

Number of motor vehicles

This factsheet presents an analysis of the growth of the motor vehicle fleet in Aotearoa New Zealand, particularly regarding fuel types and electric vehicles. These data come from statistics published by the Ministry of Transport.



The New Zealand vehicle fleet continues to grow, despite slower growth in 2020 due to the COVID-19 pandemic.



In 2021, there were 4.5 million vehicles in Aotearoa New Zealand, up from 2.5 million vehicles in 2001.



The number of light motor vehicles per capita remains very high compared with other countries, at 807.8 vehicles per 1,000 people in 2021.



While electric vehicles (EVs) still represented less than 1.0% of the light vehicle fleet in 2021 (37,000 vehicles), EV registrations have made up a growing proportion of light vehicle registrations since the introduction of the Clean Car Discount on 1 July 2021.



Light EV ownership was highest in more urbanised regions.

Why is the number of motor vehicles important for environmental health?

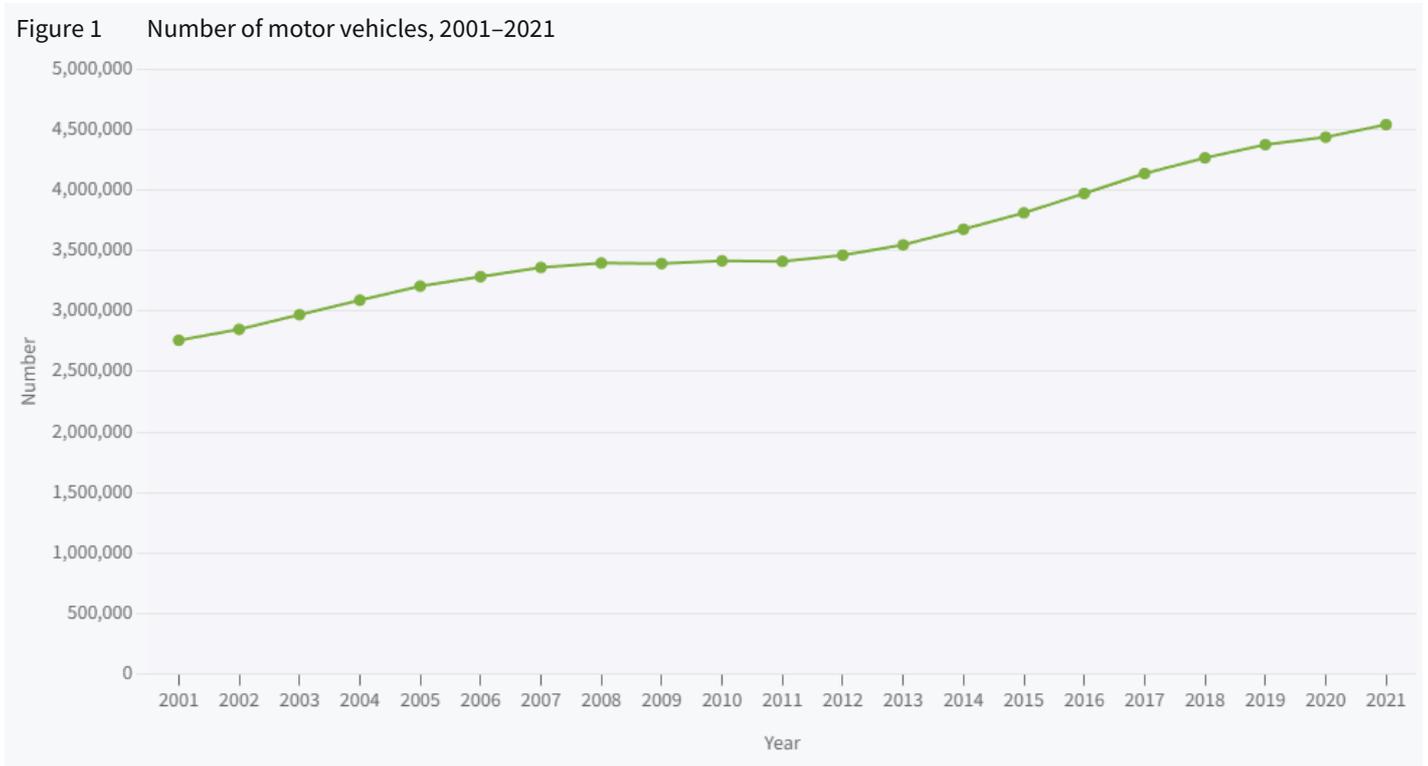
The use of motor vehicles can impact human health through air pollution, crashes and accidents, climate change as well as through noise. In particular, motor vehicle emissions from the combustion of petrol and diesel affect outdoor air quality and human health.

It has been estimated that motor vehicle emissions caused 2,247 premature deaths in 2016 (Kuschel et al. 2022) – compared to 327 deaths from road traffic accidents that year (Ministry of Transport 2023a).

Evidence also shows that diesel engine fumes can cause lung cancer (IARC, 2023). Road traffic noise can also affect health, particularly through high blood pressure resulting from stress associated with road noise (van Kempen and Babisch 2012).

The vehicle fleet continues to grow

The number of motor vehicles in Aotearoa New Zealand increased by just under 65% over the past 20 years, rising from 2.8 million in 2001 to just over 4.5 million in 2021. This compares to population growth of 32% over the same period. Annual growth in the vehicle fleet has varied over time in response to policy changes, global financial conditions, and other significant events such as the COVID-19 pandemic. After slowing in the years following the 2007–2008 global financial crisis, fleet growth accelerated between 2013 and 2018. Growth then slowed, particularly during 2020 due to the COVID-19 pandemic (Figure 1).



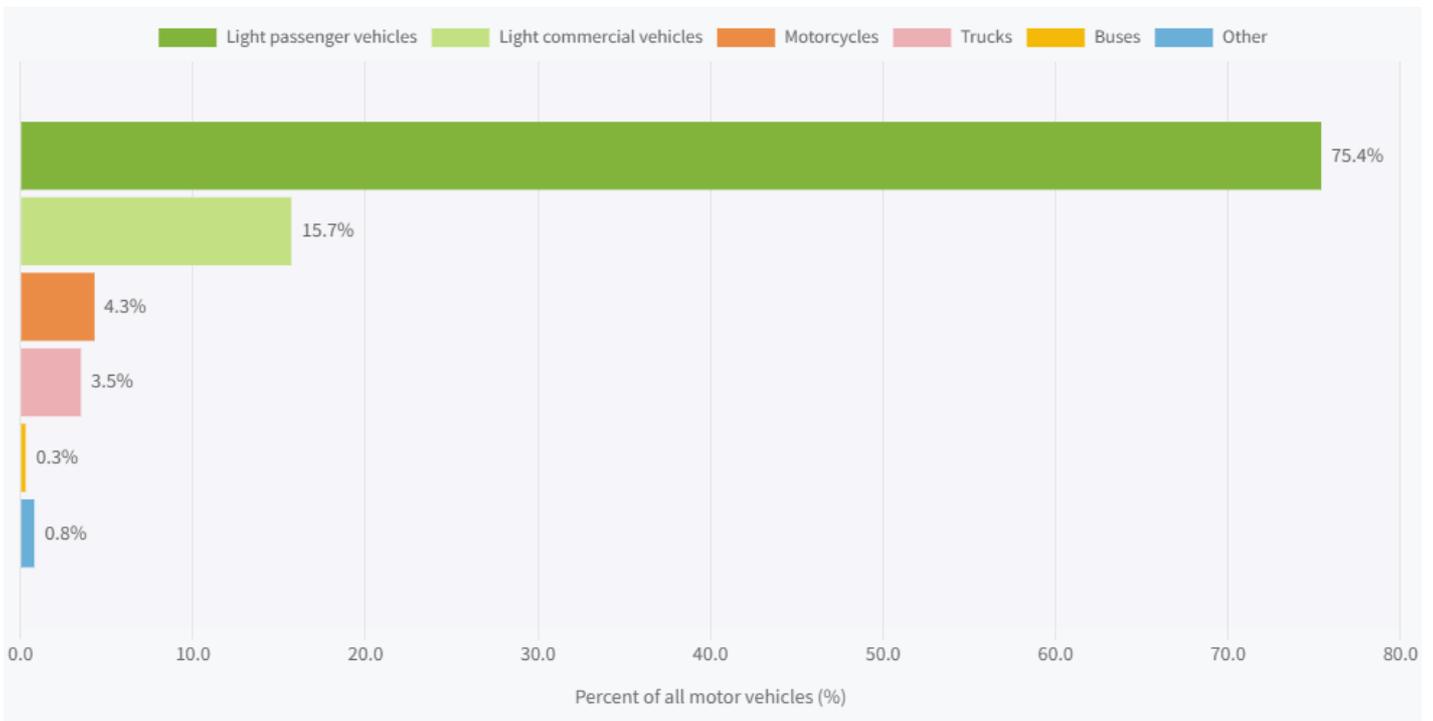
Source: Ministry of Transport, 2023b

The vehicle fleet is almost exclusively composed of light vehicles

Light passenger vehicles continue to be the most common type of vehicle, with 3.4 million vehicles making up 75.4% of the total fleet in 2021 (Figure 2). Light commercial vehicles accounted for 15.7% of the fleet (713,920 vehicles). Overall, light vehicles made up 91.1% of the total vehicle fleet.

The remainder of the vehicle fleet consisted of 195,580 motorcycles (4.3% of the fleet), 161,000 trucks (3.5%) 11,410 buses (0.3%) and 36,680 vehicles of other classes (0.8%). These proportions have remained largely unchanged over time.

Figure 2 Vehicle types as a proportion of the combined vehicle fleet, 2021

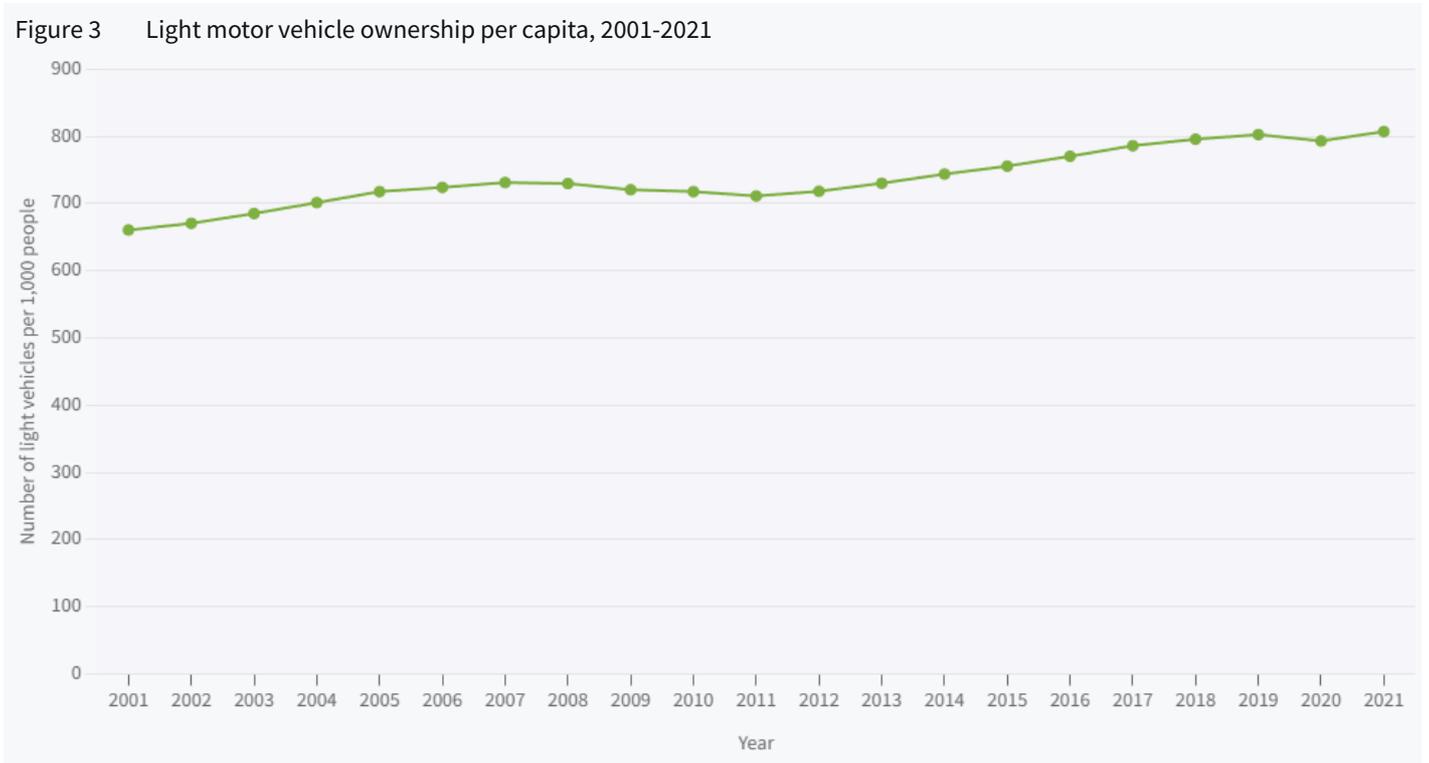


Note: Values may not add up to 100% due to rounding. ‘Other’ vehicles include mobile machines, special-purpose vehicles, tractors and agricultural equipment.

Source: Ministry of Transport 2023b

Vehicle ownership per capita is high compared with other countries

New Zealand has one of the highest rates of motor vehicle ownership in the world (Ministry of Transport 2022). Between 2001 and 2021, the number of light vehicles per capita increased from 661 to 808 vehicles per 1,000 people. There was a decrease in 2020, the first since 2011, but the rate increased again in 2021 (Figure 3).



Source: Ministry of Transport 2023b

Diesel vehicle numbers are still increasing

The number of diesel-powered vehicles has increased steadily since 2001, with the light commercial fleet growing the fastest (Figure 4).

Figure 4 Number of diesel vehicles, by vehicle type, 2001–2021



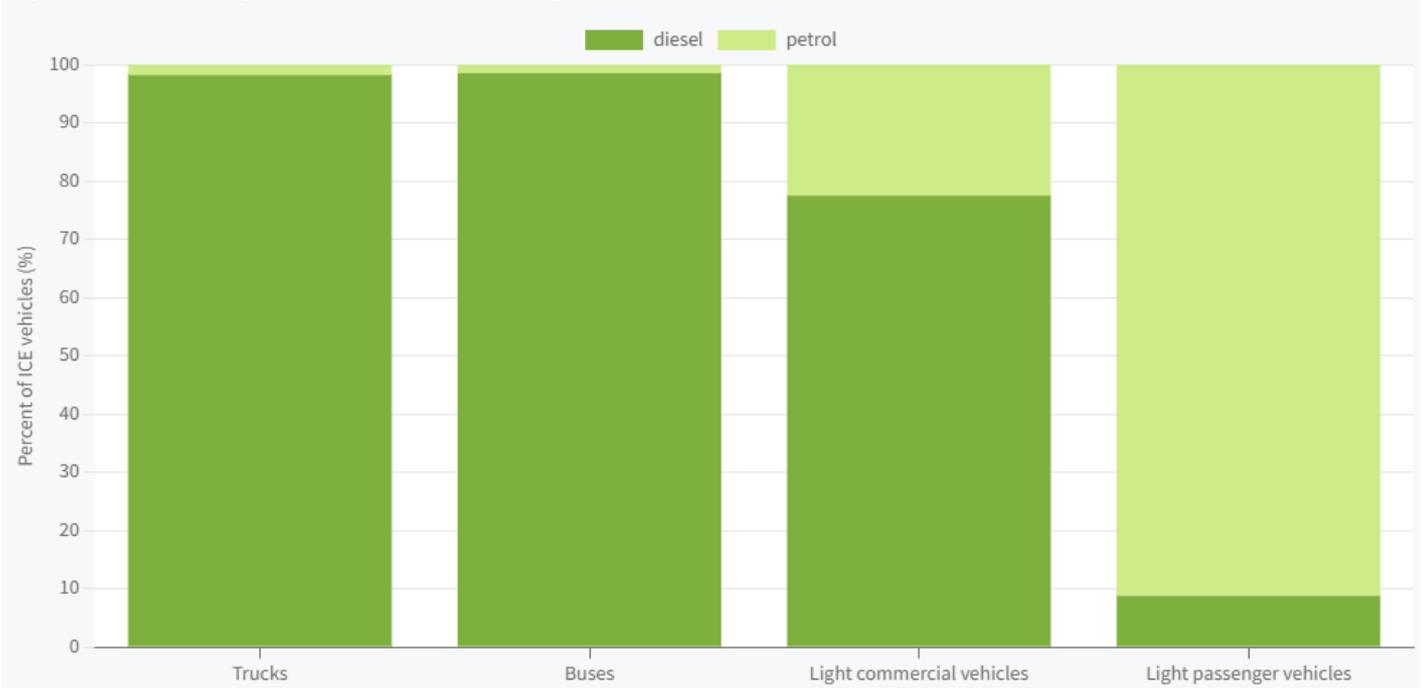
Source: Ministry of Transport 2023b

Almost all trucks and buses are diesel-powered

In 2021, 24.1% of all internal combustion engine (ICE) vehicles were diesel-powered. Internal combustion engines include petrol hybrids but not pure electric vehicles. Nearly all buses and trucks were diesel-powered. Diesel-powered vehicles made up 78.7% of light commercial and 8.8% of light passenger vehicles with internal combustion engines (Figure 5). The proportion of diesel vehicles within the light commercial fleet has grown over the past 20 years – in 2001, only 45.7% of these were diesel-powered.

The truck and bus fleets almost entirely consist of diesel vehicles, with petrol vehicles representing just 1.8% and 1.5% (respectively) of each vehicle type. A further 1.3% of the total bus fleet is electric-powered (153 vehicles).

Figure 5 Percentage of internal combustion engine vehicles, by fuel and type, 2021



Note: This graph only includes vehicles powered by internal combustion engines (ICE). This includes petrol hybrids, but not pure electric vehicles.

Source: Ministry of Transport 2023b

Electric vehicles in New Zealand

Electric vehicles (EVs) are charged externally from a power source. There are two types of electric vehicles in New Zealand:

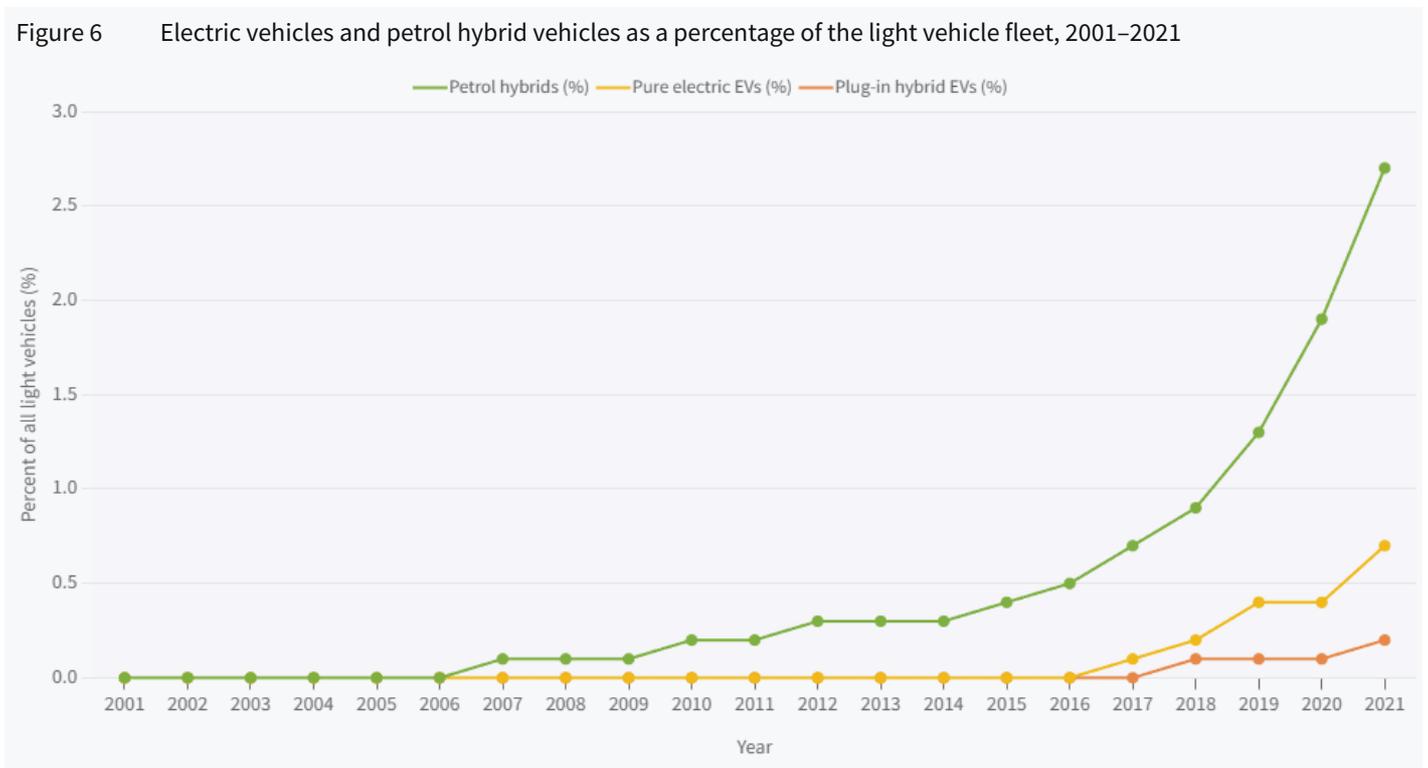
- Pure electric vehicles are powered solely by batteries
- Plug-in hybrid electric vehicles use a combination of batteries and a conventional fuel-burning engine

Petrol hybrid vehicles are not counted as 'electric vehicles' in this factsheet, as they are not rechargeable from external electrical power sources.

Electric and petrol hybrid vehicles are a growing minority

While the light vehicle fleet remains dominated by vehicles powered exclusively by fossil fuels, both EVs and petrol hybrids have grown as a proportion of the fleet, particularly since around 2016 (Figure 6). However, the proportions remain very low, with petrol hybrids making up 2.7% of the fleet in 2021, while pure EVs (0.7%) and plug-in hybrid EVs (0.2%) combined made up only 0.9% of the fleet.

The uptake of EVs will need to increase greatly in order to meet the Government target of zero-emissions vehicles being 30% of the light vehicle fleet by 2035.

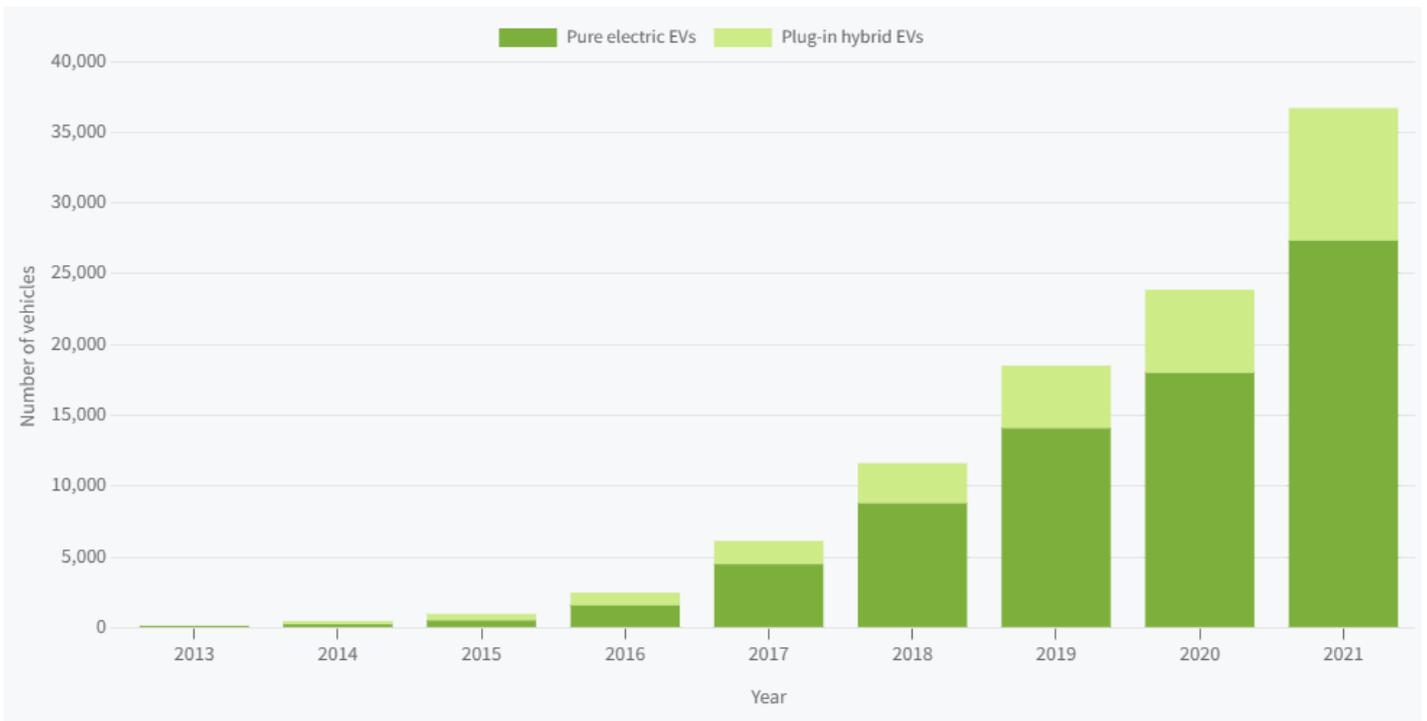


Source: Ministry of Transport 2023b

The majority of EVs are pure electric vehicles

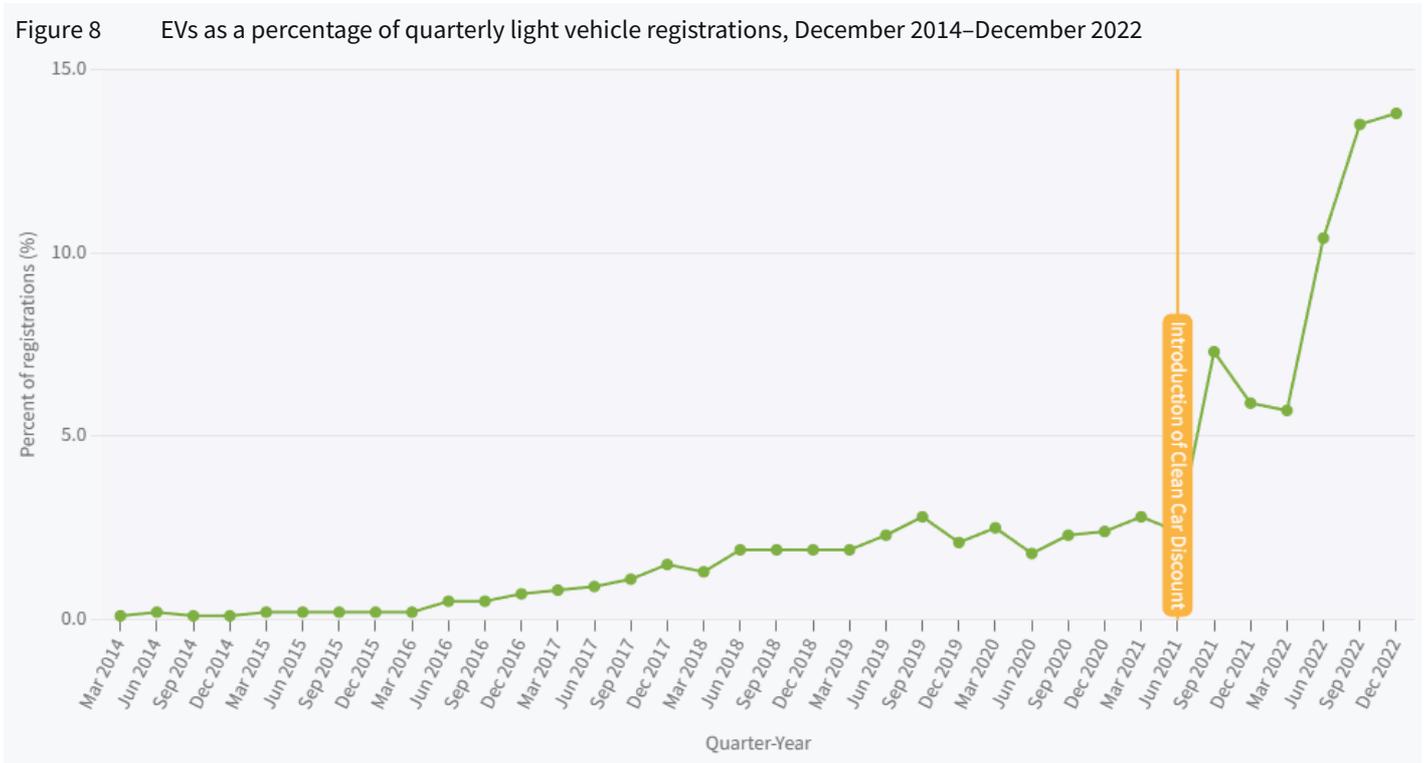
The electric vehicle fleet in New Zealand is almost exclusively composed of light passenger vehicles. In 2021, there were nearly 37,000 electric vehicles, up from only 153 in 2013 (Figure 7). Pure electric EVs comprise just under 75% of the light EV fleet; the remaining 25% are plug-in hybrid vehicles.

Figure 7 Number of light electric vehicles, 2013–2021



Source: Ministry of Transport 2023b

Electric vehicles are also becoming better represented among new registrations of light vehicles (Figure 8). EVs accounted for 13.8% of the light vehicle registrations in the October to December 2022 quarter, compared to 0.2% in the October to December 2015 quarter. The boost in registration rates for the July to September 2021 quarter coincides with the introduction of the Clean Car Discount on 1 July 2021.



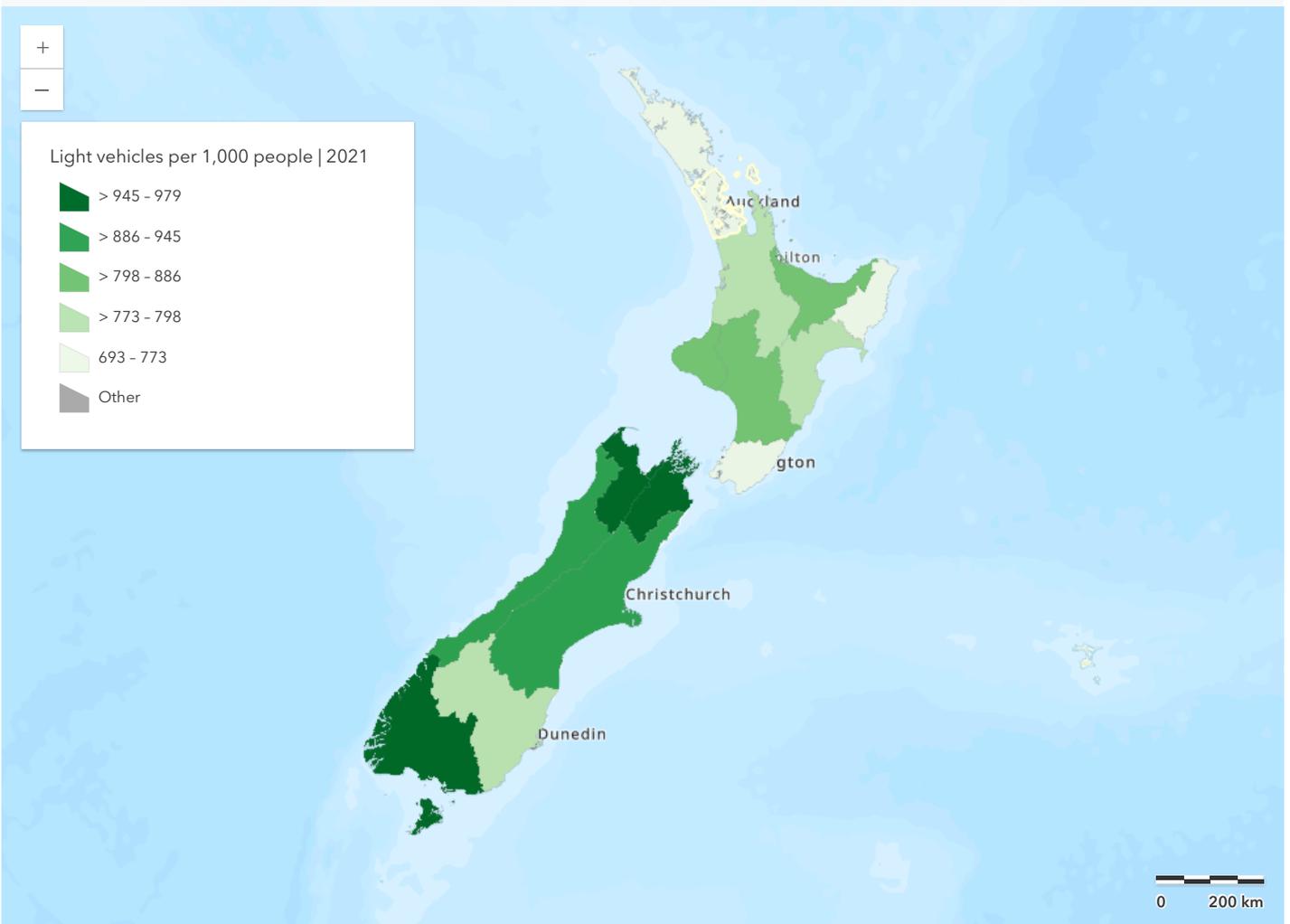
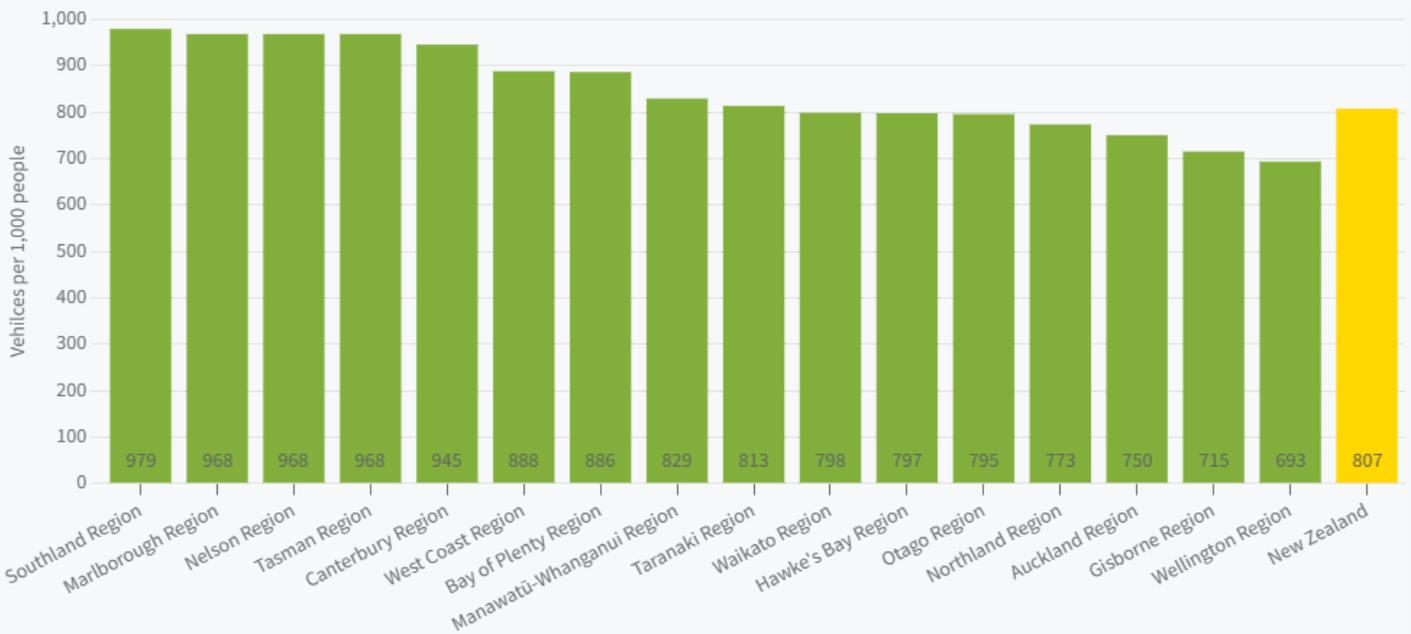
Source: Ministry of Transport 2023c

Light vehicle ownership across NZ

Light vehicle ownership rates varied across the country in 2021 (Figure 9). The region with the highest ownership rate was Southland (979 vehicles per 1,000 people), and the region with the lowest ownership rate was Wellington (693 vehicles per 1,000 people).

The lower rate of ownership may be related to commuting habits - in Wellington, 24% of all commuting time is done via active or public transport, reducing the need for owning a vehicle. See the 'Commuting time by mode of transport' factsheet for more details.

Figure 9 Light motor vehicles per 1,000 people, by region, 2021



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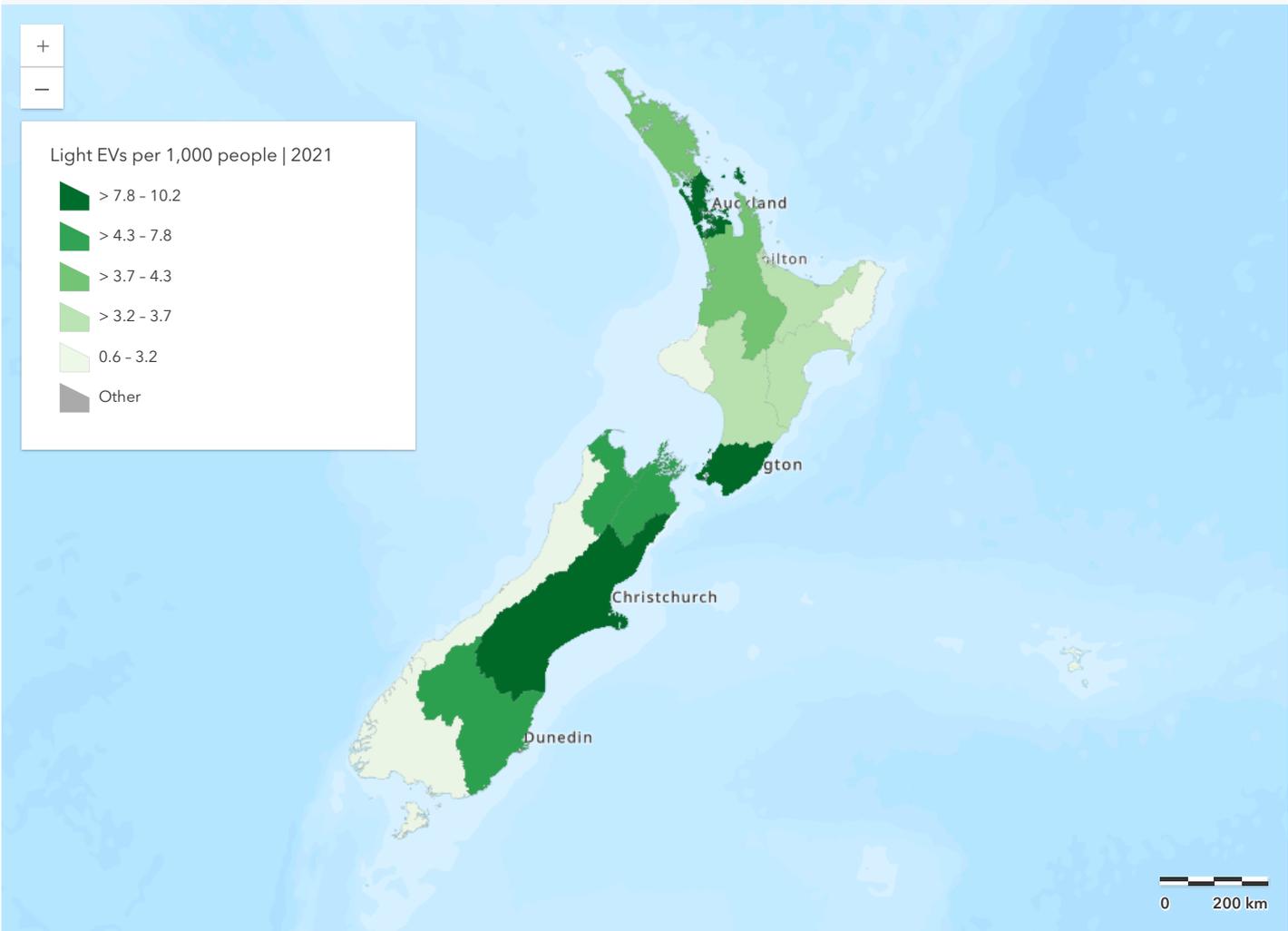
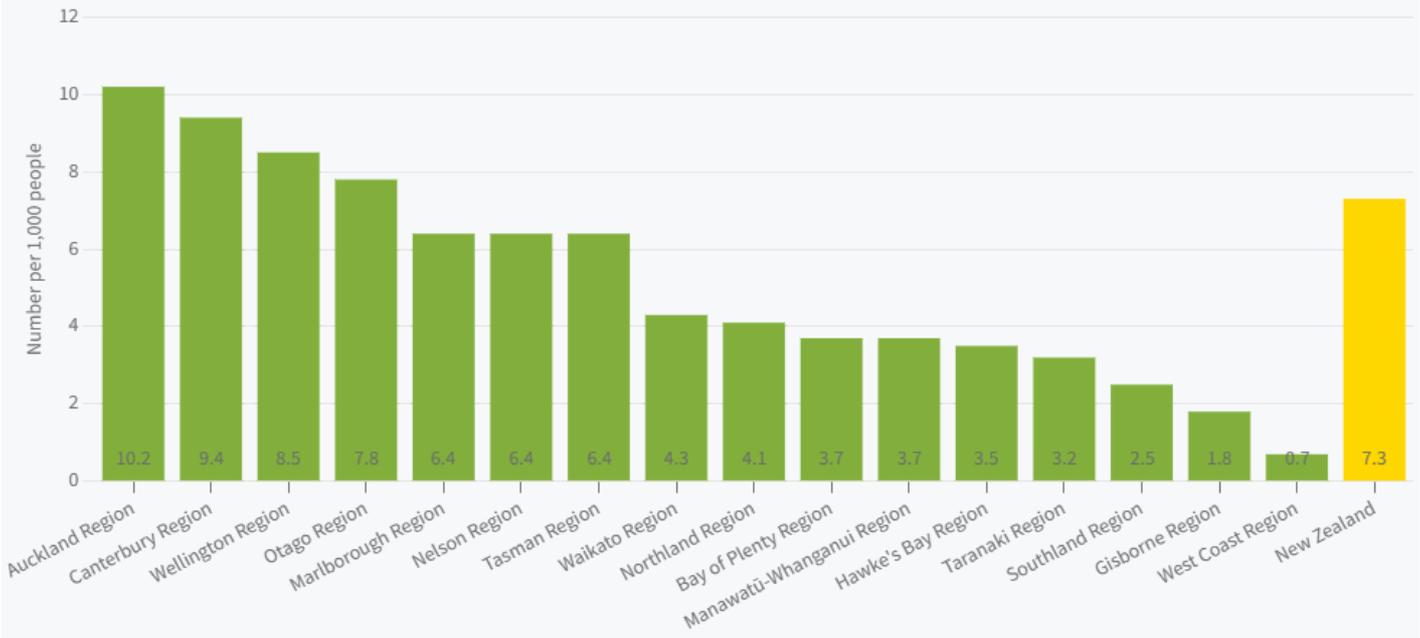
Note: Figures for the Nelson, Marlborough and Tasman regions are identical as the Ministry of Transport aggregates the number of vehicles and resident population for these regions into a single body.

Source: Ministry of Transport 2022

Light EV ownership per capita was highest in more urbanised regions

In 2021, there were 7.3 light EVs per 1,000 people in New Zealand (Figure 10), up from 4.7 in 2020. Ownership per capita increased in all regions but was still markedly higher in major urban centres. The region with the highest rate was Auckland (10.2 EVs per 1,000 people), followed by Canterbury (9.4 EVs per 1,000 people) and Wellington (8.5 EVs per 1,000 people). The West Coast region had the lowest electric vehicle ownership rate, with less than one EV per 1,000 people.

Figure 10 Light EVs per 1,000 people, 2021



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Note: Figures for the Nelson, Marlborough and Tasman regions are identical as the Ministry of Transport aggregates the number of vehicles and resident population for these regions into a single body.

Source: Ministry of Transport 2022

Data for this indicator

This factsheet is an analysis of the most recent data from the Ministry of Transport's annual vehicle fleet statistics, with further information on electric vehicle registrations sourced from the October to December quarterly fleet statistics.

The following categories of vehicles are used:

- Light vehicles, which includes:
 - Light passenger vehicles (passenger vehicles weighing up to 3,500 kg)
 - Light commercial vehicles (the following if under 3,500 kg: goods vans, trucks, utilities, buses, and motor caravans)
- Trucks (the following if over 3,500 kg: goods vans, trucks, utility vehicles, and motor caravans)
- Buses (those over 3,500 kg, including minibuses)
- Motorcycles (including mopeds and quadbikes/ATVs)

Data on electric vehicle numbers and registrations come from the Ministry of Transport's quarterly fleet statistics and covers two forms of light electric vehicles:

- Plug-in hybrid electric vehicle (PHEV), and
- Battery electric vehicles (BEV).

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