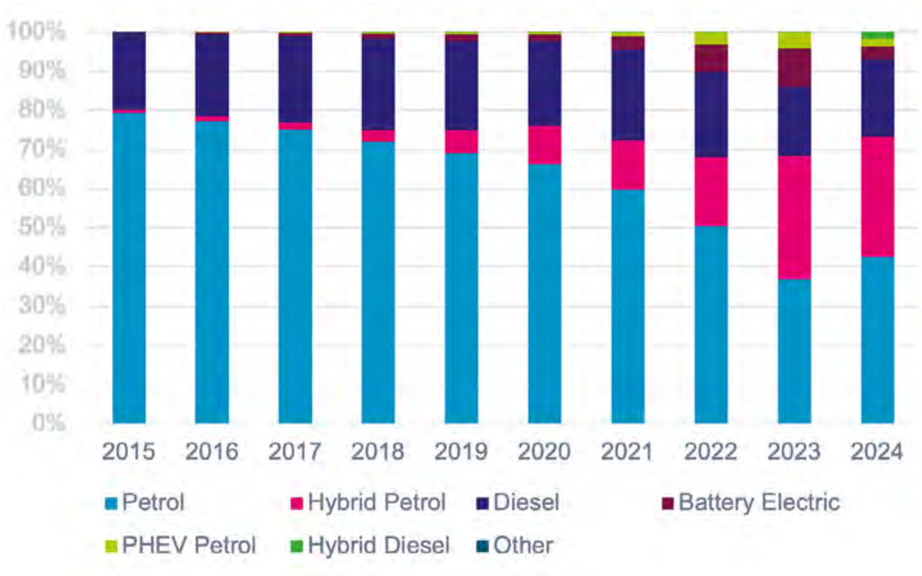
The small proportion of EVs in the light fleet is the result of relatively low sales of EVs. By contrast, there has been a significant increase in the proportion of new registrations that are petrol-hybrid vehicles, such as the Toyota Prius. From 2,726 registrations in 2015, the number of hybrid petrol vehicles registered increased to 75,140 in 2024, representing 31% of all new registrations that year. In particular, petrol hybrid vehicles have made up a large proportion of used imports in recent years. There was significant growth in 2023 following the introduction of the Clean Car Standard, which incentivised importers to bring in more fuel-efficient vehicles.

While petrol vehicles comprised 79% of total vehicle registrations in 2015, they only represented 42% of vehicles registered in 2024, with the growth in the proportion of petrol hybrids accounting for almost all of this decrease. By contrast, battery electric vehicle or EV registrations in 2024 were only 8,209 vehicles (3% of new vehicle registrations). However, they were as high as 27,290 in 2023 (10% of new vehicle registrations) before the Clean Car Discount was removed. PHEVs accounted for another 4,573 registrations in 2023 and 11,960 in 2023. In part this is due to buyers pulling forward their purchases of EVs and PHEVs ahead of the discount being removed.

To put these numbers in perspective, in 2024, 20% of all global car sales were for EVs, although this masks significant global variation. Nearly half of all new cars sold in China were electrified, with approximately 30% of those being plug-in hybrid electric vehicles. In Europe, approximately 20% of new cars were EVs, and in the United States, this figure was approximately 10% (International Energy Agency 2025).

Figure 3 Vehicle registrations by motive power

Proportion of vehicles registered per annum, 2015 to 2024



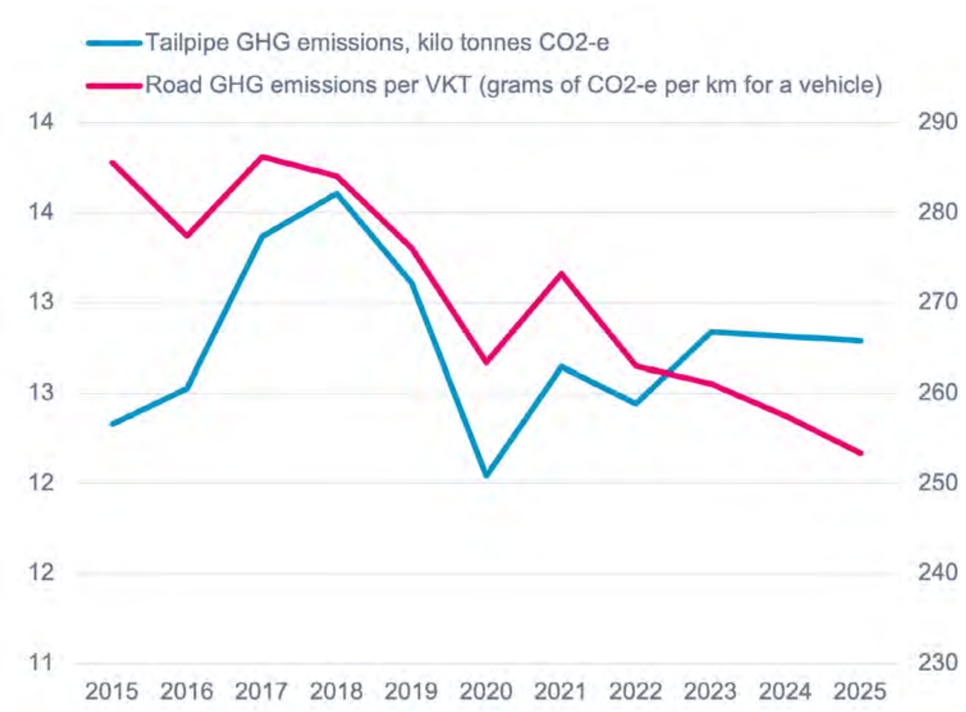
Source: New Zealand Transport Agency

2.4 Carbon emissions of the fleet

Despite the relatively slow electrification of the fleet, the greenhouse gas (GHG) emissions of the New Zealand vehicle fleet have decreased in relative terms over the last 10 years and are expected to continue trending down in absolute terms. Total road transport GHG emissions are estimated to be 12,788 kilo tonnes of carbon dioxide equivalent (CO2-e) in 2025. This equates to 253.4 grams of CO2-e per vehicle kilometre travelled (VKT) and 2,692 kilograms of C02-e per vehicle in 2025. In relative terms, GHG emissions have reduced 11% in terms of VKTs and 17% per vehicle.

Figure 4 Road transport tailpipe GHG emissions total and per VKT

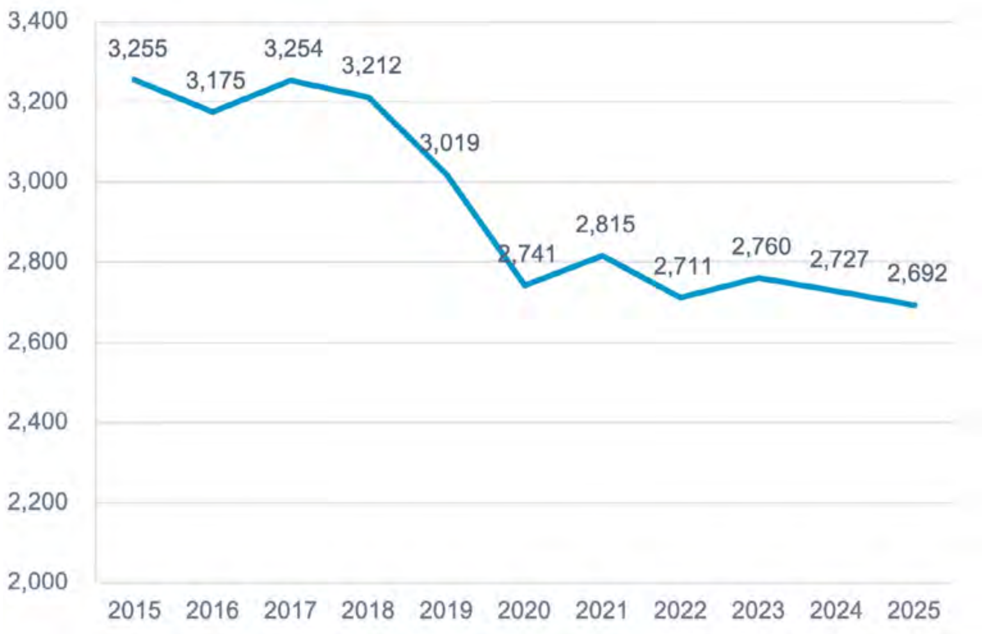
LHS total kilo tonnes CO2-e per annum, 2015 to 2025, RHS per VKT grams of CO2-e per km for a vehicle per annum, 2015 to 2025



Source: Ministry of Transport

Figure 5 Road GHG emissions per vehicle

Kilograms of CO2-e per vehicle per annum, 2015 to 2025

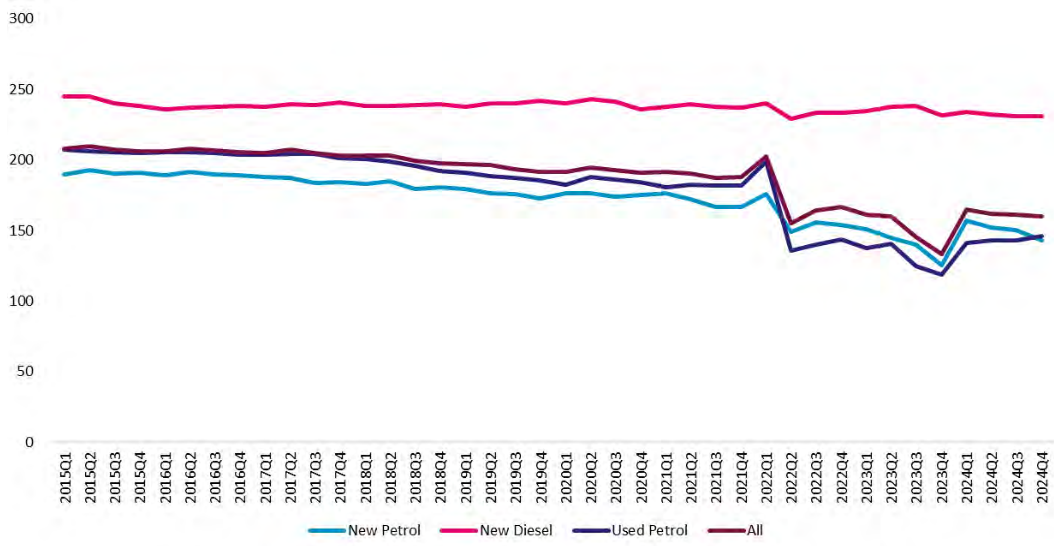


Source: Ministry of Transport

This decrease is partly due to the increase in electric and hybrid vehicles in the New Zealand light vehicle fleet, but also because both petrol and diesel vehicles produce significantly fewer GHG emissions than they did ten years ago. From 2015 to 2024, the latest available period, the average CO2 emissions, expressed as grams per kilometre, have decreased by 26% for new petrol vehicles and 29% for used petrol vehicles newly registered in New Zealand. Diesel vehicles have shown a lesser reduction of 6%.
This is despite the average engine size of the light fleet remaining relatively unchanged over recent years. The Clean Vehicle Standard, introduced in 2023, which requires importers to purchase credits based on a formula that considers emissions and weight, although only impacting the end of this time period, is designed to result in a decrease in the average emissions of new vehicles through the incentivisation of the importation of lower-emitting vehicles.

Figure 6 Average CO2 emissions for newly registered light vehicles

Grams per kilometre, quarterly 2015 to 2024



Source: Ministry of Transport

The improved emissions performance of petrol vehicles, the electrification of the LPV fleet (albeit still relatively slow) and the slower growth rates of the LPV fleet result in the LPV fleet's share of New Zealand transport emissions reducing over time from 55% in 2015 to an estimated 47% in 2025, despite comprising 75% of the vehicle fleet.

In contrast, LCVs are now estimated to account for 22% of New Zealand's transport emissions, up from 17% in 2015, despite being 17% of the New Zealand vehicle fleet. Diesel powers 80% of this fleet, so the slower improvement in emissions performance for diesel vehicles, the lack of electric options until recently and the fast growth in this fleet will explain this performance.

Similarly, the share of New Zealand's transport emissions that come from trucks, which make up 4% of the New Zealand vehicle fleet, is estimated to be 29% of total transport emissions in 2025, up from 25% in 2015. Although the emission performance of trucks has improved over time, the improvement has not been as much as light vehicles and therefore in total make up a bigger share of transport emissions.

2.5 New and imported used vehicles

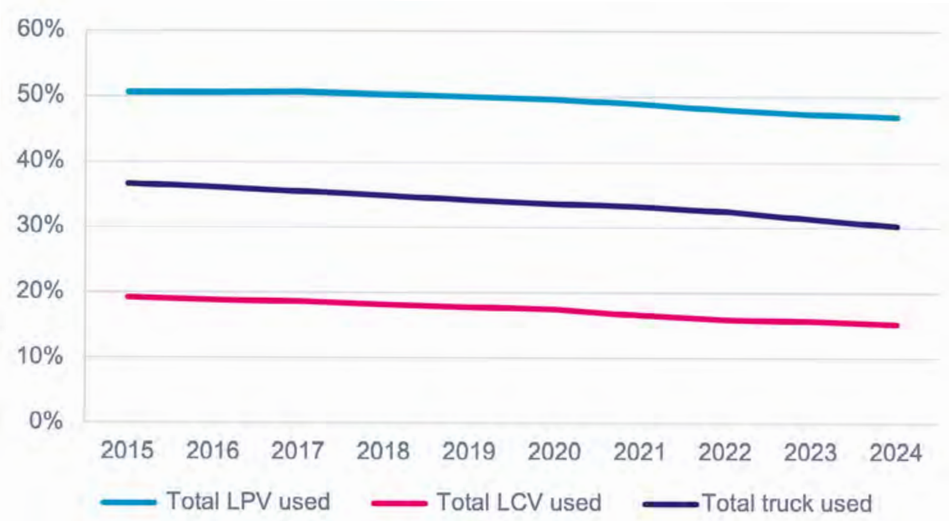
Although C02 emissions per vehicle continue to decline as emissions standards in markets around the world get tougher and technology improves, the rate at which these changes, as well as other technological advances, impact the New Zealand market is reduced by the large proportion of imported used vehicles (i.e. vehicles that were first registered overseas) in the New Zealand fleet.

The proportion of imported used vehicles in the New Zealand fleet is decreasing slowly over time but remains relatively high. In 2024, the last year for which the Ministry of Transport published data, 47% of the LPV fleet consisted of imported used vehicles, down from 51% in 2015.

Other vehicle types have a higher proportion of New Zealand new vehicles (i.e. registered for the first time in New Zealand). In 2024, only 15% of LCVs, 30% of trucks, 22% of buses and 26% of motorcycles in the total fleet were used.

Figure 7 Imported used vehicles in the New Zealand fleet by vehicle type

Percentage of total vehicle type in the fleet, 2015 to 2024

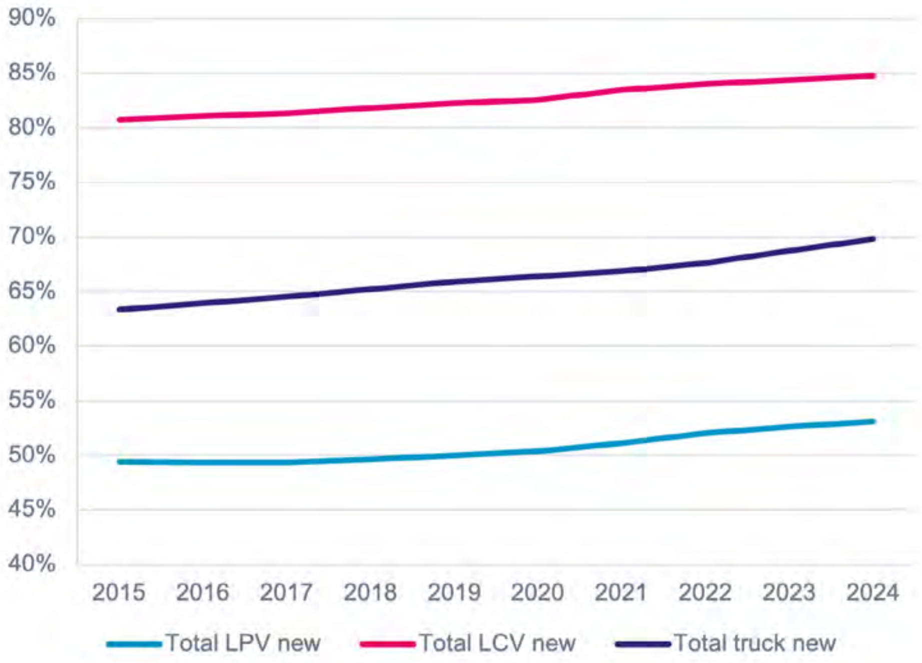


Source: Ministry of Transport

In recent years, there has been an increase in the proportion of new vehicles entering the LPV fleet in particular. In 2015, only 49% of LPVs entering the fleet were new vehicles. In 2024, that proportion had risen to 53%, with most of this change happening post-COVID from 2021. According to subject matter experts interviewed for this project, the decrease in the proportion of imported used vehicles being registered in New Zealand has been driven by competition from other global markets for used vehicles, a limited supply of right-hand-drive EVs from traditional source markets for imported used vehicles like Japan, logistical challenges in shipping used EVs, and compliance costs associated with the Clean Car Standard.

Figure 8 New vehicles entering the New Zealand fleet by vehicle type

Percentage of total vehicle type entering the fleet, 2015 to 2024



Source: Ministry of Transport

2.6 Age of the fleet

The New Zealand vehicle fleet is relatively old and ageing due to the high prevalence of imported used vehicles, particularly in the LPV fleet, which is leading to an overall ageing of the New Zealand vehicle fleet. The average age of a vehicle in the New Zealand fleet was 15.0 years in 2024, an increase of over 6 months from 14.2 years in 2015. This is primarily influenced by the age of the LPV fleet in New Zealand. The average age of a vehicle in the LPV fleet in 2024 was 15.2 years, compared to 14.3 years in 2015. In comparison, in 2023 the average age of a LPV in the European Union was 12.5 years, although this had increased from 12 years in 2021. (ACEA European Automobile Manufacturers' Association 2025).

By contrast, the LCV fleet has got younger over time. The average age of an LCV in the New Zealand fleet was 13.0 years in 2024, a decrease from 13.4 years in 2015. Trucks and buses, although on average older than vehicles in the light fleet, have remained on average the same age over the last few years. The average age of a truck in the New Zealand fleet in 2024 was 17.8 years, and the average age of a bus in 2024 was 16.4 years. This is little changed from 2015, when the average ages were 17.6 years and 16.7 years, respectively. The average age of an LCV in New Zealand is almost identical to that in the European Union. However, the average age of trucks and buses in the European Union is considerably less at 14.1 years and 12.2 years respectively. (ACEA European Automobile Manufacturers' Association 2025).

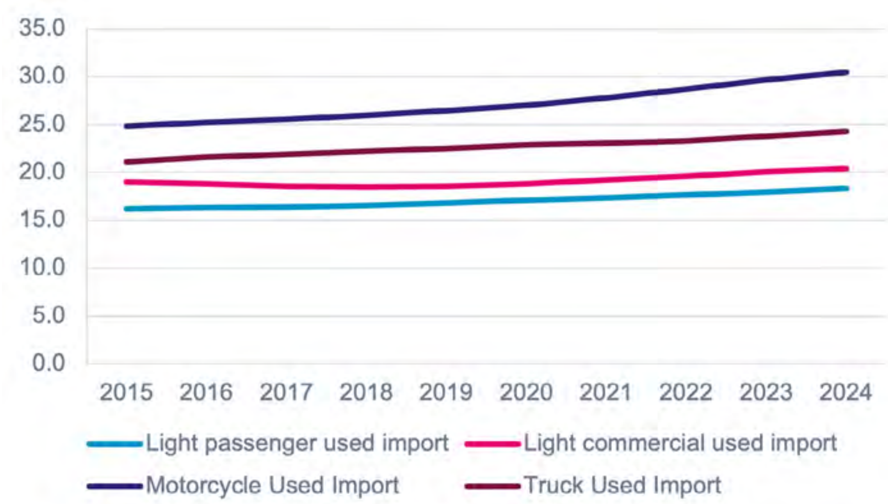
An imported used LPV entering the fleet in 2024, on average, was 9.8 years old. The average age of the imported used vehicles entering the fleet has slowly increased over time. An imported used LPV entering the fleet in 2015 was on average almost a year younger, with an average age of 8.9 years. By contrast, the age of LCVs entering the fleet has remained relatively stable.

Although New Zealand imports smaller proportions of used vehicles in other vehicle types, we see a similar ageing of imported vehicles for those vehicle types also. The average age of an imported used truck entering the fleet in 2024 was 10.7 years, compared to 7.6 years in 2015. Although the number of imported used buses entering the fleet is relatively small, the average age of these imported used buses climbed from 6.2 years in 2015 to 9.5 years in 2024. The average age of imported used LCVs entering the fleet in 2024 was 7.5 years, which was actually younger than in 2015. However, this was a reversal of a trend, as in 2022, the average age of an imported used LCV entering the fleet was 8.8 years.

The most significant ageing of a vehicle type entering the fleet is for motorcycles, where the average age of an imported used motorcycle entering the fleet in 2024 was 22.0 years, compared to 14.4 years in 2015. An increase in interest in older motorbikes likely explains this.

Figure 9 Average age of imported used vehicles by vehicle type

Years, 2015 to 2024



Source: Ministry of Transport

Not only are the imported used vehicles entering the fleet getting older, but they are also older when they leave the fleet. The average age of an LPV leaving the fleet, where the prevalence of imported used vehicles is greatest, has risen from 19.4 years to 20 years between 2015 and 2023. By contrast, the average age of a new LPV (i.e. an LPV registered for the first time in New Zealand) leaving the fleet in 2023 is 18.1 years compared to 19.4

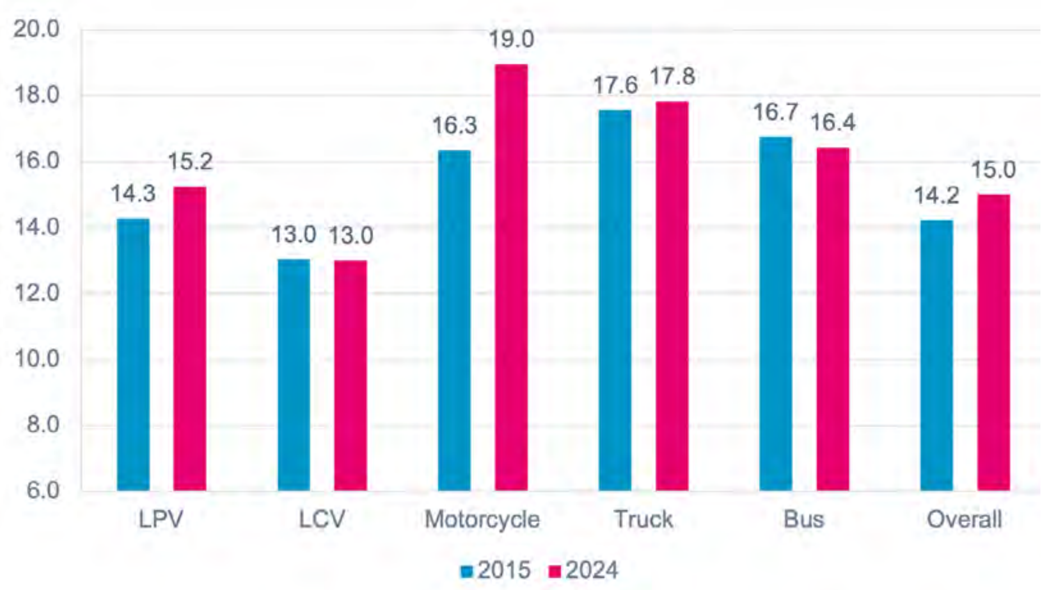
years in 2015. This pattern is even more pronounced in LCVs, where the average age of imported used LCVs exiting the fleet in 2023 was 23.3 years, compared to 22.1 years in 2015. By contrast, new LCVs exited the fleet at an average of 17.6 years in 2023 compared to 19.3 years in 2015.

This is likely to be the result of light vehicles doing less mileage per year, as discussed below, greater vehicle reliability, and poor economic conditions, with New Zealanders being less likely to upgrade to a new vehicle.

The increase in the age of imported used motorcycles entering the fleet in recent years has also led to a rise in the average age of the motorcycle fleet, from 16.3 years to 19.0 years between 2015 and 2024.

Figure 10 Average age of the New Zealand vehicle fleet by vehicle type

Years, 2015 to 2024



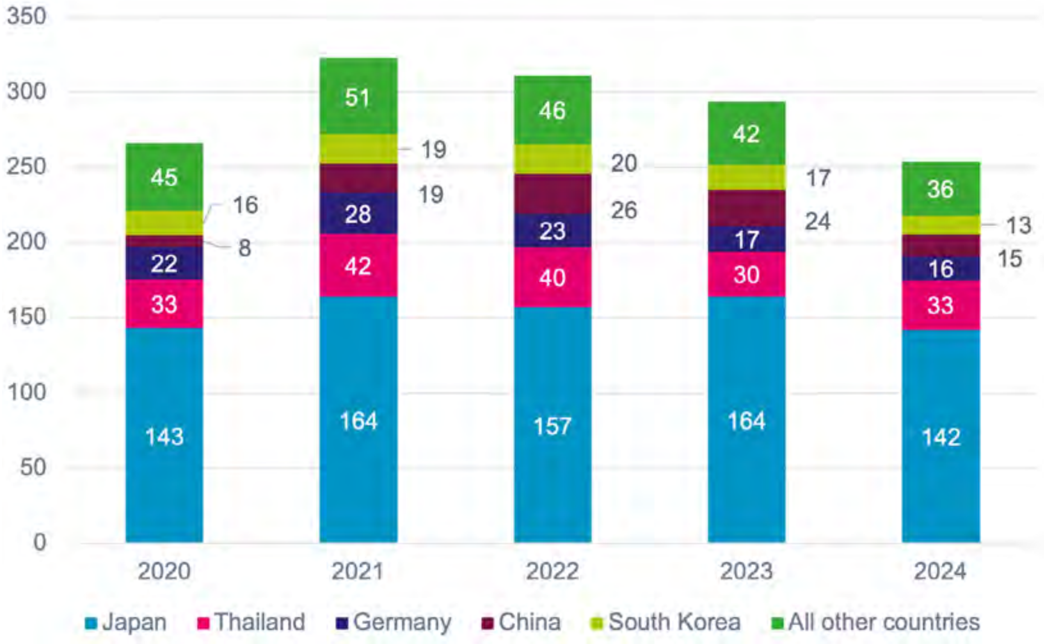
Source: Ministry of Transport

2.7 Country of origin

Japan remains the largest country of origin for New Zealand's vehicle imports, due to both the popularity of its brands and its role as the primary source market for used imports. Japan accounted for 56% of imports, followed by Thailand (13%), China (6%) Germany (6%) and South Korea (5%). Country of origin refers to where the vehicle was shipped from. Often this will be where the vehicle is manufactured even if the manufacturer is headquartered in another country. For example Tesla vehicles are often manufactured in China, although the manufacturer is headquartered in the United States. In the case of used imports, the vehicle may have been originally manufactured in another country from the one it is imported into New Zealand from.

Figure 11 Country of origin for New Zealand vehicle imports

Total number of vehicles imported (new and used) per annum, 000s, 2020 to 2024



Source: New Zealand Transport Agency

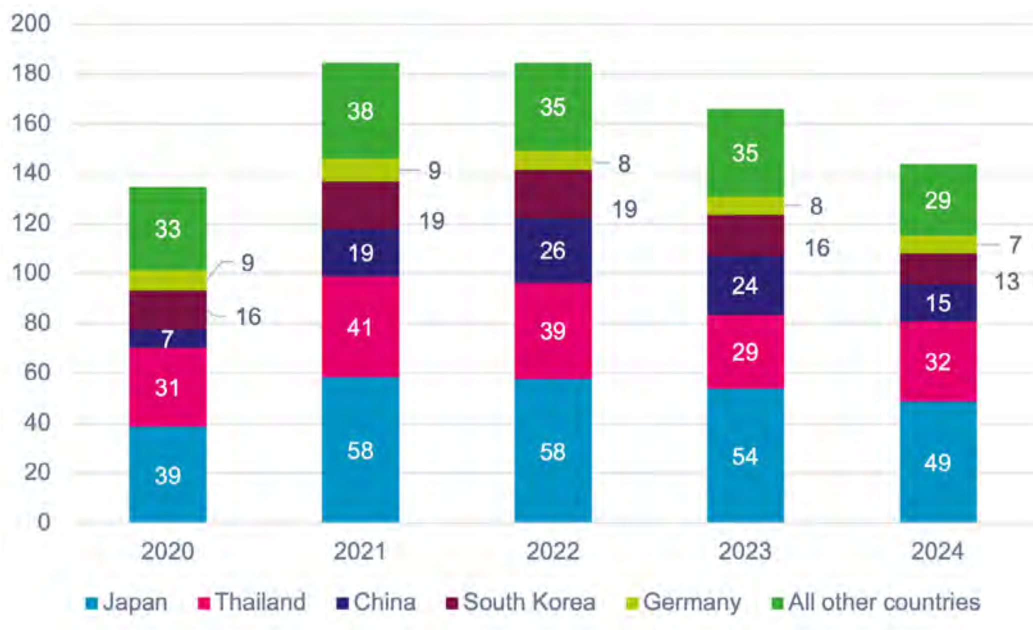
2.7.1 Country of origin of new imported vehicles

In 2024, 58% of vehicles imported into New Zealand were imported new vehicles. This is an increase from 54% in 2020. There has been a steady decline in the number of used vehicles imported. According to subject matter experts interviewed for this project, this has been the result of greater competition for used vehicles in Japan, where almost all New Zealand's used imports come from, as well as from other markets in sourcing vehicles, and the introduction of the Clean Car Standard, which increases the cost of importing internal combustion engine (ICE) vehicles.

The relative share of each source country for imports of new vehicles has remained relatively unchanged from 2020 to 2024, despite the decrease in overall volumes. While Japan and Thailand remain the biggest source manufacturing countries of new vehicles for New Zealand, in recent years, China has grown to exceed volumes from South Korea.

Figure 12 Country of origin for New Zealand new vehicle imports

Total number of new vehicles imported per annum, 000s, 2020 to 2024



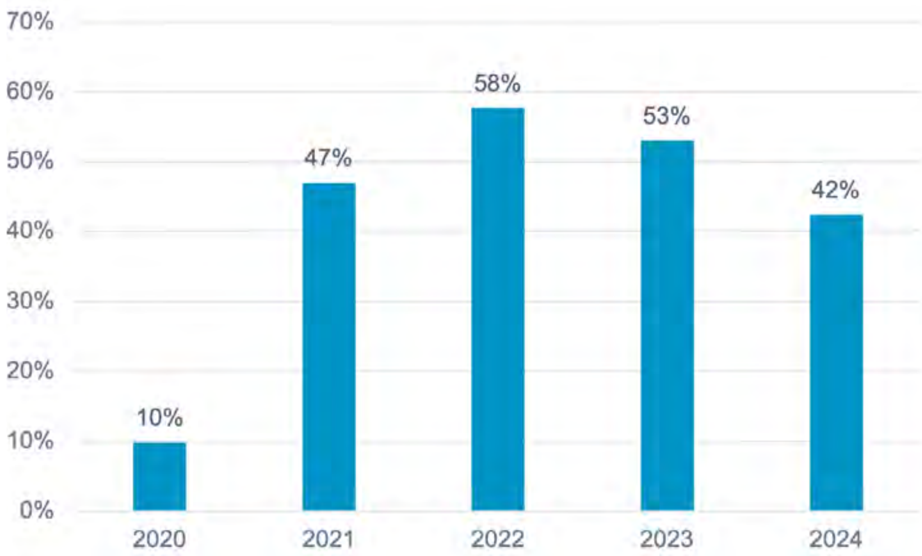
Source: New Zealand Transport Agency

2.7.2 ICE vs EV imports

The most significant change in the source country for motor vehicle imports in recent years has been the growth in the proportion of new EVs being imported from China, which explains China's growth over the last few years as a source of vehicles for New Zealand. This includes both Chinese brands and non-Chinese brands manufactured in China. Between 2020 and 2024, there has been a shift in the suppliers of EVs entering the market, with Japan being the largest source market in 2020 and China surpassing from 2021 onwards. In 2020, the share of EV EV imports into New Zealand manufactured in China (including both Chinese and non-Chinese brands) was 10%. In 2024, it was 42% although this was as high as 58% in 2022.

Figure 13 Share of EVs manufactured in China imported into New Zealand

Percentage of total EV imports per annum, 2020 to 2024



Source: New Zealand Transport Agency

This increasing share of new EVs from China reflects the global market. Currently, China accounts for 70% of global EV production, of which 80% is for Chinese brands. China accounted for 40% of all EV exports in 2024, and of these exports, 70% were for Chinese brands (International Energy Agency 2025). This increase in imported new Chinese EVs is leading to a proliferation of Chinese brands in the New Zealand market. This is expected to continue, with one interviewee interviewed for this project, predicting that 10 to 15 new Chinese brands will enter the market over the next two years.

2.8 Costs of vehicle ownership

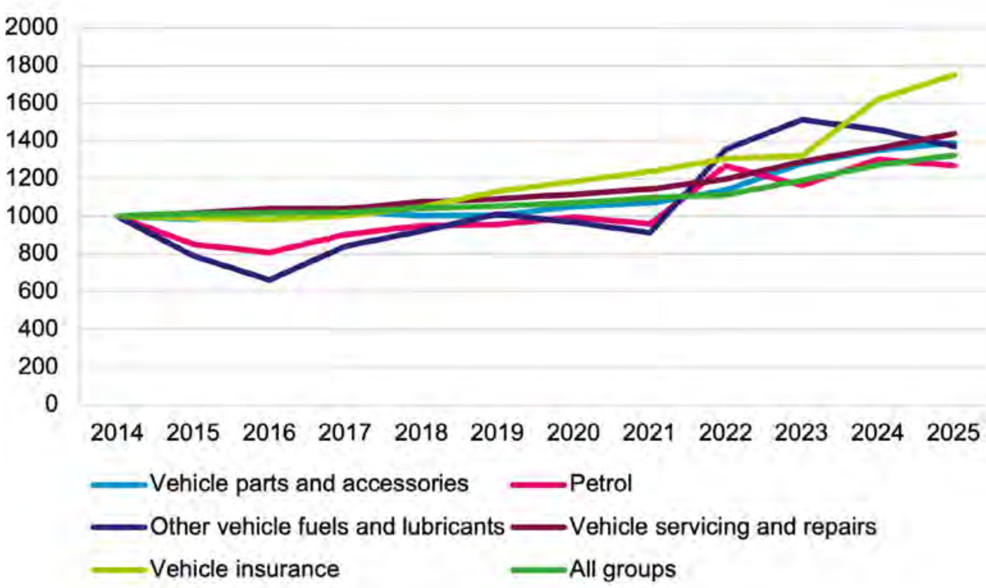
2.8.1 Inflation of vehicle-related costs

Stats NZ captures data that allows it to calculate the inflation of various costs in the economy, including vehicle-related costs. Over the period April 2014 to Mar 2025, most vehicle-related costs have increased at a rate consistent with the overall rate of inflation. The exceptions are vehicle insurance, where costs are 75% higher in March 2025 than they were in March 2014 and vehicle servicing and repairs, which are 44% higher. Based on our interviews with subject matter experts, this is likely to reflect growing technological advances in cars such as Advanced Driver Assistance Systems (ADAS), use of more expensive components, manufacturer-specific diagnostic tools and different construction methods. Although these technological advances result in a lower likelihood of collisions, when they do occur, they are more expensive to repair. Similarly, improved build quality reduces the likelihood of vehicle repairs being required, but when they are required, they are more expensive.

By contrast, the price of petrol has increased at a slower rate than other vehicle-related costs and was lower in 2021 than it was in 2014.

Figure 14 Vehicle-related inflation

2014 to 2025, indexed to 2014, 2014 = 1000



Source: Stats NZ

2.8.2 The total cost of ownership

Total cost of ownership (TCO) includes both the operating cost of the vehicle and the depreciation in the value of the vehicle across a certain period. The relative total cost of ownership and the relative purchase price differential are recognised as important determinants of the speed with which the electrification of the fleet will occur (Climate Change Commission 2024).

The TCO of EVs dropping below the TCO of the equivalent ICE vehicle is important in driving sales of EVs for business and fleet purposes. This, in turn, can increase the number of EVs available in the second-hand market at the end of their warranty period. The purchase price differential is important for private buyers and smaller businesses, given the size of the capital outlay required. The Climate Change Commission estimate TCO as an input into modelling the speed with which the fleet will decarbonise. The Climate Change Commission calculate the TCO over five years and includes only private costs (for example, excluding the cost of building out public charging infrastructure). The data presented below includes their forecast estimates for 2024 and 2025. The figures quoted below are from the TCO modelling assumption for the latest Emissions Budget provided to the Government (Climate Change Commission 2024), which the Climate Change Commission provided to NZIER.

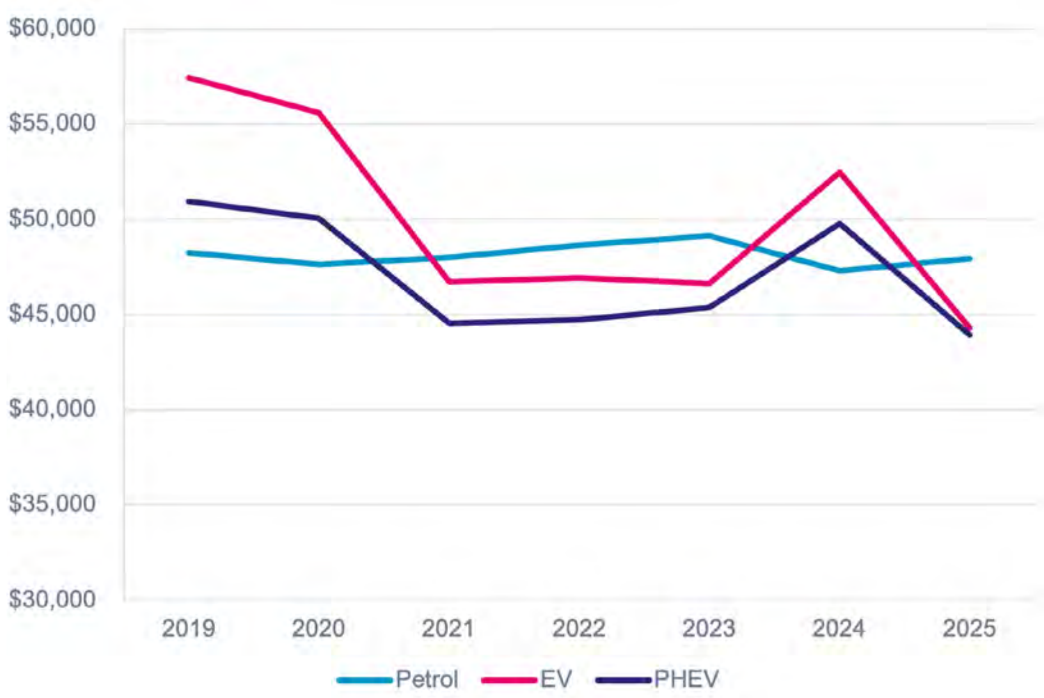
Light vehicles TCO

The Climate Change Commission modelling estimates that in 2025, the TCO of a new EV or PHEV LPV is now less than the petrol ICE equivalent.

In 2019, the average TCO for a new ICE LPV in 2023 dollars was estimated to be $48,266, $57,438 for an EV and $50,933 for a new PHEV LPV. The TCO for new LPVs powered by petrol decreased by $308 in 2025 to $47,959, while the TCO for new LPV EVs decreased by $13,121 to $44,317 over the same period. The TCO for a PHEV LPV has decreased by $6,990 to $49,769. The difference in the TCO of PHEVs and EVs has also reduced to less than $400 in 2025, and the Climate Change Commission expect the TCO of EVs to be less than that of PHEVs in 2026. One interviewee suggested that PHEVs were effectively a transition technology to full EVs and therefore their popularity will decrease in the future. This would be assisted by EVs becoming cheaper to purchase and having an increased range. However, in the world's largest market for EVs, China, PHEVs are growing in popularity due to the flexibility they offer and as a means of overcoming 'range anxiety' (International Energy Agency 2025).

Figure 15 TCO for new LPVs

Estimated in 2023 equivalent dollars, 2019 to 2025

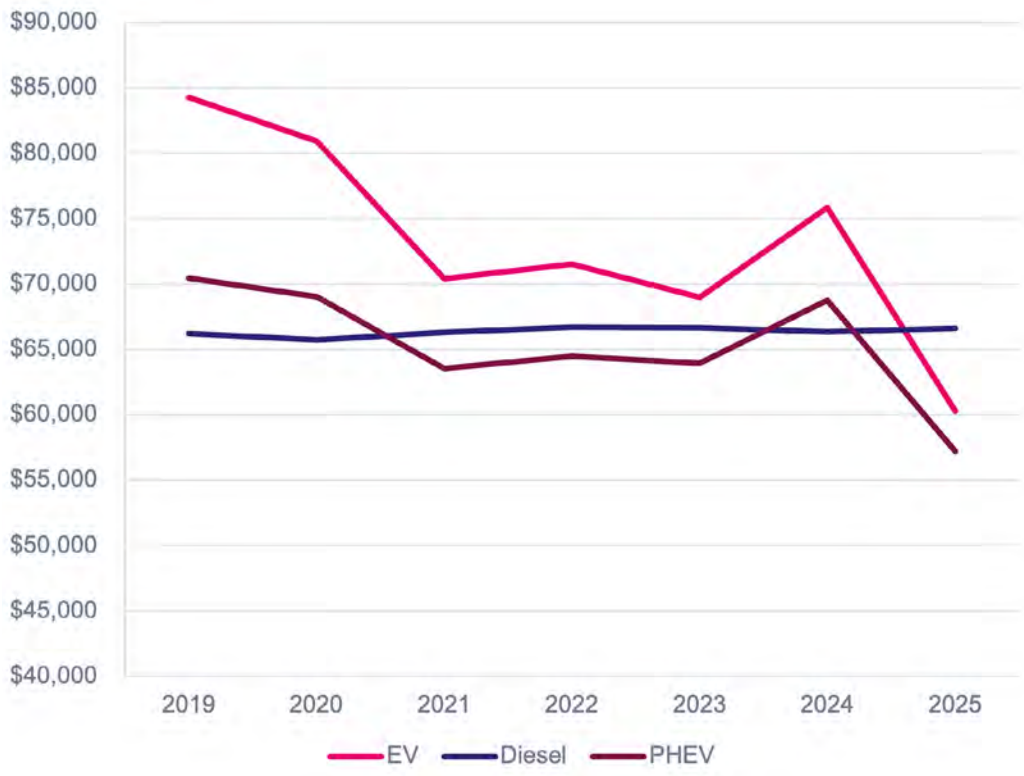


Source: Climate Change Commission

A similar pattern is seen for LCVs. The TCO of new diesel LCVs was $66,231, $82,248 for EVs and $70,449 for PHEVs. Over the last 6 years, the estimated TCO of new LCVs powered by petrol increased by $130 to $68,205. By contrast, the TCO of EV LCVs decreased by $23,963 to $60,285. Over the same period, the TCO for PHEV LCVs decreased by $1,675 to $ 68,774. Although the TCO of EV LCVs is fast approaching the TCO of EV PHEVs, PHEVs will likely continue to be a popular choice in the New Zealand market, given range concerns when towing or undertaking longer journeys.

Figure 16 TCO for new LCVs

Estimated in 2023 equivalent dollars, 2019 to 2025



Source: Climate Change Commission

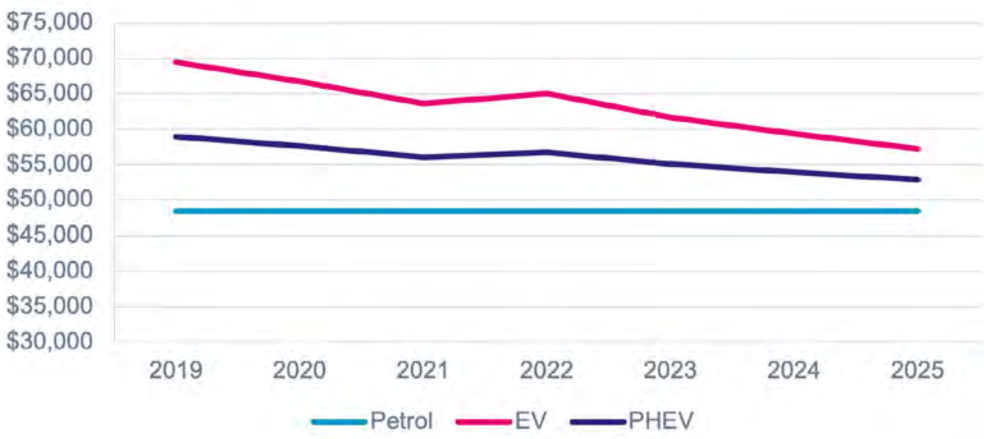
A large driver of the decrease in the TCO of both EV LPVs and LCVs has been a decrease in the purchase price of EVs over the last few years. The Climate Change Commission believe that once there is no longer a price premium for EVs, take-up will accelerate (Climate Change Commission 2024). The Climate Change Commission estimates that this has not happened yet, but the premium is rapidly closing. The price premium for an EV LPV over a petrol ICE vehicle has reduced from $21,038 in 2019 to $8,768 in 2024 on average. A PHEV LPV is still $4,383 more expensive to purchase on average than a petrol ICE vehicle, but this premium has reduced from $10,519 in 2019.

The rapid decrease in the purchase price of an EV LPV has been caused by a significant reduction in the cost of batteries, due to greater economies of scale in manufacturing and lower prices of critical minerals such as lithium. Battery prices in China fell by 30% in 2024, primarily due to a 20% drop in lithium prices. The rapid expansion of EV manufacturing in China has also led to reduced prices, driven by greater economies of scale and increased competition (International Energy Agency 2025). As China is the largest producer of EVs for the New Zealand market, New Zealand has been a beneficiary of these dynamics.

The rapid depreciation in the price of a new LPV has affected the take-up of EVs in the New Zealand market, as potential owners have been concerned with the lower future resale value when they come to sell it. As the rate of depreciation decreases, the perceived risk should also decrease.

Figure 17 Average purchase price for new LPVs

Estimated in 2023 equivalent dollars, 2019 to 2025

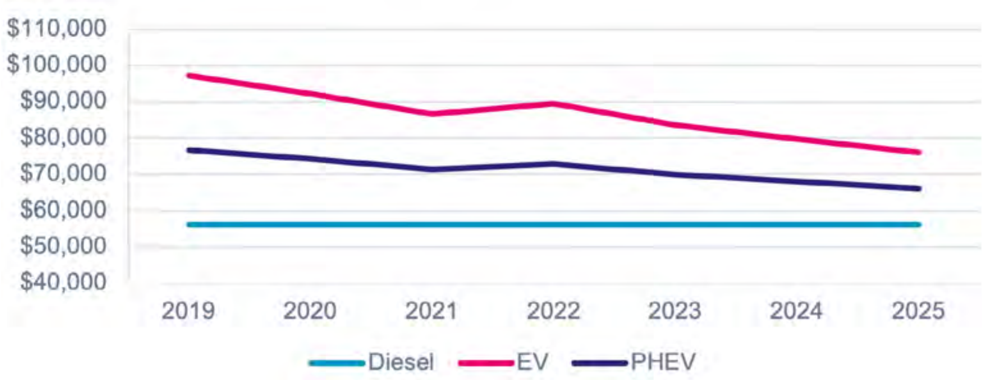


Source: Climate Change Commission

The Climate Change Commission still estimates that there is a significant price premium for EV and PHEV LCVs over the price of the diesel ICE equivalent. This premium has decreased significantly since 2019. In 2019, an EV LCV was on average $41,068 more expensive than the equivalent petrol ICE vehicle, while a PHEV LCV was $20,534 more expensive. This price premium has more than halved to $19,895 and $9,947 for LCV EVs and PHEVs, respectively. In part, this is due to a greater range of more affordable products, primarily from Chinese manufacturers, entering the market.

Figure 18 Average purchase price for new LCVs

Estimated in 2023 equivalent dollars, 2019 to 2025



Source: Climate Change Commission

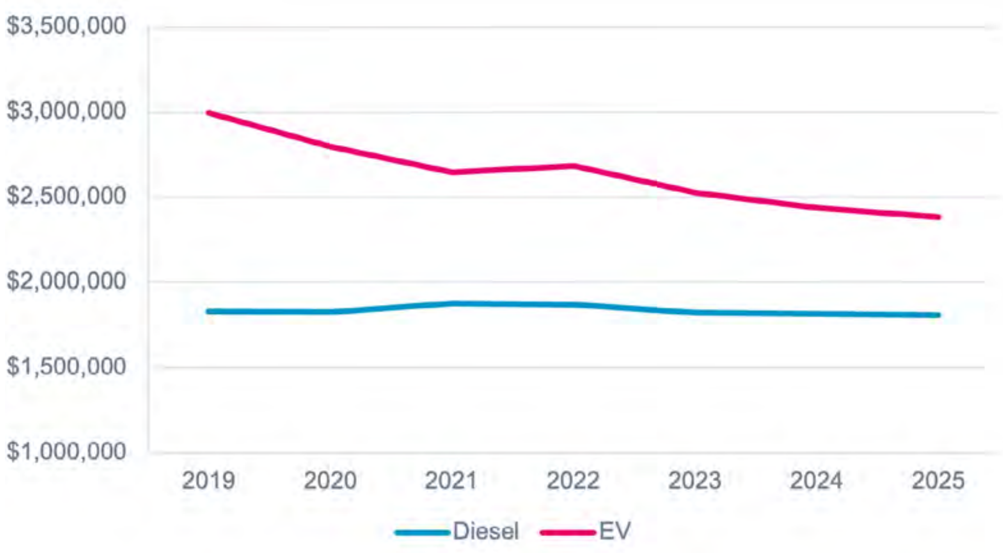
Heavy vehicle TCO

The Climate Change Commission has also modelled the TCO of the heavy vehicle fleet, incorporating the operating costs and purchase costs of the vehicle. It should be recognised that TCO calculations for individual operators will vary more than those for individual light vehicle owners, as the TCO for individual operators also depends on the nature of the vehicle's usage. For example, it is assumed that most operators of electric trucks will require infrastructure at their depot with relatively less ability to use public charging infrastructure, which introduces a further upfront cost to an operator wanting to electrify their fleet. If the need to charge the vehicle introduces more downtime into its operation (for example, because the vehicle cannot be recharged within the rest break of its driver), that will decrease the utilisation and therefore the profitability of the vehicle, lessening the attraction of an electric vehicle. Similarly, any reduction in payload capability of the vehicle required to offset the additional cost of the battery further decreases profitability of operating the vehicle for the operator.

According to Climate Change Commission calculations, there is still a large differential on average between the TCO of an electric heavy truck (weighing over 12 tonnes GVM) compared to a diesel-powered heavy truck. The average TCO of new heavy trucks powered by diesel in 2019 was $1.82 million, and this was similar in 2025. By contrast, the TCO for new electric heavy trucks in 2015 was $2.99 million and in 2025 it was $2.30 million. This differential, together with operating constraints such as the possibility of increased downtime and payload trade-offs depending on how the truck is used, will explain the low uptake of electric heavy trucks in New Zealand to date.

Figure 19 TCO for new heavy trucks

Estimated in 2023 equivalent dollars, 2019 to 2025



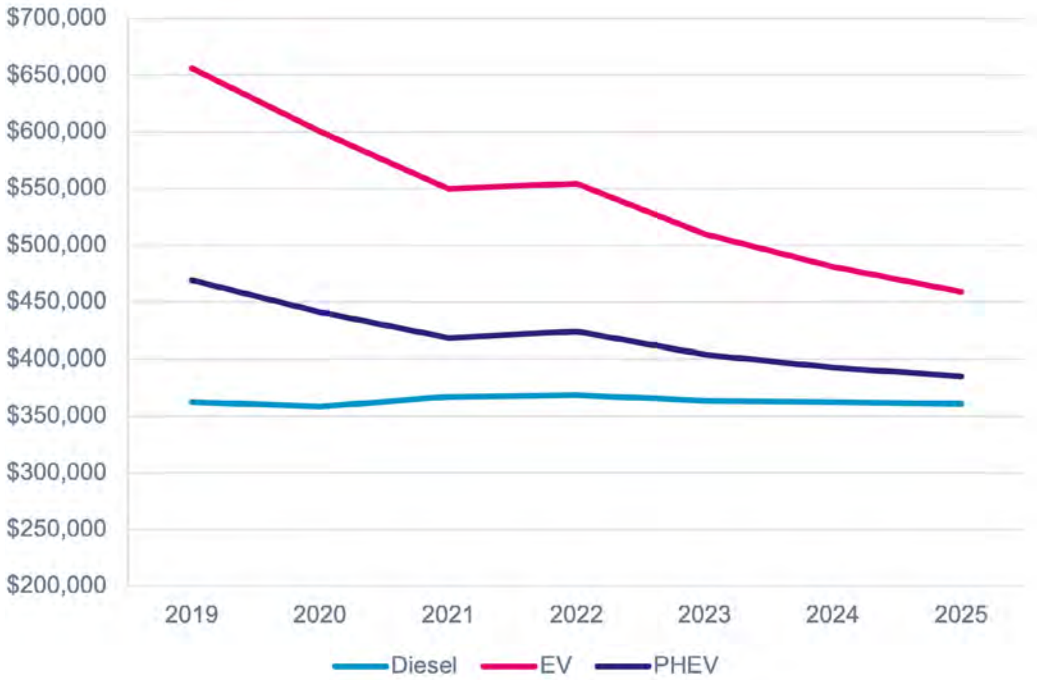
Source: Climate Change Commission

The difference in the TCO between EVs and ICE vehicles for new medium trucks (weighing between 3.5 tonnes and 12 tonnes GVM) has closed more rapidly than for heavy trucks, although it still exists. The operating characteristics of medium trucks may also make EVs or PHEVs more attractive than they are for heavy trucks currently. For example, because medium trucks often return to a depot overnight, making charging easier. They are also more likely to be used for functions that require more stopping and starting, allowing the use of regenerative braking to extend their range.

The TCO for new medium trucks powered by diesel in 2019 was estimated at $362,766 and $360,970 in 2025. The TCO for new electric medium trucks has decreased significantly from $656,079 in 2019 to $459,047 in 2025, a decrease of close to $200,000. And in 2025, it was $459,047 marking a $197,033 decrease. Although there has been a much smaller decrease in the TCO of PHEV medium trucks over that period, it is estimated that there is now only a $25,000 TCO differential between a PHEV medium truck and a diesel-powered medium truck.

Figure 20 TCO for new medium trucks

Estimated in 2023 equivalent dollars, 2019 to 2025



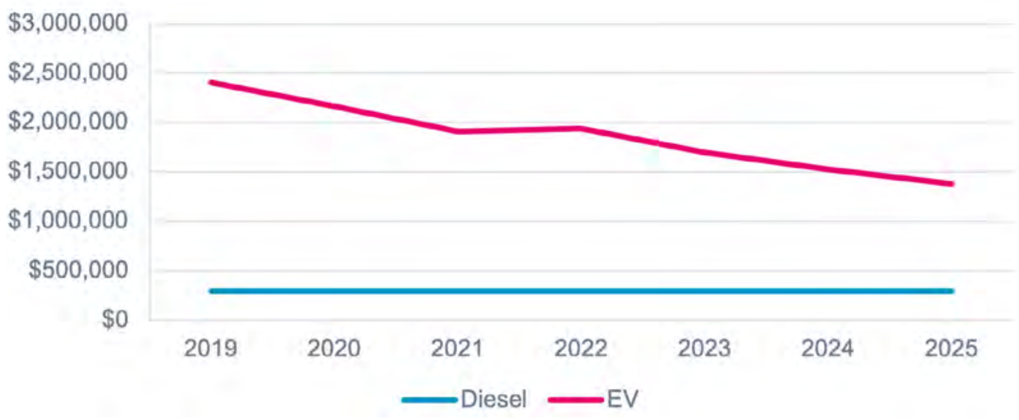
Source: Climate Change Commission

The initial purchase price for an EV or PHEV truck, whether heavy or medium, will also play a significant role in the purchase decision, and therefore, the premium for EV or PHEV trucks will be a key determinant of adoption. According to a subject matter expert interviewed for this project, the depreciation on the capital cost of a truck being estimated at between 10% and 15% of the total operating expenses of an operator, which is a similar level to fuel for an ICE.

The price of an electric heavy truck has decreased dramatically in the last few years. This is the result of the same factors that have reduced the price of electric light vehicles, namely lower battery prices, greater manufacturing economies of scale, and increased competition. There is, however, still a significant price premium for an electric heavy truck. Despite the average purchase price of an electric heavy truck decreasing from $2.4 million in 2019 to $1.4 million in 2024, this is still over four times the price of an average diesel-powered heavy truck.

Figure 21 Average purchase price for new heavy trucks

Estimated in 2023 equivalent dollars, 2019 to 2025

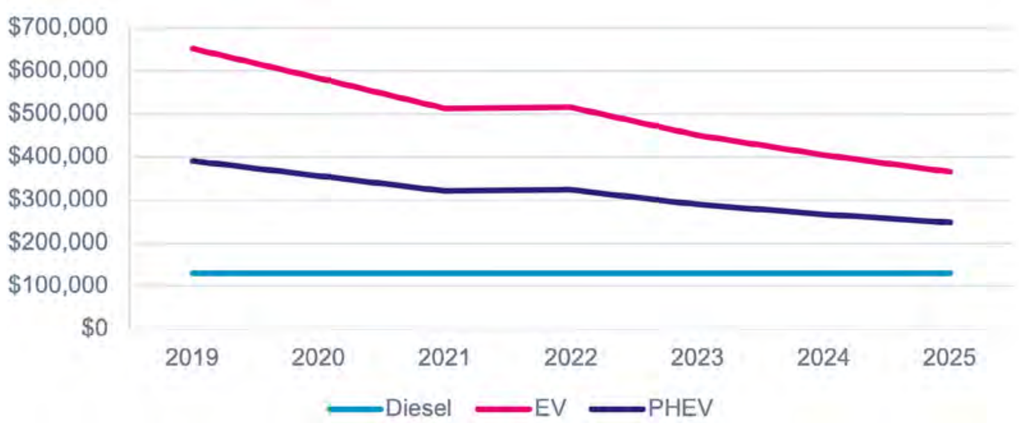


Source: Climate Change Commission

A similarly large purchase price premium exists for medium trucks. Electric medium trucks have decreased in price on average by almost half between 2019 and 2025, now costing $365,354. This, however, is almost three times the price of a diesel-powered medium truck. The price differential between a PHEV medium truck and a diesel-powered medium truck is less; however, PHEV medium trucks still cost approximately double the price of a diesel-powered medium truck.

Figure 22 Average purchase price for new medium trucks

Estimated in 2023 equivalent dollars, 2019 to 2025



Source: Climate Change Commission

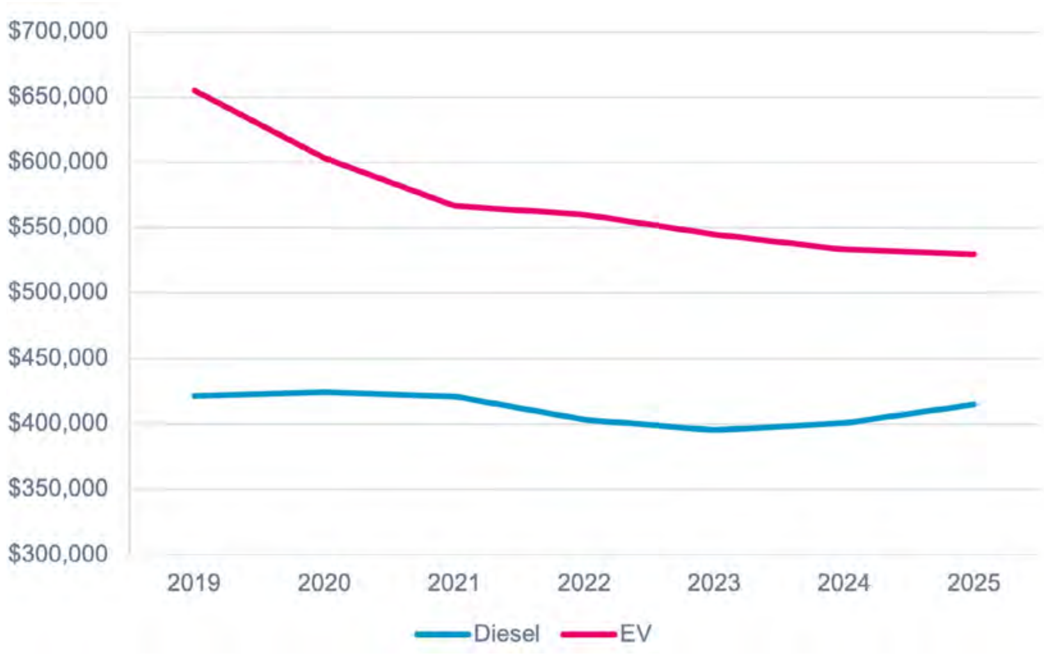
Bus TCO

As with trucks, the TCO of buses will depend on their usage. There will, for example, be a difference between the TCO of buses used in metropolitan areas and long-distance buses. While TCO will be a driver of the electrification of the bus fleet, the usage characteristics of the bus fleet will also determine the attractiveness of electric buses to operators according to a subject matter expert interviewed for this project. For example, metropolitan buses that return to the depot between morning and evening peaks and remain there overnight are easier to charge, using slower and therefore less expensive charging infrastructure, than long-distance buses.

Bearing in mind the caveat that the TCO of buses will vary depending on usage, on average, the TCO of an electric bus is $529,738, which has been reduced by approximately 20% since 2019. This is still approximately 25% more than a diesel bus, which has a TCO of $415,000 on average.

Figure 23 TCO for new buses

Estimated in 2023 equivalent dollars, 2019 to 2025

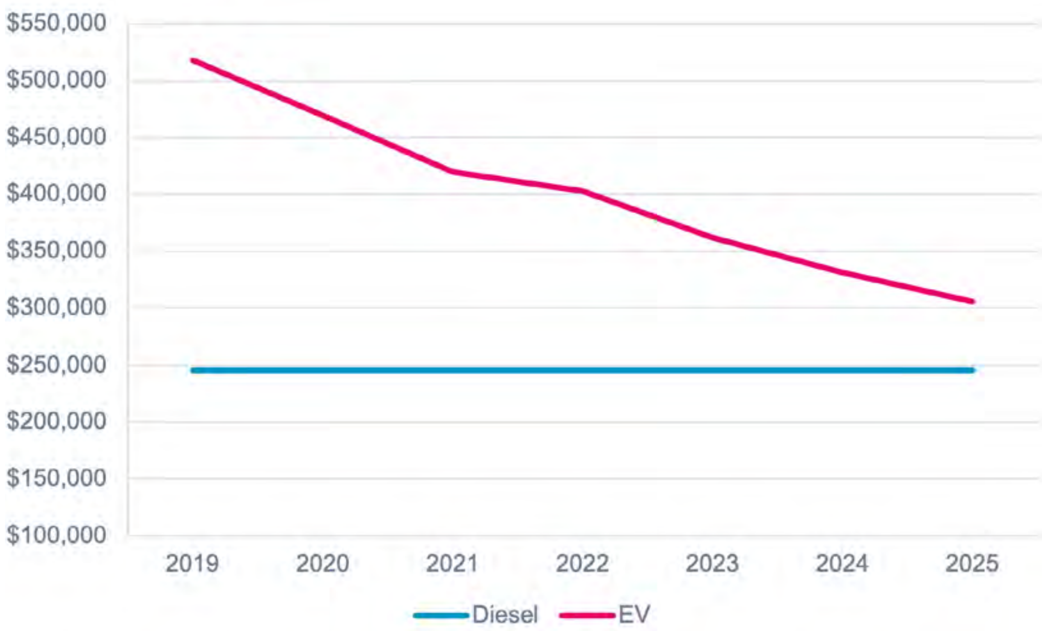


Source: Climate Change Commission

The purchase price differential between electric buses and diesel buses has also decreased significantly, and is now estimated to be, on average, $60,000, or approximately 25% of the price of a diesel bus. However, this does vary significantly, with Auckland Transport estimating an electric bus is approximately twice as expensive to purchase as a diesel bus.

Figure 24 Average purchase price for new buses

Estimated in 2023 equivalent dollars, 2019 to 2025



Source: Climate Change Commission

03/

Current travel characteristics

03/ Current travel characteristics

3.1 Vehicle kilometres travelled

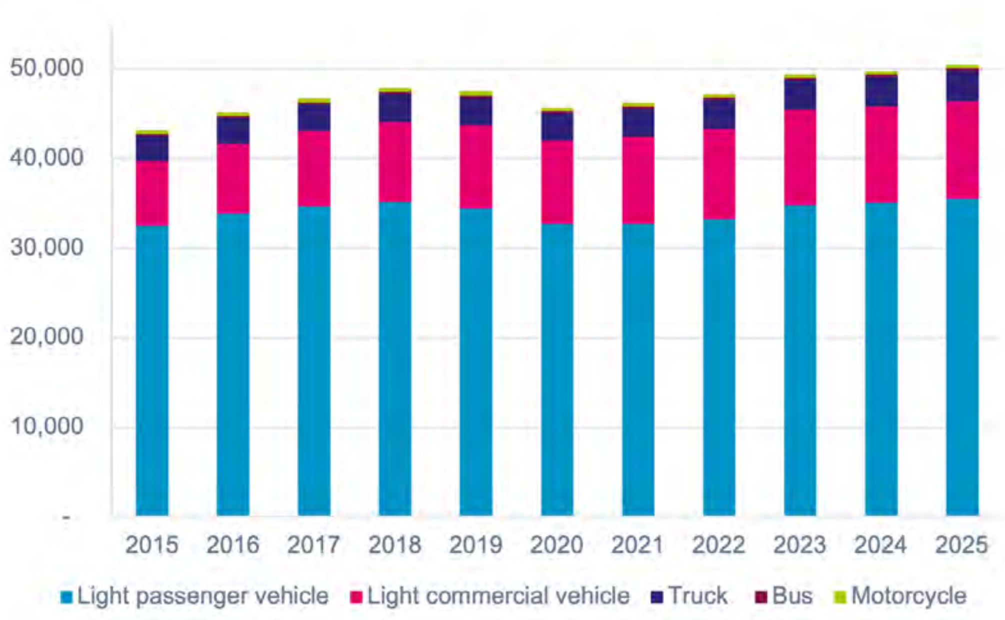
The New Zealand vehicle fleet is estimated to have travelled 50,469 million kilometres in 2025. This represents an increase of 7,269 million kilometres, or 17%, over the vehicle kilometres travelled (VKT) in 2015. This is however less than the growth rate of the number of vehicles in the New Zealand fleet.

In 2025, 70% of all VKTs were travelled in LPVs. Although VKTs have increased over the last 10 years for all vehicle types, the growth has been more gradual for LPVs, rising at 0.9% per annum. This represents approximately half the growth rate of the LPV fleet size. Mirroring the growth in the LCV fleet over the last 10 years, VKTs for LCVs have increased at 4.2% per annum and now account for 22% of total VKTs, essentially the same as their share of the vehicle fleet.

In 2025, trucks account for 7% of the New Zealand fleet's VKTs, while buses and motorcycles account for 1% each. VKTs by trucks have grown at an annual rate of 2.1%.

Figure 25 Vehicle kilometres travelled by vehicle type

2015 to 2025, million kilometres



Source: Ministry of Transport

3.2 Vehicle kilometres travelled per vehicle

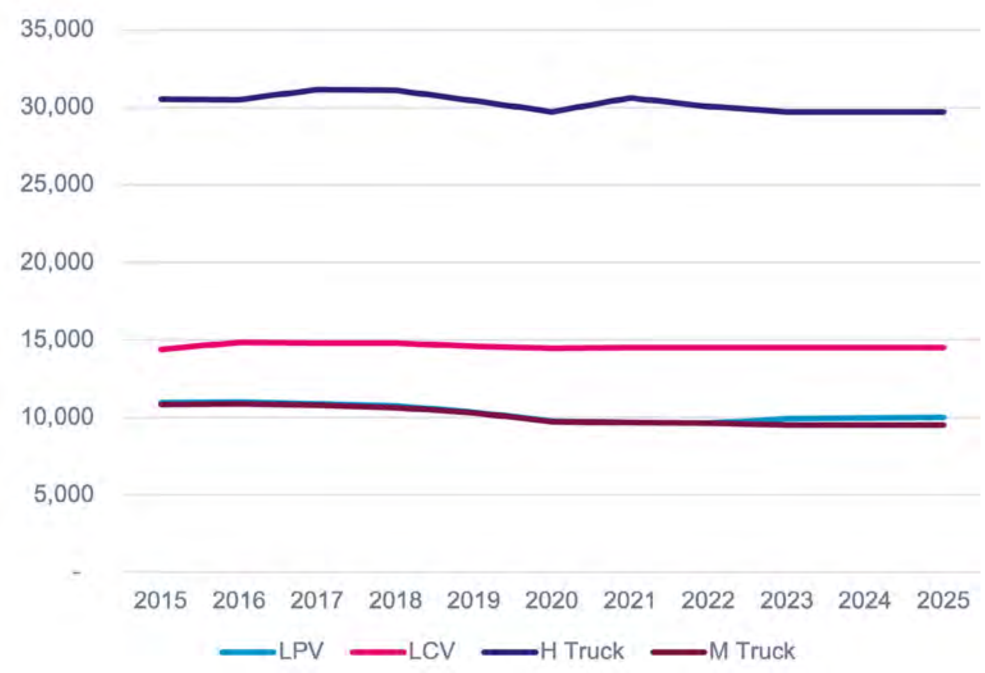
Although total VKTs have increased since 2015, the average VKT by vehicle type has dropped over that time across all vehicle types. In 2025, each LPV travels on average 9,985 kilometres. This is a reduction of close to 1000km or 9% compared to 2015. As would be expected, there was a significant reduction year on year in 2020, the year of COVID lockdowns, where VKTs per LPV reduced by 567 km year on year. VKTs for LPVs have not yet returned to their 2019 levels. Changes in work patterns with greater working from home account for at least some of this decrease. VKTs also decrease in difficult economic times, which also explains some of the decrease.

The decrease in average VKT per LPV is likely to have contributed to the ageing of the fleet. LPVs are exiting the fleet with an older average age as they are doing lower annual mileage.

There is also a decrease in VKTs for vehicles that are primarily used for commercial purposes. The average VKT for heavy trucks reduced from 30,551 kilometres in 2015 to 29,700 kilometres in 2025 - a reduction of 3%. Medium trucks travelled almost 1,300 kilometres or 12% less on average in 2025 than they did in 2015.

Figure 26 Vehicle kilometres travelled per vehicle by vehicle type

2015 to 2015, kilometres per annum



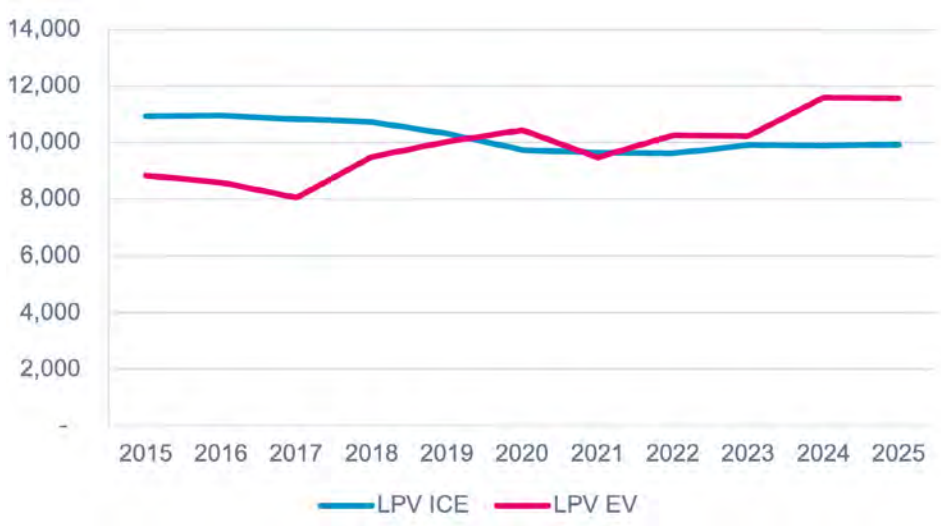
Source: Ministry of Transport

Heavy vehicle VKTs are much more closely linked to economic activity. The relationship is so established that ANZ Bank have its Truckometer series (ANZ Bank 2025) which uses the mileage of the heavy truck and medium truck fleet to indicate economic conditions. In recent years, the decrease in average VKT for heavy vehicles is explained in large part by economic conditions. The fact that the medium truck and LCV fleets have had a larger decrease in their VKT per vehicle (5% and 12% respectively) than heavy trucks (3% decrease) may also reflect increased congestion, given they will do a higher proportion of their mileage in an urban environment.

Another interesting trend is that the average VKT for electric LPVs is now starting to exceed the VKT of ICE vehicles as the range of EVs increases. For example, in 2015, the average electric LPV travelled 8,842 kilometres compared to the 10,930 kilometres an ICE LPV travelled. By 2025, it is estimated that an electric LPV travels on average 11,566 kilometres compared to an ICE LPV that travels 9,918 kilometres on average. This is not unexpected as the economics of purchasing an EV become more favourable the greater the distance driven due to greater savings on fuel costs.

Figure 27 Vehicle kilometres travelled per vehicle ICE LPV versus electric LPV

2015 to 2025, kilometres per annum



Source: Ministry of Transport

3.3 Vehicle kilometres travelled per capita

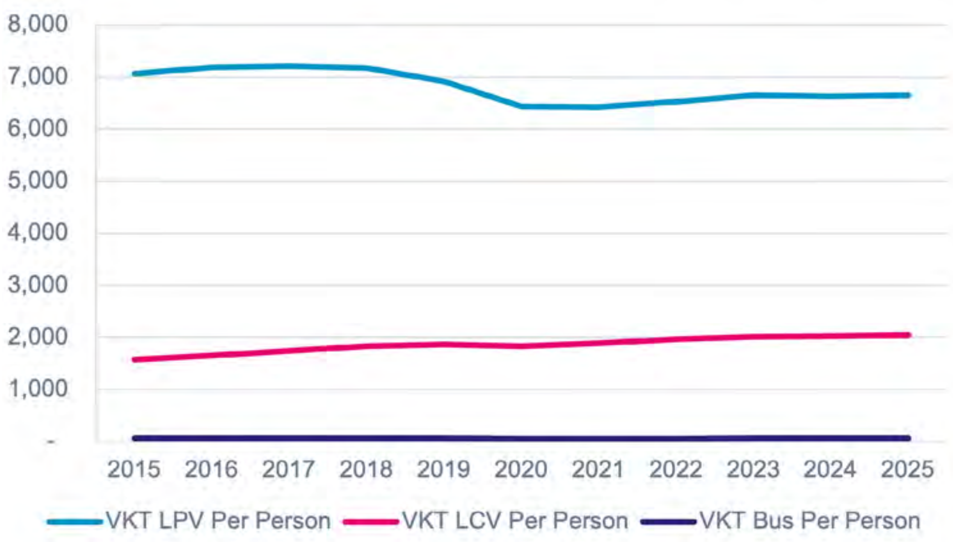
Although per capita measurement is of limited relevance for some vehicle types, it is of relevance to light vehicles and buses in particular. Per capita VKT for LPVs has decreased from 7,064 kilometres in 2015 to 6,653 kilometres in 2025. Meanwhile, per capita VKT for LCVs has increased from 1,571 kilometres in 2015 to 2,040 kilometres in 2025. This reflects the relatively higher growth in LCVs in the fleet relative to LPVs.

Over the same period, the per capita VKTs for buses have essentially remained unchanged, increasing from 54 kilometres in 2015 to 56 kilometres in 2025. Per capita VKT for buses grew relatively strongly from 2015 to 2019, reaching 62 kilometres, before reducing to 51 kilometres in 2020 due to COVID and has only slowly recovered. This is likely the result of changed working patterns impacting how often commuters commute to work.

It should be noted that VKT per capita is an indicative measure, as it does not include tourists and non-residents whose travel in rental cars, taxis, and buses will be measured in VKTs but who will not be counted in the resident population.

Figure 28 Vehicle kilometres travelled per capita for light vehicles and buses

2015 to 2025, kilometres per annum



Source: Ministry of Transport

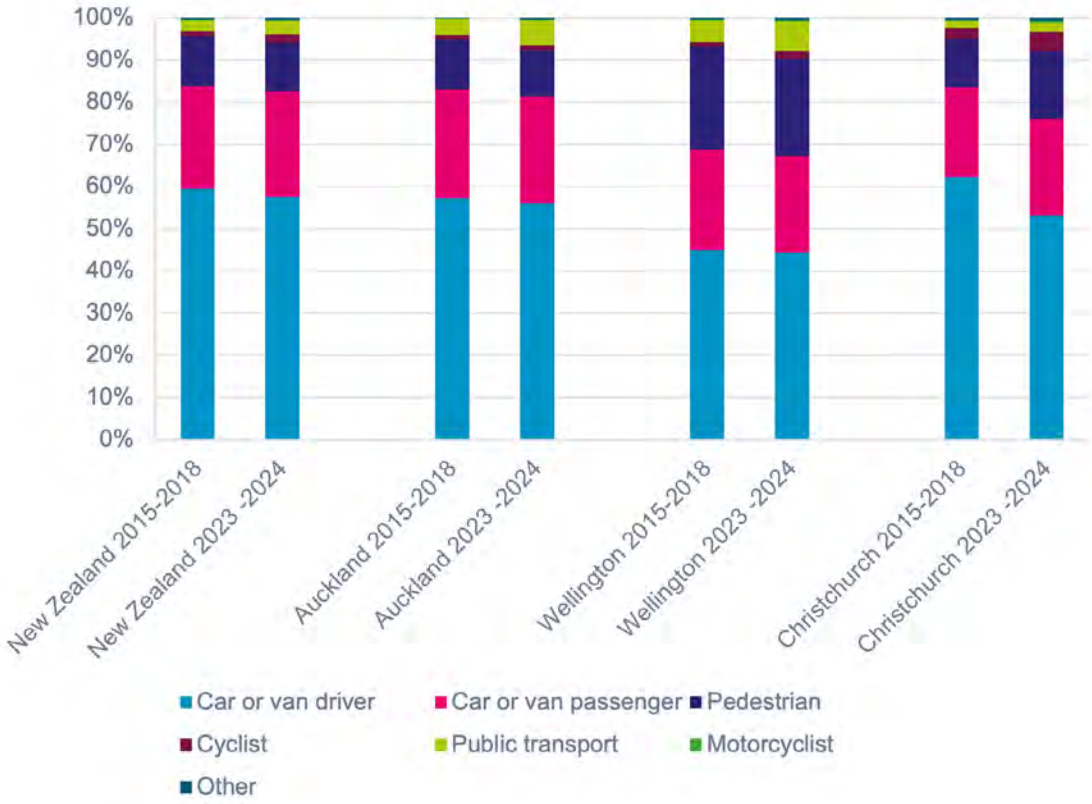
3.4 Mode of travel

Although VKT measures the distances travelled in total and per vehicle, it does not capture the primary mode of travel by individuals. The Ministry of Transport's Household Travel Survey captures how the mode of transport used by New Zealanders. Despite the disruption caused by COVID-19 and increasing investment in public transport, there has been relatively little change in how people travel over the last ten years in New Zealand as a whole, or in its major metropolitan areas. Public transport usage in Auckland has increased from 4% of trips in 2015 to 2018 to 6% in 2023 to 2024. There was also a two percentage point increase in public transport usage in Wellington from 5% of trips in 2015 to 2018 to 7% in 2023 to 2024.

There is also little change in the proportion of trips that are undertaken in a car or van as a passenger in either New Zealand as a whole or in the major metropolitan areas over that period. This indicates that there is no significant shift to shared mobility through the greater use of Uber or similar services during the period.

Figure 29 Mode of travel for individual trips

Share of total trips, %



Source: Ministry of Transport Household Travel Survey

04/

Ownership and licensing

04/ Ownership and licensing

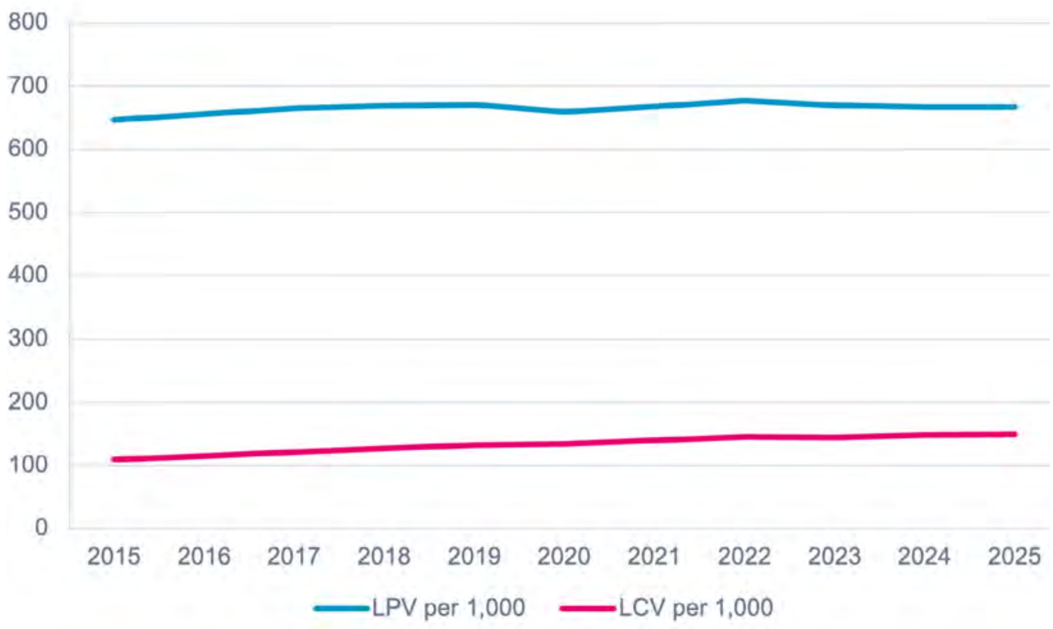
4.1 Ownership per capita

In 2025, the Ministry of Transport estimates the total light fleet in New Zealand to be 4.35 million, representing an increase of 869,000, or 25%, from 2015. The increase in the light vehicle fleet has outstripped population growth over that period. In 2025, there are 816 light vehicles per 1,000 people in New Zealand. This is an 8% increase in light vehicles per capita from 2015. This data does not support the narrative that New Zealanders are less interested in owning vehicles as other options, such as shared mobility, become available. However, as we note below, it is forecast that New Zealanders will reduce their ownership of vehicles as the population ages and cities intensify.

Ownership growth rates of LPVs and LCVs have been uneven in the last 10 years. LPV ownership has increased from 646 vehicles per 1,000 people in 2015 to 666 vehicles per 1,000 people in 2025, a 3.1% growth from 2015. However, LCV ownership has seen a 36.5% increase from 2015, increasing from 109 vehicles per 1,000 people to 149 vehicles per 1,000 people over the same period. There are now 27 EV LPVs per 1,000 people in New Zealand.

Figure 30 LPV and LCV ownership per capita

Vehicles per 1000 people, 2015 to 2025



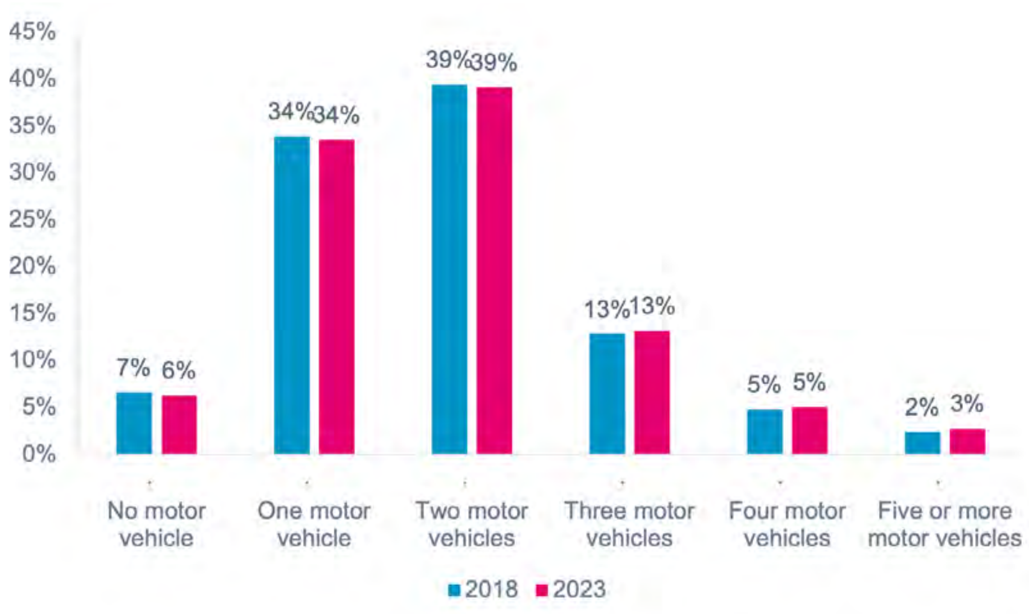
Source: Ministry of Transport, Statistics New Zealand

4.2 Access to a vehicle per household

In the 2023 Census, 1.52 million or 94% of households indicated that they had access to at least one motor vehicle. This was an increase from the 2018 Census, when 93% of households had access to a motor vehicle. The majority of households in 2018 and 2023 with access to a motor vehicle have access to two or more motor vehicles.

Figure 31 Household access to motor vehicles

% of households



Source: Stats NZ Census

4.3 Licence status

In 2024, according to New Zealand Transport Agency (NZTA) data, the number of driver's licences held by New Zealanders was 3.97 million, which was a 17% increase or an additional 583,000 licences from 2015. From 2015 to 2024, the average year-on-year change in the number of driver licences held was 64,199. In 2024, 86% of driver licences held were full licences. Restricted and learner driver licences each made up 7% of total driver licences held.

4.4 Licence status by age group and per capita

The growth in the number of driver licences held in total has been in line with population growth in New Zealand.

In 2024, there were 941 licences held per 1,000 people for individuals aged 16 and over. This is essentially unchanged from 2015, when there were 942 licence holders per 1000 people aged over 16. In 2024, 86% of licences held were full licences, 7% were restricted, and the remaining 7% were learners for all individuals aged 16 and over. In 2015, 84% of licences were full licences, 8% were restricted licences, and 8% were learner licences.

For younger New Zealanders, there has been an increase in the proportion of the population holding a driver's licence. In 2015, the number of licences held by 16-24 year olds was 777 per 1,000 people. In 2024, this had increased to 850 per 1,000 people, a 9% increase. In 2024, 42% of 16- to 24-year-olds with a driver's licence held a full licence, 26% held a restricted licence, and 32% held a learner's licence. This is unchanged from 2015.

This data paints a different picture from the common narrative that New Zealanders are becoming less interested in obtaining their driver's licence, especially younger New Zealanders. Similarly, the narrative that younger New Zealanders, in particular, are spending longer on their restricted licence and not obtaining their full licence is not supported by the data.

Figure 32 Driving licences per capita

Licences held per 1000 people

Source: New Zealand Transport Agency

4.5 Licence pass and fail rates

Although the proportion of New Zealanders with a licence has remained unchanged over the last ten years and has increased for New Zealanders aged 16 to 24, New Zealanders are taking more attempts to pass their driving licence tests.

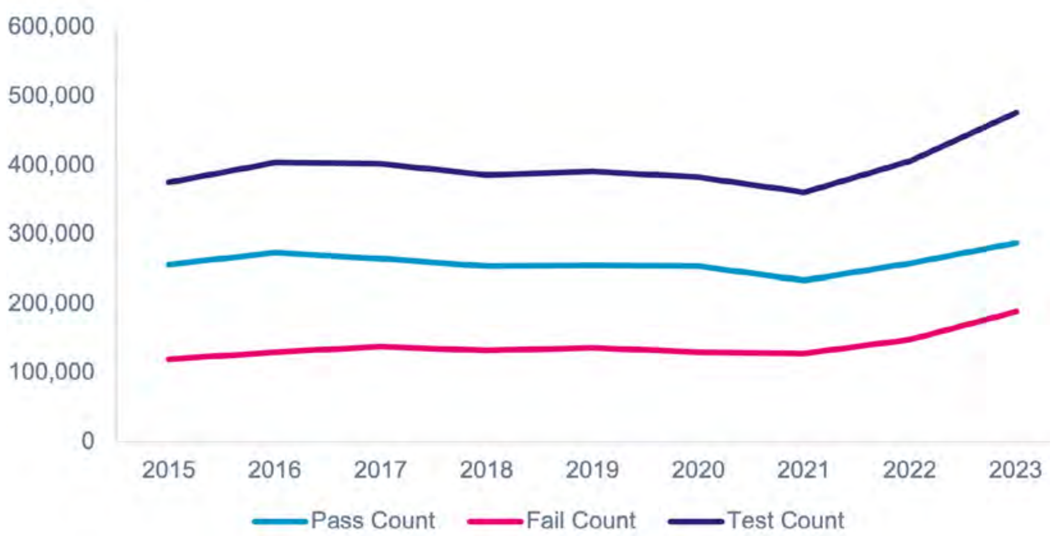
NZTA publishes data on licence pass and fail rates, as well as the number of tests undertaken. In 2023, the total pass rate for licences was 60% which is a reduction from 2015, when the pass rate was 68%. Given that this rate is calculated on all tests, including both first-time tests and subsequent resits for those who failed in their first attempt, the first-time pass rate will be even lower than this.

The pass rate was highest among the 16- to 24-year-old age group, who achieved a 65% pass rate. This is, however, a six percentage point decrease from 2015, when the pass rate for the 16- to 24-year-old age group was 71%.

There has also been a significant increase in the number of licence tests sat since 2021. Partly this represents a rebound after COVID restrictions. However, the decrease in pass rates indicates that prospective drivers sitting their tests were less prepared and therefore required more tests to get their licence. In October 2023, the Government abolished the fee charged to applicants who resit driver licence tests after failing. Although this will only be reflected in the last few months of the data shown below, this also increased the number of tests undertaken, as there was less incentive for applicants to ensure they were properly prepared. This has now been reduced by the Government to only one free resit.

Figure 33 Driver licence test results

Tests undertaken and passed or failed per annum



Source: New Zealand Transport Agency

05/

Vehicle safety

05/ Vehicle safety

A key feature of the New Zealand fleet's evolution in recent years has been the improvement in safety features, driven by the increased use of Advanced Driver Assistance Systems (ADAS) in vehicles. These features include blind spot detection, automatic braking, lane departure warnings, and forward collision warnings. The construction of vehicles has also improved, with cars featuring a stronger "pod" where the driver and passenger sit and a stronger chassis.

In a report on the trends in safety on the New Zealand vehicle fleet, Monash University (Newstead et al. 2024) concluded that there has been a substantial improvement in vehicle safety over time. Between 1983 and 2022, the risk of death or serious injury for drivers decreased by 74%, with the most significant safety improvements occurring between 1983 and 2007 (Newstead et al. 2024). These improvements are attributed to advancements in vehicle safety technologies, increased government regulation, enforcement, and communication, as well as changes in the mix of vehicles on New Zealand roads.

The probability that a driver would be severely injured in a crash in 2022 is 10.3%, significantly below the 58 year average of 16.8%. (Newstead et al. 2024)

The report also highlights the safety implications of imported used vehicles. In the early 1990s, when imported used vehicle began entering the market in large numbers, these vehicles displayed relatively poor crashworthiness. Although their safety has improved, they remain consistently less safe than new vehicles entering the fleet. This gap has widened as the average age of imported used vehicles entering the fleet has increased (Newstead et al. 2024). The continued high average age of the fleet, in part due to the age at which imported used vehicles enter the vehicle fleet, slows down the rate at which safety-enhancing technology is adopted across the New Zealand vehicle fleet.

5.1 Warrant of Fitness/Certificate of Fitness pass/fail rates

Another indicator of New Zealand light vehicle safety is the fail rates of Warrant of Fitness (WOF) and tests. The fail rate for WOF tests reported by NZTA increased from 37% in 2017 to 41% in 2024. As this figure includes the total fail rate, including retests, it understates the number of unsafe vehicles on the road, as most vehicles would be expected to pass their second WOF test. The first time fail rate, a better indicator of vehicle safety, will be higher than the overall fail rate and can be assumed to have also increased over time. In 2014, the WOF regime changed to allow older vehicles to be tested annually. This has contributed in part to the increased fail rates.

The fail rate also only captures vehicles that are tested. There is anecdotal evidence provided by an interviewee that on any given day in New Zealand, there could be up to 700,000 unwarranted and/or unregistered vehicles. While some of these may be vehicles that failed an initial WOF test and have not yet been rechecked, a significant proportion will not have been tested.

Figure 34 Warrant of Fitness pass and fail rates

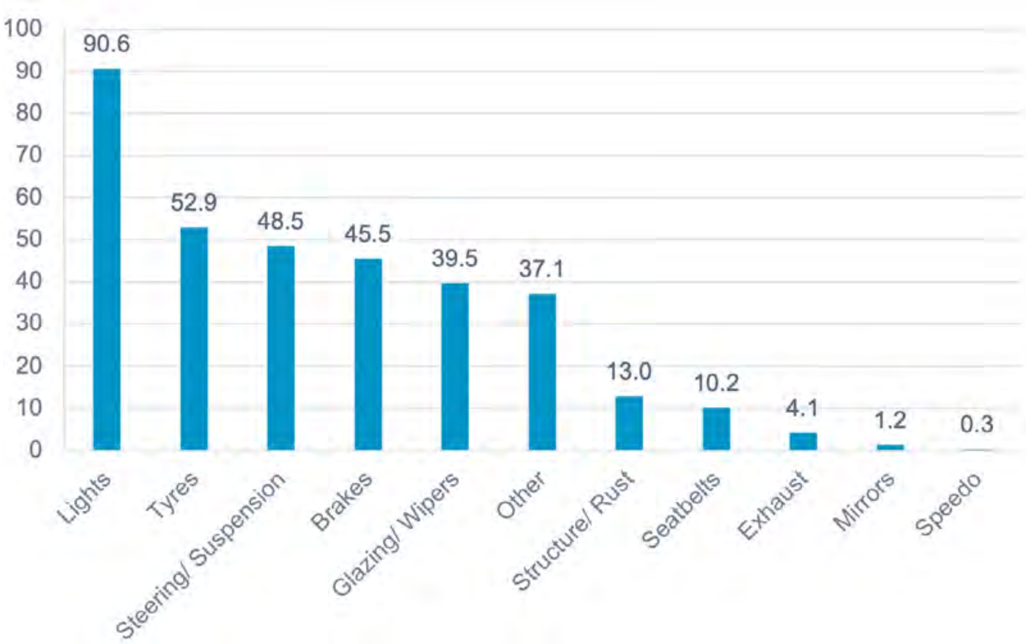
Percentage of tests undertaken and passed or failed per annum

Source: New Zealand Transport Agency

Although we do not have data showing whether the faults that vehicles are failing on are changing over time, we do have data on the reasons for failure from tests carried out in July 2025. This shows that defective lights, tyres, steering, and suspension are the top three reasons vehicles fail their WOF tests.

Figure 35 Reasons for Warrant of Fitness pass failures

July 2025, 000s



Source: New Zealand Transport Agency

A similar trend of increasing fail rates is also seen in Certificate of Fitness (COF-A) tests for light passenger service vehicles weighing up to 3.5 tonnes. The failure rate in 2017 was 13% of all tests. This climbed to 20% in 2024. As with the WOF fail rates, the first-time fail rate will be higher. The passenger service fleet is less homogeneous than the light vehicle fleet subject to WOF tests. It encompasses rental vehicles, taxis and specialist service vehicles such as ambulances. Within these groups, the rental vehicles and specialist service vehicles are more likely to pass their test first time, as they are more likely to have regular, professional maintenance programmes, according to an interviewee with knowledge in this field.

Figure 36 Certificate of Fitness A (COF-A) pass and fail rates

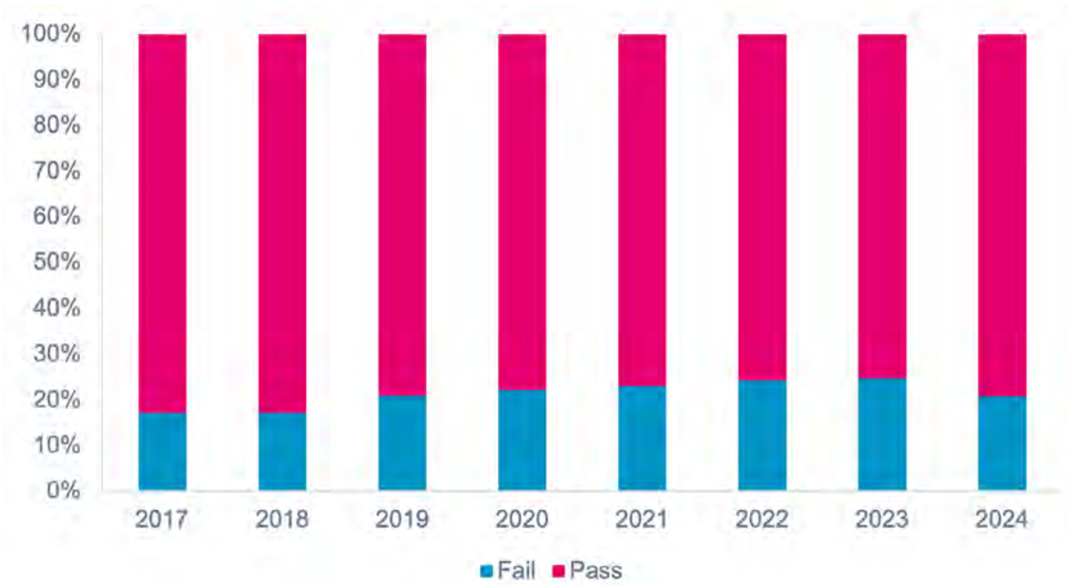
Percentage of tests undertaken and passed or failed per annum

Source: New Zealand Transport Agency

For heavy vehicles weighing over 3.5 tonnes, the fail rates have also increased from 2017 to 2024. In 2017, 17% of Certificate of Fitness B (CoF-B) tests were failed, increasing to 21% in 2024. Again, first-time fail rates will be higher.

Figure 37 Certificate of Fitness B (COF-B) pass and fail rates

Percentage of tests undertaken and passed or failed per annum



Source: New Zealand Transport Agency

06/

State of the industry

06/ State of the industry

In compiling this state of the industry analysis, we have made use of Stats NZ data, captured as part of their industry surveys and matched it to MTA's sectors. The sectors that we can report industry statistics for are as follows:

- Collision repair
- General repair
- Parts and accessories
- Service stations
- Vehicle dealers.

The way in which Stats NZ categorise their data means that we cannot break down vehicle dealers into new and used vehicle dealers. We also cannot report on towing, as its data is contained in a much larger industry group that includes freight transportation. Appendix A shows how we have classified the Stats NZ industry categories to MTA's sectors.

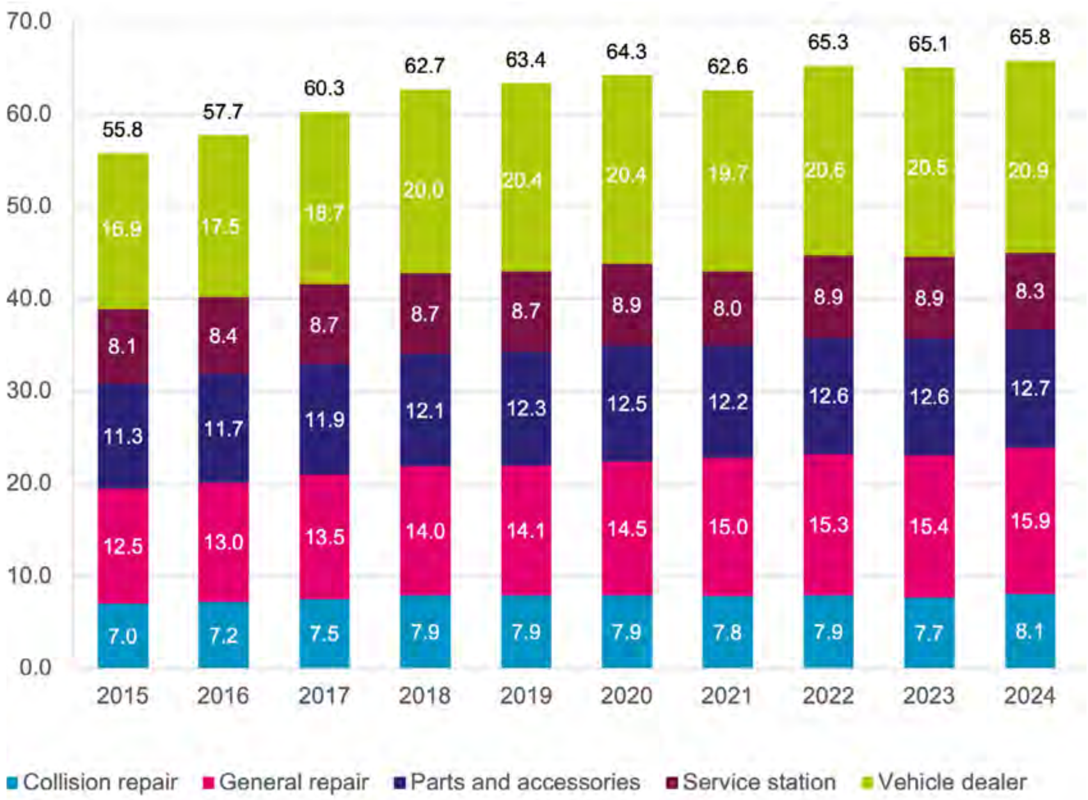
6.1 Employment

As at 2024, there were 65,830 employees in the sectors that MTA represents. Vehicle dealers were the largest employers, with 20,850 employees, followed by general repair, which employed 15,850 employees. Since 2015, there has been a growth of just over 10,000 employees in the industry. This is an overall growth of 18% or 1.9% per annum. The strongest growth in this period has occurred in the vehicle dealer sector and the general repair sector, with annual growth rates of 2.4% and 2.7%, respectively. The weakest growth across the sectors has been in the service station sector, which has grown at only 0.3% per annum over the ten years from 2015.

Since 2022, all sectors have experienced a decrease in growth rates, reflecting tougher economic conditions. The industry has grown by 0.4% on average over the last two years, while the service station sector has seen a decrease of 3.4% per annum during the same period, as service stations close and become increasingly unmanned, with operators seeking to reduce costs.

Figure 38 Employees by sector

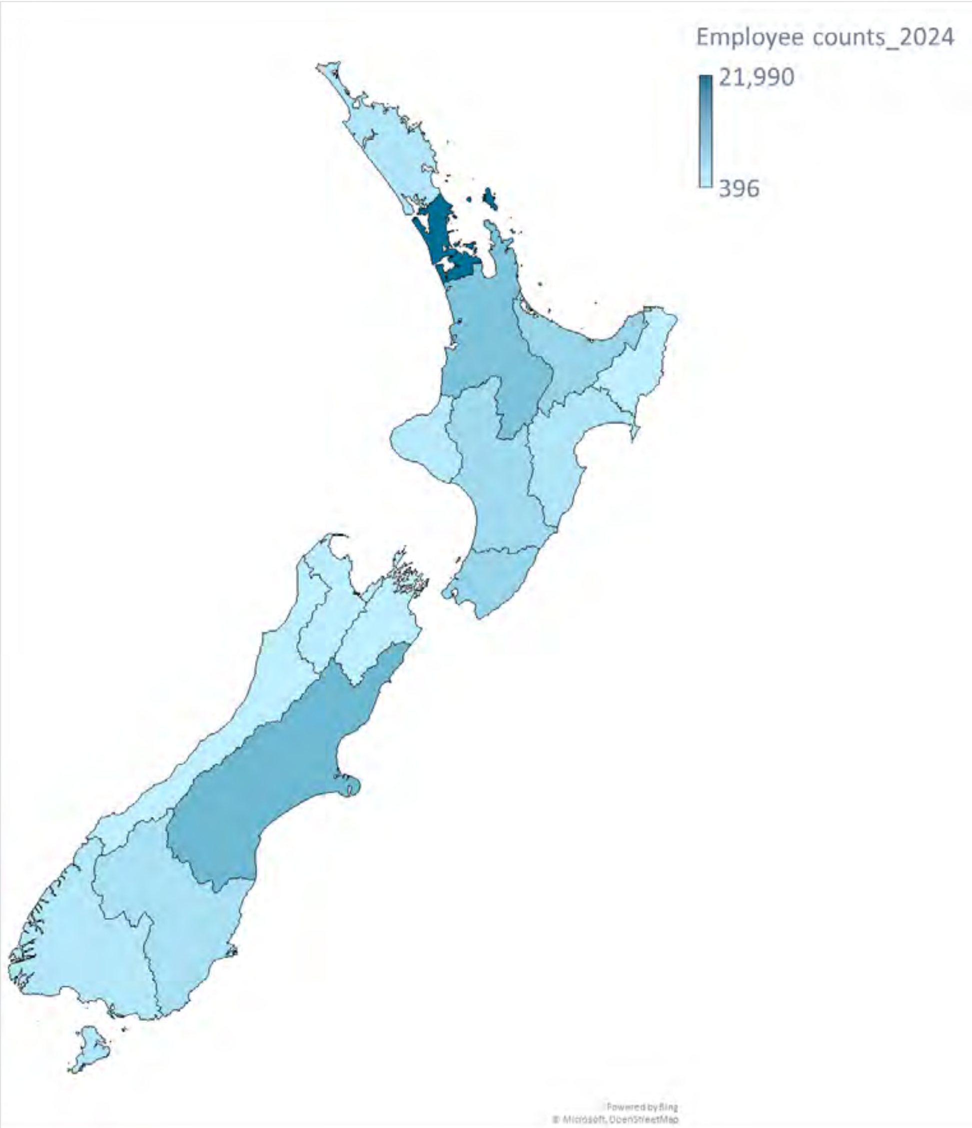
000s employees, 2015 to 2024



Source: Stats NZ

As would be expected the geographic distribution of where the employees in the industry are located mirrors the population distribution of New Zealand.

Figure 39 Geographic distribution of employment in the industry



Source: Stats NZ

In addition to analysing data, we also undertook a number of interviews with subject matter experts in the industry. Topics discussed in these interviews included discussions around changing workforce characteristics that are not captured in statistical data. Interviewees noted that the increasing use of technology in vehicles is changing the requirements of technicians in the automotive repair industry. Modern vehicles incorporate extensive diagnostic and safety systems, as well as advanced materials, which require adherence to strict manufacturer specifications. Similarly, over the past ten years, collision repair has shifted from largely mechanical and bodywork-focused tasks to highly technical processes. The technological evolution of vehicles has heightened the need for technicians who are not only mechanically skilled but also capable of high-level electronic diagnostics and software troubleshooting.

Recruitment into the industry is difficult. In addition to a perceived shortage of young people entering the industry, it is estimated by an interviewee that training an apprentice can cost between $80,000 and $100,000 annually, taking into account the costs of supervision and inefficiencies. As a result, the industry has become very reliant on recruiting fully trained staff from overseas.

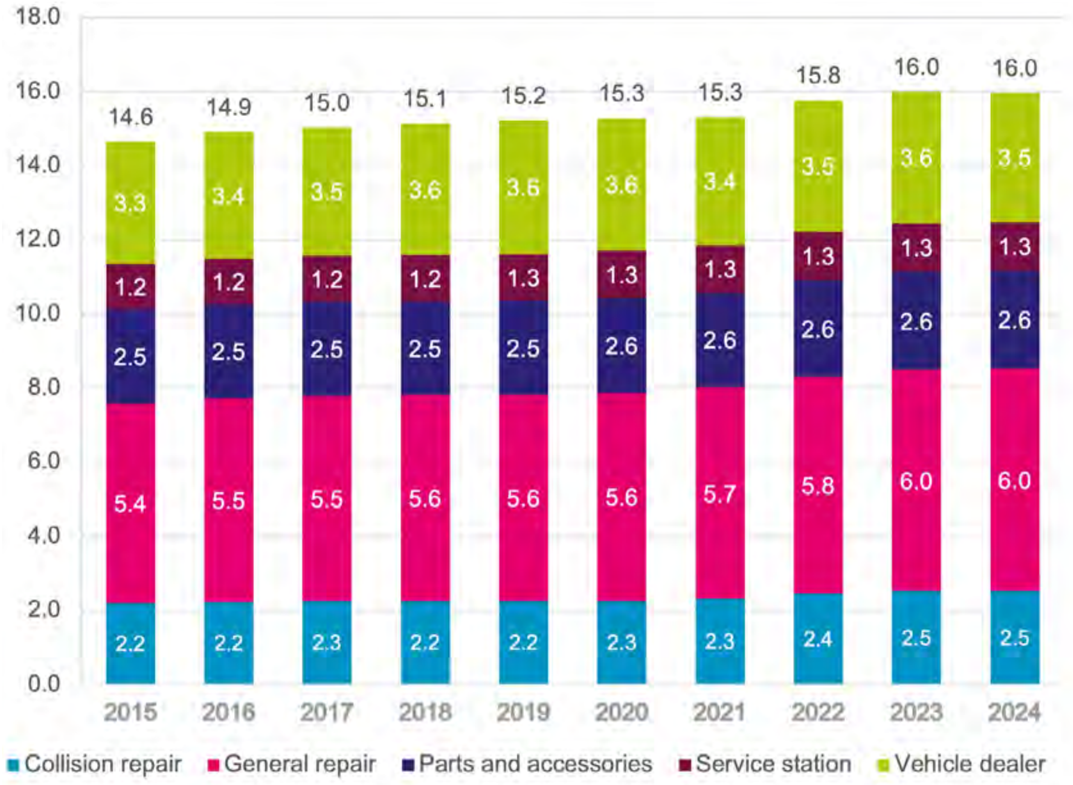
Although different training is required for repairing EVs, and EVs have fewer maintenance requirements than ICE vehicles, the relatively low numbers in the New Zealand fleet are not yet having a significant impact on either the number of employees in the industry or the training required.

6.2 Business units

Stats NZ captures data on the number of business units operating in New Zealand at a geographic level. Therefore, a business with three branches is counted as three separate geographic units by Stats NZ.

The industry had 15,969 business units at the end of 2024. This represents a 1,329 increase since 2015, or 9%, equating to an annual growth rate of 1%. Over the last two years, as economic conditions have deteriorated, the rate of growth has slowed to an average of 0.7%, with the number of vehicle dealer business units declining by 0.6% per annum. This reflects the economic conditions, particularly the tough market for vehicle sales, as evidenced by the decrease in registrations of new vehicles. The number of business units in the general repair sector has, however, increased by 1.5% over the last two years, bucking the trend.

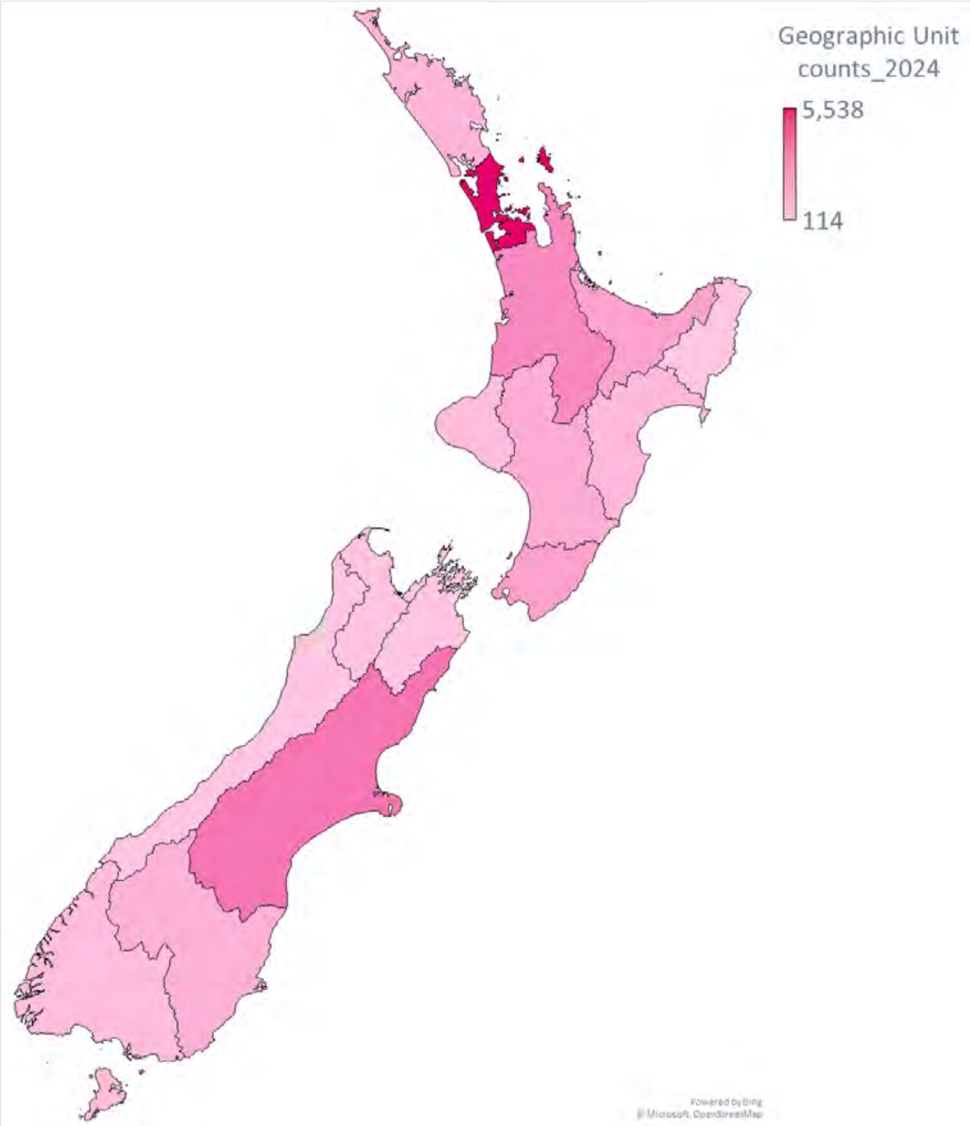
Figure 40 Business units by sector



Source: Stats NZ

As with the distribution of employment in the industry, the geographic distribution of business units also mirrors population distribution in New Zealand.

Figure 41 Geographic distribution of business units in the industry



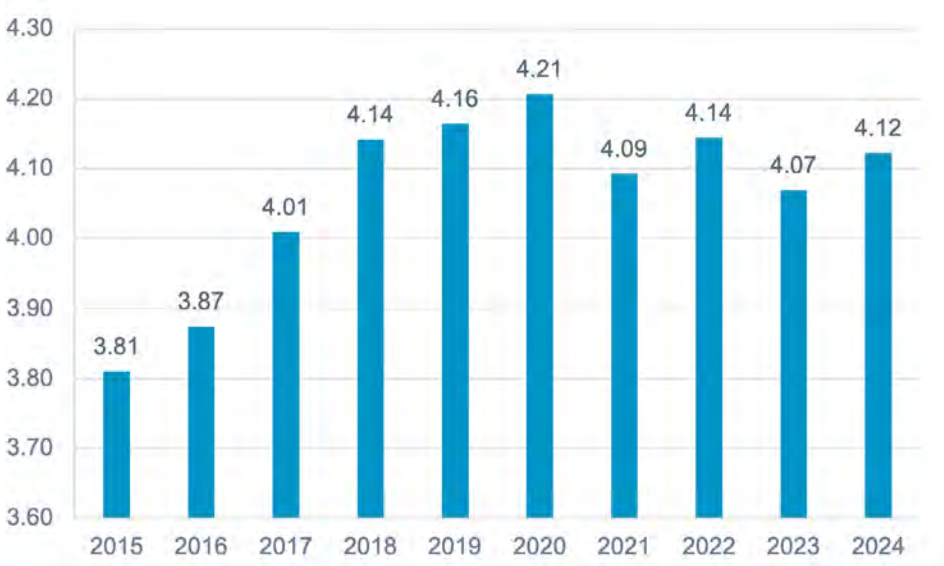
Source: Stats NZ

As we have data on employees in the industry and the number of business units in the industry, we are able to calculate the average number of employees per business unit, which provides a proxy measure for the size of business units in the industry.

The average number of employees per business unit is low. In 2024, the average number of employees per business unit was 4.12. This was, however, an increase from 3.81 in 2015, indicating that business units have grown larger over that time. Looking at the years more closely, the highest average number of employees per business unit was achieved in 2020, when, on average, a business unit in the sector employed 4.21 employees. Given that COVID lockdowns occurred in 2020 and 2021, we hypothesise that businesses in the industry laid off staff to manage a reduction in demand resulting from COVID, for example, as a result of vehicles doing less mileage. Employment per business unit has grown back slowly since then.

Figure 42 Size of business units

Employees per business unit, 2015 to 2024



Source: Statistics New Zealand

Breaking down by sector, the sectors with the highest average number of employees are service stations, with 6.4, and vehicle dealers, with 6.0. General repair is the lowest with 2.6 employees per business unit on average, slightly less than collision repair business units, which have 3.2 employees.

Table 3 Average number of employees per business unit

Industry sector	Average number of employees
Collision repair	3.2
General repair	2.6
Parts and accessories	4.8
Service station	6.4
Vehicle dealer	6.0
Total industry	**4.1**

Source: Stats NZ

Although the Stats NZ data gives us a proxy measure for the size of the business unit and how this measure changes over time, it does not describe the changes in the size of businesses within the industry, changes to the structure of businesses or the market. For example, although we know the number of business units is increasing, we do not know if the number of businesses in the sector is changing and if so, how.

Based on the interviews conducted as part of this research, interviewees felt that the general repair sector was increasingly a three-tier market, comprising dealers, franchise or chain businesses, and independent businesses. In part, this consolidation into three tiers is the result of demographic changes in the workforce and shifts in the technology and maintenance requirements of vehicles. Increasingly, as the New Zealand population ages, owners of independent repairers are looking to sell their businesses and retire. This provides more opportunities for larger chains or franchise operations to acquire them.

As vehicles become more technologically advanced, the increasing integration of computer systems, advanced sensors, and proprietary software has significantly complicated diagnosis and repair. Access to manufacturer-specific tools, diagnostic equipment, and repair manuals is often restricted, requiring independent workshops to use overseas subscriptions, VPNs, and third-party software to access essential data. This challenge is part of the broader global 'right to repair' debate, where independent service providers advocate for open access to repair information. Investing in aftermarket diagnostic tools is costly and forces workshops to make strategic decisions about whether to maintain broad coverage across multiple brands or specialise in a few, where investment can be maximised. It is also likely to lead to the consolidation of businesses because of the greater investment required.

Similar market dynamics are seen in the collision repair market. The market is changing as insurers, such as AMI and the IAG group of businesses, enter the market directly to repair vehicles they insure. There is also growth in chains. These can be either consolidators of independent businesses, such as Drive Group or franchise and buying group arrangements. Again, interviewees feel that the drivers of this are similar to the general repair market. The increasing use of technology in vehicles requires access to proprietary information and data from manufacturers to effectively repair the vehicles. Some brands can only be repaired at repairers authorised by the manufacturer, and this is an increasing trend as new Chinese brands enter the market. The ability to calibrate the ADAS systems in vehicles also requires specific equipment. This increased investment in equipment, technology and licensing increases the cost of operation and is likely to require greater scale. Similarly, an ageing cohort of business owners is increasingly looking to exit their businesses and retire.

In the vehicle dealer market, there is anecdotal evidence from interviewees that large groups are expanding and adding new brands to their businesses. In part, this is being driven by the explosion of Chinese brands, and in particular those with EV models, who are entering the New Zealand market.

In the service station market, there has been a growth in business units, but changes in business models have occurred as margins become tighter. Increasingly, the market is splitting between full-service operations that also include convenience stores and cafes, to generate additional revenue streams, and unmanned self-service sites aiming to reduce operating costs.

6.3 Financial metrics of industry participants

Stats NZ also publishes industry financial information for different industries. This is collected through their Annual Enterprise Survey. Since this information comes from a survey, it has varying degrees of statistical robustness, depending on the size of the industry and the survey response rates. It, therefore, should be considered as indicative.

Table 4 Financial metrics for the industry

2024 financial year

Metric	Collision repair	General repair	Parts and accessories	Service stations	Vehicle dealers
Income ($m)	1,920	4,089	5,256	6,882	25,665
Expenditure ($m)	1,769	3,773	4,922	6,553	25,085
Profit ($m)	151	316	334	329	580
Assets ($m)	891	2,118	4,125	2,541	12,013
Profit margin	7.9%	7.7%	6.4%	4.8%	2.3%
Return on assets	16.9%	14.9%	8.1%	12.9%	4.8%

Source: Stats NZ

The vehicle dealer sector generates the most profit in the industry, but its profit margin and return on assets were lower than those of other industry sectors in 2024. The most profitable sectors for the industry in terms of margin and return on assets were collision repair and general repair.

The financial performance of each sector has varied over time. The collision repair sector has seen an improvement in profitability in 2024, following a decline in 2023. Although there has been a significant increase in sector revenues from 2022 to 2024, it has largely been offset by increased expenditure due to high inflation in New Zealand over that period, as well as the increased cost of repairs as vehicles become more technologically advanced. As noted above, the inflation rate for repairs (which includes collision repairs) was above the overall inflation rate for vehicle expenses in recent years.

Table 5 Collision repair sector financial metrics

2022 to 2024

Metric	2022	2023	2024
Income ($m)	1,547	1,661	1,920
Expenditure ($m)	1,429	1,547	1,769
Profit ($m)	127	121	150
Assets ($m)	816	796	891
Profit margin	7.6%	6.9%	7.9%
Return on assets	14.5%	14.3%	16.9%

Source: Stats NZ

A similar pattern can be seen in the financial performance of the general repair sector. Despite strong revenue growth since 2022, expenditure has also increased, although overall profit has risen, albeit with a margin slightly below that of 2022.

Table 6 General repair sector financial metrics

2022 to 2024

Metric	2022	2023	2024
Income ($m)	3,592	3,901	4,089
Expenditure ($m)	3,307	3,615	3,773
Profit ($m)	285	286	316
Assets ($m)	1,837	1,981	2,118
Profit margin	7.9%	7.3%	7.7%
Return on assets	15.5%	14.4%	14.9%

Source: Stats NZ

By contrast, the parts and accessories sectors have experienced rising margins over the 2022–2024 period. This is due to tight expenditure control in 2024 in particular, while revenues increased.

Table 7 Parts and accessories sector financial metrics

2022 to 2024

Metric	2022	2023	2024
Income ($m)	4,852	5,197	5,256
Expenditure ($m)	4,675	4,918	4,922
Profit ($m)	177	279	334
Assets ($m)	3,341	3,656	4,125
Profit margin	3.6%	5.4%	6.4%
Return on assets	5.3%	7.6%	8.1%

Source: Stats NZ

The service station sector has seen an improvement in margins, albeit from a very low base, and is not achieving the level of profitability that most other sectors have delivered. Although revenues decreased in 2024, this was offset by a very similar decrease in expenditure. Given that revenues and expenditures are both highly dependent on the oil price, this is not unexpected.

Table 8 Service station sector financial metrics

2022 to 2024

Metric	2022	2023	2024
Income ($m)	5,236	7,140	6,882
Expenditure ($m)	5,141	6,819	6,553
Profit ($m)	95	321	329
Assets ($m)	1,968	2,428	2,541
Profit margin	1.8%	4.5%	4.8%
Return on assets	4.8%	13.2%	12.9%

Source: Stats NZ

Although the largest sector in terms of income, expenditure, and assets, the vehicle dealers sector has struggled with low profitability during the period from 2022 to 2024. Margins decreased in 2023. Although they have rebounded in 2024, they still remain low relative to the rest of the industry. As noted above, the number of business units in the sector decreased between 2022 and 2024, which is likely in response to the low margins in 2023 and may have played a role in the increase in profitability in 2024.

The sector also experienced a significant increase in asset value between 2022 and 2024. This may be due to an increase in inventory levels, given the subdued sales activity in the sector.

Table 9 Vehicle dealer sector financial metrics

2022 to 2024

Metric	2022	2023	2024
Income ($m)	24,706	25,624	25,665
Expenditure ($m)	24,205	25,199	25,085
Profit ($m)	501	425	580
Assets ($m)	9,913	11,151	12,013
Profit margin	2.0%	1.7%	2.3%
Return on assets	5.1%	3.8%	4.8%

Source: Stats NZ

6.4 Contribution of the industry to the New Zealand economy

Using Stats NZ data, we have estimated the contribution the industry makes to the New Zealand economy. This is calculated by estimating the value of the total output of the industry and deducting the value of all goods and services used in producing this output (known as intermediate consumption). In the year ended March 2023 (the latest information provided by Stats NZ), the contribution of the industry to New Zealand's gross domestic product (GDP) was $6.8 billion. New Zealand's total GDP from all industries that year was $360.4 billion. The industry therefore contributed 1.9% of New Zealand's GDP.

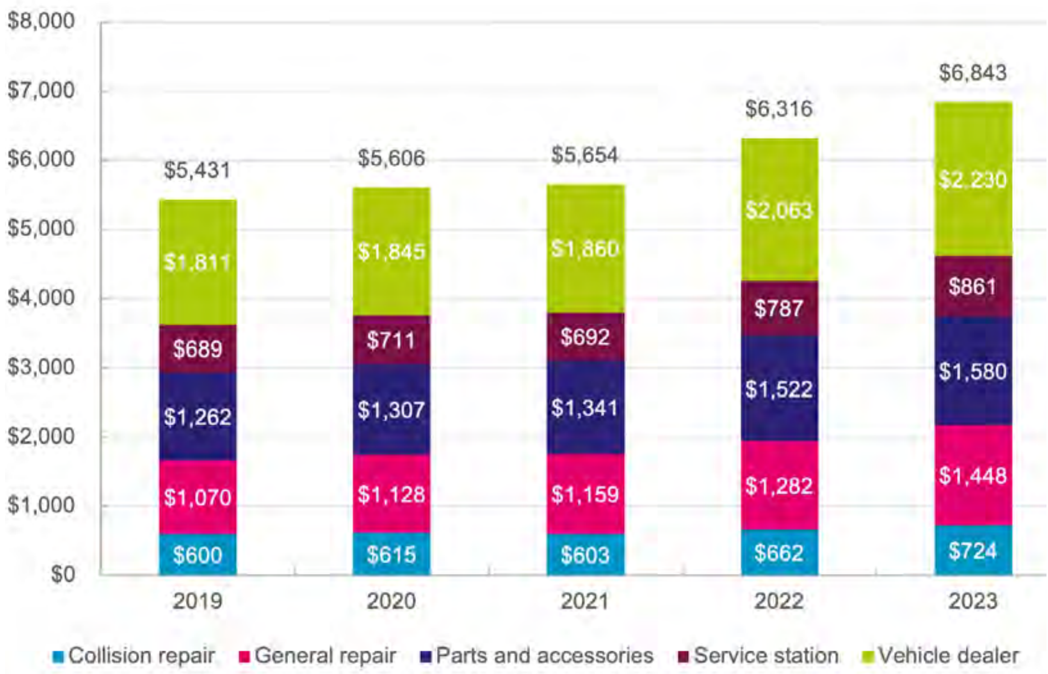
The sector with the largest contribution to New Zealand's GDP for the year ended 31 March 2023 was the vehicle dealer sector, which contributed $2.2 billion, followed by the parts and accessories sector, which contributed $1.6 billion.

The industry's contribution to New Zealand's GDP has grown from $5.4 billion in 2019 to $6.8 billion in 2024, representing an annual growth rate of 5.9%. This growth rate was consistent with the New Zealand economy as a whole, and as a result, the share of New Zealand's GDP produced by the industry remained unchanged at 1.9%.

The strongest growth was in the general repair sector, whose GDP contribution increased from just under $1.1 billion to $1.5 billion between 2019 and 2024.

Figure 43 Contribution to GDP by the industry

2019 to 2023, $000s, nominal dollars



Source: Stats NZ

07/

Future size and composition of the New Zealand fleet

07/ Future size and composition of the New Zealand fleet

Looking ahead, the total size of New Zealand's vehicle fleet is projected to continue growing steadily over the next two decades. By 2035, the Ministry of Transport estimates that the national fleet will reach approximately 5.07 million vehicles -an increase of around 320,000, or 7%, compared to 2025 levels.

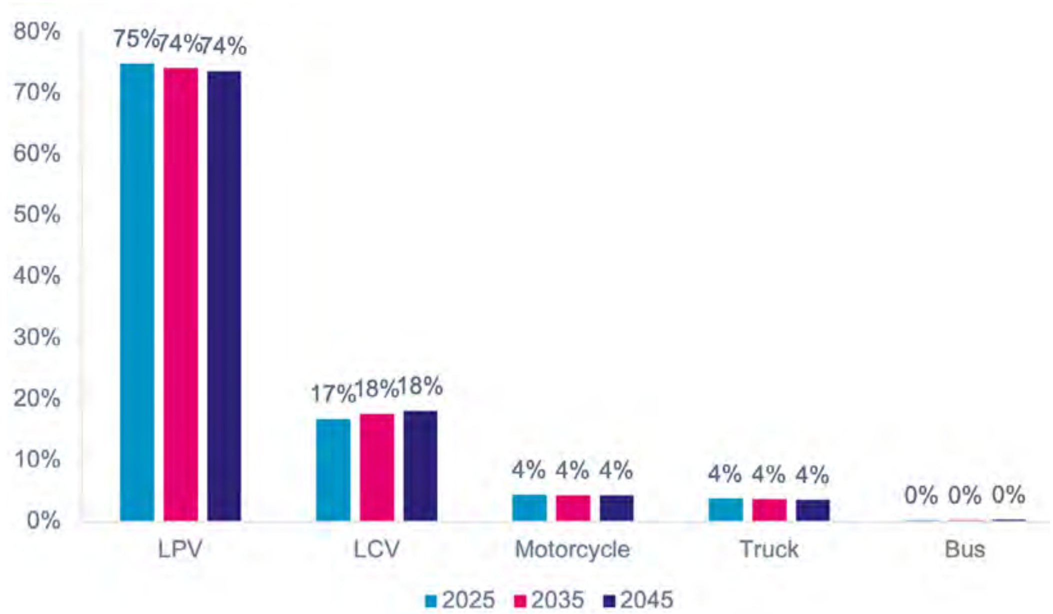
According to Ministry of Transport forecasts, LPVs will continue to dominate the fleet, accounting for approximately 74% of total vehicles in both 2035 and 2045. LCVs are projected to maintain an 18% share of the fleet through this period, reflecting their continued role in freight, service, and utility applications. Motorcycles and trucks are each expected to account for approximately 4% of the fleet in both 2035 and 2045.

Notably, these proportions are not expected to change significantly under varying rates of EV uptake. Whether electrification proceeds more rapidly or more slowly than the base case forecasted by the Ministry of Transport, the structural mix of the fleet by vehicle type remains broadly unchanged. Instead, the key variables that will change will be the fuel type and emissions profile within each category of vehicle type.

This steady composition reflects a mature vehicle market, where growth is modest and demand for different vehicle types remains consistent, driven by population growth, land use patterns, and economic activity across key sectors, including freight, construction, and personal transport.

Figure 44 Forecast future composition of the New Zealand vehicle fleet by vehicle type

Percentage of the total New Zealand vehicle fleet 2025, 2035 and 2045

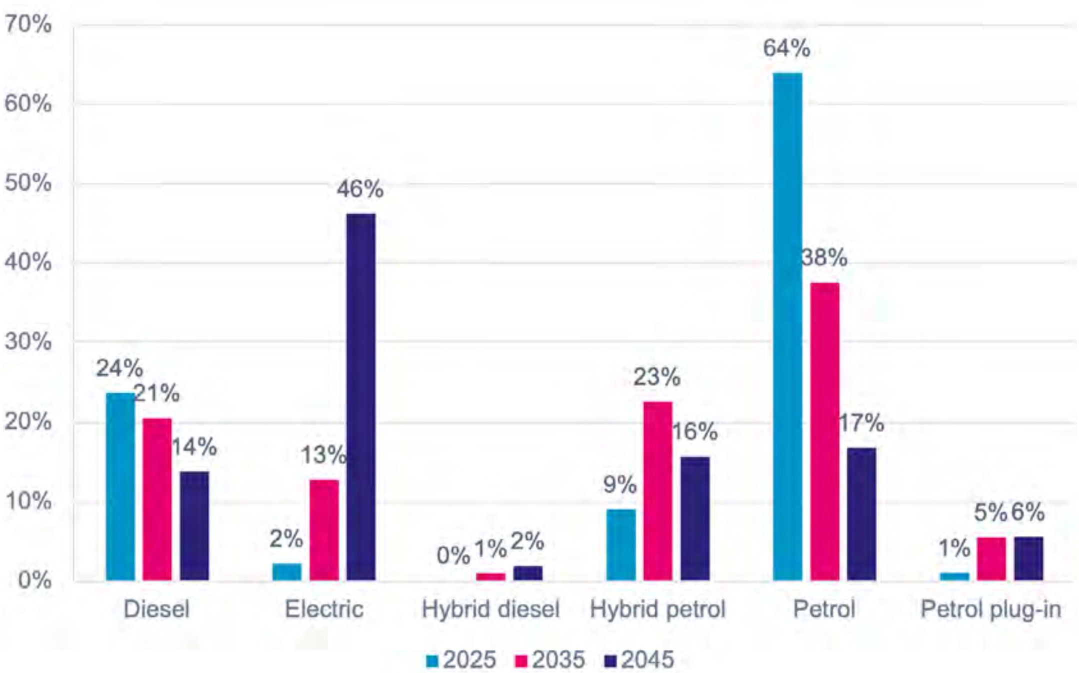


Source: Ministry of Transport

Although the proportion of the fleet that is electrified is currently relatively small, it is forecast to grow over the next 20 years. In particular, over the 10 years following 2035, the pace of electrification in the fleet grows rapidly. By 2035, the majority of vehicles will still be powered by liquid fuels, although, as noted above, these vehicles continue to become more fuel-efficient.

Figure 45 Total fleet by fuel type

Percentage of total fleet, base case forecast 2025, 2035 & 2045



Source: Ministry of Transport

08/

The future state of the New Zealand light vehicle fleet

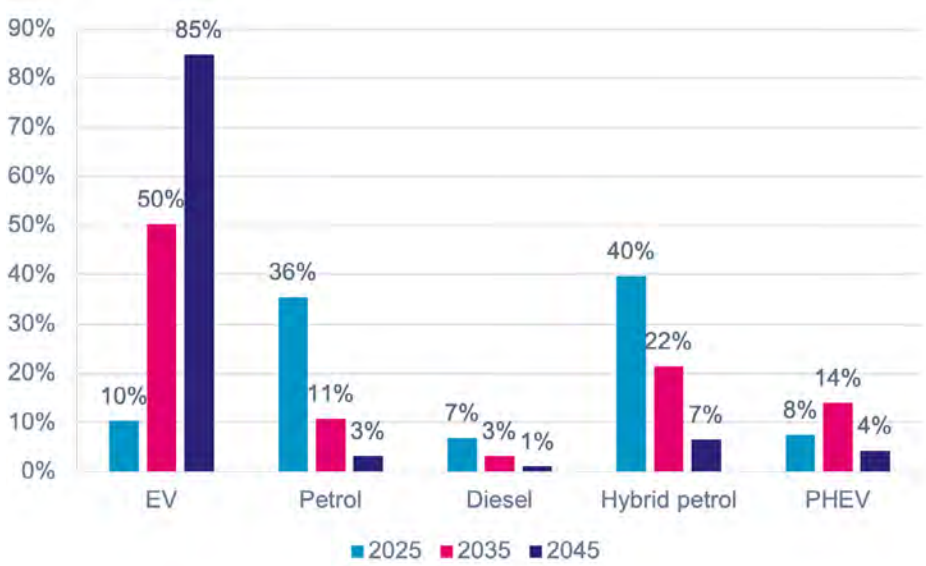
08/ The future state of the New Zealand light vehicle fleet

8.1 Light passenger vehicle registrations

By 2035, the registration of new LPVs is forecast by the Ministry of Transport to be heavily weighted toward electric and hybrid models. Registrations of new petrol LPVs are projected to decline from 36% of LPV registrations in 2025 to an estimated 11% of all new LPV registrations by 2035. New electric LPVs, on the other hand, are estimated to increase from 10% in 2025 to 50% of all new LPV registrations in 2035. This trend is anticipated to continue in the following decade as well, with new petrol LPV registrations projected to decline from 11% to 3% between 2035 and 2045. New electric LPV registrations are projected to increase rapidly from 50% to 85% of all new LPV registrations. The growth in the expected proportion of new LPV registrations that are EVs comes at the expense of both petrol hybrids and petrol ICE vehicles. This supports the theory that hybrids are a transitional technology on the path to full electrification of vehicles.

Figure 46 New LPV Registrations by fuel type

Percentage of new LPV registrations, base case forecast 2025,2035 & 2045



Source: Ministry of Transport

Looking forward, the IEA expect that by 2030, 80% of new vehicles sold in China will be electric vehicles, including PHEVs (International Energy Agency 2025). This represents a share of new vehicle sales that the Ministry of Transport in New Zealand estimates will not reach until approximately 2045.

A major driver of increasing electrification in overseas markets is currently the decrease in the purchase price of vehicles. In part, this is due to the reduction in production costs of the vehicles and their batteries. In some markets, this is also due to Government policies, including purchase price subsidies, rewards for trading in older ICE vehicles, and tougher emission standards. Looking further forward, this change will also be driven by manufacturers stopping the manufacture of ICE vehicles and increasingly stringent environmental standards. (International Energy Agency 2025). These implications extend to the New Zealand market.

A notable feature of both new car and new EV sales in recent years in New Zealand has been the increase in sales of Chinese vehicles and the growing presence of Chinese brands in the New Zealand market. Currently, China accounts for 70% of global EV production, with 80% of this production attributed to Chinese brands. China accounted for 40% of all EV exports in 2024, and of these exports, 70% were for Chinese brands. Therefore, the future production of Chinese EVs will have a significant impact on the electrification of the fleet both overseas and in New Zealand.

Within China, nearly all small EV cars are priced at less than the average small ICE car. Across each segment of LPVs in China, with the exception of the medium-sized segment, there is no price premium for an EV, and in some cases, a discount is observed, as of the end of 2024. The price decrease has been significant in most segments between 2023 and 2024, driven by the decreased costs of batteries. For example, the average price of a battery pack for an SUV in China decreased by 30% between 2023 and 2024, resulting in a 10% decline in the price of an EV SUV (International Energy Agency 2025). The decreasing costs of batteries are expected to continue over the next few years, due to an oversupply of lithium and the continued expansion of battery manufacturing capacity. It could therefore be expected that we will continue to see a decrease in the purchase price of EVs, especially from China, in the New Zealand market, which will increase the electrification of the fleet.

An unknown factor is the increasingly tense global trade situation. The increase in tariffs on Chinese vehicles, both in the United States and the European Union and the removal of subsidies for electric vehicles in the United States could impact New Zealand. Chinese manufacturers could seek new markets as other Western markets become more expensive for them to access. Depending on whether they wish to build new right-hand drive vehicles, this may result in even more competitive pricing in New Zealand.

In recent years, sales of PHEVs in China have been growing faster than those of EVs, as they offer greater flexibility, can handle longer trips when charging infrastructure is insufficient, and their battery range has increased. There has also been growth in Extended Range Electric Vehicles (where a small ICE recharges the battery rather than powering the vehicle), especially in the SUV category, where they accounted for 25% of new sales in 2024

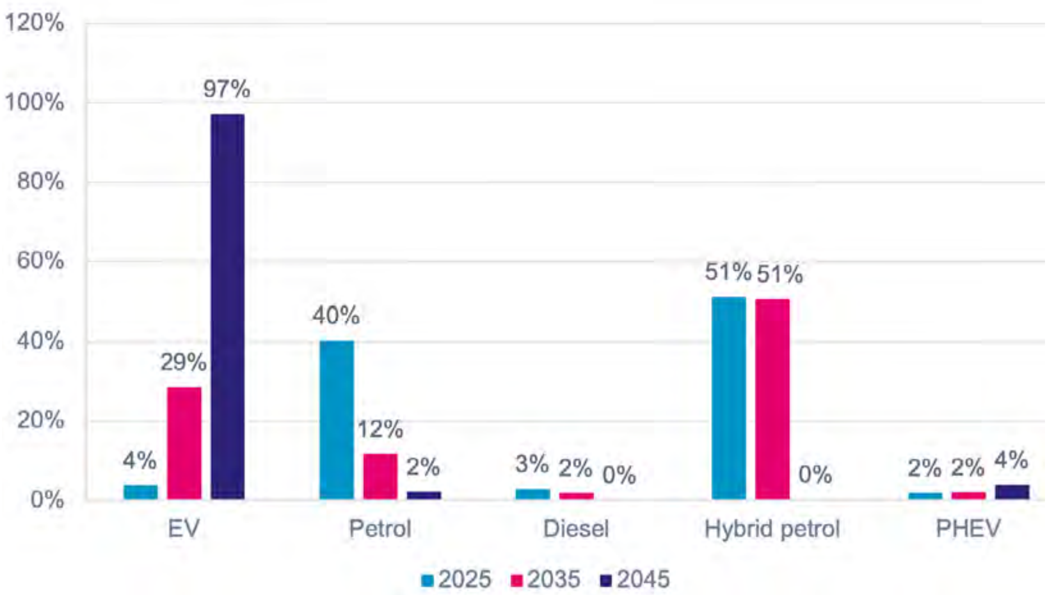
(International Energy Agency 2025). This is a trend in China that is not reflected in the Ministry of Transport's forecasts for New Zealand's growth in PHEV vehicles in China. In New Zealand's forecasts, PHEVs remain a relatively small share of new registrations and are almost a transitional technology from ICE to EV.

Another unknown for LPVs when looking out to 2045 is the production policies of the major car manufacturers. Many have previously had policies of stopping production of ICE vehicles in the period up to 2035. These policies have been either rolled back or abandoned in a number of cases. However, for New Zealand still to be registering new petrol LPVs does imply production of petrol LPVs will still be happening in 2045.

The type of used LPVs being imported into New Zealand will continue to evolve in response to changing supply conditions in key source markets, such as Japan. A key feature of the Ministry of Transport's forecast for imported used LPVs is that the majority of registrations will be petrol hybrids even in ten years' time. Only in the following decade is it forecast that EVs will become the dominant imported used vehicle type. By 2045, imported used EVs are expected to make 97% of imported used LPV registrations, up from 4% in 2025 and 29% in 2035. Petrol LPV registrations are expected to decrease from 40% of used LPV registrations to 12% from 2025 to 2035. This decline is expected to continue until 2045, when petrol is expected to account for 2% of imported used LPV registrations.

Figure 47 Used LPV Registrations by fuel type

Percentage of used LPV registrations, base case forecast 2025, 2035 & 2045



Source: Ministry of Transport

Japan, the key source market for imported used LPVs in New Zealand, currently has very low penetration of EVs. In 2024, only 3% of new car sales were EVs. By 2035, it aims to sell 100% electrified vehicles (including fuel cell and hybrid models) with an interim target in 2030 of 20%–30% EVs, 30%–40% hybrids, and 3% fuel cell vehicles (International Energy Agency 2025). The Japanese government is supporting this through subsidies and increasing emission standards. Given the average age of an imported used LPV entering the New Zealand fleet is currently over 9 years old, this would explain the large shift to used EV imports in the decade following 2035.

This big shift from petrol hybrid to EV in the imported used LPV registrations is significant, as imported used LPVs are estimated in the Ministry of Transport forecasts to account for 52% of New Zealand's registrations, even as far out as 2035.

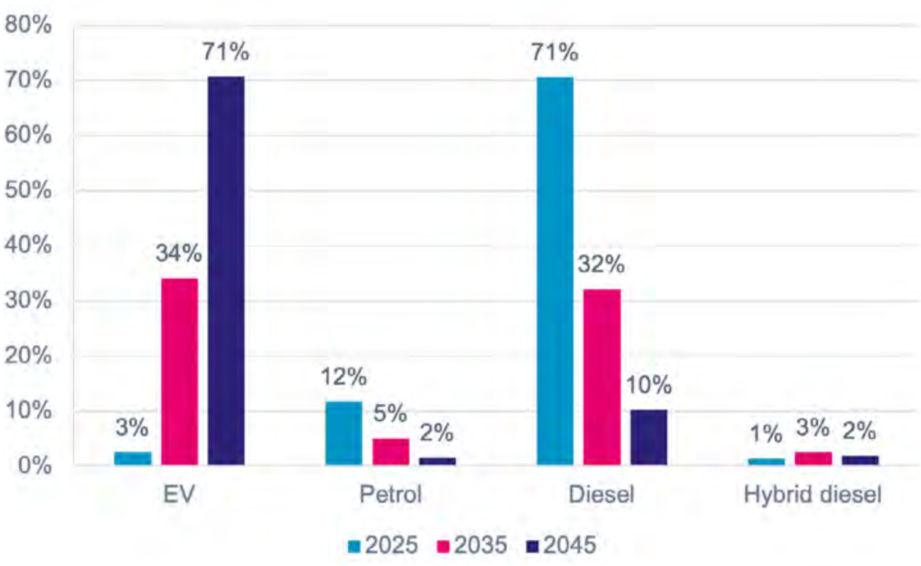
The relatively slow predicted increase in registrations of used EV LPVs is also due to logistical and technical barriers. In recent months, according to an interviewee, major shipping companies have restricted the transport of used EVs from Japan due to perceived fire risks during transit. As of the date of the interview, only the Nissan Leaf could be imported under specific battery-testing conditions, effectively shutting out other popular models.

This is compounded by compatibility issues between Japanese-origin EVs and New Zealand's charging infrastructure. Many used imported Japanese EVs use the CHAdeMO fast-charging standard, which is slower than the CCS standard now dominant in New Zealand. Buyers seeking to travel long distances are increasingly opting for CCS-compatible vehicles, even if they are more expensive, according to a subject matter expert.

The Ministry of Transport forecast that new LCV registrations will also see an increasing share of electric models, but diesel will remain the dominant fuel type for LCVs in 2035. In 2035, registrations for new diesel-powered LCVs will be 32% of the total new LCV registrations. Electric vehicles are estimated to make up 34% of new LCV registrations in 2035. In 2045, the share of new diesel-powered LCV registrations will decline to 10% of all registrations, and the share of new EV LCV registrations will increase to 71%. In part, the slower growth in LCVs is due to the absence of models until relatively recently, as well as concerns about performance, such as range when towing.

Figure 48 New LCV registrations by fuel type

Percentage of new LCV registrations, base case forecast 2025, 2035 & 2045



Source: Ministry of Transport

The relatively slow adoption of electric vehicles in the LCV fleet is consistent with trends observed worldwide. In 2024, registrations of new EV LCVs were 7% of total registrations, with 70% of those coming from China. In China, over 30% of new LCV registrations were EVs, but in Europe, the share of registrations was around 5% and declined in 2024. In all markets, sales performance is influenced by Government policy, such as the addition or removal of purchase subsidies and incentives, as well as the imposition of low-emission zones in major metropolitan areas (International Energy Agency 2025).

Although the Ministry of Transport's future fleet model shows some increase in hybrid registrations for LCVs, this may potentially understate the actual increase in the popularity of these models. As for LPVs, PHEVs are gaining popularity in China and given the purchase price advantage of Chinese models and the share of global production that China represents, we can expect to see more of these models in New Zealand. PHEVs may better suit the usage of New Zealand LCVs and provide solutions to issues like range while towing.

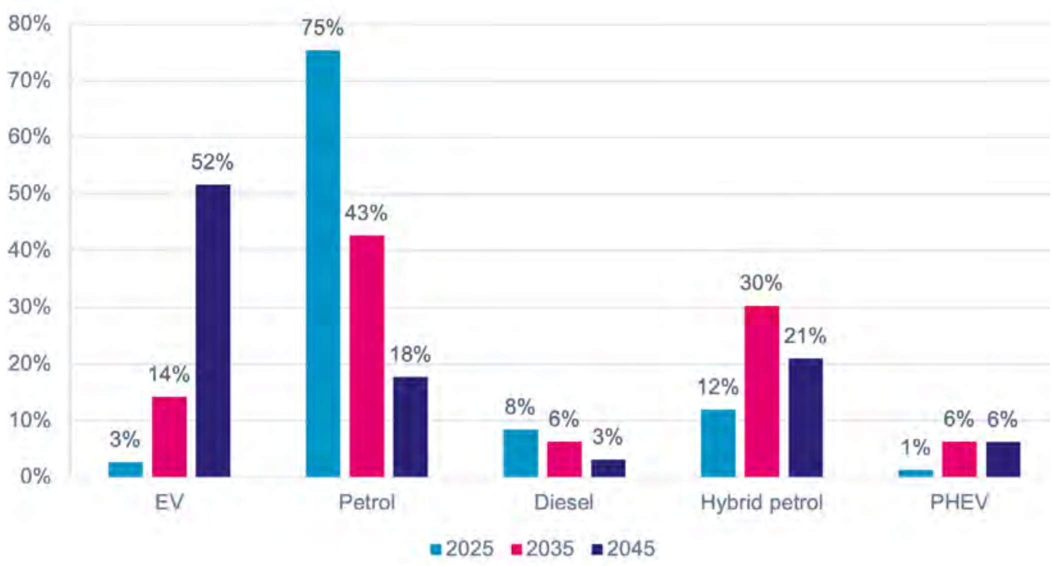
8.2 Light vehicle fleet composition

The relatively slow electrification of the fleet, together with the average age of the fleet, means that even by 2035, electric vehicles are only expected to make up 14% of the LPV fleet, half as many as hybrids. Petrol vehicles will still comprise 43% of the fleet. It is only in 20 years that electric vehicles will make up more than half of the New Zealand LPV fleet, with hybrids accounting for another 21% of the total fleet.

Despite the forecast that 43% of LPVs will still be powered by petrol in 2035, this will represent a significant decline from 2025. The number of petrol LPVs in the fleet is expected to decrease from approximately 2.7 million vehicles to 1.6 million vehicles by 2035. This is, however, largely offset by a forecast increase of over 700,000 petrol hybrid vehicles in the fleet and an increase of 200,000 PHEVs. It is only in the following decade that New Zealand is forecast to see a very large decline in vehicles with an ICE engine. Petrol vehicles are projected to decline by a further 700,000 vehicles between 2035 and 2045, while petrol hybrids are expected to decline by 300,000 vehicles, and plug-in hybrids are forecast to remain unchanged at approximately 240,000 vehicles.

Figure 49 LPV fleet by fuel type

Percentage of total LPV fleet, base case forecast 2025, 2035 & 2045

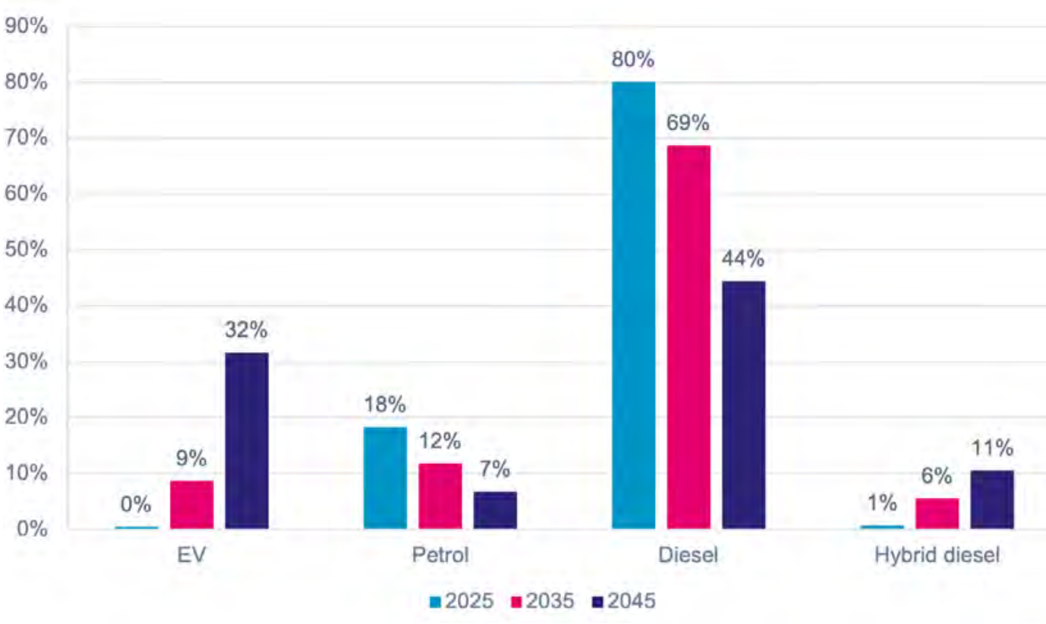


Source: Ministry of Transport

The electrification of the LCV is forecast by the Ministry of Transport to be even slower than the LPV fleet. Even as far out as 2045, diesel and diesel hybrid LCVs are expected to make up more than half of the LCV fleet in 2045. This has implications for the vehicle service and repair industry, which will continue to service diesel engines, and the fuel retailing industry, where diesel will remain an important fuel source at least until 2045.

Figure 50 LCV fleet by fuel type

Percentage of total LCV fleet, base case forecast 2025, 2035 & 2045



Source: Ministry of Transport

8.3 Total cost of ownership of the light vehicle fleet

As identified above, the Climate Change Commission models the TCO of different types of vehicles. This modelling was completed in 2024 and is forecast out to 2050 (Climate Change Commission 2024). The Climate Change Commission forecast TCO based on known policy at the time. For example, the forecast reflects the removal of the Clean Car Discount but not the imposition of universal RUC (although, as far as possible, it is likely to be set at rates which do not incentivise purchase of a particular type of vehicle).

There are two elements to the forecast TCO. The first is the purchase price of the vehicle, which in the Climate Change Commission's modelling is amortised over six years, and the ongoing operating costs.

As discussed above, the purchase price differential is important for private buyers according to the Climate Change Commission, and electrification of the fleet increases when the purchase price of EVs and PHEVs decreases below that of ICE vehicles. This has been the experience in China, where the purchase of new EV LPVs in some categories is less than their ICE equivalent, assisted by government subsidies and incentives. For commercial buyers, such as those involved in fleet or LCV purchases, TCO becomes relatively more important, as the total impact on the profitability of the purchasing organisation is key. In New Zealand, approximately 56% of new vehicle purchases are currently for fleet use, and 4% are for rental or leasing companies.

Climate Change Commission modelling suggests that TCO for EV and PHEV LPVs is already below that of ICE LPVs. Further, there is an expectation that the TCO will continue to decrease further until 2045, while the TCO of an ICE LPV remains relatively unchanged. As expected, PHEVs have a higher TCO, not just because they use petrol but because the ICE will also require more servicing than the electric motors of EVs.

The Climate Change Commission model requires assumptions about the future, the most critical of which are the purchase price of vehicles, the efficiency of vehicles and the relative price of electricity and oil. Although the modelling suggests the TCO of ICE LPVs remains constant over time until 2045, following a reduction in oil prices to US$65 in 2030 as global demand drops, this does not account for the trend of ICE vehicles becoming more fuel-efficient over time, which could close the TCO gap to some extent.

Figure 51 Forecast TCO of LPV by fuel type

Estimated in 2023 equivalent dollars, 2025 to 2045

Source: Climate Change Commission

The Climate Change Commission's modelling predicts that in a base case, the average purchase price of a new EV and a new PHEV will be below that of a new ICE vehicle by 2032. They also model a scenario in which the purchase price of an EV reduces more quickly to be less than that of a new ICE vehicle by 2028. This scenario is possible given the advances in reducing battery costs in China, and New Zealand potentially benefiting from tariffs on Chinese vehicles. As noted above, battery prices in China fell 30% in 2024. This was the result of low prices for lithium, which dropped 20% in 2024, as well as other critical minerals and intense competition among Chinese manufacturers. The surplus of lithium and nickel is expected to continue for the next few years, reducing prices further. Ultimately, low commodity prices discourage investment in mining, and as a result, the surplus could decrease by 2030.

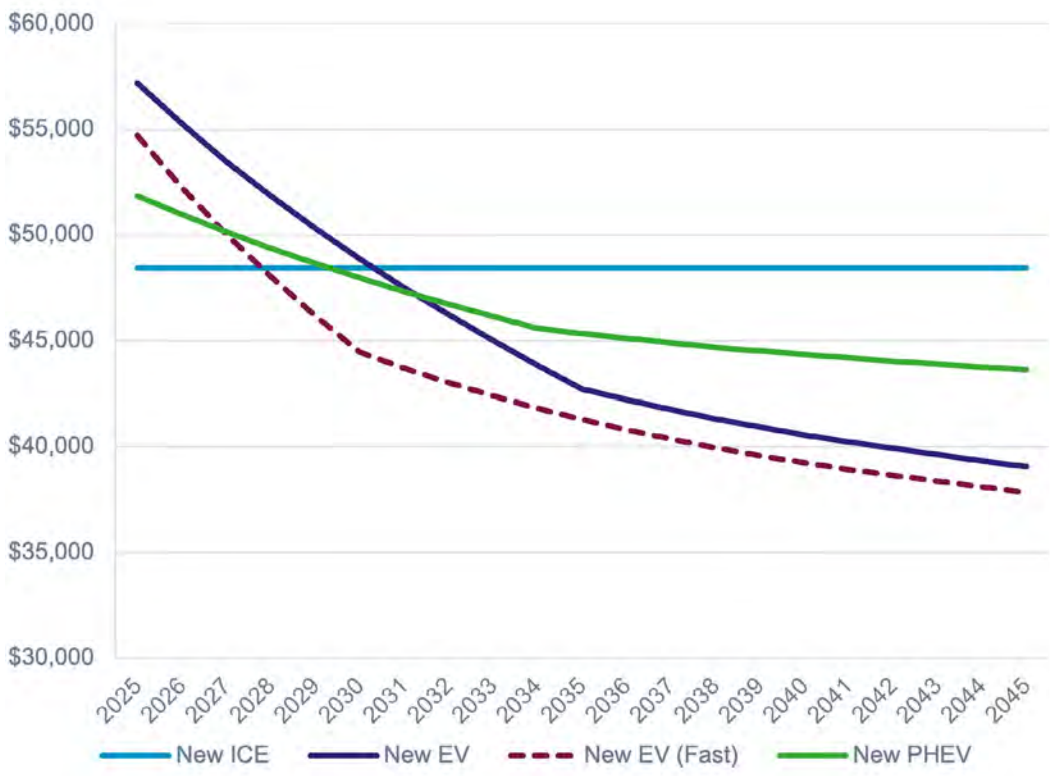
There are also advances in battery technology, which over time could reduce battery prices and/or improve energy density. For example, sodium-ion batteries are being developed, which could have a cost advantage over lithium-ion batteries if the price of lithium increases (although they do not currently have a cost advantage). Similarly, solid-state batteries are being developed and are currently at the pilot stage. The International Energy Agency assesses that it will be several years before these batteries can be commercialised at a scale that would enable them to compete with lithium-ion batteries (International Energy Agency 2025).

A relatively slow decrease in the purchase price of EVs and PHEVs once they reach price parity with ICE vehicles may also be beneficial to the electrification of the fleet, as concerns about rapid depreciation in the value of used EVs have, according to interviewees, acted as a constraint on buyers considering the purchase of an EV previously.

The modelling of the Climate Change Commission also suggests the price of ICE vehicles remains constant in real terms. As overseas production of ICE vehicles decreases over time, reducing economies of scale, it is possible that the price of ICE vehicles may increase towards the end of the forecast period.

Figure 52 Forecast purchase price of LPV by Fuel Type

Estimated in 2023 equivalent dollars, 2025 to 2045

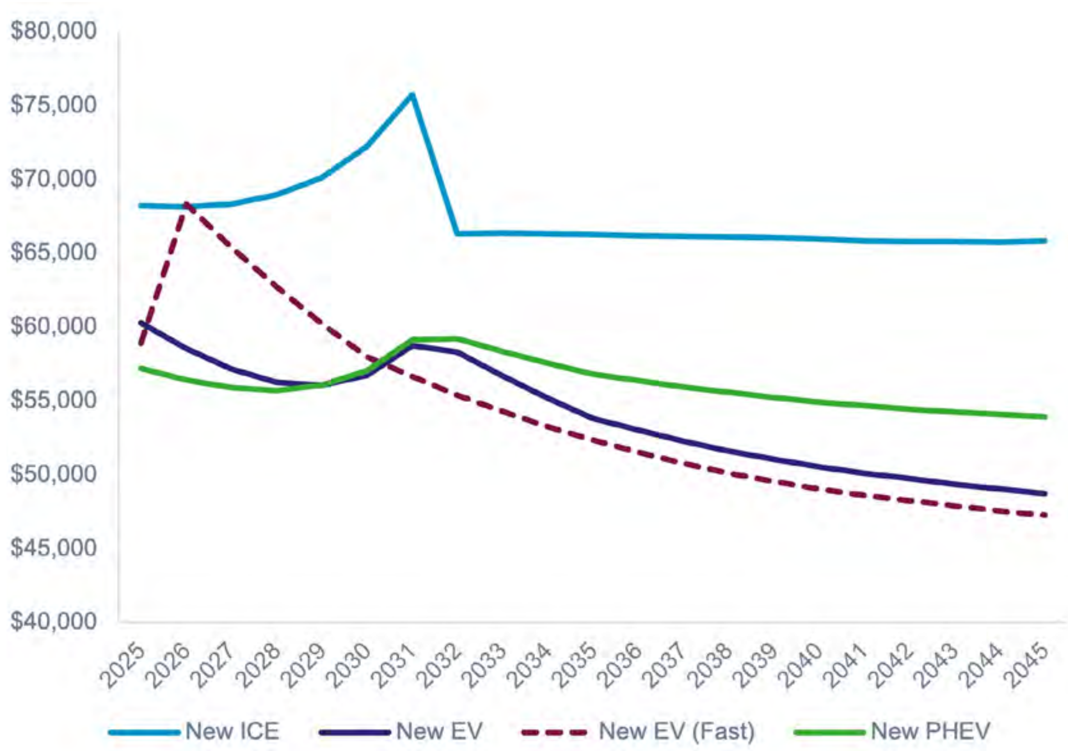


Source: Climate Change Commission

The Climate Change Commission forecast that in 2025, there is a considerable TCO advantage to EV and PHEV LCVs. Given a focus on TCO for commercial buyers, this would seem to be inconsistent with the relatively low take-up of EV and PHEV LCVs. This indicates that factors such as concerns about range, towing, or load-carrying capacity are currently restricting buyers of EVs or PHEVs in LPVs.

Figure 53 Forecast TCO of LCVs by fuel type

Estimated in 2023 equivalent dollars, 2025 to 2045

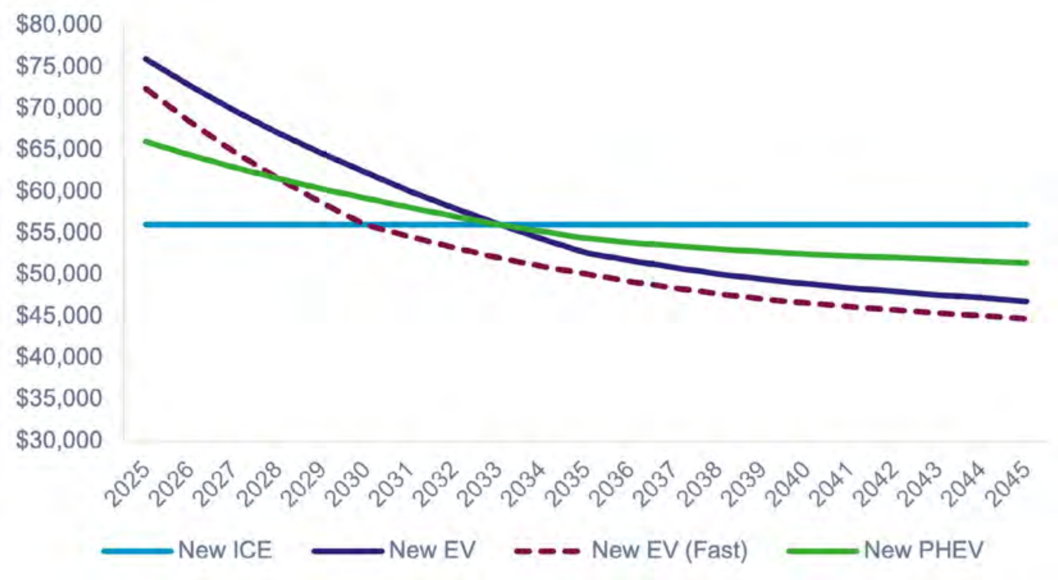


Source: Climate Change Commission

The Climate Change Commission currently forecasts that the purchase price of EV and PHEV LCVs will take a little longer to reach parity with ICE vehicles than LPVs. However, this is still forecast to be achieved sometime between 2029 and 2035. The comments made regarding the sensitivity of the forecast to assumptions about fuel efficiency, purchase price changes, and oil prices with respect to LPVs also apply to LCVs.

Figure 54 Forecast purchase price of LCVs by fuel type

Estimated in 2023 equivalent dollars, 2025 to 2045



Source: Climate Change Commission

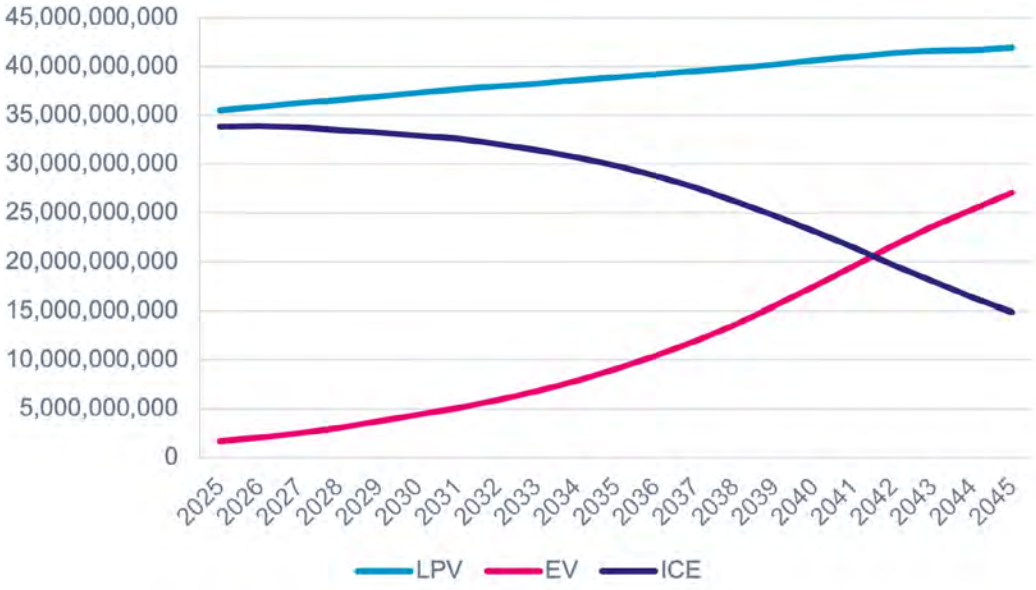
8.4 Light vehicle travel

The Ministry of Transport's forecast model shows an increase in both total VKT and VKT per vehicle over time for the LPV fleet as a whole. This is at odds with the pattern that has been seen in recent years of decreasing LPV VKTs per vehicle. As explained above, these decreasing VKTs are likely the result of decreased economic activity, changes following COVID to a greater working from home and an increasing use of public transport (although still not to the levels before COVID).

Over time, VKTs will be influenced by economic activity. Predicted GDP growth in New Zealand as it recovers from recession could be expected to lead to greater VKTs per vehicle. The other reason for increasing VKTs is evident in the TCO charts above. As electrification of the fleet continues, the operating cost advantages of EVs and PHEVs make each kilometre travelled cheaper for an EV or PHEV vehicle than its ICE equivalent. We already see in the historical data that the VKTs of EVs are greater than those of ICEs. All things being equal, as the average cost to New Zealanders of a kilometre of travel decreases, the volume of travel should increase.

Figure 55 Total forecast LPV VKTs

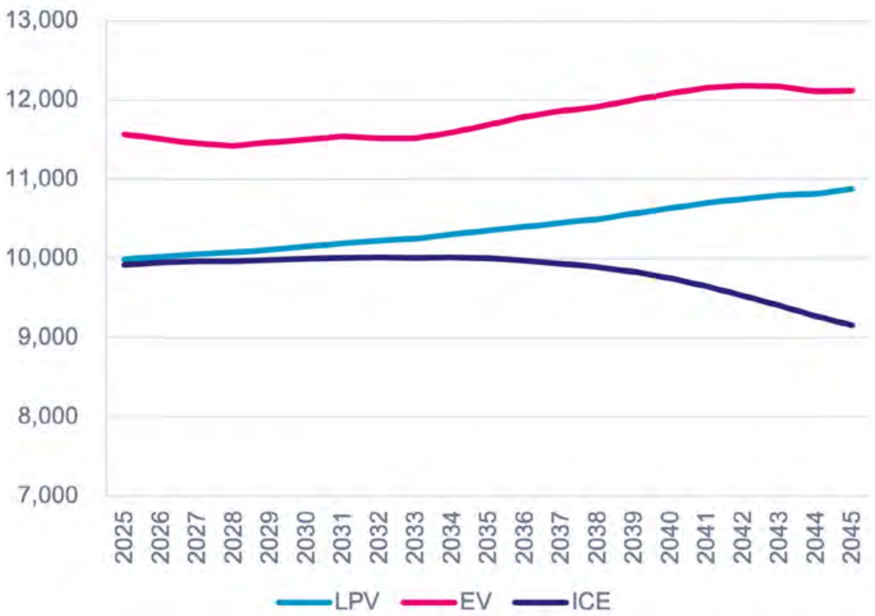
Base case, 2025 to 2045



Source: Ministry of Transport

Figure 56 Forecast LPV VKT per vehicle

Base case, 2025 to 2045



Source: Ministry of Transport

There are, however, other factors which may reduce the average VKT per vehicle over time. Firstly, there will be a gradual societal change. As the population ages and a higher proportion of the population is not in the workforce or at least not full-time in the workforce, travel patterns will change. By 2045, according to Statistics New Zealand population projections, 24% of the population is expected to be older than 65, up from 17% currently. A reduction in commuting and the ability to access free public transport have the potential to reduce VKTs. Similarly, greater intensification of housing may force travel mode shift from LPVs to public transport. For example, a reduction in parking spaces that may result from housing intensification could cause this.

Another factor that will likely lead to a reduction in VKTs is the introduction of time-of-use charging in metropolitan areas. The Government is currently preparing legislation that will enable these charges to be introduced. The sole purpose of this legislation, according to the Government, is demand management. As a result, it is expected that the introduction of time-of-use charging will lead to a mode shift from private vehicles to public transport, the elimination of journeys altogether, or a time shift, where journeys are moved to other parts of the day. The first two of these effects will reduce VKTs. Experience overseas suggests that where congestion charging is introduced, total VKTs will reduce and not just in the area subject to the congestion charging. A study of the impact of London's congestion charging regime in its central business district (Evans 2007) revealed a 17% reduction in VKTs in the area subject to charging and a 2% reduction in VKTs for Greater London as a whole. A congestion charging scheme has recently been introduced in Manhattan. Modelling carried out for the Metropolitan Transportation Authority in New York estimated a reduction in VKTs (or more precisely Vehicle Miles Travelled) of between 7.6% and 9.2% depending on the price and nature of the scheme for Manhattan CBD, and between 0.7% and 1.5% for New York City as a whole (Metropolitan Transit Authority 2023).

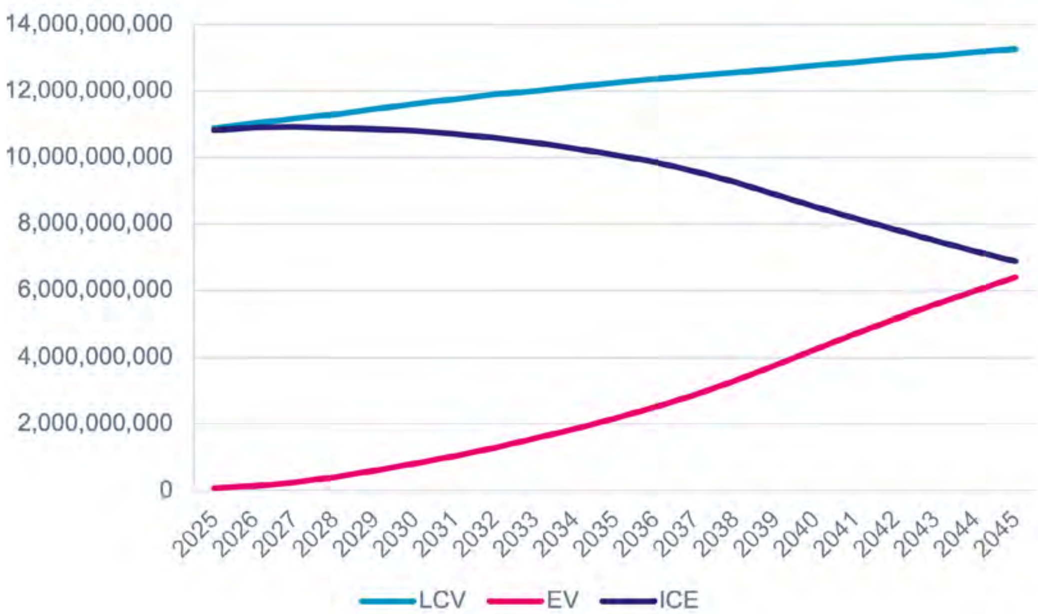
Another reason to expect that VKTs may fall in the future is the continued investment in public transport in metropolitan areas, which increases their attractiveness. For example, in Auckland, the completion of the City Rail Link, the creation of dedicated busways and bus lanes on key public transport routes, and the improved experience through increased frequency, the completion of rail upgrade work, and the ability to use PayWave are all expected by Auckland Transport to increase public transport usage. In Auckland, Auckland Transport expects that public transport usage, although still below pre-COVID levels, will grow to exceed pre-COVID levels in the next year or two. Similar patterns are being seen in other metropolitan areas.

For these reasons, the Climate Change Commission, in its Emissions Budget 4 released in 2024, expects VKT for light vehicles to reduce by 19% by 2040 and public transport passenger kilometres travelled to have increased from 5% in 2022 to 15% by 2040 (Climate Change Commission 2024).

The Ministry of Transport forecast that LCV VKTs are likely to stay relatively constant over time out to 2045, but with a similar pattern that EV VKTs increase, and ICE VKTs decrease due to the lower TCO (and in particular the operating cost advantages) of EVs. LCVs' VKTs are likely to be more immune to the impacts of congestion charging and public transport improvements. LCV owners using their vehicle for commercial trips may view congestion charging as a cost of doing business, which is passed onto customers, and public transport does not substitute for LCV usage in commercial trips. Where the LCV is used as a private vehicle, which an increasing proportion are, it could be expected that LCV VKTs will decrease as a result of time-of-use charging and public transport improvements.

Figure 57 Total forecast LCV VKTs

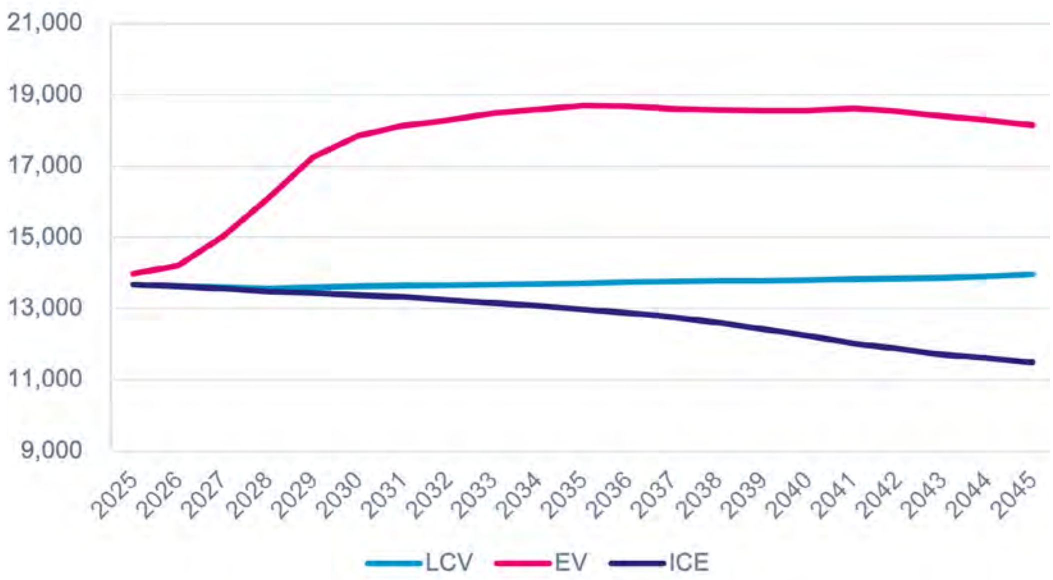
Base case, 2025 to 2045



Source: Ministry of Transport

Figure 58 Forecast LCV VKT per vehicle

Base case, 2025 to 2045



Source: Ministry of Transport

8.5 Light vehicle ownership

New Zealand remains some way away from achieving 'peak light vehicle'. The total size of the light vehicle fleet will continue to grow until 2046, according to the Ministry of Transport's forecasts. The rate of growth is expected to decrease over time, starting from 2025, and will not keep pace with the rising population numbers. As a result, ownership of light vehicles per capita peaks in 2026 and then declines for the rest of the forecast period.

There are likely to be a range of factors that explain this trend:

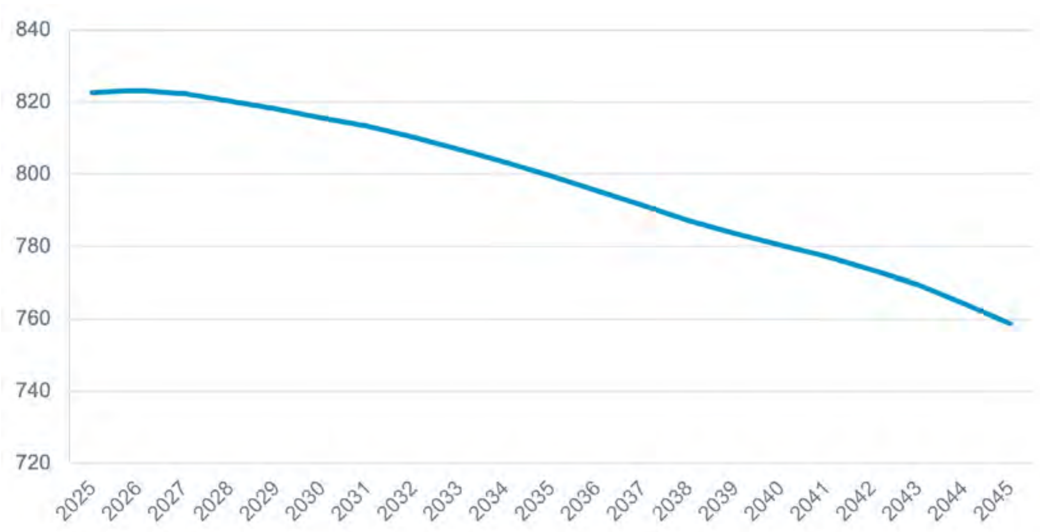
- Firstly, an ageing population is expected to result in more single-car households as the need for multiple cars in the household to accommodate the different travel requirements of the household's members decreases.
- Secondly, the intensification of housing in metropolitan areas and the resultant impacts, such as a lack of access to parking, make owning a vehicle more difficult.
- Thirdly improvements to public transport in metropolitan areas, which are in part made possible by housing intensification, provide a better substitute for vehicle ownership.
- Finally, the fact that the Ministry of Transport are forecasting car ownership to decline on a per capita basis but light vehicle VKTs to stay relatively constant implies that subscription or car share services and other shared mobility solutions will become more prevalent.

Currently, New Zealand has three providers of car share services, but their usage remains low. Radio New Zealand reported that in 2022, one of the providers, Cityhop, had been used for 200,000 trips across New Zealand (Huston, 2023). To put that into context, in the year ended 30 June 2024, New Zealanders took 3.3 billion trips as a driver. Based on the claims of the providers, each car in a car share fleet can replace up to 15 privately owned vehicles.

Overseas, there are predictions of significant growth in the car share market. It is predicted that by 2035, 16% of private vehicle usage in Europe and 13% of private vehicle usage in the United States will be through subscription or car-sharing schemes. This is likely to be driven by younger drivers. Research shows that 49% of 18- to 34-year-olds in Europe and 38% of 18- to 34-year-olds in the United States question whether they need to own a vehicle given the availability of shared transportation options (Deloitte 2023). Although New Zealand is likely to start from a lower base, an ageing population reducing their vehicle ownership as their usage changes, and a younger generation receptive to the idea of shared usage, could combine to produce the predicted per capita reduction in ownership.

Figure 59 Light vehicle ownership per capita

Vehicles per 1000 people, 2025 to 2045



Source: Ministry of Transport, Statistics New Zealand

09/

The future state of the heavy fleet

09/ The future state of the heavy fleet

The future characteristics of the heavy fleet, and in particular, the speed with which it electrifies, are more nuanced than those of light vehicles. There are three options currently for decarbonisation of the heavy fleet. These are battery electric, fuel cell electric, i.e. hydrogen or biofuel being added to diesel. There is no clear consensus among manufacturers or operators on the dominant technology for the future, with both battery electric and hydrogen fuel cell systems under active development. According to subject matter experts interviewed for this project, battery electric trucks perform well in stop-start urban applications, such as waste collection, where regenerative braking and predictable routes maximise efficiency. However, the weight of the battery reduces payload capacity, and long charging times limit its suitability for continuous operations. Hydrogen fuel cell vehicles offer rapid refuelling and greater range, making them better suited for long-haul freight, but the infrastructure to support widespread hydrogen use is currently minimal in New Zealand. Hybrid hydrogen-diesel retrofits, which can reduce emissions by approximately 30%, are viewed as a transitional option for existing fleets, offering environmental benefits without necessitating the full replacement of diesel assets.

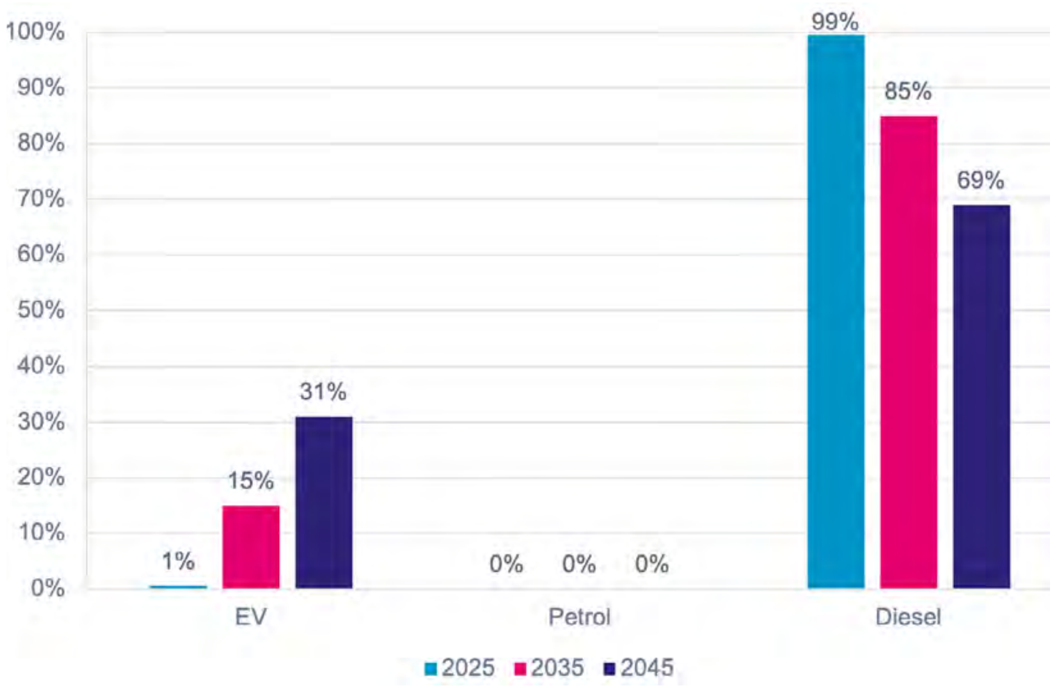
When examining future forecasts of registrations and the ultimate composition of the fleet, the usage of heavy vehicles becomes an important categorisation. Although it does not necessarily capture all the nuances, it is useful to break down the heavy vehicle fleet into heavy trucks, medium trucks, and buses, as the typical characteristics of their use will be predictive to some extent of the likely decarbonisation route of the heavy vehicle fleet.

9.1 Heavy fleet registrations

Looking first at heavy truck registrations, the Ministry of Transport's modelling is predicting slow electrification of the heavy fleet. As far out as 2045, electric vehicles will make up only 31% of new heavy truck registrations (for the purposes of the Ministry of Transport's forecasts, EVs include fuel cell electric vehicles).

Figure 60 Forecast heavy truck registrations by fuel type

Percentage of total heavy truck registrations, base case forecast, 2025, 2035 & 2045

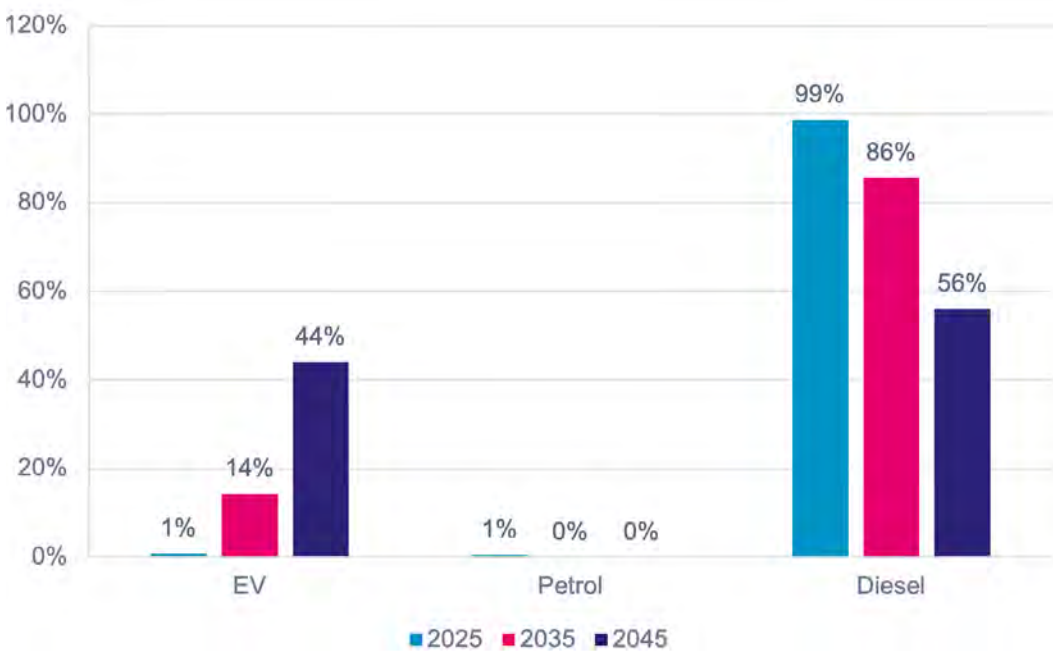


Source: Ministry of Transport

The predicted pace of electrification is faster for medium trucks, but only beyond 2035. The growth in the share of sales of electric medium trucks can be explained by their usage being more conducive to electric vehicle operation. Medium trucks are more likely to be used on predictable routes, have more frequent stopping and starting, and return to a depot where they can be charged or refuelled.

Figure 61 Forecast medium truck registrations by fuel type

Percentage of total medium truck registrations, base case forecast, 2025, 2035 & 2045



Source: Ministry of Transport

It is worth noting that the Climate Change Commission, in its latest emission budget, has assumed that almost all trucks entering the fleet in 2040 will be zero-emission vehicles (Climate Change Commission 2024). This is a significant variance from the Ministry of Transport modelling.

Unlike the situation with light vehicles, the pace of electrification in New Zealand does not lag as far behind as the rest of the world for trucks. In 2030, the IEA predict that 13% of new truck registrations will be for electric vehicles (International Energy Agency 2025).

There are several reasons for the relatively slow electrification of the truck fleet. Firstly, as we demonstrate below, the TCO of electric vehicles does not reach parity with that of diesel vehicles for a number of years. Secondly, there is a need for operators to roll out infrastructure that enables the recharging or refuelling of vehicles. Depending on the truck's usage, the speed of the charger becomes very important, as faster chargers reduce downtime when the vehicle cannot be used because it is charging. For example, currently, a 350kW charger can provide around 200 km of range in an hour, while a 1 MW charger can provide the same range in 20 minutes. (International Energy Agency 2025) For heavy trucks in particular, this can be critical, as ideally the vehicle needs to be recharged within a period shorter than the legislated rest period for the driver to minimise downtime if the vehicle is used continually.

There also needs to be further enhancements in battery technology to provide the optimal trade-off between battery cost, weight and range. As shown below, the upfront purchase price of an electric truck is significantly higher than that of a diesel truck. Currently, for a truck with a 500 km range, the battery accounts for almost half of the vehicle's purchase price. This will reduce the battery cost to around 35% of the purchase price by 2030. In the United States, a survey showed that 18% of trucks operate close to the general maximum gross vehicle weight and a further 7% operate above it (International Energy Agency 2025). Therefore, the additional weight of a battery pack can reduce the payload that can be carried and therefore, the profitability of the truck. Reducing the size of the battery reduces both weight and cost, but at the expense of range. Therefore, there needs to be further technological development in batteries that optimise the balance of weight, cost and range.

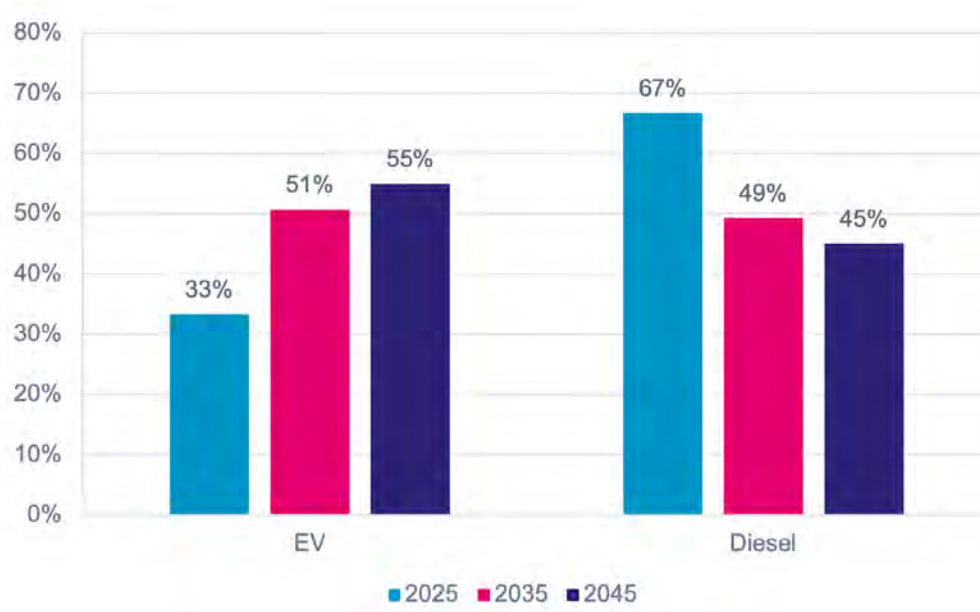
The speed of electrification will also be determined by the speed of fleet replacement. Fleet replacement is dictated by usage and warranty coverage. Typically, in New Zealand according to interviewees, warranties for trucks used in critical services, such as fuel transport, range from 1 to 1.2 million kilometres, which can equate to five to six years of usage. After this time, trucks are downgraded to less demanding roles or sold in the second-hand market to other users. In tougher economic times, as New Zealand has experienced recently, the VKTs of the truck fleet have reduced. Therefore, operators may be able to retain their vehicles for longer, lengthening the replacement cycle and therefore delaying the electrification of the fleet.

In contrast to trucks, buses have already achieved a greater level of electrification and are expected to continue at a faster pace in New Zealand. Ministry of Transport modelling suggests that a third of all new bus registrations in 2025 will be for electric vehicles, and this proportion is expected to rise to 51% and 55%, respectively, in 2035 and 2045.

To put this in a global perspective, the share of new buses that were electric in China was over 60% in 2024. However, in Europe this share was only 13%, lagging behind New Zealand. Globally, the IEA predicts that the share of new bus sales that are electric will reach 20% by 2030 (International Energy Agency 2025).

Figure 62 Forecast bus registrations by fuel type

Percentage of total bus registrations, base case forecast, 2025, 2035 & 2045



Source: Ministry of Transport

The difference with the truck fleet is explained by the operating characteristics of buses, especially those used in metropolitan areas. They operate predictable routes, with greater stopping and starting, allowing the benefits of regenerative braking to be realised. They have long periods when they are not in use and are stored in a depot, allowing them to be recharged. This is usually overnight but can be recharged between the morning and evening rush hour, depending on the speed of the charging infrastructure. They may even be able to take advantage of infrastructure at different points on their routes for quick charges, as their routes are predictable. Finally, they operate further below their maximum gross weight, meaning there is less of a weight penalty for the battery, which reduces payload.

In New Zealand, it is also expected that public transport usage will continue to increase over time. This will require further investment in buses and, therefore, increased electrification.

9.2 Fleet composition

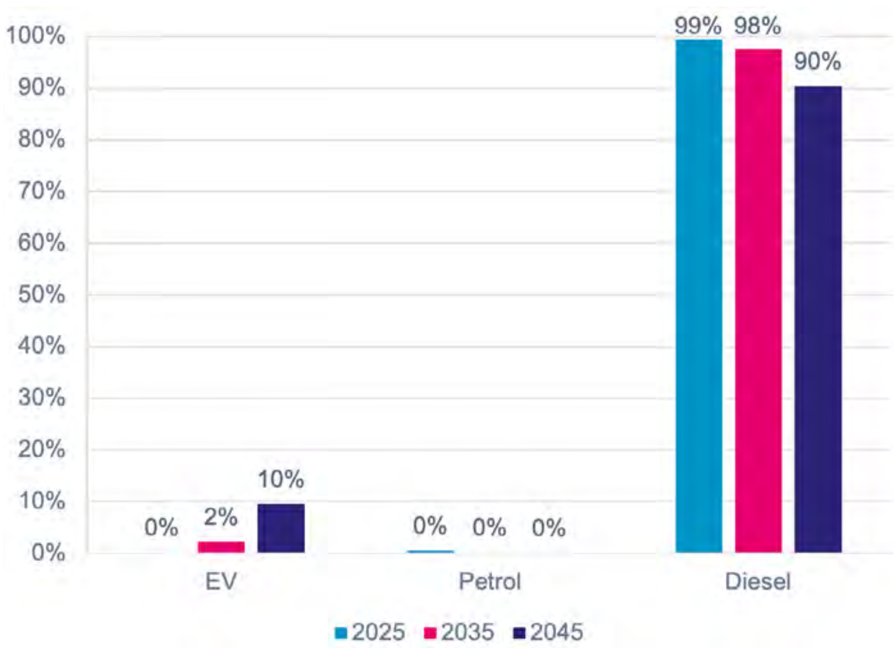
Given the relatively slow future pace of electrification of the truck fleet, the Ministry of Transport forecasts that diesel-powered vehicles will continue to be the overwhelming majority of the heavy and medium truck fleets.

Even by 2045, 90% of heavy trucks are forecast to be diesel, while 87% of medium trucks are forecast to be diesel, with no real change until after 2035. The effect of the relatively small share of new electric trucks entering the fleet is compounded by the high average age of trucks in the fleet. The average age of the truck fleet is just under 18 years. Therefore, a truck entering the fleet today, when the share of electric trucks of total new registrations is only 1% will likely still be in the fleet in 2045.

The situation in New Zealand is not considerably different to the predictions of the IEA, which expects only 3% of the truck fleet to be electric by 2030 (International Energy Agency 2025).

Figure 63 Forecast composition of the heavy truck fleet by fuel type

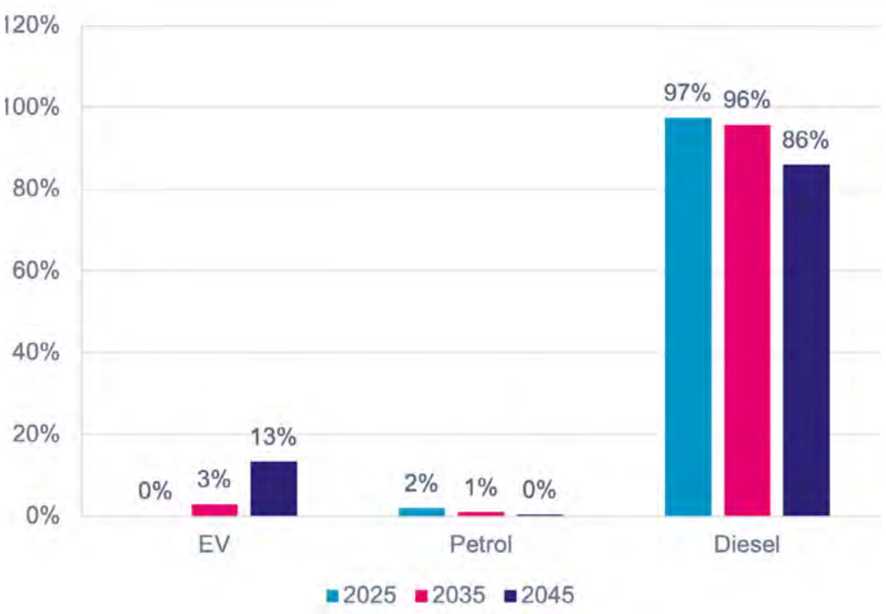
Percentage of total heavy truck fleet, base case forecast, 2025, 2035 & 2045



Source: Ministry of Transport

Figure 64 Forecast composition of the medium truck fleet by fuel type

Percentage of total medium truck fleet, base case forecast, 2025, 2035 & 2045



Source: Ministry of Transport

The transition to low-emissions technology in New Zealand's bus fleet is progressing more rapidly than in other heavy vehicles, driven by public policy, procurement standards, and urban air quality goals. Electrification of new public transport buses is already well underway, with electric buses making up a growing share of new fleet additions, particularly in metropolitan areas. This mirrors the trend seen in other markets. In Europe in 2024, only 13% of new bus sales were for electric buses, but 50% of all metropolitan bus sales were for electric buses.

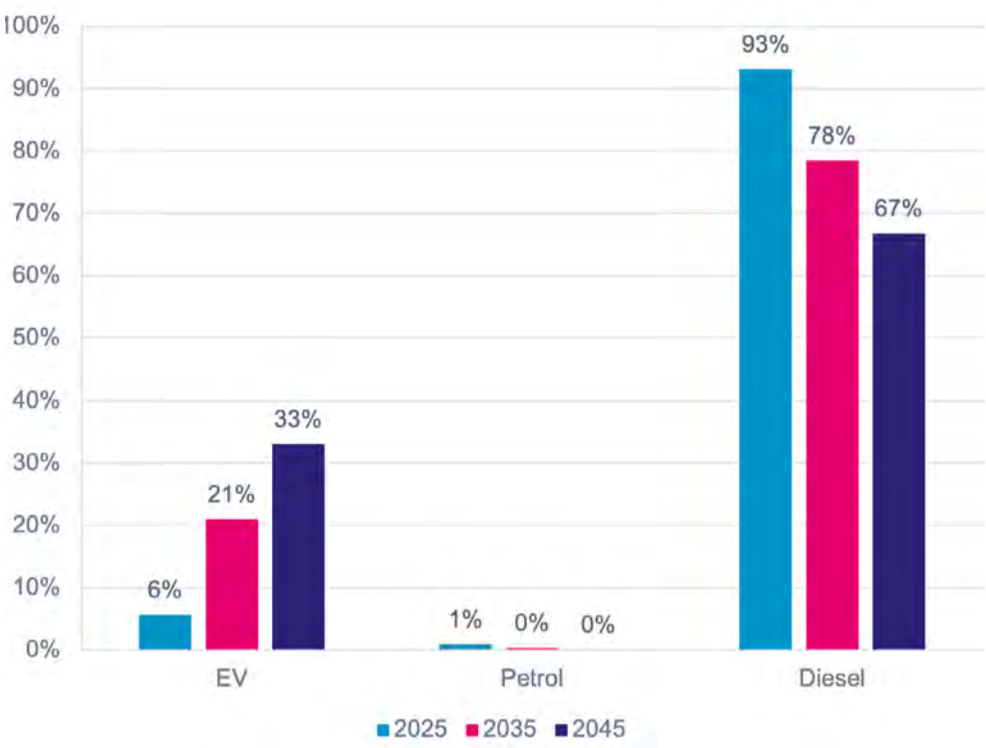
By 2045, a third of all buses will be electric. In some areas, primarily metropolitan areas, this share will be greater. Auckland Transport expect to reach one-third of its fleet being electric in August 2026, up from 17% today.

However, diesel will continue to make up the majority of the national bus fleet through to 2045. This is due in part to the long operational life of buses, limited electrification of intercity and regional services and the slower turnover of privately operated or contracted fleets outside major urban centres. Hybrid models may play a transitional role, particularly where full electrification is not yet viable.

New Zealand continues to perform well by global standards for the electrification of its bus fleet. The IEA predict 10% of the global bus fleet will be electric by 2030 (International Energy Agency 2025).

Figure 65 Forecast composition of the bus fleet by fuel type

Percentage of total bus fleet, base case forecast, 2025, 2035 & 2045



Source: Ministry of Transport

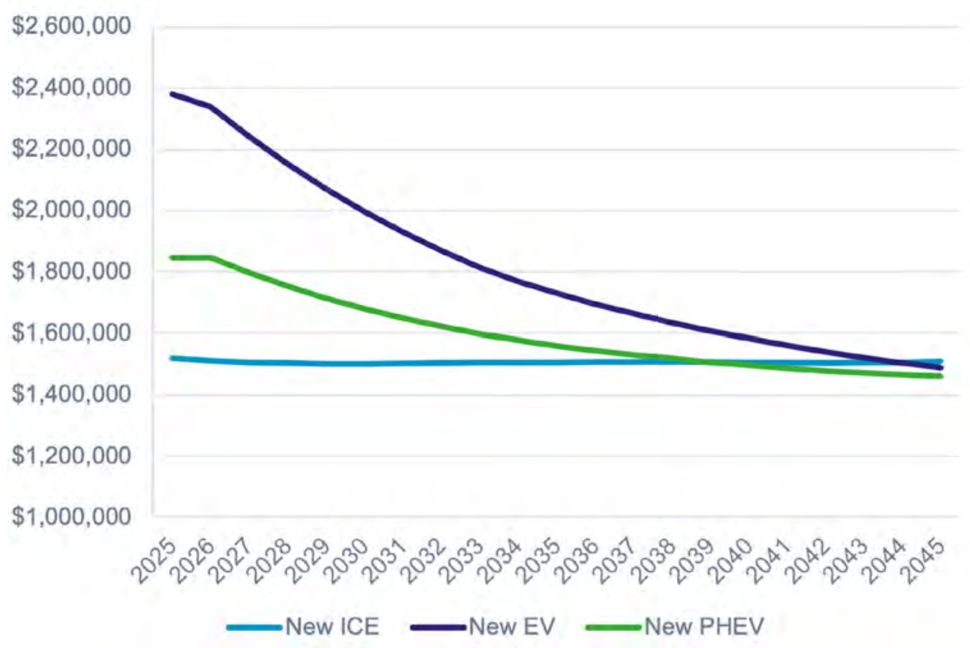
9.3 Total cost of ownership of heavy vehicles

One of the major constraints on the pace of electrification of the truck fleet is the relatively high TCO (including the high purchase price) of electric vehicles relative to diesel vehicles. The Climate Change Commission do not expect the TCO of heavy trucks to reach parity with diesel trucks until close to 2045. For medium trucks, that point is reached sooner, at around 2036, but this is still considerably after parity in TCO is reached for light vehicles (Climate Change Commission 2024).

As noted above, it should also be recognised that the attractiveness of electric vehicles for individual operators will vary more than it does for individual light vehicle owners, as they depend on the nature of the usage of the vehicle.

Figure 66 Forecast TCO of heavy trucks by fuel type

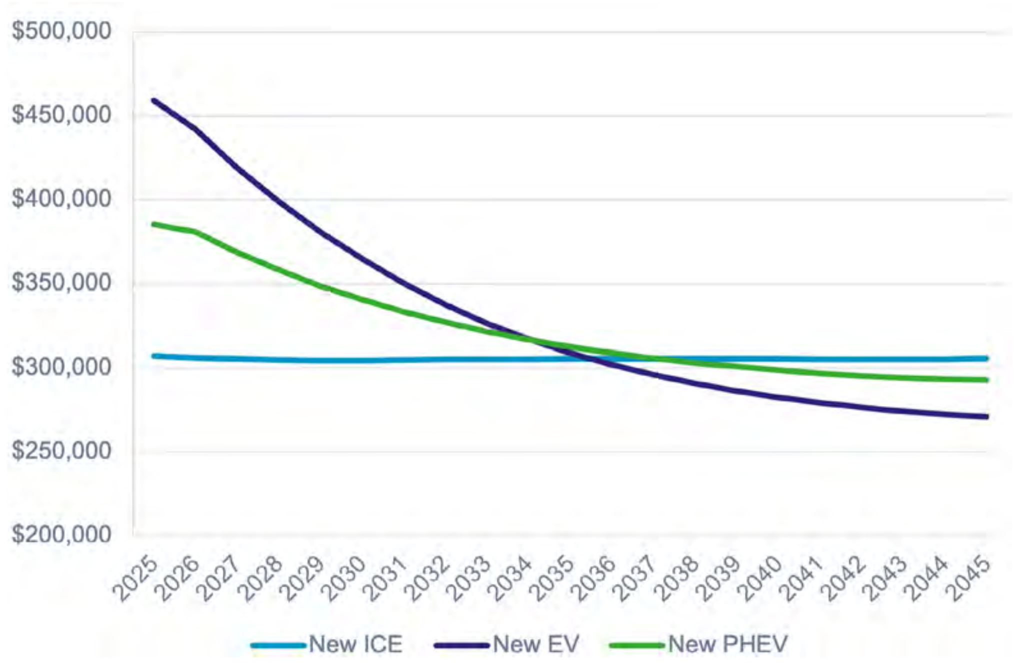
Estimated in 2023 equivalent dollars, 2025 to 2045



Source: Climate Change Commission

Figure 67 Forecast TCO of medium trucks by fuel type

Estimated in 2023 equivalent dollars, 2025 to 2045



Source: Climate Change Commission

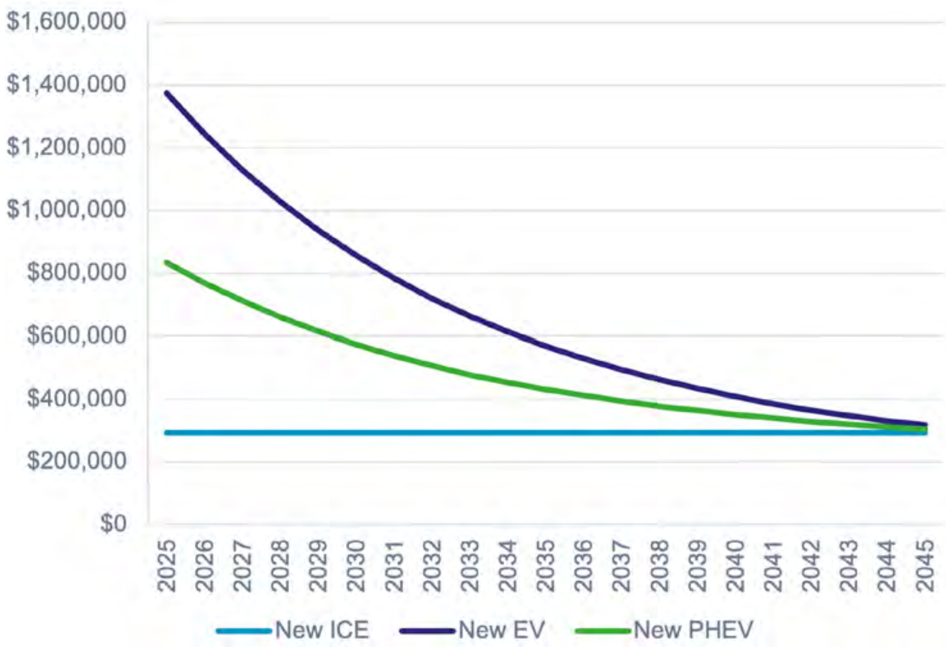
A major component of the TCO of a truck is the purchase price. It is estimated by the Climate Change Commission that an EV is currently up to three times the price of a diesel truck. With fuel accounting for only 10% to 11% of an operator's operating costs according to an interviewee, the purchase price differential becomes a significantly larger factor in the purchase decision. This is especially true for smaller operators, who may struggle to finance the initial purchase price.

The same picture is evident in overseas markets, where the purchase price of an electric truck is two to three times higher than that of a diesel truck. Fuel cell electric vehicles are even more expensive than battery electric vehicles.

Although the price differential will decrease over time, the Climate Change Commission forecasts that the purchase prices of an electric heavy truck and an electric medium truck will reach parity with their diesel equivalents by 2045 and 2040, respectively.

Figure 68 Forecast purchase price for heavy trucks by fuel type

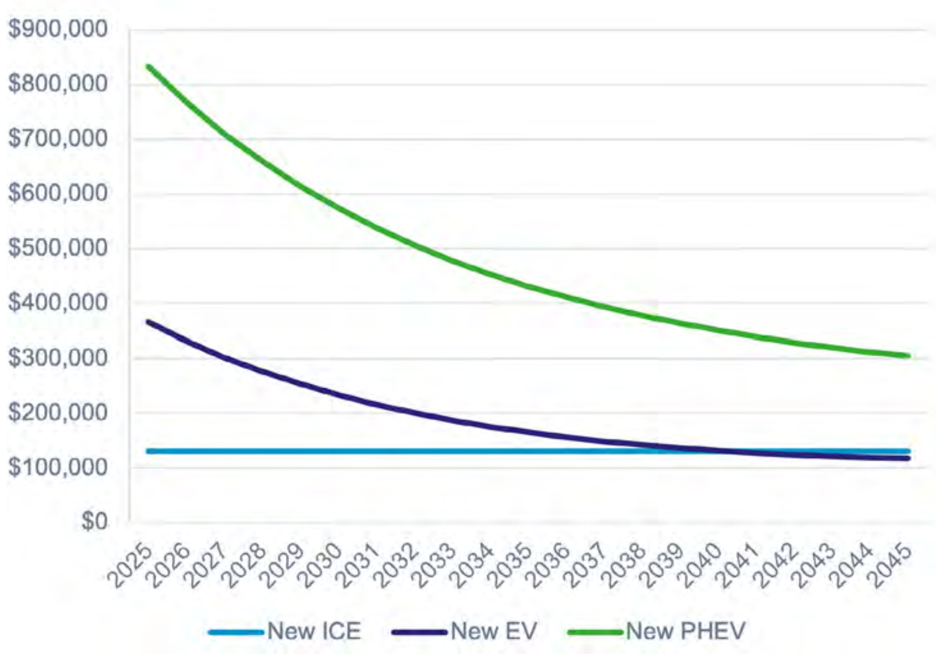
Estimated in 2023 equivalent dollars, 2025 to 2045



Source: Climate Change Commission

Figure 69 Forecast purchase price for medium trucks by fuel type

Estimated in 2023 equivalent dollars, 2025 to 2045



Source: Climate Change Commission

As with light vehicles, decreases in battery costs will be a driver of decreased purchase prices. Currently, a battery pack with a range of 500 km makes up close to half of the cost of the truck. By 2030, this is expected to be 35%. The impact is expected to be a reduction in the purchase price of between 15% and 35% over the next five years, depending on the region. Fuel cell trucks could fall by 20% to 25% in the same timeframe, but for both battery electric and fuel cell electric trucks, they remain more expensive than diesel trucks, as seen in New Zealand.

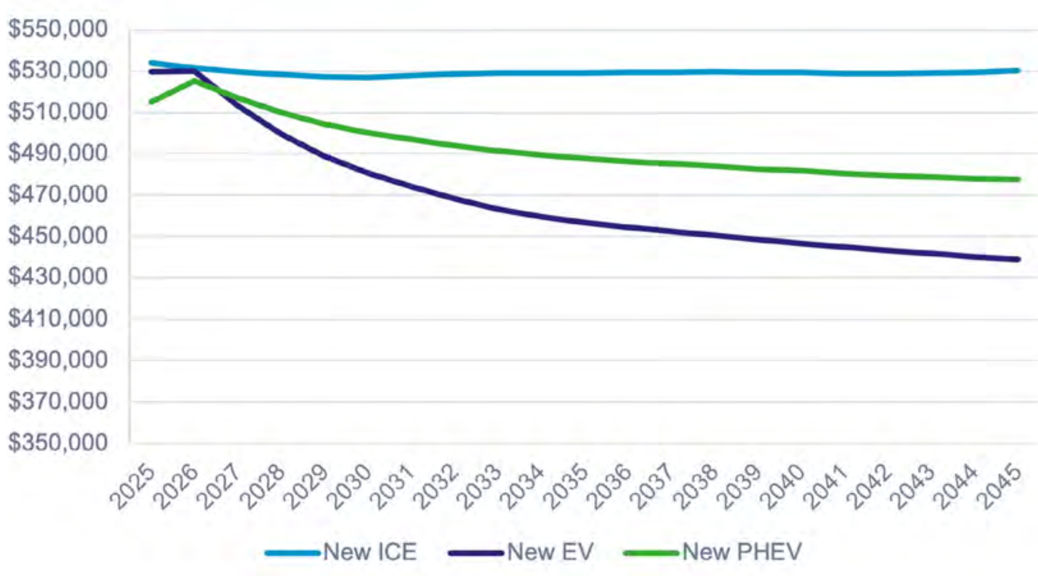
It might also be that manufacturers will trade off price against range as battery prices fall. Between 2020 and 2024, battery pack prices for medium trucks rose by 15% but the size of the battery pack (and therefore the range) rose by 60%. In heavy trucks, the battery pack size increased by 70%, and the price of the battery pack increased by 20% (International Energy Agency 2025).

Unlike light vehicles, the relatively low global production of electric trucks, although growing, is limiting economies of scale and allowing for further decreases in purchase prices. To put this in perspective, globally in 2024, 90,000 electric trucks were sold (International Energy Agency 2025). That is roughly half the size of the New Zealand truck fleet.

In markets such as China, where there are greater sales of electric trucks, the government is taking action in the form of subsidies, scrapping incentives, and tougher emission standards to reduce the upfront purchase price differential and encourage sales of electric vehicles.

Figure 70 Forecast TCO for buses by fuel type

Estimated in 2023 equivalent dollars, 2025 to 2045

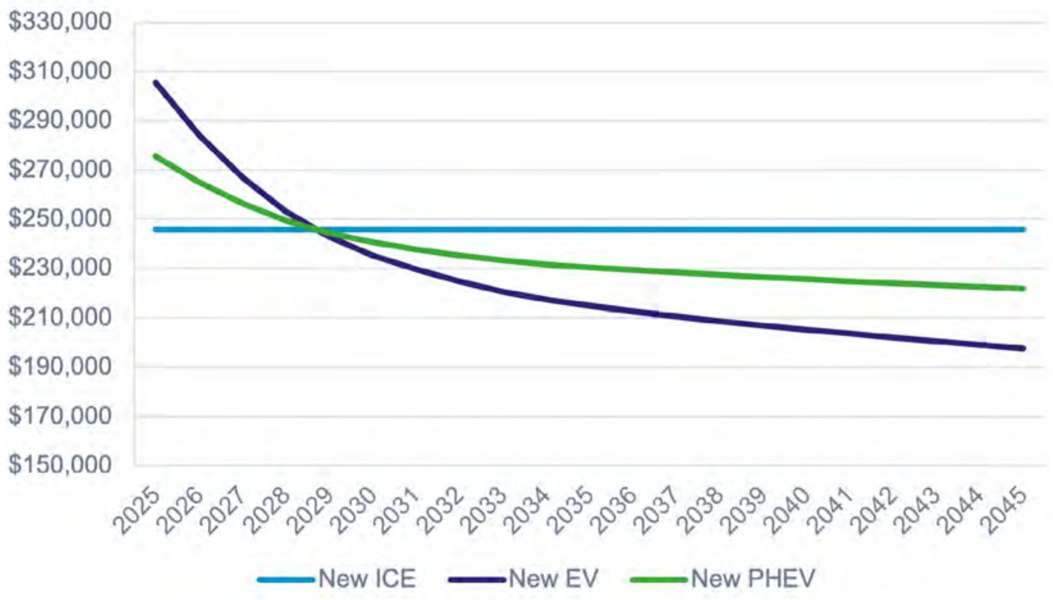


Source: Climate Change Commission

In contrast to the situation with trucks, the Climate Change Commission modelling predicts that the TCO of electric buses will be less than that of diesel buses in the next couple of years. This is driven in part by an expectation that the purchase price of an electric bus will be less than that of a diesel bus by the end of this decade. It should be noted, however, that anecdotal data from Auckland Transport suggests that an electric bus is currently twice as expensive as a diesel bus.

Figure 71 Forecast purchase price for buses by fuel type

Estimated in 2023 equivalent dollars, 2025 to 2045



Source: Climate Change Commission

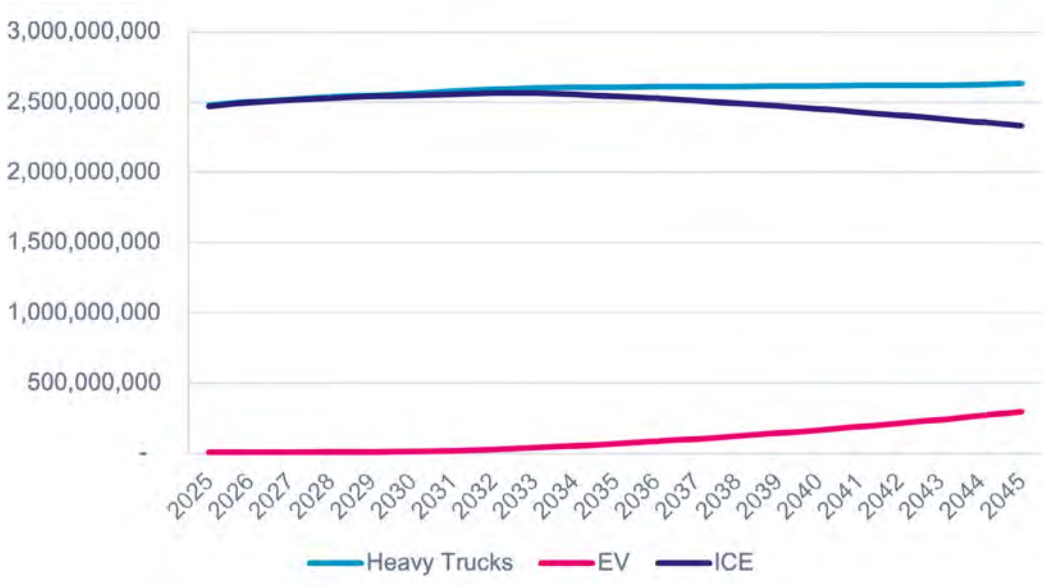
9.4 Heavy vehicle kilometres travelled

The Ministry of Transport's modelling of VKTs for trucks assumes that VKTs will grow at the rate of road freight tonnes per kilometre, upon which GDP growth and population will have a large influence. As a result, the VKTs for trucks are forecast to increase slowly out to 2045, albeit with an increasing share of VKTs being achieved by electric trucks, especially by 2045.

This, however, fails to account for any mode shift that occurs for freight. The Climate Change Commission assume that there will be a 10% reduction in truck VKTs due to the mode shift of freight onto rail and coastal shipping (Climate Change Commission 2024).

Figure 72 Total forecast heavy truck VKTs

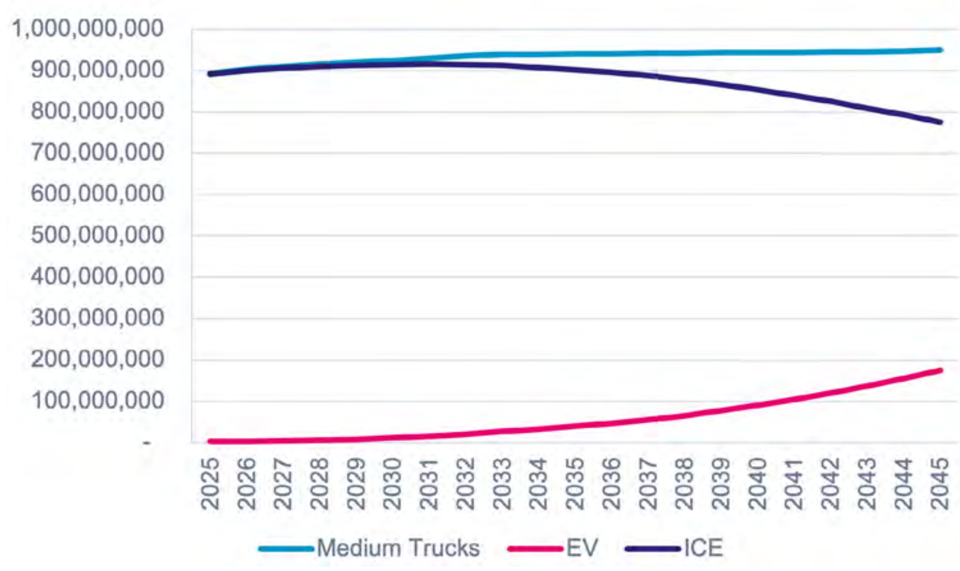
Base case, 2025 to 2045



Source: Ministry of Transport

Figure 73 Total forecast medium truck VKTs

Base case, 2025 to 2045



Source: Ministry of Transport

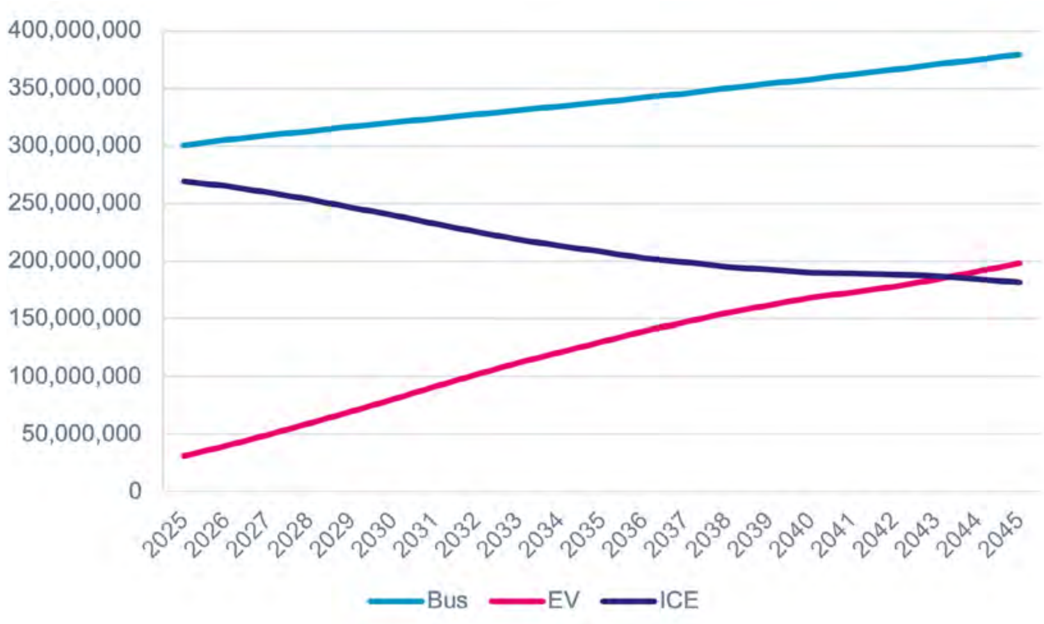
Consistent with the relatively small but steady growth of truck VKTs, the Ministry of Transport predicts that the number of trucks on the road will increase from 177,000 in 2025 to 188,000 in 2045. This is approximately 6% growth over those 20 years. If the Climate Change Commission is correct that there will be 10% fewer truck VKTs by 2040, this could result in the truck fleet being smaller in 2045 than it is today.

By contrast, bus VKTs are forecast by the Ministry of Transport to grow rapidly across the forecast period, driven by a large increase in electric bus VKTs. This is a result of increased public transport usage driven by mode shift and a growing population. Although they use different assumptions from the Ministry of Transport, the Climate Change Commission assumes that public transport in the major metropolitan areas will capture 20% of all passenger kilometres travelled by 2040.

The total number of buses on New Zealand roads is expected to grow from just under 12,000 in 2025 to 15,000 in 2045, representing a 25% increase over the next 20 years.

Figure 74 Total forecast bus VKTs

Base case, 2025 to 2045



Source: Ministry of Transport

10/

The future state of the motorcycle fleet

10/ The future state of the motorcycle fleet

Motorcycles in New Zealand are beginning to transition toward electrification, especially in urban areas, where their relatively low energy demands, compact size, and competitive total cost of ownership make them well-suited for electric drivetrains. The smaller battery size and the ability to remove the battery require less investment in infrastructure.

The smaller battery size, however, does limit range and power currently. Therefore, where larger-capacity motorcycles are required, such as for recreational or rural use, ICE motorcycles continue to be the preferred choice. As identified above, advances in battery technology will continue to reduce these issues. Globally, motorcycles are the most electrified segment of the vehicle market, driven by high shares in Asia (International Energy Agency 2025).

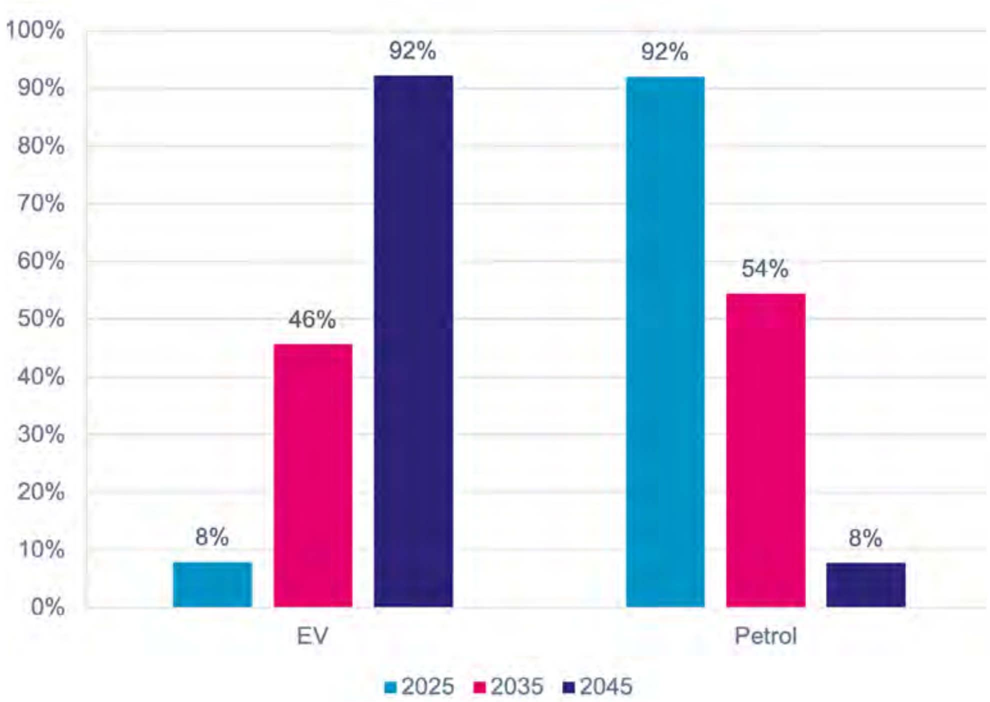
10.1 Forecast motorcycle registrations

The electrification of the motorcycle fleet is expected to progress rapidly. By 2035, registrations of new electric motorcycles are forecast to be 46% of all motorcycle registrations. This figure will climb to 92% by 2045 according to Ministry of Transport forecasts.

This rate of electrification is slower than the global average, however. The IEA predict that close to 40% of all motorbike sales globally will be for electric motorbikes by 2030. This reflects their popularity in large urban environments globally (International Energy Agency 2025).

Figure 75 Forecast motorcycle registrations by fuel type

Percentage of total motorcycle registrations, base case forecast, 2025, 2035 & 2045



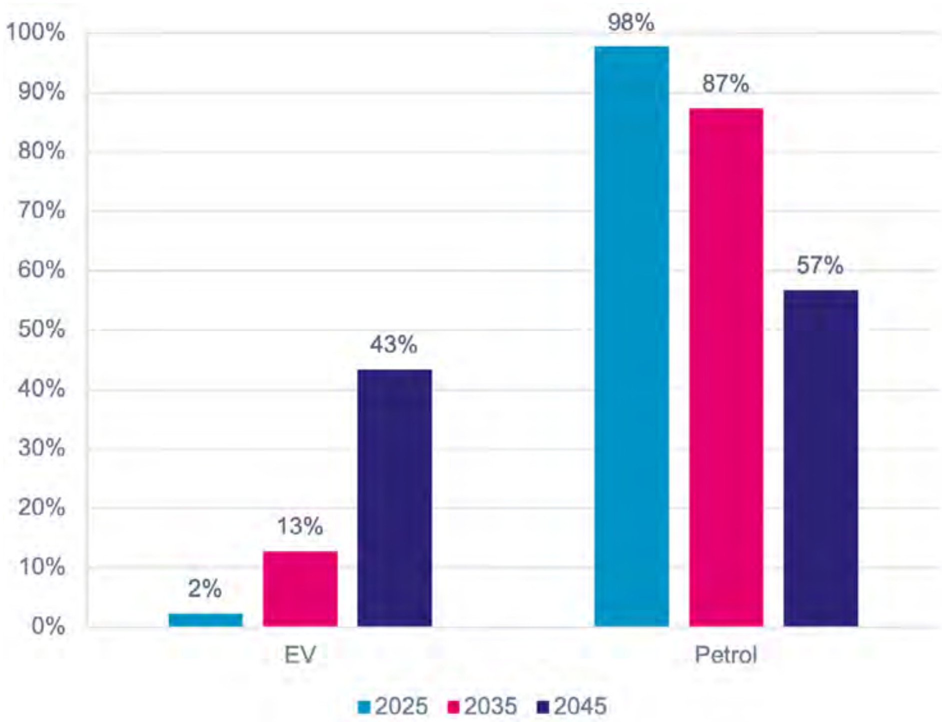
Source: Ministry of Transport

10.2 Forecast motorcycle fleet composition

By 2035, electric motorcycles are expected to account for 13% of the motorcycle fleet according to the Ministry of Transport's forecasts. They are more likely to be used by commuters and delivery riders operating in city environments. However, petrol-powered motorcycles will continue to dominate the fleet overall and are still projected to make up over half of the motorcycle fleet by 2045. This is despite 92% of new motorcycle registrations being for electric motorcycles in 2045 due to the relatively high age of the New Zealand fleet. Globally, by 2030, electric motorbikes are forecast to make up 17% of the total motorcycle fleet (International Energy Agency 2025).

Figure 76 Forecast composition of the motorcycle fleet by fuel type

Percentage of total motorcycle fleet, base case forecast, 2025, 2035 & 2045



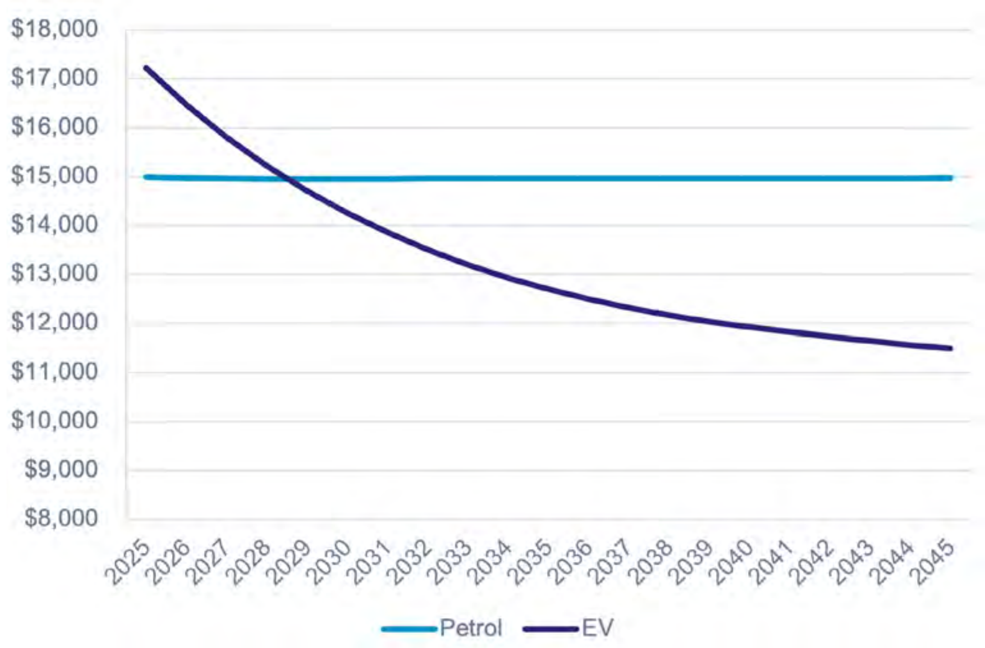
Source: Ministry of Transport

10.3 Forecast TCO of motorcycles

The Climate Change Commission forecast that the TCO of electric motorcycles will reach parity with petrol motorcycles by 2029. They are forecasting continued cost savings for electric motorcycles in the years to follow, which will lead to continued growth in the number of electric motorcycles sold in New Zealand.

Figure 77 Forecast TCO of motorcycles by fuel type

Estimated in 2023 equivalent dollars, 2025 to 2045



Source: Ministry of Transport

11/

Implications of future trends on the industry

11/ Implications of future trends on the industry

As we have identified above, three main trends are forecasted for the vehicle fleet over the next 10 to 20 years, which will have implications for the industry and its workforce. These are electrification of the fleet, increasing technology in vehicles, and a reduction in vehicle ownership and a possible reduction in vehicle kilometres travelled due to mode shift. Combining the forecast data and the views of the subject matter experts we interviewed for this project; it is possible to hypothesise what these trends mean for the industry and its workforce.

11.1 Implications of electrification of the fleet

The electrification of the fleet is expected to reduce demand for liquid fuels and vehicle maintenance, as electric vehicles have fewer moving parts. It is also expected to require a change in skills in order to repair high-voltage systems. There will also need to be a change in infrastructure from liquid fuel refilling infrastructure to electric recharging infrastructure.

However, the electrification of the light vehicle fleet in New Zealand is still a relatively recent phenomenon, and as such, the proportion of EVs in the light vehicle fleet is currently low, at only 3% of the LPV fleet and less than 1% of the LCV fleet. The heavy fleet, except for buses, remains almost entirely diesel-powered. Even by 2035, despite a rapidly increasing proportion of new vehicles being registered as EVs, the proportion of EVs in the light vehicle fleet remains low, at 14% for LPVs and 9% for LCVs. However, 30% of LPVs are estimated to be hybrids, up from 12% today. Only 2% to 3% of trucks in the fleet will be EVs by 2035, although 21% of buses will be EVs by 2035. Therefore, it can be expected that the structural change to the industry resulting from the electrification of the fleet will be relatively gradual over the next decade, before accelerating in the decade after that.

For example, vehicles with an ICE engine (either solely or as part of a hybrid) are still forecast to comprise 73% of the LPV fleet in 2035 (compared to 95% today) and 82% of the LCV fleet (compared to 98% today). This implies that demand for mechanics with skills to work on internal combustion engines will reduce over the decade, but relatively slowly over the next few years. The situation for diesel mechanics is more stable, given diesel will still power 69% of LCVs and between 96% and 98% of trucks in 2035, as well as 78% of all buses. Similarly, demand for mechanics with skills to work on high-voltage systems and possess skills such as the ability to change batteries will gradually increase according to interviewees.

This also means that although there will be a reduction in petrol sold, there will still be significant demand for service stations to provide petrol and diesel.

In the decade following 2035, electrification of the fleet is expected to ramp up significantly. EVs will represent 52% of the LPV fleet, with hybrids comprising a further 21% of the LCV fleet by 2045. It is forecast that 32% of the LCV fleet will be EVs. It is also possible, although the Ministry of Transport is forecasting that 44% of the LCV fleet will be diesel-powered, that this figure could be lower if the popularity of hybrid LCVs in China is replicated in this market.

The total number of light vehicles in the fleet is forecast to remain relatively stable from 2035 to 2045. Combined with a much bigger proportion of the fleet being electric, interviewees expect there will be a reduction in demand for mechanics, given the lower servicing requirements of an EV. There will also be a significant change in the skills required of mechanics, as they will need to be trained in high-voltage systems and battery repairs.

One interviewee also suggested that you may see consolidation among the auto electrical repair, general repair, and collision repair sectors as work in the general repair sector reduces and technological change, as well as manufacturers requiring repairs to be done by authorised repairers, becomes more common.

Service stations will need to reinvent themselves as energy providers, rather than just liquid fuel providers, by providing quick public charging infrastructure. The need for quick public charging infrastructure is likely to be exacerbated by increasing intensification in metropolitan areas, meaning EV owners are less likely to have off-street charging capability in their homes.

11.2 Implications of increasing technological advances on the industry

There will continue to be technological advancements in vehicle development over the next twenty years. However, the pace at which technology will be taken up in the New Zealand fleet is limited by the age of the fleet. The average age of an LPV in the New Zealand fleet is almost 15 years old. Therefore, a new vehicle entering the fleet today will only reach the average age of an LPV in the fleet in 2040. Despite the reduction in imported used vehicles entering the fleet in recent years, the Ministry of Transport is still forecasting that imported used vehicles will make up 45% of registrations through the forecast period. Currently, the average age of an imported used LPV is close to 10 years old when it enters the New Zealand fleet.

Further advances in the use of ADAS in new vehicles may also be hampered by the need to upgrade New Zealand's transport infrastructure. There is likely to be greater uptake of semi-autonomous features, with ADAS Level 3 autonomy being a likely milestone for mainstream adoption. However, infrastructure shortcomings – such as inconsistent lane markings and variable road signage – was identified by a subject matter expert as significant barriers to full autonomy in New Zealand.

Although autonomous vehicles are being used in some cities around the world to provide taxi services, there are currently no plans to introduce them in New Zealand. If they were introduced, it would likely initially be as part of a taxi service, according to a subject matter expert.

There are no forecasts for how the age of the fleet is expected to change over the next 10 to 20 years. As build quality improves, cars could be expected to be retained longer. Similarly, if VKTs decrease, as may happen if there is a mode shift through greater use of public transport or congestion charging, average mileage per annum will decrease. Both of these will lead to the fleet ageing. If EVs become significantly more cost-effective than ICE vehicles, then ICE vehicles may exit the fleet at a younger age. These effects, however, would cancel each other out to some extent.

Even at a relatively slow pace of technological advance across the fleet, the increasing sophistication of technology in the cars will continue to exacerbate the trends the industry is already seeing. Cars will, according to interviewees, in general, become safer and less likely to be involved in collisions because of the ADAS technology in them. This will result in less collision repair work; however, the collision repair work that remains is becoming more expensive due to increasingly expensive components and systems that need to be replaced. This, in turn, can lead to a higher proportion of cars being written off, further reducing demand for collision repair services. In the case of general repairs, the reliability of vehicles will continue to increase, and faults will be diagnosed earlier; however, there will also be an increase in system faults. The increased use of ADAS will lead to a greater proportion of calibration work in repairing vehicles.

The increasing technology in vehicles also requires access to manufacturers' data, brand-specific diagnostic tools, and repairs to be carried out using manufacturer-approved methods and products. Similarly, modern connected vehicles transmit performance data directly to manufacturers, enabling proactive maintenance notifications and direct marketing from manufacturers to vehicle owners. According to interviewees, these factors increase the cost of repairs and the amount of investment required by repairers, potentially excluding independent workshops. In light of these issues, workshops may increasingly need to limit the number of brands they work on. This challenge could be partially addressed through a mandated 'right to repair' policy, where independent service providers are given open access to repair information from manufacturers. However, the need for brand-specific diagnostic tools and manufacturers requiring repairs to be done by authorised repairers so as not to void warranties, combined with longer warranty periods as cars become more reliable, will still represent a challenge for the industry.

It is also likely that emissions from cars will decrease as overseas jurisdictions, such as those in Europe, tighten their regulations. For example, the European Union is requiring manufacturers to reduce emissions from their light vehicles by 15% on average between 2025 and 2027 compared to a 2021 baseline (International Energy Agency 2025). Although, as mentioned above, the pace of electrification of the fleet in New Zealand means that ICE vehicles will continue to be a significant proportion of new registrations, especially over the next ten years, they will be more fuel-efficient, further reducing demand for liquid fuel, especially petrol.

11.3 Slowing growth in the fleet size, less ownership and lower VKTs

Although the total size of the light vehicle fleet is not expected to peak until 2046, the rate of growth of the fleet slows and does not keep pace with population growth, due to demographic changes in the New Zealand population and factors such as urban intensification. As a result, ownership per capita decreases over the period to 2045. This is likely to make the vehicle dealer market more competitive over time and result in further reduction in business units.

The Ministry of Transport predicts that light vehicle VKTs will remain relatively constant over time, growing at a rate equal to population growth and GDP growth. The implication of this is that subscription services and shared mobility services will become more prevalent. This will, in turn, change the characteristics of buyers, making fleet buyers even more important than they are now. Fleet buyers (business, government and rentals) already make up over 60% of new purchases across all vehicle fleets, and this could be expected to grow over time.

Although the Ministry of Transport is forecasting continued growth in VKTs, the Climate Change Commission are modelling reductions in VKTs. This is the result of expected mode shift to public transport, as public transport usage increases due to greater investment in this mode of transportation. This is expected to be supported by time-of-use charging, which will eliminate some journeys and shift others to public transport. Similarly, the Climate Change Commission assume that there will be some mode shift of freight from road to rail and coastal shipping. At the very least, if this occurs, the result for the industry will be vehicles with less average mileage per annum and therefore fewer servicing requirements. It could also flow through to a reduction in fleet size, with fewer vehicles entering the fleet. In turn, this reduces demand for new vehicles and the services the industry provides.

12/ References

12/ References

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Appendix A / Industry groupings into sectors

Table 10 Industry groupings

ANZSIC Group	ANZSIC Group Name	ANZSIC class	ANZSIC class Name	MTA Sector
C231	Motor Vehicle and Motor Vehicle Part Manufacturing	C231900	Other Motor Vehicle Parts Manufacturing	Parts and accessories
C231	Motor Vehicle and Motor Vehicle Part Manufacturing	C231100	Motor Vehicle Manufacturing	Vehicle dealer
C231	Motor Vehicle and Motor Vehicle Part Manufacturing	C231200	Motor Vehicle Body and Trailer Manufacturing	Vehicle dealer
C231	Motor Vehicle and Motor Vehicle Part Manufacturing	C231300	Automotive Electrical Component Manufacturing	Parts and accessories
F350	Motor Vehicle and Motor Vehicle Parts Wholesaling	F350300	Trailer and Other Motor Vehicle Wholesaling	Vehicle dealer
F350	Motor Vehicle and Motor Vehicle Parts Wholesaling	F350400	Motor Vehicle New Parts Wholesaling	Parts and accessories
F350	Motor Vehicle and Motor Vehicle Parts Wholesaling	F350500	Motor Vehicle Dismantling and Used Parts Wholesaling	Parts and accessories
F350	Motor Vehicle and Motor Vehicle Parts Wholesaling	F350200	Commercial Vehicle Wholesaling	Vehicle dealer
F350	Motor Vehicle and Motor Vehicle Parts Wholesaling	F350100	Car Wholesaling	Vehicle dealer
G391	Motor Vehicle Retailing	G391300	Trailer and Other Motor Vehicle Retailing	Vehicle dealer
G391	Motor Vehicle Retailing	G391200	Motorcycle Retailing	Vehicle dealer
G391	Motor Vehicle Retailing	G391100	Car Retailing	Vehicle dealer
G392	Motor Vehicle Parts Retailing	G392200	Tyre Retailing	Parts and accessories
G392	Motor Vehicle Parts Retailing	G392100	Motor Vehicle Parts Retailing	Parts and accessories
G400	Fuel Retailing	G400000	Fuel Retailing	Service station
S941	Automotive Repair and Maintenance	S941900	Other Automotive Repair and Maintenance	General repair
S941	Automotive Repair and Maintenance	S941100	Automotive Electrical Services	General repair
S941	Automotive Repair and Maintenance	S941200	Automotive Body, Paint and Interior Repair	Collision Repair

Source: Stats NZ

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