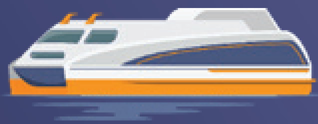


STATE OF THE NATION REPORT
ELECTRIC TRANSPORT
IN AOTEAROA NEW ZEALAND
2026

DRIVE ELECTRIC

CONTENTS

Drive Electric has made every attempt to ensure this report has been prepared from accurate sources as of 30 April 2026, however we are not responsible for any errors or omissions, for the results obtained from the use of this information.

ABOUT DRIVE ELECTRIC

Drive Electric is a leading apolitical not-for-profit organisation advocating for electric vehicle uptake and the decarbonisation of New Zealand's transport sector.[1.0]

We engage with government, media, industry and individuals to promote the benefits of making e-mobility mainstream. Over the past decade, we have played a key role in shaping EV-related policy, facilitating conversations between industry and government, and in the distribution of accurate research and information to help Kiwi consumers and businesses make informed transport choices.

Our board, members, and research partners are at the forefront of the electric transport movement, and represent all aspects of the EV ecosystem.[1.1, 1.2]

We are proud to instigate change and impart brand-agnostic expertise in the effort to bring New Zealand closer to a fully electric future.

This report is informed by our network of industry experts, global and local research, and the insights of our members.

PREMIUM MEMBER

CORPORATE MEMBERS

ESSENTIAL MEMBERS

EXECUTIVE SUMMARY

Transport electrification has crossed a global inflection point. It is no longer primarily an environmental movement — it is an economic opportunity and a national security imperative.

In 2023, New Zealand was a leader in EV market share, however policy changes have slowed our progress. Australia has overtaken us for the first time.

WHERE NEW ZEALAND STANDS

11% **New car sales electric (2025)**[1.4]

3.3% **Total fleet EV share**

1:52 **EV-to-public-charger ratio** [1.21, 1.22]

88%+ **Electricity from renewables** [1.5]

THE GLOBAL SHIFT - FROM ENVIRONMENT TO ECONOMICS WHERE NEW ZEALAND STANDS

Globally, one in four new cars sold is an electric vehicle (EV).[1.6] In China, it is one in two. [1.7]

Norway has reached 98% electric new car sales, yet after 35 years of consistent, cross-party policy, only 32% of Norway's total fleet is electric.[1.8.]

It is clear transformation at scale takes time, consistency and bipartisan commitment.

The transition is not just for wealthy nations, other markets have identified the opportunity to reduce their dependence on imported fossil fuels and fuel costs for their citizens. They have made systemic choices and their percentage of new electric car sales reflects that:

Ethiopia 60% - ICE import ban, 95% renewable energy [1.9, 1.10]

Vietnam 40% - Domestic manufacturer VinFast [1.11, 1.12]

Thailand 28% - Regional manufacturing hub [1.13, 1.14]

Turkey 22% - 4th largest BEV market in Europe by volume [1.15, 1.16]

Costa Rica 15% - Highest in Americas (BEV-only) [1.17, 1.18]

Indonesia 14% - Tripling year on year despite ICE market contraction [1.19, 1.20]

NEW ZEALAND'S POSITION
REAL STRENGTHS, REAL RISKS

New Zealand holds structural advantages that most countries cannot match: 88% renewable electricity generation (reaching a record 96% in December 2025), a grid fully capable of charging the entire light-vehicle fleet off-peak, and a transport cost advantage that sees EV drivers paying the equivalent of 40 cents per litre to fuel their vehicles — less than half the cost of petrol. [1.5]

Yet our charger-to-EV ratio sits at 1:52, among the lowest in the OECD. Australia, once the laggard, has introduced its New Vehicle Efficiency Standard (NVES) in 2025 and has closed the gap. Our competitive advantage in renewable energy is real, but it requires policy settings that allow households, businesses, and infrastructure investors to act with confidence. [1.21, 1.22]

The Clean Car programme has been dismantled and has demonstrably stalled New Zealand's EV uptake. The sector is recovering — the March 2026 EV sales surge in response to the Iran-US conflict reflects genuine consumer appetite — but policy volatility creates uncertainty, increases costs and slows progress across the entire EV ecosystem.[1.23]

THE FULL E-MOBILITY ECOSYSTEM IS EMERGING

This report covers the full electric transport ecosystem – it extends well beyond the cars in our driveways:

Micro-mobility – Two-thirds of all New Zealand vehicle trips are under 6 km. International research shows the average car is parked ~95% of the time. E-scooters, e-bikes, e-cargo bikes and e-mopeds are increasingly being used to commute and deliver goods. Significant growth is forecast in this segment.[1.24, 1.25]

Light Passenger Vehicles – Over 50% of EVs are now manufactured in China. [1.26] The number of available new models, and vehicle range, have increased dramatically since 2023. Our used EV fleet is still dominated by the Nissan Leaf. Whilst battery prices have dropped significantly and price parity with ICE vehicles is nearing, many Kiwis are still unable to afford the upfront cost of an EV.

Light Commercial Vehicles - Electric utes have entered New Zealand with vehicle-to-load (V2L) capability and a warm reception. Electric van options are also increasing, however further support is needed to scale.

Heavy Vehicles - Trucks and buses make up ~4% of our fleet, but are responsible for ~25% of total road transport emissions. 98% of heavy vehicles still run on diesel, and trucks entering the fleet today are likely to be operating into the 2040s. Decarbonising trucks requires significant policy changes to support uptake. [1.27, 1.28, 1.29, 1.30, 1.31]

New Zealand's electric bus rollout shows what consistent strategy and procurement policy can achieve. The country's electric bus fleet has grown around 12-fold in just three years.[1.32]

Palmerston North, the first town to operate a fully electric bus fleet, recorded a 69% increase in bus use over two years. [1.33] Meanwhile, Auckland Transport operates one of the largest zero-emission bus fleets in Australasia. [1.34, 1.35]

Maritime Transport - Electric ferries have been deployed in Auckland and several more are planned to arrive in the near future. Complemented by world-leading mega-watt charging systems, innovation in this sector is an opportunity for New Zealand to create new export markets.

CHARGING INFRASTRUCTURE UNDERPINS THE ENTIRE E-MOBILITY ECOSYSTEM

Over 80% of EV charging still happens at home, but our public network — currently over 1,800 charge points — is not on track to meet the Government's 10,000-charger target by 2030. [1.36, 1.37]

New bipartisan support for smart charger mandates and changes to resource consents are positive signals. Concessional government loans are being implemented to help boost public charger numbers.

For commercial, heavy, marine and aviation to electrify there needs to be a coordinated plan and policy platform to support all stakeholders.

New vehicle-to-everything (V2X) technology is emerging and the first significant pilot is underway in Queenstown. New Zealand only needs to look to Australia, the UK and Norway - where there are already working smart policy settings - to see how this technology can be implemented here and save significant costs in the future.

ENERGY INDEPENDENCE THE ECONOMIC OPPORTUNITY

New Zealand spends an estimated $7–9 billion annually on petroleum imports, sourced through Asian refineries drawing 80% of their crude from Gulf states. Since the closure of Marsden Point in 2022, we have no domestic refining capability. [1.38, 1.39]

Transport emissions cause an estimated $10.5 billion in social costs annually, including hospital admissions and ~2,000 deaths.[1.40, 1.41]

Every EV on the road, largely powered by New Zealand's renewable electricity, is a direct reduction in these exposures.

A 2026 report by the Sustainable Business Council and Climate Leaders Coalition — representing more than 150 businesses and approximately 45% of private sector gross domestic profit (GDP) — found that a successful low-emissions transition could add $22.6 billion annually to New Zealand's GDP by 2035, rising to $33.6 billion by 2050. Transport electrification was identified as a major contributor to that opportunity. [1.42]

The economic case for transport electrification is as compelling as the environmental and social case.

WHAT MUST HAPPEN NOW

Whilst Drive Electric's manifesto, detailing policy options across all sectors, will be released in July 2026, it is clear that to deliver energy independence New Zealand needs a bipartisan strategy to electrify transport in our country.

Supply, demand, and infrastructure policies must operate simultaneously — every jurisdiction that has achieved rapid EV uptake has done so with all three levers engaged at once.

Norway took 35 years and still has only 32% fleet share. [1.43, 1.44]

New Zealand needs a long-term, durable cross-party strategy. It is not idealism — it is the minimum requirement for investors, who make decisions over multi-year horizons, and to give consumers confidence. It will allow every New Zealander the opportunity to electrify their mobility.

With 88% renewable energy, New Zealand holds an economic advantage to create energy independence across the whole transport ecosystem.

It will take co-ordination and collaboration across the sector, working with government and stakeholders. There are many global partners for New Zealand to learn from.

Without that certainty, private capital will price in policy risk or head to other markets, consumers will defer purchases, and New Zealand's transition away from imported liquid fuels will be slower and more expensive.

The question is no longer whether electric transport will transform New Zealand. It will.

The question is whether New Zealand will lead that transformation or be reshaped by it.

The structural advantages are in place. The consumer appetite is there.

What remains is the policy commitment to match them.

WHY DO EVS MAKE SENSE FOR NEW ZEALAND?

EVs have a myriad of advantages in comparison to internal combustion engine (ICE) vehicles.

Our electricity grid is currently

~88% RENEWABLE

...and counting.[2.0]

Embracing renewable energy to produce a low-emissions grid has put New Zealand in an excellent position when it comes to keeping our EV operating emissions as low as possible.

Total life cycle emissions of EVs are significantly lower, especially if charged on a predominantly renewable-powered electricity grid.[2.1]

The life cycle of a vehicle includes:

- Resources extraction
- Manufacturing
- Shipping
- Operating life
- Total kilometres travelled
- End-of-life and disposal

Compared to an equivalent ICE vehicle, over its total life cycle a battery electric vehicle (BEV) used in New Zealand will produce:[2.2]

91% fewer operating emissions [2.2]

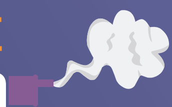
62% fewer life cycle emissions [2.22]

LOWER COST OF OWNERSHIP

'Filling up' an EV in NZ is equivalent to paying **~40¢ / LITRE** [2.4]

1/2 COSTS for ongoing maintenance [2.5]

BEVs PRODUCE

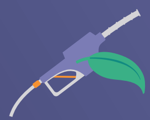


0 exhaust fumes or tailpipe emissions [2.6]

and an almost

SILENT ride [2.6]

WHAT ABOUT PETROL HYBRIDS?



Plug-in hybrid electric vehicles (PHEV) only achieve a 21% reduction in life cycle GHG emissions compared to an equivalent ICE vehicle.[2.3]

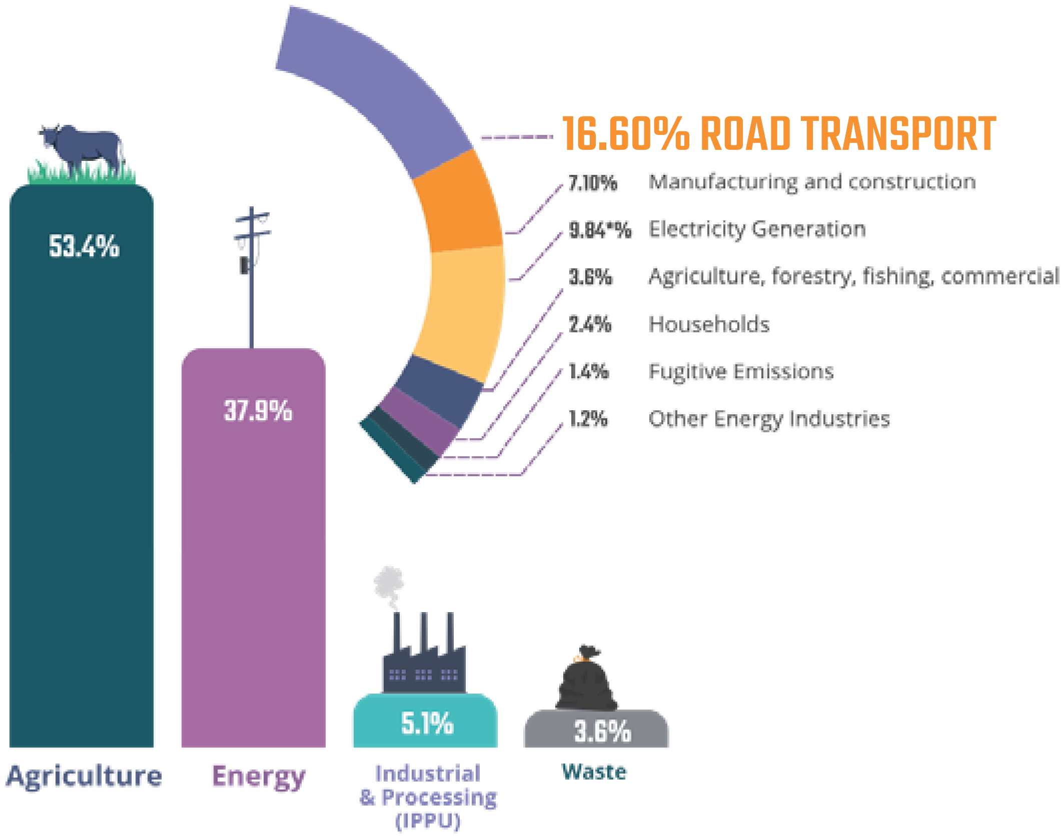
THE E-MOBILITY ECOSYSTEM

Decarbonising New Zealand's transport sector involves more than sourcing lower-emission vehicles. A full ecosystem is required to support successful EV adoption and significantly reduce greenhouse gas (GHG) emissions.

Charging providers, power companies, local and central government, roading and infrastructure providers, public transport operators, freight and heavy transport operators, corporates, small and medium-sized enterprises (SMEs), and individual consumers all have a role to play in creating a cleaner, lower-emissions transport future for New Zealand.

OUR CURRENT EMISSIONS PROFILE

Figure 1 - **New Zealand GHG emission snapshot - 2025**



Sources: Manatū Mō Te Taiao | Ministry for the Environment, Hīkina Whakatutuki | MBIE 2.7, 2.8

Transport is responsible for

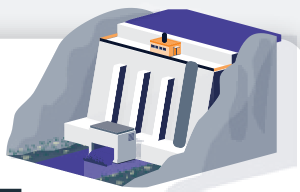
16.6%

of our CO^2 emissions [2.7]

We are reliant on

99%

fossil fuels for of our transport energy [2.9]



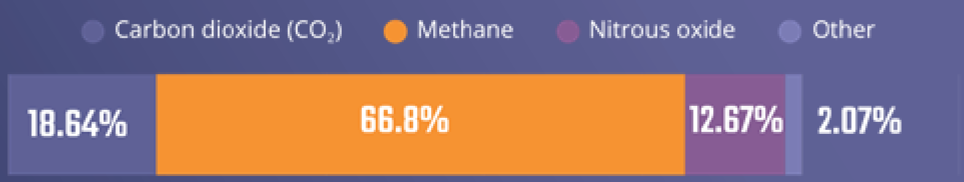
ENERGY INDEPENDENCE

The more we 'fuel up' with renewable electricity produced in New Zealand, the less we rely on imported oil products. We currently import the majority of our fuel, at a cost of $7-9 billion per year[2.10]

Producing more renewable energy for transport, rather than relying on fossil fuels from overseas, will reduce New Zealand's vulnerability to the price and supply fluctuations of the global oil market, while also reducing our emissions.

The Ministry of Transport has estimated that even if every light vehicle in New Zealand were electric, the grid could generate sufficient electricity to charge them provided most charging occurs off-peak.[2.11] This makes EV charging in New Zealand one of the lowest-carbon options globally.

Figure 2 - **New Zealand emissions by gas-type 2024**



Source: Manatū Mō Te Taiao | Ministry for the Environment 2.7

AIR POLLUTION AND HUMAN HEALTH

Transport is responsible for two-thirds of our 'harmful emissions' (air pollution).[2.13]
Each year, air pollution from transport results in:

2,247 premature deaths [2.15]

9,400 hospital admissions for respiratory and cardiac illnesses [2.15]

13,200+ cases of childhood asthma

$10.5 billion+ in social costs*

Research indicates that widespread EV uptake could result in a ~50% reduction in the health impacts of air pollution. Not only do EVs provide less air pollution, they also contribute to quieter cities. [2.14]

** 'Social costs" reflect the cost of all air pollution impacts to New Zealand - not only in terms of direct costs incurred in the health system but also due to loss of life, lost quality of life and lost productivity. 2.13*

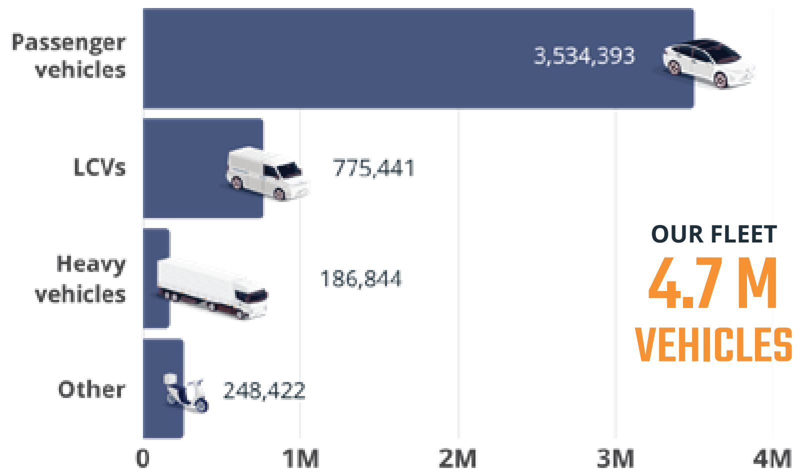
NEW ZEALAND'S FLEET PROFILE

New Zealand has one of the highest rates of car ownership in the OECD.[2.15] Due in part due to the country's geography; outside of urban centres, private vehicles are often the only available practical mode of transport.

Emissions from the light vehicle fleet are the single largest source of transport emissions in New Zealand.

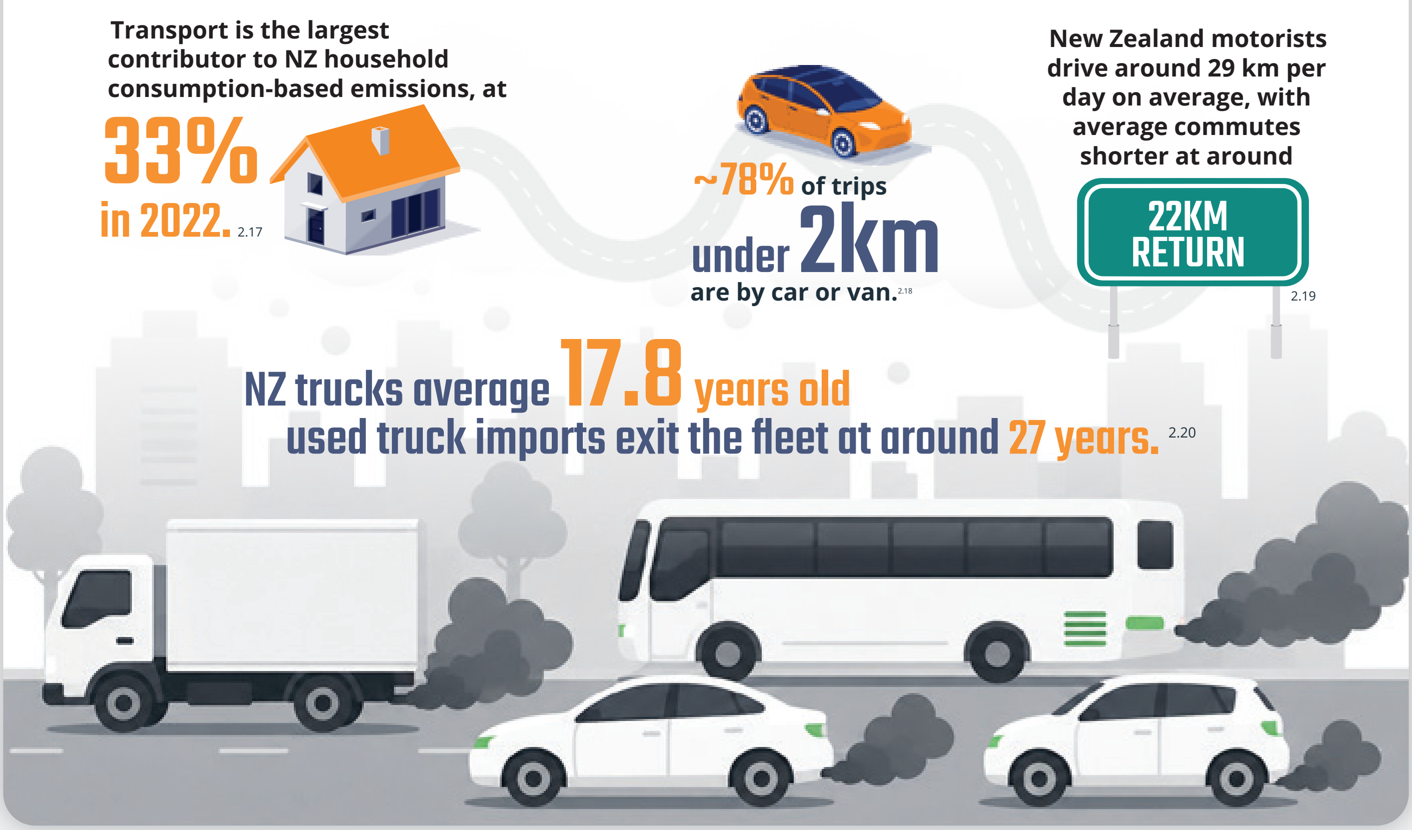
Heavy vehicles are the second-largest source (~25%) of transport emissions, despite accounting for only 4% of our fleet.[2.7, 2.16]

Figure 5 - **New Zealand's fleet composition by vehicle class - 2024**



Source: Te Manatū Waka | Ministry of Transport 2.21

OUR TRANSPORT HABITS



SPONSORED BY

LIGHT ELECTRIC VEHICLES

Figure 6 - **Types of light vehicles**

Light Passenger Vehicles
Cars, SUVs and 4WDs

Light Commercial Vehicles (LCVs)
Utes, vans and light trucks

Maximum weight of less than 3.5 tonnes (For details on EV terminology see Appendix I)

Source: Ministry of Transport

THE GLOBAL MARKET

Globally, EVs are now a mainstream automotive market. Growth has been driven by energy security concerns, industrial strategy, emissions reduction targets and rapid advances in battery technology.

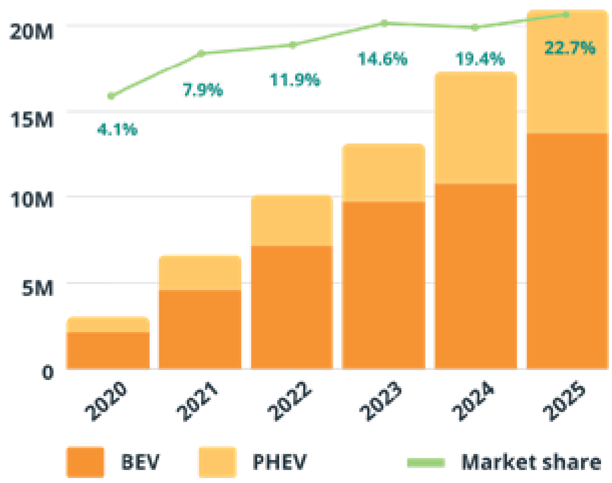
Increasingly, countries are viewing electrification not only as a climate policy, but as an economic and geopolitical strategy to reduce dependence on fossil fuels, strengthen domestic manufacturing and improve energy resilience.

Nearly 21 million Plug-in Vehicles sold in 2025 [3.2]

20.9M

1 in 4 cars sold globally **were electric** [3.2]

Figure 7 - **Global sales-light electric passenger vehicles 2020-2025**



Source: International Energy Agency (IEA) 3.2

China now dominates global EV manufacturing. Accounting for more than 70% of worldwide production and producing 12.4 million of the 17.3 million EVs manufactured globally in 2024.

The majority of these vehicles stay in China's domestic market where 1 out of 2 cars sold is electric.[3.2]

At the same time, technology has improved rapidly. The median range of new EVs has more than tripled over the past decade — increasing from 135km in 2014 to a record ~455km in 2024.[3.4] Prices are also falling as battery costs reduce and manufacturing scales increase. Global EV prices peaked at ~$67,000 in 2022 before beginning to decline across markets to ~$55,000 by late 2024.[3.5]

Europe and China have been leading EV adoption globally with the top five countries being:[3.3]

Norway ~98%
Iceland ~60%
Sweden ~60%
China ~50%
Denmark ~40%

However, a number of other markets have identified the economic opportunity to reduce petrochemical dependence and grow their domestic manufacturing capacity.[3.3]

Ethiopia 60% - ICE import ban, 95% renewable energy [1.9, 1.10]

Vietnam 40% - Domestic manufacturer VinFast [1.11, 1.12]

Thailand 28% - Regional manufacturing hub [1.13, 1.14]

Turkey 22% - 4th largest BEV market in Europe by volume [1.15, 1.16]

Costa Rica 15% - Highest in Americas (BEV-only) [1.17, 1.18]

Indonesia 14% - Tripling year on year despite ICE market contraction [1.19, 1.2]

LIGHT EV MODELS AVAILABLE GLOBALLY [3.2]

2020	2022	2024
370 models total	**533** models total	**785** models total

2020-2024
112% INCREASE over 4 years

2024-2026
27% PROJECTED INCREASE

For New Zealand, developments in right hand drive markets Japan, India, South Korea, and the United Kingdom strongly influence future EV availability, pricing and supply.[3.8, 310, 3.11]

GLOBAL MARKET OUTLOOK: 2030

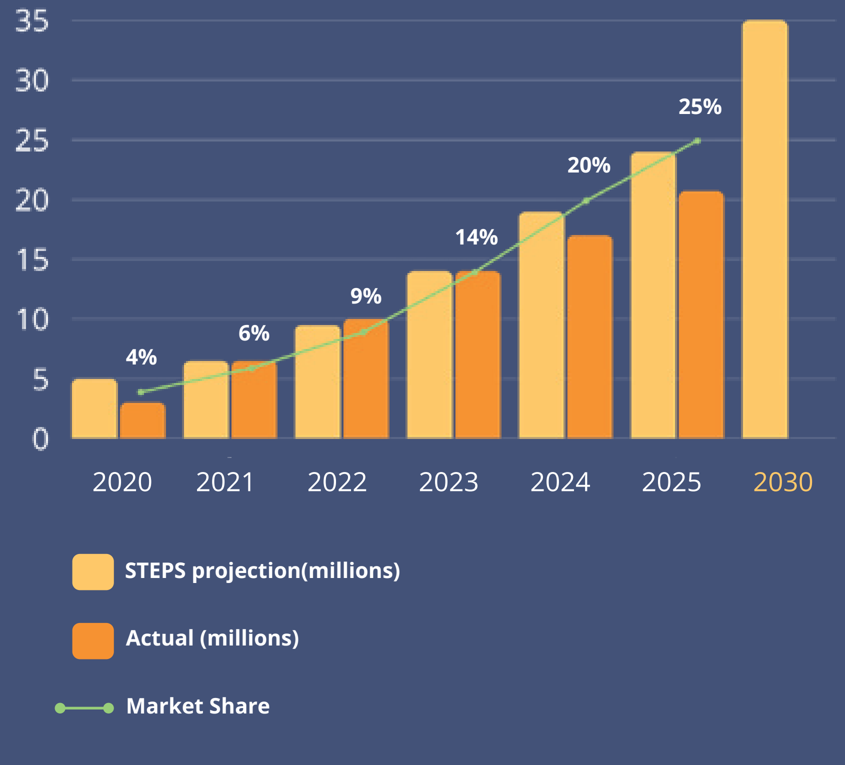
Despite some governments softening transition timelines, the long-term global direction remains clear.

The International Energy Agency (IEA) projects EVs will exceed 40% of global new passenger car sales by 2030 under current policy settings — rising to 80% in China and 60% in Europe. From fewer than 1 million EVs on global roads in 2015, the fleet hit 58 million in 2024 and is projected to reach 260 million by 2030. [3.9]

The IEA has also identified the global shift towards BEVs over PHEVs.[3.4]

Figure 8 - **Annual sales projections for plug-in cars under the Stated Policies Scenario (STEPS) 2020-2025**

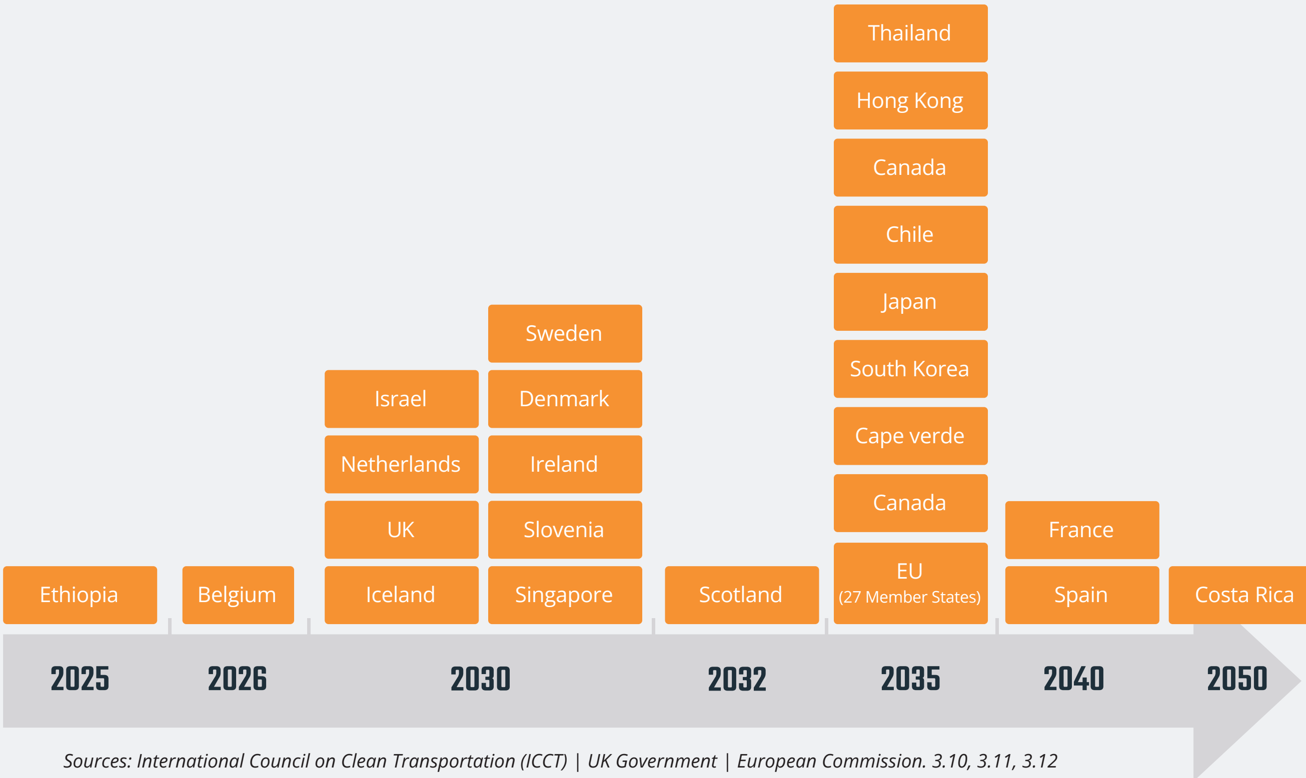
The STEPS scenario predicts EV market growth based on current policy settings, and policies confirmed to be in development, around the world as of September 2022.



Source: International Energy Agency (IEA)3.1

STEPS is a relatively conservative scenario that doesn't take governmental 'ambitions' or 'targets' into account unless formalised implementation is underway. Ideally, market share will exceed these projections, if more governments implement measures to accelerate EV adoption in the coming years.3.1

Figure 9 - **Light ICE vehicle phase-out dates in selected markets**



Sources: International Council on Clean Transportation (ICCT) | UK Government | European Commission. 3.10, 3.11, 3.12

2025: Ethiopia - ICE ban on new car sales

2030: UK (ICE only) - UK bans new pure petrol/diesel cars; hybrids permitted until 2035

2035: Canada, Chile, Hong Kong, Thailand Full ZEV only, no ICE or hybrid new sales.

European Union (27 member states) - Full ICE ban scrapped; carmakers must meet 90% CO_2 emissions reduction target, PHEVs, mild hybrids and ICE vehicles permitted beyond 2035.

Japan, South Korea - Pure ICE banned; non-plug-in hybrids (HEVs) remain permitted, significant for RHD model availability

THE NEW ZEALAND MARKET

New Zealand's EV market has undergone a significant reset since the release of the 2023 State of the Nation report.

The Clean Car Discount (CCD) was removed, the Clean Car Standard (CCS) weakened, and road user charges (RUC) were introduced for EVs. At the same time, Australia introduced its New Vehicle Efficiency Standard (NVES), overtaking New Zealand's EV market share for the first time.[3.13, 3.14, 3.15]

These policy changes had an immediate impact on vehicle sales.

In 2023, EVs accounted for 20% of new car sales. By 2024, EV sales share had fallen to 10.6%. The decline strongly highlights how purchasing behaviour responds to policy settings.[3.16]

The market has since begun stabilising, yet the structure of the market has shifted rapidly. EV-first manufacturers such as BYD and Tesla disrupted the traditional automotive sector, while established brands continue accelerating their transition toward electrification. These manufacturers now account for 46% of New Zealand's EV market.[3.16.]

In February 2026 EV registrations increased from 642 to 2,370 in March — an increase of ~265% in a single month. Year-on-year, new EV sales are up 278%.[3.16]

The increase coincided with rising global oil price volatility following conflict in the Middle East, which renewed public attention on fuel affordability and New Zealand's dependence on imported fossil fuels. BEV market share more than doubled to 10.7%, while PHEVs reached 9.1% of new vehicle sales.[3.16]

The ute market has also changed rapidly. In 2023, the LDV T60 was the only electric ute available in New Zealand. Now multiple electric ute models have entered the market, marking the beginning of electrification in one of New Zealand's most emissions-intensive vehicle categories.

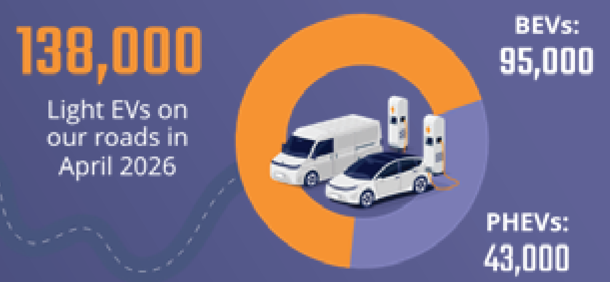
Our total light fleet:

4,309,833

vehicles

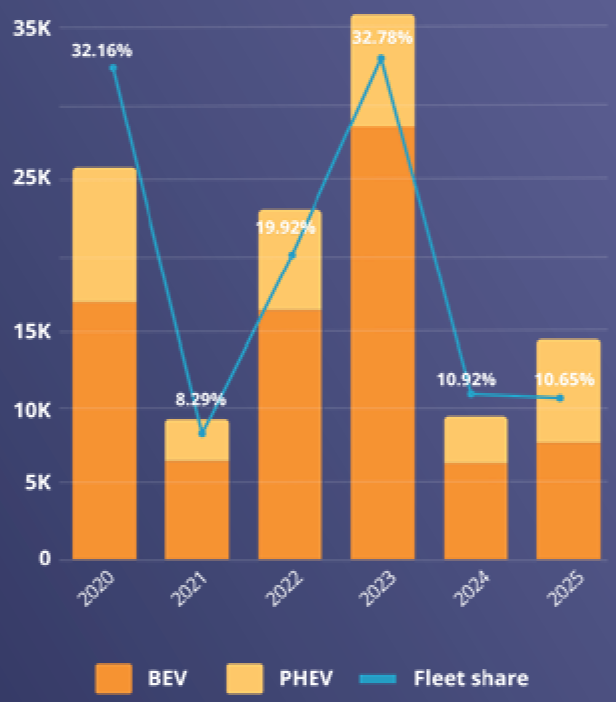
Source: Ministry of Transport 3.0

Figure 10 - **Light EVs in the New Zealand Fleet January 2020-April 2026**



Source: Ministry of Transport 3.0

Figure 11 - **Light EVs in the New Zealand Fleet 2020 - 2025**



Source: Te Manatū Waka | Ministry of Transport 3.0

MODEL AVAILABILITY AND AFFORDABILITY

APRIL 2026 AVAILABILTY

260 NEW LIGHT EVs	**188** NEW BEVs	**72** NEW PHEVs

JUNE 2023 AVAILABILTY

152 NEW LIGHT EVs	**84** NEW BEVs	**68** NEW PHEVs

Sources: Jato | EVDB 3.17, 3.18

Consumer EV choice now spans nearly every major vehicle category and price point.

Competition has intensified. Around 71 EV models now compete in the $50,000–$70,000 range on price, performance and capability. At the same time, the market now spans from sub-$30,000 entry-level vehicles through to premium models above $200,000.[3.17, 3.18]

The BYD Atto 1 and Dongfeng Box were the first new BEVs available below $30,000 in New Zealand, while the sub-$60,000 segment had expanded to 17 models. [3.19, 3.20]

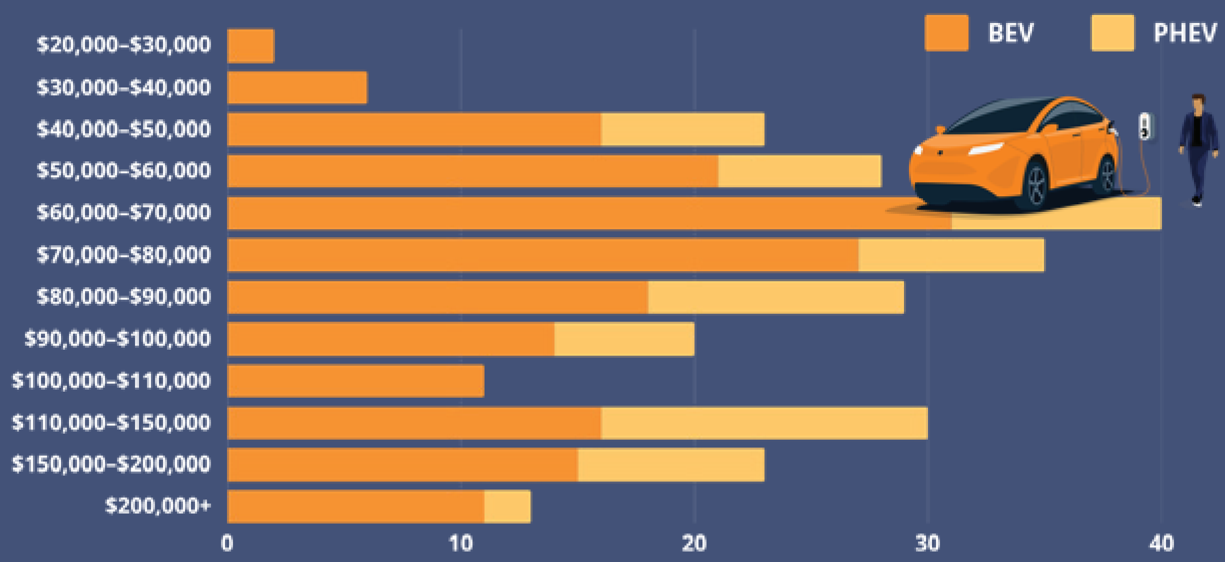
At the same time, the structure of the market has shifted. Manufacturers that prioritised electrification early, continue gaining market share while established automotive brands accelerate their EV programmes.

Tesla Model Y remained New Zealand's highest-selling BEV in 2025, while BYD continued strong growth across both BEV and PHEV segments. [3.22, 3.23]

PHEV registrations nearly doubled during 2025, reaching 6,883 units. Growth was driven largely by the arrival of new SUV and ute models, including the BYD Shark 6 — New Zealand's first widely available plug-in ute — which rapidly became the country's highest-selling PHEV. [3.23]

The market is also expanding into segments that previously had few or no electric options. New plug-in models launched across most vehicle categories during 2025, including larger SUVs, utes and light commercial vehicles.

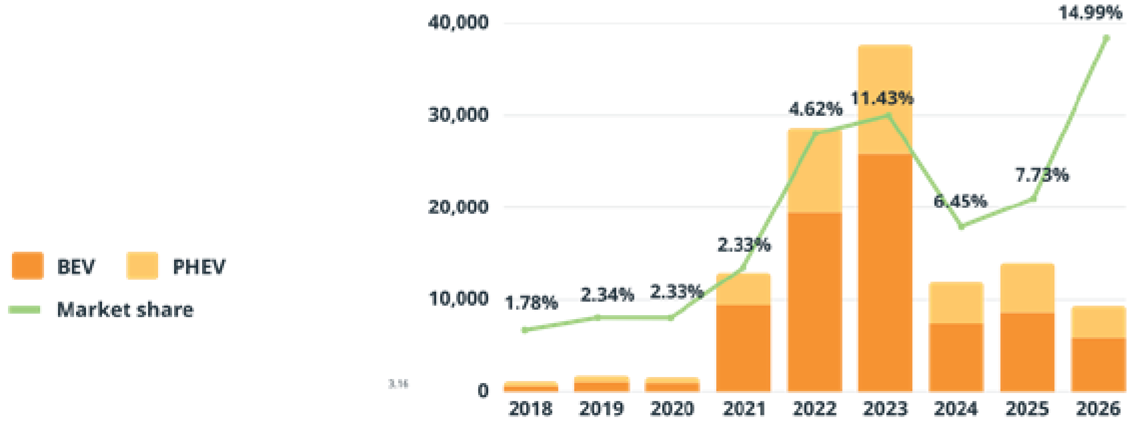
Figure 12 - **Available light EV models by Price in New Zealand - April 2026**



Source: Drive Electric 3.21

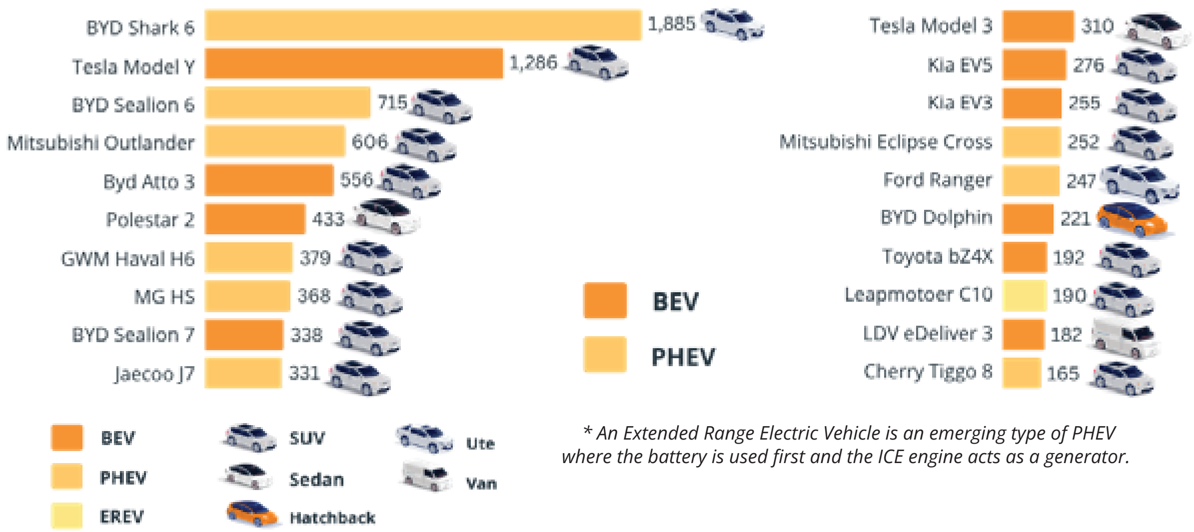
LIGHT VEHICLE SALES TRENDS

Figure 13 - **Annual New Zealand Light EV registration and market New & used registrations June 2018 - June 2026**



Source: Te Manatū Waka | Ministry of Transport 3.0

Figure 14 - **Top 20 Light EV models in New Zealand New import Registrations 2025**



** An Extended Range Electric Vehicle is an emerging type of PHEV where the battery is used first and the ICE engine acts as a generator.*

Source: Te Manatū Waka | Ministry of Transport 3.0

WHEN WILL EVS REACH PRICE PARITY WITH ICE VEHICLES IN NEW ZEALAND?

Bloomberg NEF projects BEVs will reach purchase price parity with equivalent petrol cars globally between 2025 and 2029, driven almost entirely by falling battery costs. [3.24]

EV pricing has become competitive with equivalent petrol vehicles. For many drivers, the upfront cost is increasingly justified by lower fuel costs, reduced maintenance, and the ongoing improvements in range and capability.

Despite the introduction RUCs, the total cost of ownership (TCO) still favours EVs.[3.25]

The primary barriers to light vehicle electrification are no longer model availability or range. Increasingly, the challenges are affordability, policy certainty, charging infrastructure and the speed of fleet turnover.

SPOTLIGHT:
LIGHT COMMERCIAL VEHICLES

UTES

Utes are consistently New Zealand's top-selling vehicle category.

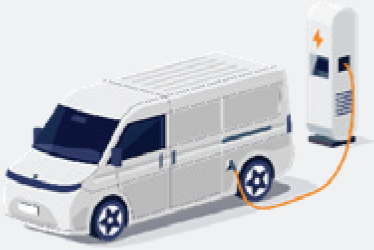
The most popular diesel utes — Toyota Hilux, Ford Ranger, and Nissan Navara — are among the highest-emitting light vehicles available in the country, with CO^2 outputs of 190–220g/km, well above the average for passenger cars.[3.26, 3.27, 3.28, 3.29, 3.30, 3.31]

In 2025, the BYD Shark 6 registered 1,885 units - 6.5% of the total ute market, 85% of all PHEV light commercial registrations and 27% of all PHEV registrations. The Ford Ranger PHEV followed from June (247 units, growing from 23 to 92 monthly units by December).[3.20] The first BEV ute also entered the NZ market in 2025 with Geely's Riddara RD6 Pro ute.[3.26]

While the segment remains 92% ICE, further electric ute models are confirmed to enter New Zealand in 2026.[3.26]

All EV utes in New Zealand have vehicle-to-load (V2L) functionality — household-style sockets located in the vehicle that can power appliances or tools.

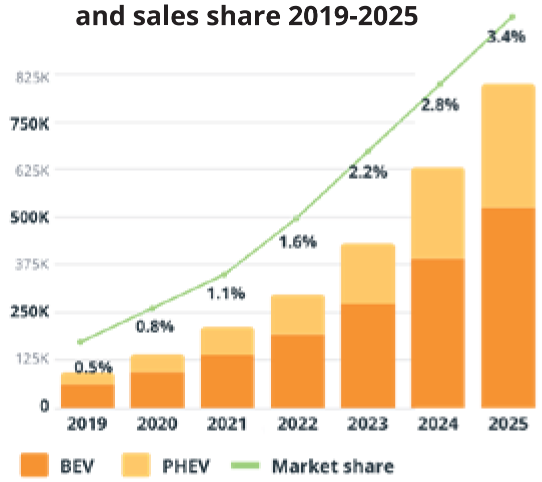
VANS



Vans carry heavy loads, routinely cover 200–400 stops and travel large distances daily in urban environments. Vans make up 4% of New Zealand's total vehicle fleet but generate up to six times more carbon emissions per year than the average car and contribute to poor urban air quality at roughly five times the rate of a passenger vehicle. As a result decarbonising this segment needs increased focus.[3.32, 3.33, 3.34]

In 2023, a lack of incentives and availability was the primary barrier to electric van adoption. The market was emerging, but model options were limited, and those with adequate range and payload sat above the CCD eligibility threshold. That is changing, the electric van market has grown materially and competition is driving prices down.[3.35]

Figure 15 - **Global electric van fleet and sales share 2019-2025**



The annual sales share of electric vans globally is projected to increase to 23% by 2030[3.1] hopefully, New Zealand will follow a similar trend in the coming years.[3.3]

Figure 16 - **Electric vans available or arriving in New Zealand in 2026**

OEM	Model	Notes
LDV	eDeliver 3, eDeliver 9	Multiple sizes; established in market
Mercedes-Benz	eVito	Pioneered NZ fleet transition via NZ Post
Peugeot	e-Partner, e-Expert	e-Expert on runout from $62,990
Volkswagen	ID. Buzz Cargo	Premium segment, from $69,990
Farizon (Geely)	V7E, SuperVan	V7E launched at $55,990 — claims diesel price parity; SuperVan from $79,990
Kia	PV5	Multiple Van of the Year awards; arriving NZ 2026; 416km WLTP range
Ford	E-Transit Custom	In NZ market; Transit City under consideration
Renault	Kangoo E-Tech	Compact segment

Source: EVDB 3.34

BUSINESSES ARE LEADING ELECTRIC VAN ADOPTION

NZ Post's fleet of almost 1,000 vehicles reached 70% electrification in May 2025, with all corporate cars and most vans transitioned, supported by 180 charging points nationwide. The business offered innovative finance partnerships with Carbn Group to their contract driver network. This offered competitive lease rates on electric vans that become progressively more affordable with each re-lease — absorbing early depreciation to create an accessible second-hand EV market for owner-operators.[3.27]

Retail giant IKEA opened its first New Zealand store in late 2025 and mandated all deliveries to be made by electric vans and trucks in Auckland as part of its goal to achieve 100% zero-emission city deliveries. When retailers of IKEA's scale require zero-emission last-mile delivery from partners like NZ Post and Mainfreight, it accelerates investment across entire logistics networks.[3.38]

The light commercial fleet segment is in its early stages of electrification — but expanding model range, falling prices, innovative fleet financing, and large-retailer demand signals are creating the conditions for scale. Policy support including incentives targeting commercial vehicles would also help accelerate the transition at the pace emissions targets require.

SPOTLIGHT: THE USED LIGHT VEHICLE MARKET

For many New Zealand households, the used vehicle market remains the primary pathway into lower-emissions transport.

This creates a structural challenge for New Zealand's EV transition.

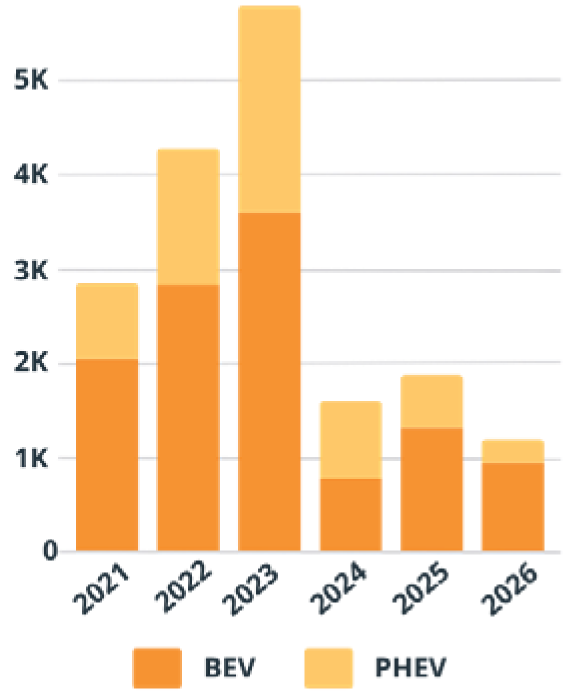
Approximately half of all monthly vehicle imports are used vehicles. The vehicles are predominantly sourced from Japan, where EV adoption is modest compared to Europe and China, limiting the availability of affordable second-hand EVs suitable for export.[3.39]

80% of used imports are PHEV and ICE vehicles. The Nissan Leaf, is the main exception and the dominant used-EV model in the New Zealand market.[3.14]

On average, used BEVs are newer than used ICE vehicles and significantly cheaper to run. Expanding access to affordable used EVs will be important for ensuring the benefits of electrification are shared more widely across New Zealand communities. At the same time, the wider used import market is ageing.

New Zealand's used import market contracted during 2025 while the average age of imported vehicles increased. This highlights how policy settings and supply constraints can slow fleet decarbonisation by pushing buyers toward older vehicles.[3.20]

Figure 17 - **Used light EV import registrations in New Zealand January 2021- May 2026**



Source: Te Manatū Waka | Ministry of Transport 3.0

The used import market can only supply vehicles that exist in sufficient volume and at workable prices out of Japan.

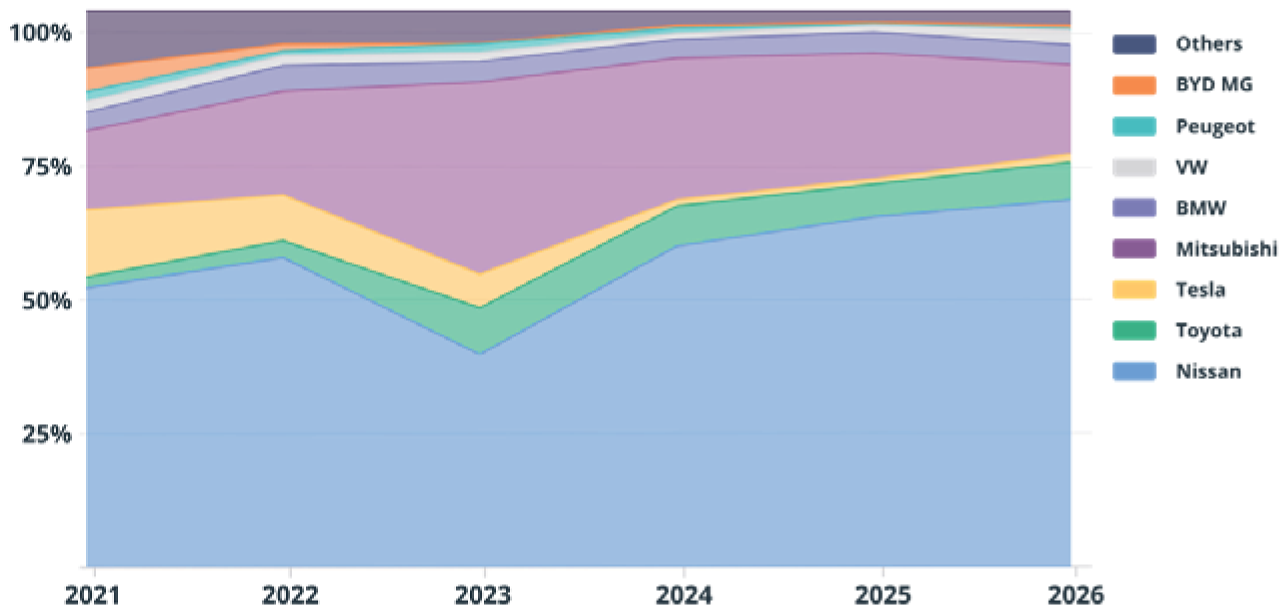
Turners research shows that the majority of New Zealanders can only afford cars $15k and under, which means that even a used import BEV from Japan is not within their reach. Hybrid vehicles that achieve that price point are a good solution. The CCS settings over recent years have penalised most vehicles and consequently importers were forced to import older vehicles.

The rapid fleet ageing in recent years is due to the significant drop in import volume coming into New Zealand. Fewer imports have reduced the overall stock pool of used cars available to kiwi consumers, pushing up prices.

Imports have also traditionally provided a viable used vehicle replacement option for everyday kiwis (ie a consumer buys a 10 year old import to replace his deteriorating 20 year old car) but with less available to choose from and prices up. Older cars are now staying on the road for longer which is reflected in registration data.

The core constraint is not importer unwillingness; it is the combination of Japan's limited used BEV supply, shipping constraints, CCS costs, and New Zealand household affordability.

Figure 18 - **Used EV import market share in New Zealand by OEM January 2021– May 2026**



Source: Te Manatū Waka | Ministry of Transport 3.0

New Zealand's used import market contracted 14% in 2025 - from 103,925 to 89,188 units. Toyota accounts for 37.5% of all used passenger imports (31,851 units). Clean car standard compliance costs and increased low-emissions demand caused price pressures; importers ended up sourcing older stock. The proportion of used Prius aged 10 or more years rose from 41% in December 2023 to 68% in December 2025, and mean import age rose from 9.5 to 10.7 years over the same period. The wrong levers can affect even cheap low emissions vehicles.[3.20]

Used EV Imports

Used EV imports totalled 2,519 units in 2025 (1,763 BEV, 756 PHEV) – just 3% of all used passenger imports. The Nissan Leaf accounts for 78% of used BEV imports. Used BEVs averaged 6.4 years at import - 2.7 years newer than the fleet-wide average of 9.1 years. Japan is not a large BEV market and suitable used supply remains limited; it is unlikely the used BEV channel will diversify much beyond the Leaf in 2026. Battery health assessment is a baseline competency dealers should be delivering now.[3.20]

SPOTLIGHT:

MOBILITY-AS-A-SERVICE AND RIDE SHARING

SPONSORED BY Carbn

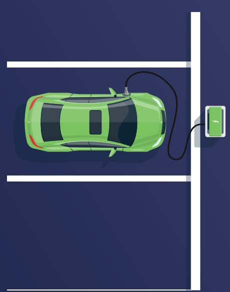
ACCESS OVER OWNERSHIP IN NEW ZEALAND

Private cars are one of the most expensive assets most New Zealand households own and one of the least used.

Mobility as a service (MaaS) offers an alternative: access over ownership. Instead of owning a vehicle, people access transport when they need it through a mix of public transport, shared vehicles and on-demand services.

This model reduces the total number of vehicles needed in the fleet, improves utilisation and enables more efficient use of urban space.

When these services are electric, the benefits extend further — reducing emissions, lowering operating costs, and supporting a more flexible, low-carbon transport system.



The average car is parked **~95%** of the time - and in motion for **less than 90 minutes** a day *3.40*

New Zealand has one of the highest car ownership rates in the OECD with **815** **light vehicles per 1,000 people***.3.41*

4.4M **light vehicles with an average value of ~$14K represent** **~$60 B** **in capital tied up in assets** that spend most of their time parked. *3.41*

THE NEW ZEALAND CONTEXT

MaaS and ride sharing are growing in New Zealand, but remain early-stage compared to more mature markets in Europe, North America and Australia.

Shared micro-mobility — including e-scooters and e-bikes — has expanded rapidly in cities. Providers including Lime, Neuron and Flamingo collectively complete hundreds of thousands of trips each year. Often replacing short car trips. [3.6, 3.43]

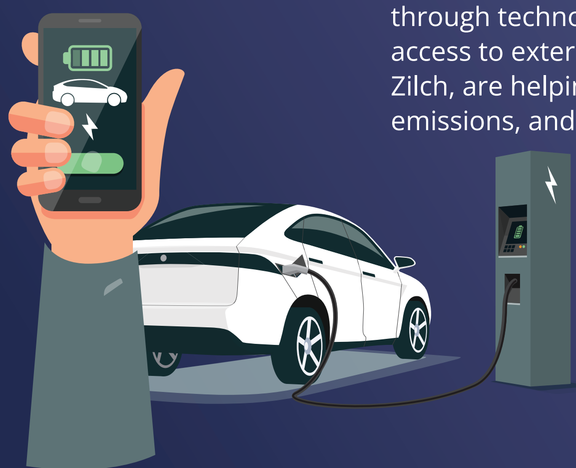
Ride-sharing services are common in large cities. Platforms such as Uber are beginning to shift toward electrification, recognising both the cost and emissions advantages of EVs. In 2024 Uber mandated EVs as part of their Uber Green offering.[3.44]

Electric car-sharing services are emerging. Zilch is New Zealand's only dedicated fully-electric car-sharing service that provides access to EVs without the need for ownership, bundling insurance, maintenance, and charging into a single service. This model lowers one of the key barriers to EV adoption — upfront cost — while enabling access for households without home charging. [3.45]

For organisations, shared EV fleets are replacing underutilised pool vehicles, reducing fleet size, lowering operating costs, and improving asset utilisation.

Every vehicle shifted from imported petrol to New Zealand's 88% renewable grid directly reduces the country's $7-9 billion annual petroleum import bill - making shared electric mobility an energy security proposition as much as an environmental one.

For organisations, shared EV fleets managed through technology platforms like Carbn, or access to external carsharing services such as Zilch, are helping reduce fleet size, lower costs and emissions, and improve vehicle utilisation.



One shared vehicle can replace **5-15** **privately owned cars.** *3.42*

THE GLOBAL OUTLOOK

Internationally, MaaS is scaling rapidly.

The global MaaS market was valued at over US$220 billion in 2024 and is forecast to grow at approximately 18–20% annually, reaching more than US$1 trillion by the early 2030s.[3.46]

Shared EVs in Europe have achieved utilisation rates of 40–60% — far exceeding the 5% of privately owned cars. Shared fleets also address one of the most persistent barriers to EV adoption — access to charging. An estimated 30–40% of urban households lack off-street parking. By concentrating charging infrastructure at shared hubs rather than individual homes, MaaS enables EV access for households that would otherwise be excluded. [3.47]

In Helsinki, the Whim platform integrates public transport, taxis, bikes, and car hire into a single monthly subscription. It has reduced private car use among subscribers by up to 30%. [3.48]

New technology is advancing

Autonomous vehicles already operate rideshare services in parts of the United States, while China is advancing driverless public transport.
In New Zealand, Ohmio has trialled autonomous shuttles at Christchurch Airport, with regulation supporting further testing and deployment. Early use cases are likely to include transport shuttles, campuses, freight and logistics, and flexible public transport in lower-density communities — applications well suited to New Zealand's geography and renewable electricity system.[3.49, 3.50, 3.51, 3.52, 3.53]

ACCELERATING THE SHIFT TO MAAS

Unlocking the benefits of MaaS requires coordinated action across government, local councils, and the private sector.

Key priorities include:

- Treating shared and active mobility as core transport infrastructure, rather than commercial novelties
- Investing in shared and public transport networks
- Expanding charging infrastructure to support shared fleets as well as private vehicles
- Enabling simple, user-friendly digital platforms that integrate transport options
- Aligning procurement policies to support shared mobility in government and corporate fleets

These actions will support a shift from fragmented services to a connected, efficient transport system.

As electrification and digital platforms converge, shared mobility has the potential to reduce vehicle numbers, lower emissions, and improve access to transport.

MICRO-MOBILITY

Electric two and three-wheelers are now the world's most electrified transport segment, ahead of passenger cars. The IEA projects global numbers will reach 170 million by 2030. [4.0]

New Zealand's travel patterns make micro-mobility a strong fit for many everyday journeys:

NEARLY A THIRD
OF ALL VEHICLE TRIPS
ARE UNDER [4.1]

NEARLY 2/3
OF ALL VEHICLE TRIPS
ARE UNDER [4.1]

THE DRIVER IS THE SOLE VEHICLE OCCUPANT IN ~70% OF OUR TRIPS [4.2]

Urban e-bikes account for **77%** of the market, driven largely by commuters in **Auckland, Christchurch and Wellington.** [4.4]

E-bikes, e-scooters, e-mopeds, e-cargo bikes offer a lower-cost, lower-emissions alternative to commuting, local deliveries and short urban trips — while reducing congestion and parking pressure in cities.

The New Zealand e-bike market was valued at approximately $100 million in 2024, with consistent year-on-year growth driven by urban commuter demand.[4.3]

Subscription models, employer-supported schemes and shared mobility services are also expanding.

Salary sacrifice schemes such as Workride[4.7] and Northride[4.8] help businesses to support micro-mobility uptake through existing Fringe Benefit Tax (FBT) exemptions.[4.9]

E-mopeds

In 2025, e-mopeds accounted for 21.1% of new registrations. The motorcycle segment, however, remained almost entirely petrol-powered.[4.10]

New Zealand companies are beginning to develop electric vehicles suited to both urban and off-road use, but uptake remains constrained by cost, regulation and limited policy support.

Figure 19 - **Number of e-mopeds registered in New Zealand - 2025**

Brand	Model	2025 Units
FTN Motion	Streetdog Electric	47
Lima	HK / M9	31
UBCO	2X2ADV & variants*	~38
Surron	All variants	24
Horwin	EK1 / EK3	15
Yadea	All variants	14
NIU	All variants	11

** UBCO road-registered bikes only. Farm and off-road models are unregistered and not included.*

Source: Motor Industry Association 4.10

E-quadricycles

NZ Post operates around 400 Paxster e-quadricycles under a commercial exemption that is not available to the wider public.[4.11]

The vehicles already operate successfully on New Zealand streets, yet the regulatory pathway for broader adoption remains unclear.

International experience shows that modest incentives and supportive regulation can rapidly increase uptake of e-bikes and e-mopeds, helping reduce both congestion and transport emissions.[4.12]

WHAT COULD INCREASE UPTAKE IN NEW ZEALAND?

- Open the quadricycle category through a simple regulatory amendment aligned with international standards.
- Continue investing in protected cycling and locking infrastructure.
- Extend FBT exemptions to e-mopeds, not just e-bikes and e-scooters.
- Introduce minimum safety and certification standards for imported batteries and chargers.

Micro-mobility gives New Zealand an opportunity to better match the right vehicle to the right trip.

For millions of short urban journeys each year, electric micro-mobility may offer the cheapest, simplest and most practical transport option available.

As uptake grows, regulation will need to evolve alongside it. Clearer national standards around footpath access, speed limits and helmet requirements would provide greater certainty for users, councils and industry, while supporting safer and more consistent growth across New Zealand.

HEAVY ELECTRIC VEHICLES

Heavy vehicles account for ~4% of New Zealand's vehicle fleet, yet they produce ~25% of all our road transport emissions due to high fuel use and constant operation.[5.0, 5.1, 5.2]

There are **~174,700 TRUCKS** and **~12,000 BUSES** on our roads.[5.0]

98%+ of our heavy fleet runs on diesel.[5.3]

Diesel produces ~15% more CO^2 per litre than petrol, making heavy vehicle decarbonisation essential for meeting national targets.[5.4]

New Zealand's vehicle fleet is one of the oldest in the OECD, with an average age of 15.8 years[5.3]

Diesel trucks entering the fleet today may still be operating into the 2040s.

Freight demand is projected to increase by 46% over the next 20 years, increasing pressure to transition the sector away from fossil fuels while maintaining fleet capacity.[5.7]

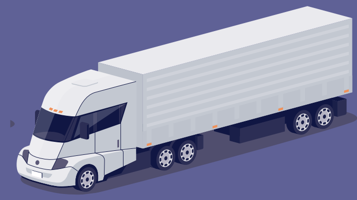
While passenger vehicle emissions are beginning to fall through EV uptake, freight emissions remain a significant challenge.

Figure 20 - **New Zealand Road Transport Emissions (Mt Co^2-E)**

Year	Total Road Transport	Light Vehicles	Heavy Vehicles
2019	14.5	10.1	4.4
2020	13.0	9.1	3.9
2021	13.5	9.4	4.1
2022	13.7	9.5	4.2
2023	14.2	9.7	4.5

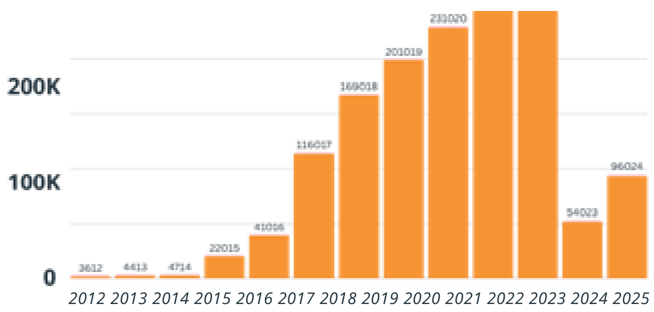
Source: Climate Change Commission (2025). 5.8
Footnote: Mt CO_2-e: Million tonnes of carbon dioxide equivalent

TRUCK MARKET



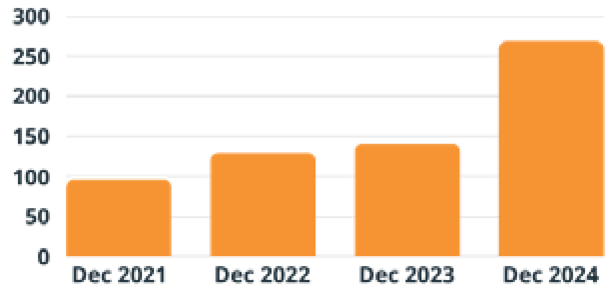
Heavy truck electrification is accelerating globally, but New Zealand remains in the early stages of deployment.

Figure 21 - **Global plug-in truck fleet 2012 - 2025**



Source: International Energy Agency (IEA) 5.10

Figure 22 - **Battery electric truck fleet in New Zealand 2021 - 2024**



Source: Te Manatū Waka | Ministry of Transport 5.11

THE PAYLOAD CHALLENGE

Battery-electric trucks are inherently heavier than diesel equivalents because of the size and weight of their battery packs.

This creates a commercial challenge under New Zealand's Vehicle Dimensions and Mass 2016 Rule (VDAM), which sets maximum gross mass and axle load limits for heavy vehicles, and does not make allowance for the additional weight of zero-emission drivetrains.[5.20]

Long-haul electric trucks require large battery packs weighing around 2.8 tonnes to achieve a commercially viable mid-range, and greater for longhaul. Under existing rules, the battery weight reduces the amount of freight the truck can legally carry, directly affecting operator revenue.[5.21]

Every lost tonne of payload capacity reduces freight revenue and affects commercial viability for operators.[5.22]

Overseas markets are beginning to address this issue. The European Commission has proposed increasing the permissible weight limits for zero-emission vehicles (ZEVs) by up to 4 tonnes above the equivalent diesel limit — sufficient to ensure payload parity.[5.23, 5.24] New Zealand has not yet introduced equivalent allowances, creating an additional barrier to heavy EV uptake.

A significant amount of research and development by manufacturers is taking place to solve this challenge. Vehicles are becoming increasingly lighter by the year. [5.27]

ALTERNATIVE FUELS

Electrification remains the most efficient, cost-effective and scalable pathway for decarbonising transport.[5.25]

Heavy transport presents a more complex challenge. Some use cases — including long-haul, high-payload and remote operations — are not yet easily electrified. Alternative fuels, including hydrogen and biofuels, may help address these gaps, but each comes with trade-offs in cost, efficiency and practicality.[5.25]

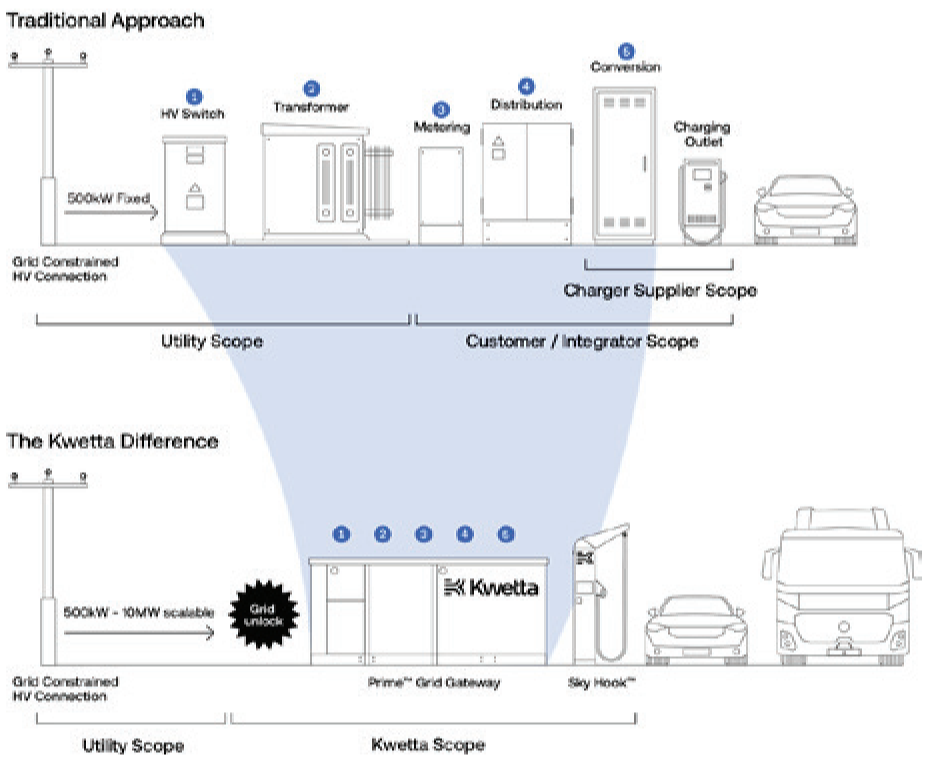
In New Zealand, these challenges are amplified by limited infrastructure and fuel supply. Hydrogen requires entirely new production and refuelling networks. Biofuels are constrained by cost, availability and reliance on imported supply.[5.26]

The emerging direction is to electrify wherever practical, while using alternative fuels selectively for long-distance and high-payload transport where batteries remain challenging.

DEPOT CHARGING: THE NEW FUEL INFRASTRUCTURE

For heavy fleet operators, the depot is becoming the new fuel station. Internationally, around 70–80% of heavy vehicle charging occurs at depots, where trucks are parked, loaded and unloaded between shifts.[5.15] Electrifying a depot requires far more than installing chargers. Many transport operators are now managing large-scale energy infrastructure or electricity demand for the first time.

Figure 23 - **Electrifying a depot requires more than installing chargers.**



SOURCE: 5.15

In many cases, the first operator to electrify a depot bears the full cost of local grid upgrades, while later users benefit from the increased network capacity. Long connection wait times, constrained electricity networks and high upfront capital costs remain barriers to heavy fleet electrification globally.

Internationally, operators are adapting to these challenges in different ways. In Europe, transport operators use heavy public charging networks and, in some cases, sharing private charging equipment.[5.17, 5.18] While China has deployed high-powered DC charging and is exploring battery-swapping systems for heavy vehicles. Battery swapping allows depleted batteries to be exchanged for fully charged units in minutes, reducing downtime and helping manage electricity demand.[5.19]

For New Zealand, heavy transport electrification is more than a vehicle transition — it is an energy transition. Freight operators are moving beyond fuel logistics into electricity procurement, charging strategy and energy management. Over time, access to scalable charging infrastructure, smart energy systems and coordinated depot design with integrated grid intelligence will be a real competitive advantage.

ELECTRIC BUS ADOPTION IN NEW ZEALAND

515+ ELECTRIC BUSES in the national fleet.

That's **4.3%** of New Zealand's CURRENT BUS FLEET 5.28

In three years, our national bus fleet has grown **~12x** 5.28

New Zealand's public transport sector is making substantial progress in transitioning urban bus fleets to zero-emission vehicles.

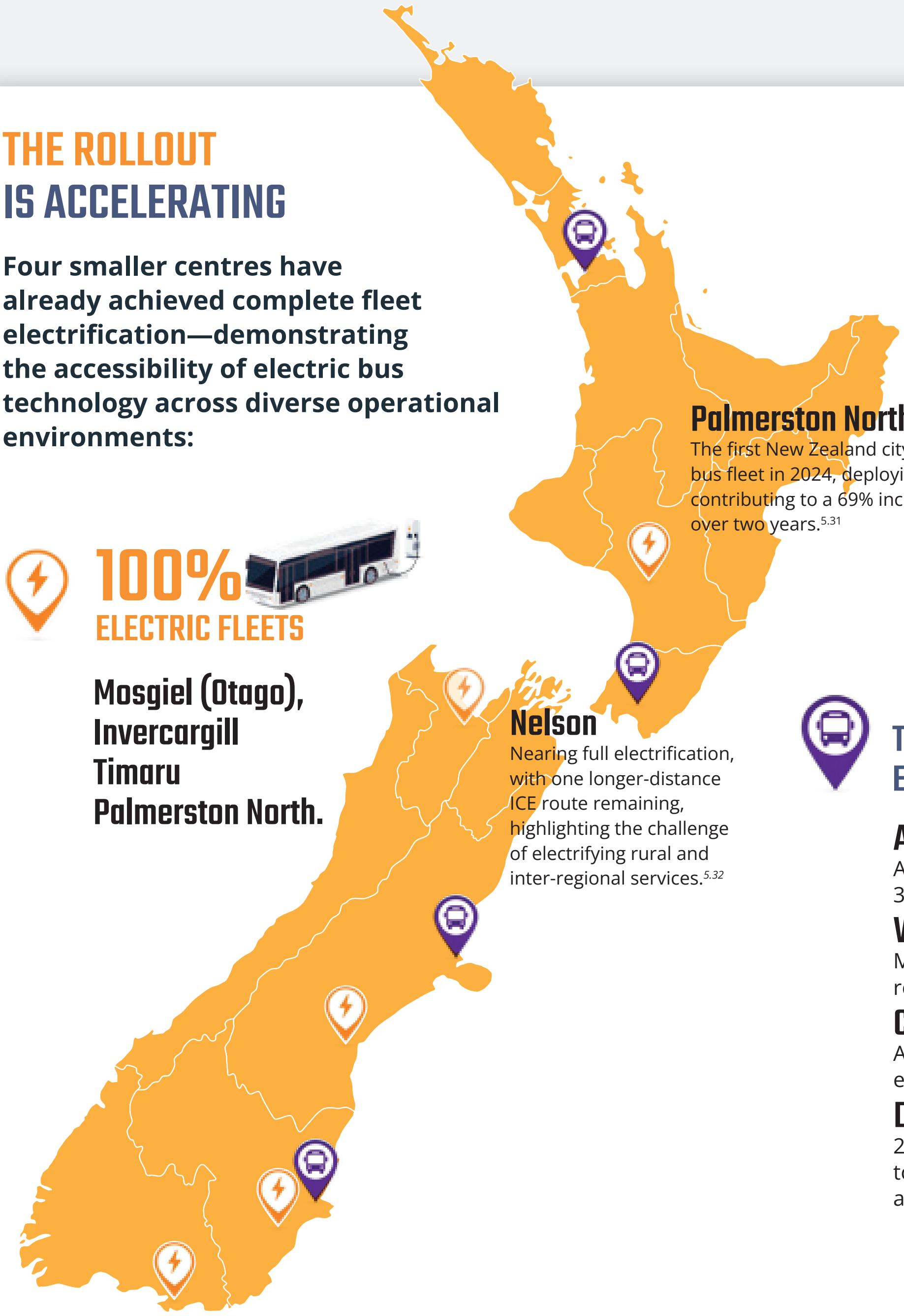
In 2021, the Government committed to requiring only zero-emission buses be purchased from 2025, alongside a target to fully decarbonise the fleet by 2035. 5.30

THE ROLLOUT IS ACCELERATING

Four smaller centres have already achieved complete fleet electrification—demonstrating the accessibility of electric bus technology across diverse operational environments:

100% ELECTRIC FLEETS

Mosgiel (Otago), Invercargill Timaru Palmerston North.



Palmerston North

The first New Zealand city to operate a fully electric bus fleet in 2024, deploying 43 electric buses and contributing to a 69% increase in bus patronage over two years.[5.31]

Nelson

Nearing full electrification, with one longer-distance ICE route remaining, highlighting the challenge of electrifying rural and inter-regional services.[5.32]

TRANSITIONING TO ELECTRIC FLEETS

Auckland

Auckland Transport operates 314 electric buses. [5.33]

Wellington

Metlink operates 119 electric buses, representing ~25% of the fleet.[5.34]

Christchurch

Around 26% of the Metro fleet is now electric.[5.35]

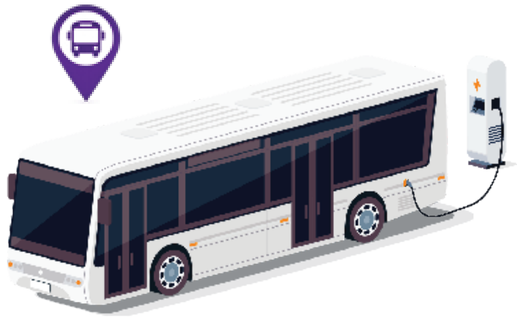
Dunedin

24 buses in the Orbus fleet are expected to reduce annual diesel consumption by approximately 571,000 litres. [5.36]

GLOBAL CONTEXT

Electric bus adoption is accelerating globally.

~70,000 ELECTRIC BUSES WORLDWIDE IN 2024



CHINA ~70%
remains the dominant market (~ 680K buses, or ~70% of global sales)

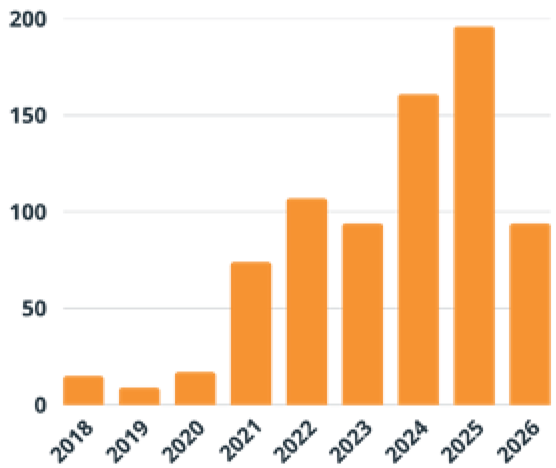
INDIA 11,500
has deployed approximately 11,500 electric buses and has set a national target of 40,000 by 2027

NORWAY
DENMARK
FINLAND
THE NETHERLANDS
~40%
already converting 40% or more of new bus sales to electric.)

Source: International Energy Agency (IEA) 5.37

Comparatively, New Zealand is well positioned. Our major cities are deploying electric buses at scale, while regional centres are demonstrating that full fleet conversion is already achievable.

Figure 24 - **Electric bus fleet in New Zealand June 2019 - April 2026**



Source: Te Manatū Waka | Ministry of Transport 5.38

MARITIME TRANSPORT

New Zealand's maritime sector is a significant part of our economy and an emerging area of electrification innovation.

Annually, the maritime sector

Contributes
$7.7 billion
to the economy.[6.0]

supports around
406.0
jobs.[6.0]

sees
~2 million
people participate.[6.1]

New Zealand is also home to two globally significant electric maritime milestones — positioning the country as an early leader in electric ferry systems, charging infrastructure and hydrofoiling technology.

The broader marine economy reinforces this scale, but progress is uneven and policy signals to industry are still mixed.

BENEFITS OF ELECTRIC MARITIME TRANSPORT

No noise pollution

Reduced emissions

No oil spills
No fumes

Longer lifespan

Better passenger experience (quiet, no vibrations)

Higher residual value

Major operational savings

Less maintenance

Source: WEBBCo [6.5]

A POSITION OF LEADERSHIP

New Zealand is already leading in electric maritime innovation.

Technologies developed here are moving quickly from prototype to commercial deployment and export.

Recent milestones include:

- The world's first commercially operated electric hydrofoiling vessel, the Vessev Kermadec, launched in the Hauraki Gulf.[6.6]
- One of the world's first maritime Megawatt Charging Systems is being deployed by ABB in Auckland. The 3.3 MW-per-berth system is projected to save 1.5 million litres of diesel annually.[6.7]
- Auckland has launched two 200-passenger electric fast ferries, developed by EV Maritime and built by McMullen & Wing, among the fastest electric ferries in the world.[6.8]

Building on domestic success, EV Maritime is exporting New Zealand design and engineering of electric and hybrid-electric ferry vessels into international markets.[6.8] Meanwhile, Vessev has announced export projects to several international destinations.

This is not early-stage experimentation. It is a growing export sector.

$3 billion
value of marine manufacturing & services [6.2]

5,500+
vessels produced. [6.3]

$212 million
spent by superyacht visitors during 2023/24 season. [6.4]

WHERE ELECTRIFICATION IS HAPPENING NOW

Electrification is underway across the maritime sector.

FERRIES

Ferries play an important role in New Zealand's transport system. They reduce pressure on our roads, connect island communities, and provide faster alternatives to longer road journeys. [6.10]

Ferry transport is energy-intensive.

Auckland's ferries deliver **6%** of all public transport journeys...

...but are currently ferries deliver **20%** of public transport emissions.[6.11]

Replacing one of Auckland's 30 diesel ferries with a BEV is equivalent to replacing 25 buses.[6.12]

Electric ferries are entering service on key commuter routes. Wellington's Ika Rere, New Zealand's first fully electric passenger ferry, demonstrated what is possible. In one year of operation, it saved more than 220,000 kg in carbon emissions and cost 82% less to run than its ICE counterparts.[6.13, 6.14]

Early operational challenges – including a mechanical issue unrelated to the electric drivetrain – highlighted the importance of local servicing capability as the sector matures.[6.15, 6.16]

Progress is real, but not yet consistent.

Auckland Transport has committed to decarbonising its ferry fleet by the early 2030s, and is progressing a megawatt-level charging network for its ferries.[6.17, 6.18, 6.19]

Its first two battery electric fast ferries are now operational, each projected to reduce emissions by around 750,000 kg per year on the long-range Half Moon Bay commuter service. Auckland's first plug-in hybrid electric ferry is expected to enter service on the Devonport route in 2026.[6.20, 6.21, 6.22, 6.23]

At the same time, new diesel vessels are still being procured, following withdrawal of central government co-funding.[6.24, 6.25]

This highlights the ongoing challenge of balancing higher upfront capital costs against long-term operational savings.

While electric vessels typically require greater initial investment, substantially lower fuel and maintenance costs can improve whole-of-life economics over time. Existing procurement and funding frameworks do not always enable public agencies to fully account for these long-term operational, environmental and public health benefits when making investment decisions.

BEYOND FERRIES

Beyond ferries, electrification options are expanding across:

- Tourism and charter vessels
- Aquaculture and work boats
- Port and harbour operations ,including the fully electric tugboat operated by Ports of Auckland — the first of its kind globally.[6.26]

Adoption is being driven by lower operating costs, reduced maintenance, quieter operation and improved passenger experience.[6.5]

For private users, a growing range of electric options is now available. Electric outboards and propulsion systems can meet the needs of everyday boating, while new technologies such as electric hydrofoils are beginning to enter the market.

New Zealand companies are also moving quickly from development to export.

Start-up Naut secured early-stage investment in 2023, enabling rapid scaling of its electric propulsion manufacturing operations.[6.27, 6.28] By 2025, the company was reporting offshore sales of its third-generation technology.[6.29]

This signals a shift from early innovation to a growing export-led industry.

GLOBAL CONTEXT

Internationally, maritime electrification is accelerating.

The global market is growing rapidly, with electric and hybrid marine propulsion projected to reach US$8.5B by 2030.[6.30]

Leading examples show what is possible

- Norway operates more than 100 electric ferries.[6.31, 6.32]
- Lisbon has deployed a megawatt-scale charging network and operates 10 electric ferries.[6.33]
- Stockholm's electric hydrofoils demonstrate commercially viable high-speed, low-wake operations.[6.34]

The evidence base is substantial, and directly relevant to New Zealand.

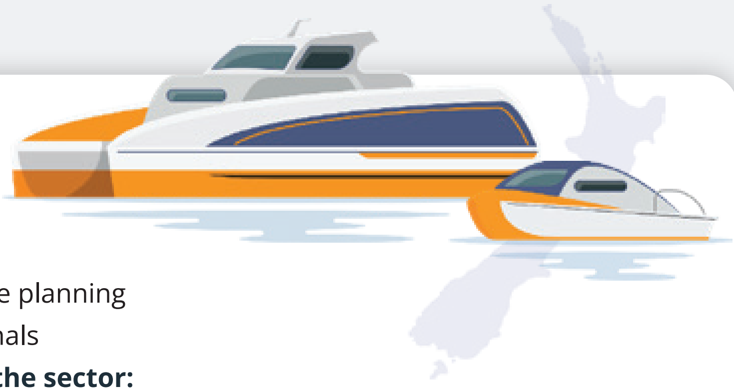
CHARGING INFRASTRUCTURE OUTLOOK

Maritime charging infrastructure is emerging across New Zealand, but deployment remains fragmented. Auckland is progressing megawatt-scale charging infrastructure for ferries, while other regions are developing CCS2 and AC shore-power systems for recreational and light commercial vessels.[6.35, 6.39, 6.40, 6.41]

These technologies serve different operational needs, but New Zealand currently lacks a coordinated national charging framework. Without greater alignment, incompatible infrastructure could increase costs and reduce interoperability between ports.

Internationally, the Megawatt Charging Standard (MCS) is being adopted across heavy transport, aviation and maritime to reduce cost and complexity by creating a unified global interface.[6.36] Aligning larger commercial maritime infrastructure with MCS, while using CCS2 for smaller vessels, could help future-proof investment and simplify long-term infrastructure planning.

Without coordination, New Zealand risks slowing adoption, increasing long-term costs and falling behind this shift.



WHAT NEEDS TO HAPPEN NEXT?

Three barriers are slowing progress:

- High upfront vessel and infrastructure costs
- Fragmented charging standards and infrastructure planning
- Policy inconsistency and uncertain co-funding signals

Targeted action could accelerate progress across the sector:

Close the capital gap: New Zealand could introduce co-investment funding for electric vessel deployment, and accelerate tax depreciation, allowing Year-1 write-offs for electric vessel premiums or conversions to shorten payback periods for small operators.

Build a national charging network: National planning and coordination for charging infrastructure is needed, prioritising Marlborough, Northland, and the Hauraki Gulf [6.37]

Set clear charging standards: Mandate MCS-compatible charging in new publicly-funded ferry terminals and commercial ports, and CCS2-compatible charging for smaller vessels. Aligning future infrastructure would reduce fragmentation and help align New Zealand with emerging international standards.

Lead through electric-first procurement: An electric-first approach to publicly funded vessel procurement would provide stronger market signals and support industry scale-up.

Maritime electrification is underway across ferries, tourism, and export technologies. New Zealand has the opportunity to build a globally competitive export industry while reducing emissions, improving air quality and lowering long-term operating costs. With clearer policy direction, coordinated infrastructure planning and targeted investment, the sector could scale rapidly over the next decade.

AVIATION

Aviation plays a critical role in New Zealand's transport system, shaped by geography, distance, and limited alternatives. The country has one of the highest rates of short-haul flights per capita, with strong reliance on air travel for passenger, business, and freight movement — particularly across the Cook Strait and between regions with limited transport options.[7.0, 7.18]

Domestic aviation accounts for approximately 6% of New Zealand's GHG emissions.[7.1] International aviation adds a significant and growing share, with outbound journeys contributing an estimated 3.5 million tonnes of CO^2 in 2024. [7.2]

The Climate Change Commission notes that, given aviation's importance to New Zealand, emissions reductions will need to come primarily from lower-emission technologies rather than reduced use.[7.3]

NEAR-TERM PROGRESS: ELECTRIC DRONES

The most immediate emissions reductions are likely to come from electrification in smaller aircraft and specialised applications.

Electric agricultural drones are already beginning to replace diesel-powered equipment and manned aircraft in tasks such as spraying and monitoring. These systems reduce fossil fuel use, improve precision, and lower operating costs.[7.4]

Regulatory change is enabling this shift. In 2026, the New Zealand Government launched an accelerated programme to modernise civil aviation rules,[7.5] including reforms to streamline certification for larger drones. This removes a key barrier to adoption while maintaining safety standards.

Current rules require a Part 102 certificate for drones over 25 kg — a process that can take up to 18 months. Reform will remove this bottleneck while maintaining safety.[7.5]

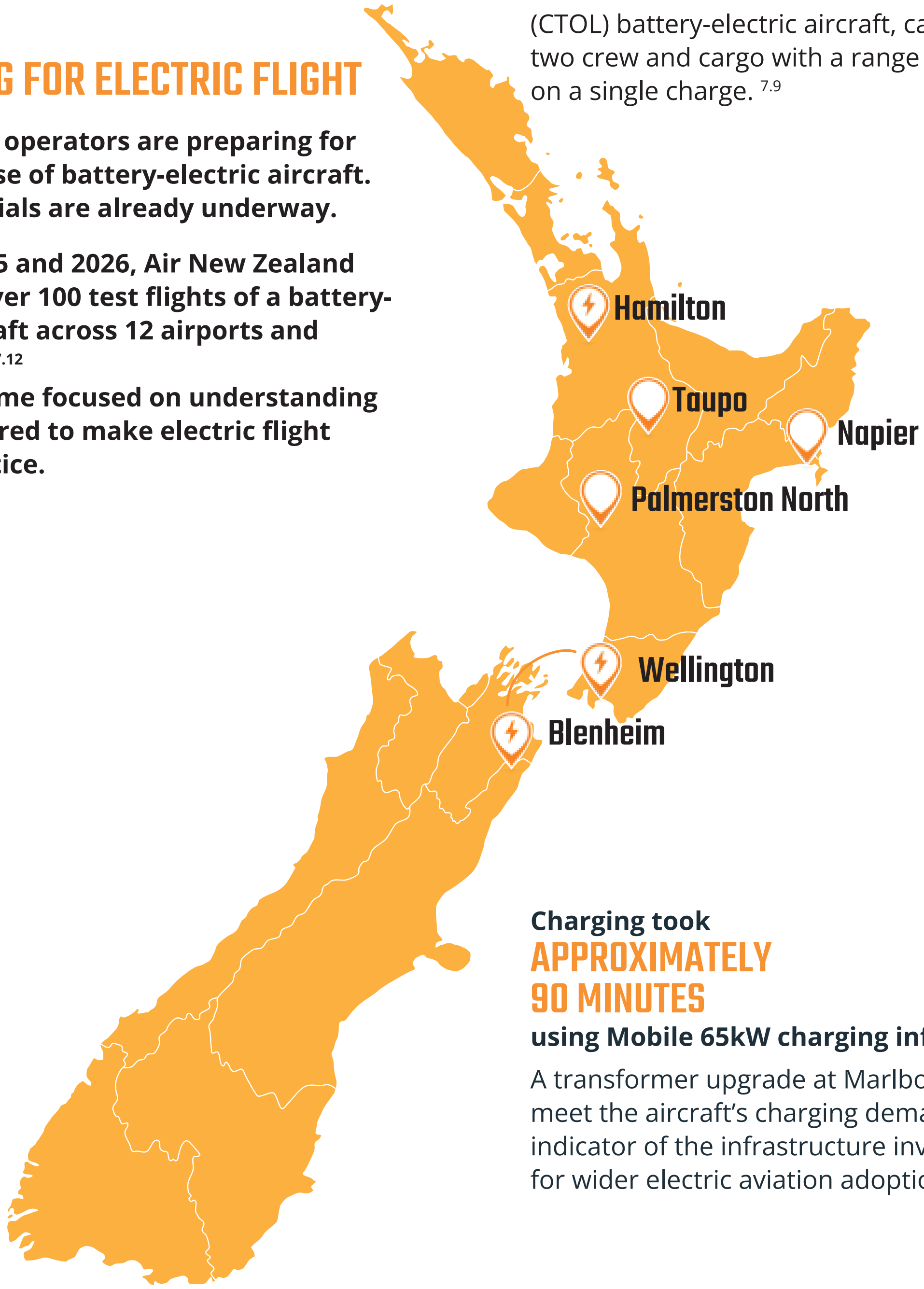
Electric drones can replace diesel-powered equipment and manned aircraft for many tasks, reducing fossil fuel use and improving precision.

PREPARING FOR ELECTRIC FLIGHT

New Zealand operators are preparing for the next phase of battery-electric aircraft. Real-world trials are already underway.

Between 2025 and 2026, Air New Zealand completed over 100 test flights of a battery-electric aircraft across 12 airports and aerodromes.[7.12]
The programme focused on understanding what is required to make electric flight work in practice.

Air New Zealand has flown the BETA Technologies ALIA CX300. Conventional take-off and landing (CTOL) battery-electric aircraft, capable of carrying two crew and cargo with a range of up to 398 Kms on a single charge. [7.9]



Charging took
APPROXIMATELY 90 MINUTES
using Mobile 65kW charging infrastructure.

A transformer upgrade at Marlborough Airport to meet the aircraft's charging demands — an early indicator of the infrastructure investment required for wider electric aviation adoption. [7.7]

The findings align well with New Zealand's network, where around 60% of regional flights are under 350 km. Air New Zealand has signaled a potential cargo route between Wellington and Blenheim from around 2028, in partnership with New Zealand Post. An order for ~23 electric aircrafts indicates intent.[7.13]

One of the clearest lessons is that infrastructure will determine how quickly electric aviation can scale.

Aircraft charging requires high-capacity connections, upgraded transformers, and coordinated planning across airports and electricity networks. These challenges mirror those seen in road transport — but at a different scale.

New Zealand is well positioned for early adoption, with a high share of renewable electricity generation and a route network suited to shorter-range aircraft. However, widespread deployment will require coordinated investment and system planning.

ELECTRIC VEHICLE CHARGING

EV charging has shifted from an early-adopter concern to critical national infrastructure.

New Zealand's public charging network now exceeds 1,800 public charge points [8.0] supported by growing private investment, government co-investment and regulatory reform. However, the rollout is unlikely to meet government targets by 2030 without significantly faster deployment.

Recent reforms are beginning to remove long-standing barriers to charging infrastructure delivery. Changes include new resource management act (RMA) permitted activity standards for EV charging infrastructure, [8.1] streamlined electricity network connection requirements and proposed minimum standards for smart EV chargers to support off-peak charging and reduce grid pressure.

The challenge is no longer proving EV charging works. The challenge is scale.

Infrastructure, regulation and electricity networks must scale fast enough to support mass electrification.

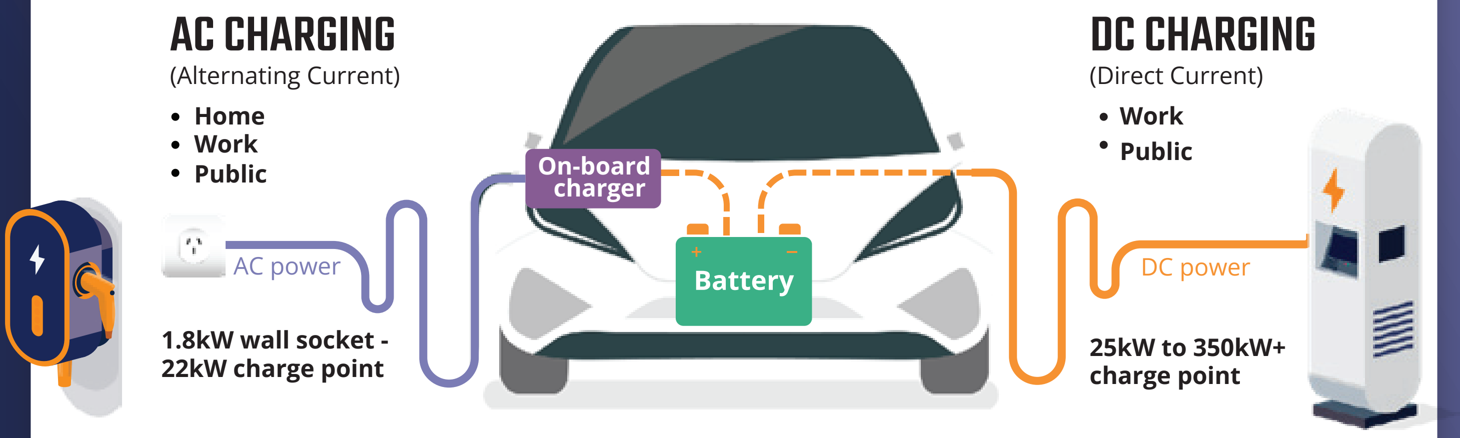
New Zealand has made strong progress in building basic state highway coverage and improving charging access in major centres. But gaps remain in regional towns, tourist routes, apartment buildings, rental homes and heavy vehicle infrastructure. Queueing, reliability and site economics also continue to affect both drivers and operators.

Most EV charging still happens at home, usually overnight. For many drivers, this remains the cheapest and easiest way to charge.

Charger rollout and EV uptake must continue to grow together. Without coordinated investment in homes, workplaces, public charging and electricity networks, infrastructure risks becoming a bottleneck to wider transport electrification.

CHARGING PHASES

A NEW LANGUAGE FOR DRIVERS



The electricity supplied through New Zealand's grid is AC power, but EV batteries store DC energy.[8.3]

When an AC charger or standard 3-pin power socket is used, the car will convert the power to DC.

This is why AC chargers take a little longer than DC chargers. AC charging is ideal for overnight charging at home, for daily top-ups and for fleet locations where vehicles have several hours to charge.

In public or for commercial applications, faster charging becomes more crucial; this is where DC chargers come in, because they feed DC power directly into the car's battery.

They can deliver higher power outputs, but require robust 3-phase power supply to do so.[8.3]

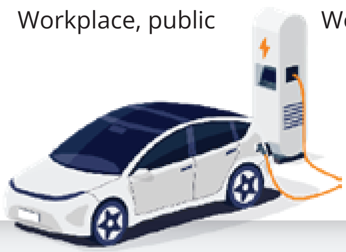
Public DC chargers are deployed with power ranges spanning from 25–300kW.[8.4]

Heavy vehicle charging infrastructure is emerging separately from the light vehicle network, with depot charging and megawatt charging systems discussed further in the Heavy Vehicles chapter.

CHARGING SPEEDS

Charging terminology varies internationally and continues to evolve as charging technology advances. In this report, charging terminology follows guidance used by Waka Kotahi New Zealand Transport Agency. (For more details on charging terminology, see Appendix II.)[8.5]

AC CHARGING			DC CHARGING	
<3kW	3-7kW	7-22kW	22-43kW	>43kW
TRICKLE CHARGE	SLOW	MEDIUM	FAST	RAPID
Domestic wall socket (Commonly known as 3-pin charging)	Home, workplace	Home, workplace, public	Workplace, public	Workplace, public



Source: Waka Kotahi | New Zealand Transport Agency 8.5

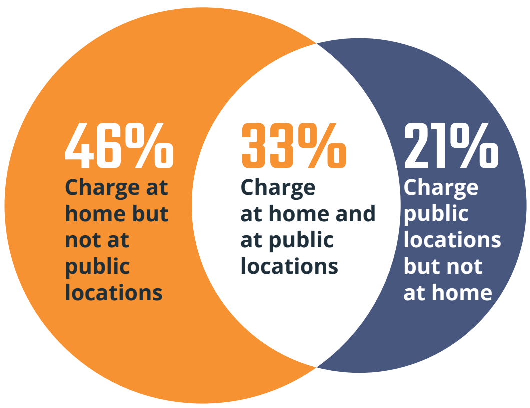
WHERE ARE WE CHARGING?

Most EV charging in New Zealand occurs at home, where it remains the lowest-cost and most convenient option, particularly when paired with off-peak electricity pricing.

Homes and workplaces form the foundation of New Zealand's charging ecosystem. Public charging plays an important supporting role for long-distance travel, apartment residents, commercial fleets and drivers without reliable access to home charging.

Around 60% of home charging still occurs through 3-pin sockets, although dedicated home chargers are becoming more common as EV ownership grows. [8.6]

Figure 25 - **Charging locations used by EV drivers in New Zealand**

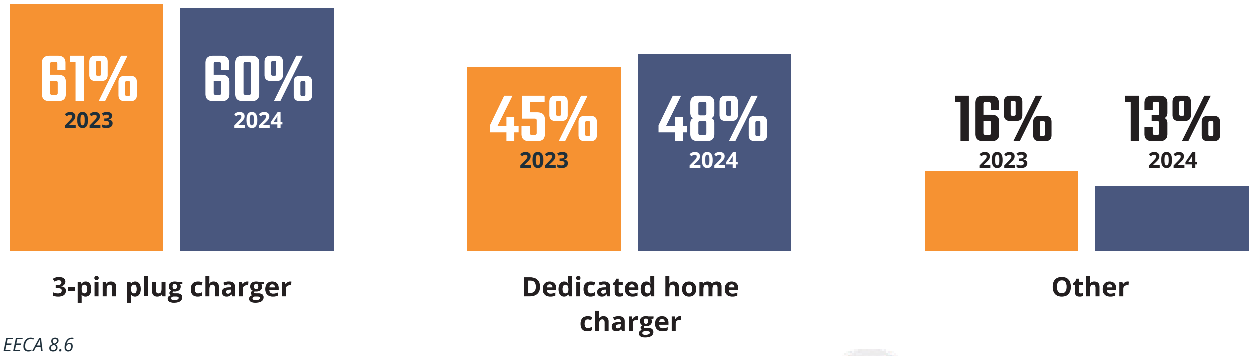


Source: EECA 8.6

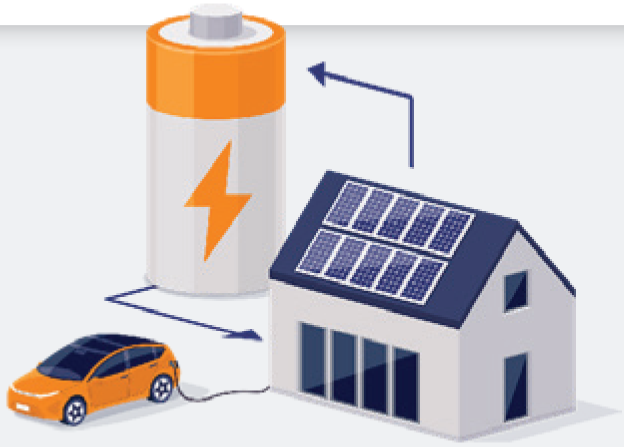
PRIVATE CHARGING

Around 60% of home charging still occurs through 3-pin sockets, although dedicated home chargers are becoming more common as EV ownership grows. [8.6]

Figure 26 - **Home charging methods used by New Zealand EV owners 2023 v 2025**



Source: EECA 8.6



SMART CHARGING

Smart charging will become increasingly important as EVs integrate into the electricity system. (As outlined in the Vehicle-to-Grid (V2G) chapter).

Features such as scheduled charging, solar integration, dynamic load management and bi-directional charging allow chargers to respond to electricity demand in real time, helping reduce pressure on networks and lower charging costs for households and businesses.[8.9, 8.10, 8.11]

As EV uptake accelerates, measures must be taken by policy makers to support the widespread adoption of smart chargers and move away from 3-pin charging.

Figure 27: **Smart EV charging hardware and installation costs**

Item	Typical cost	What's included
Smart AC charger (7kW)	$1,000 to $1,500	Typically include app control, scheduling and demand response
EV-ready	~$500–$1,000 per charge point	Conduit and cabling only (no charger installed)
Simple installation	Residential ~$900 - $2,500 Commercial ~$6,000	Short cable run, no switchboard upgrade, straightforward wall mount
Complex installation	Residential $3,000 – $5,500 Commercial ~$15-$60k	Switchboard upgrade, longer cable run, potential capacity increase, compliance work load management systems, transformer upgrades or civil works.

Sources: 8.2, 8.12, 8.13, 8.14, 8.15, 8.16

** Note: Cost of installation varies widely based on site conditions and electrical set up and capacity. NZ-specific construction-phase provisioning costs (the "act now" figure) aren't well documented in published NZ sources — the $500–$1,000 per space figure is an industry-accepted benchmark drawn from developer practice and international research rather than a formally published NZ study. Sources:8.12*

EV CHARGING STANDARDS

These guidelines will ensure safety and longevity for our charging infrastructure.

Standards New Zealand - Guidelines for residential charging installations [8.9]

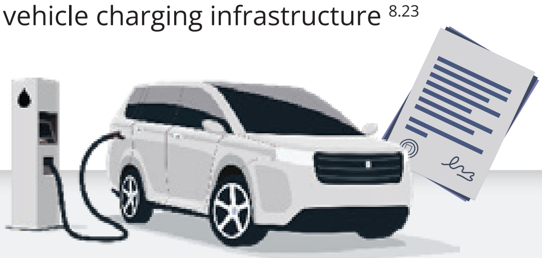
Standards New Zealand - Electric Vehicle chargers for commercial applications [8.19]

WorkSafe - Guidelines for safe EV charging [8.20]

WorkSafe - Addendum to Electric vehicle charging safety guidelines - 3rd edition [8.21]

EECA - Recommended EV Chargers [8.22]

Waka Kotahi | New Zealand Transport Agency - National guidance for public electric vehicle charging infrastructure [8.23]



ACT NOW OR PAY MORE LATER

Retrofitting EV charging infrastructure into existing buildings can cost several times more than installing EV-ready infrastructure during construction.[8.17]

Internationally, governments are increasingly requiring new developments to include EV-ready cabling, switchboard capacity and charging infrastructure provision.

New Zealand currently relies on voluntary guidance for charging through Standards NZ, Worksafe and EECA. The Building Code does not mandate EV-ready infrastructure in new developments.

As apartment living and higher-density housing increase, access to convenient home charging will become increasingly important. Without future-proofing, many households may face higher retrofit costs or limited charging access later.

Local and central government policies should include future-proofing measures that incentivise or mandate the installation of smart chargers for new commercial and residential builds.[8.18]

POLICY AND REGULATORY CHANGE

Government and regulatory settings affecting EV charging infrastructure have accelerated since 2024. Key developments include:

May 2026, the government proposed regulation of smart EV chargers above 2.4kW, including ‘smart functionality’ and explanatory consumer labelling requirements. to support off-peak charging and reduce peak electricity demand.[8.24]

January 2026, Worksafe issued an ‘Addendum to Electric vehicle charging safety guidelines - 3rd edition’. Previously, employee homes were treated as workplaces for EV charging and chargers could only be located in a garage, creating barriers for business EV adoption. The addendum removed this reference and clarified employer obligations [8.22]

Figure 28 - **Leading countries have mandates**

Country	Requirement
UNITED KINGDOM Building Regulations Part S (2022)	New residential builds must include smart EV charging. Commercial developments must provide EV charging in a proportion of car parks.
AUSTRALIA National Construction Code (NCC 2025)	New apartments and motels must be provisioned for future EV charging installation.
NORWAY Right to Charge Legislation	Apartment residents have a legal right to install EV chargers at their own cost.
EUROPEAN UNION Energy Performance of Buildings Directive (EPBD	New commercial and residential developments must include EV charging infrastructure or EV charging provisions.

Source: UK Government | Australian Government Department of Climate Change | Norwegian Ministry of Transport | European Commission. 8.25, 8.25, 8.27, 8.28

OUR PUBLIC CHARGING NETWORK

New Zealand has achieved near-complete basic coverage on the state highway network, with DC fast chargers spaced at 75–100 km intervals on major routes supporting long-distance travel.[8.29]

2016 IN NZ 20 PUBLIC CHARGERS[8.31]

TODAY IN NZ 1800 PUBLIC CHARGERS NATIONWIDE[8.0]

Public charger deployment and charger capacity have both increased as EV battery sizes and charging speeds continue to improve. Many recent charging projects have been supported through grant based government co-investment.[8.6]

To better support mass EV adoption, the network now requires deeper regional coverage, improved reliability, support for apartment residents and higher-capacity infrastructure for heavy vehicles. International Energy Agency (IEA) [8.29]

Despite the increased deployment rate in recent years, the industry is not on track to reach the Government's target of 10,000 public charge points by 2030. New will require significantly faster deployment rates than those achieved to date.

PUBLIC CHARGING PERCEPTIONS

Most EV drivers report positive experiences using New Zealand's public charging network with ~90% of users satisfied or somewhat satisfied with public charging. However, concerns remain around charger availability.

EECA research found:

- **66%** of EV users find it **easy to locate EV chargers**
- **66%** agree that the time taken **to charge is adequate**
- **64%** believe public chargers **are well maintained**

EV users identified wait times for a charger and cost to charge as the most common barriers to using EV chargers. October 2025 EECA research

Figure 29 - **Common barriers to using public chargers for New Zealand EV owners.**

Having to queue / wait for a charger	**55%**
Cost to charge	**36%**
They aren't located in convenient places I'm passing/going	**29%**
It takes too long to charge	**17%**
There aren't any near enough to me	**16%**
Concerned about degrading battery through a fast charging network	**13%**
No room at public chargers when towing	**10%**
They're not all compatible with my EV	**9%**
I don't always know where to find them	**9%**
Concern about safety	**4%**

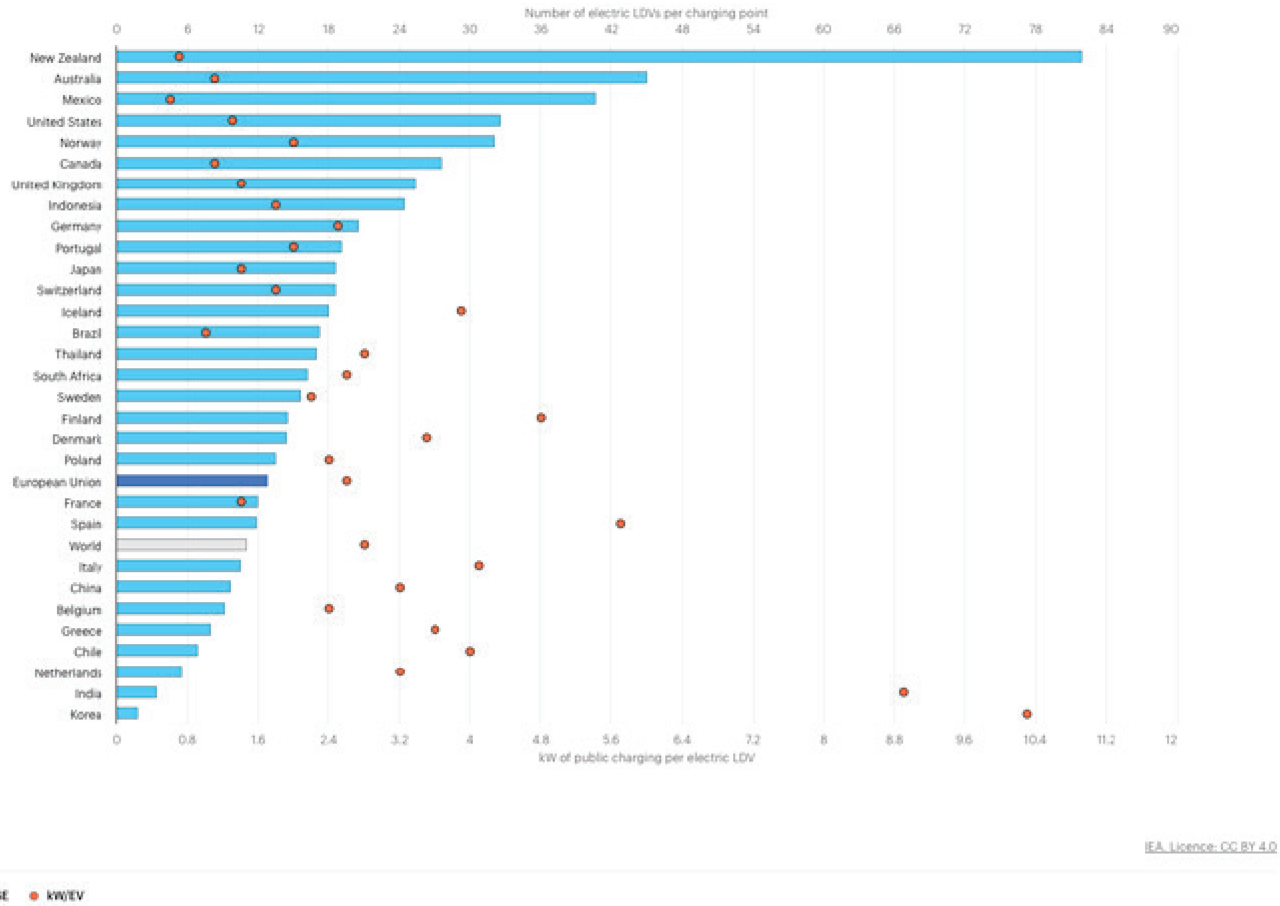
Footnote: Currently there is not a publicly available and up to date source of all public chargers in New Zealand, covering all types of charger. In part this is because the New Zealand network is evolving in real time. As such we have used data from EV Roam, supplemented with updated data provided directly by some Charge Point Operators. We acknowledge these are estimates and subject to various methodologies used by data providers. 8.26, 8.31

HOW DO WE COMPARE GLOBALLY?

New Zealand continues to lag comparable countries in public charger availability per EV.[8.32]

While New Zealand's network has improved significantly in recent years, international comparisons suggest infrastructure deployment will need to accelerate further to support mass-market EV adoption and reduce pressure on existing sites.

Figure 30 - **Number of electric light-duty vehicles per public charging point and kw per electric light-duty vehicle - 2024**



Source: International Energy Agency (IEA) 8.32

Currently there is not a publicly available and up to date source of all public chargers in New Zealand, covering all types of charger. In part this is because the New Zealand network is evolving in real time. As such we have used data from EV Roam and the International Energy Agency and sourced these as such. We acknowledge these are at a moment in time and depend on the methodologies used by those data providers. 8.26, 8.31

POLICY AND REGULATOR CHANGE

A cross-government work programme called Supercharging EV Infrastructure was established in 2024 to address barriers slowing charger deployment, with industry input from Drive Electric and the Charge Point Operator subgroup.[8.33]

Key reforms include:

- Nationally Consistent Permitted Activity Standards for EV charging infrastructure under the RMA reforms effective May 2026. [8.34]
- Electricity Authority (EA) pricing reforms to improve connection consistency and reduce high upfront charges effect from April 2026. [8.7, 8.35]
- A new concessional loan co-investment model managed by National Infrastructure Funding and Financing (NIFF) was established replacing earlier grant-based support schemes [8.36]

Breaking the charging deadlock: ChargeNet and Meridian's NIFF-backed expansion

The announcement of NZ$52.7 million in zero-interest government loans to ChargeNet and Meridian Energy marks a significant turning point for New Zealand's EV charging landscape. [8.37]

With matched co-investment of NZ$60 million from the two companies, this funding unlocks over 2,500 new charge points—1,374 DC fast chargers and 1,200 AC chargers—more than doubling our national network from 1,800 to approximately 4,550 by 2030. [8.37]

ChargeNet's PowerUp rollout will deliver over 1,700 new charging points, while Meridian will deploy 900 charge points across metropolitan and regional locations.

The funding strategically addresses the "chicken-and-egg" challenge that has long constrained infrastructure investment: private investors hesitate to build charging networks until demand justifies the capital outlay, yet drivers remain reluctant to switch to EVs without confidence in reliable, accessible charging. [8.37]

By bringing charging investment forward through concessionary financing, this expansion—focused on connecting major centres including Auckland, Hamilton, Tauranga, Wellington, Christchurch and Dunedin with regional areas—brings tangible progress towards New Zealand's 10,000-charger target by 2030 and strengthens the foundations for the needs of EV drivers.

THE CHARGING OUTLOOK

New Zealand has moved beyond proving EV charging works. The next challenge is scale.

Charging infrastructure is becoming increasingly interconnected with the wider electricity system, urban development, freight infrastructure and transport planning.

Coordinated investment across homes, workplaces, public infrastructure and electricity networks will determine how quickly Aotearoa can transition away from fossil-fuel transport over the coming decade.

Without continued coordination between government, electricity networks and industry, charging infrastructure risks becoming one of the major constraints on wider transport electrification in New Zealand.

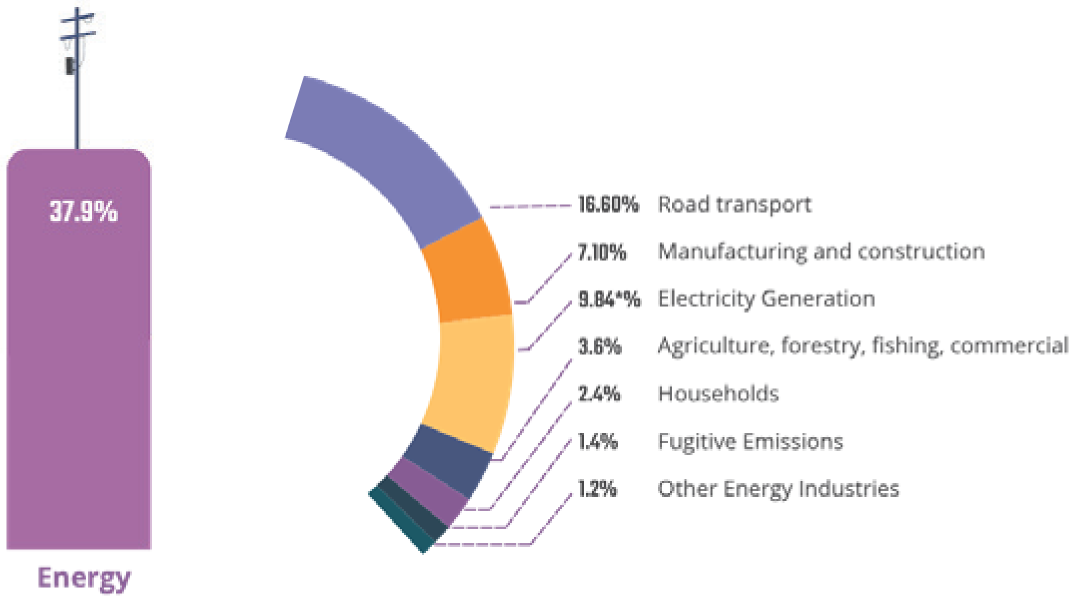
SPONSORED BY Meridian.

THE ENERGY SECTOR

Transport is New Zealand's largest source of energy-related emissions and the nation's greatest opportunity for decarbonisation.[9.0]

Electrifying transport does more than reduce emissions. It strengthens energy security, reduces reliance on imported oil and allows more of New Zealand's transport system to run on locally produced renewable electricity.

Figure 31 - **New Zealand GHG Emissions from Energy 2021**



Source: Manatū Mō Te Taiao | Ministry for the Environment, Hīkina Whakatutuki | MBIE 9.0, 9.1

ENERGY SECURITY AND IMPORTED FUEL

New Zealand's transport system remains heavily dependent on imported fossil fuels.

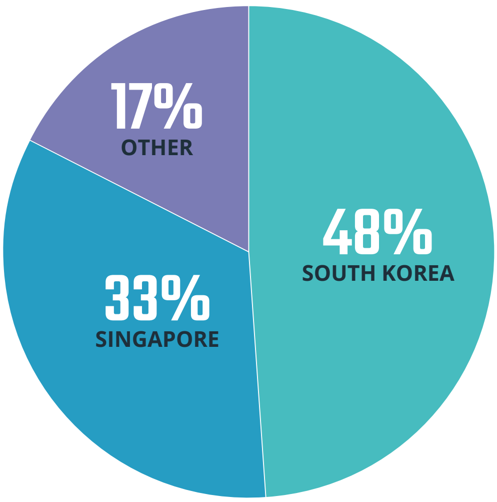
Transport accounts for nearly three-quarters of New Zealand's oil consumption, including petrol, diesel and jet fuel. Since the closure of Marsden Point in 2022, New Zealand has had no domestic fuel refining capability and now imports most refined fuel products directly from overseas.[9.3]

New Zealand spends an estimated $7–9 billion annually on petroleum imports, making fuel one of the country's largest import categories.[9.4]

Electrification provides an opportunity to replace imported fuel with locally generated renewable electricity., improving national energy resilience while keeping more energy spending within the New Zealand economy.

Although New Zealand imports most fuel products from Asian refineries, global supply chains remain interconnected. Disruptions in major oil-producing regions can still affect fuel prices and supply security in New Zealand. South Korean and Singaporean refineries source ~80% of their crude from Gulf states including Saudi Arabia and the United Arab Emirates.[9.5]

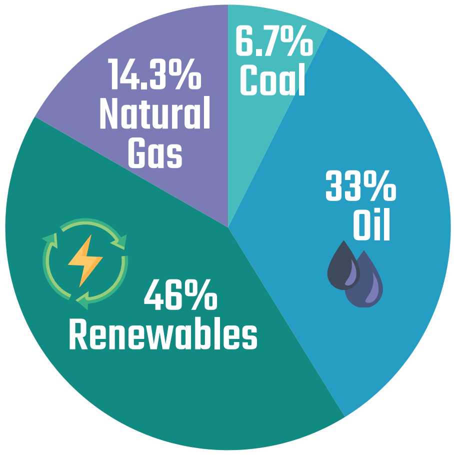
Figure 32 - **Where our fossil fuel imports come from - 12 months to March 2025**



Other - Japan Malaysia, Taiwan, Qatar, Indonesia, and Brunei Darussalam

Source: Stats NZ 9.6

Figure 33 - **Energy consumption in New Zealand by source 2024**



Source: Hīkina Whakatutuki | MBIE 9.7

SPONSORED BY

ELECTRICITY GENERATION

Most of New Zealand's electricity generation comes from domestic renewable resources including hydro, geothermal, wind and increasingly solar generation.

In 2024, approximately 95% of New Zealand's electricity came from domestic energy sources, including renewable generation, domestic natural gas and a small amount of locally mined coal. Imported fuels play only a very small role in electricity generation.

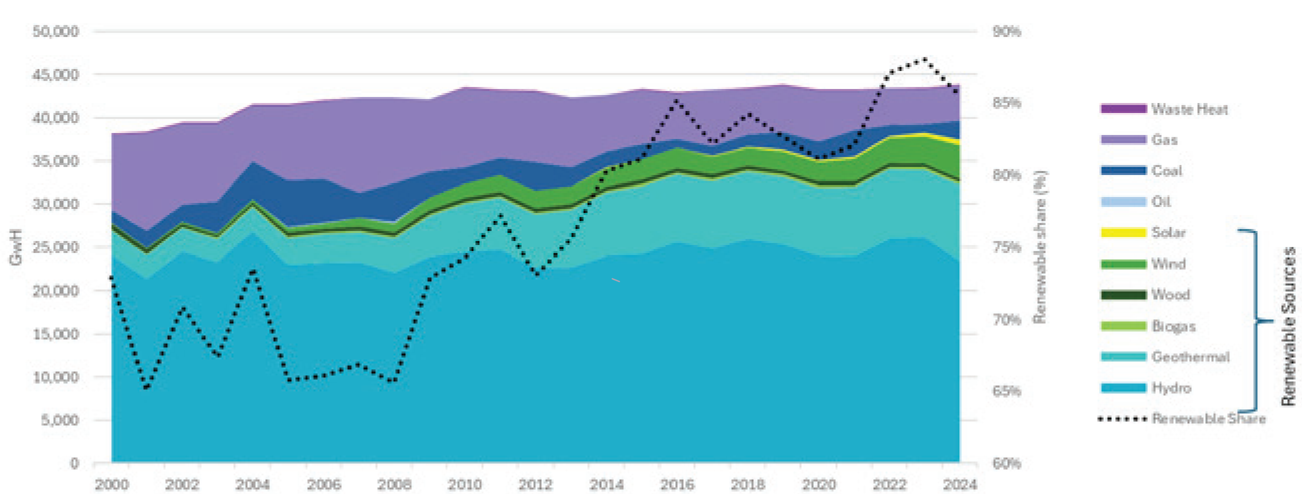
New Zealand's high proportion of electricity from renewable sources creates a competitive advantage for transport electrification compared with many other countries. As the electricity system continues to decarbonise, the emissions benefits of EVs will continue to increase over time.

In 2025, we achieved 88% RENEWABLES IN OUR ELECTRICITY MIX

Local fossil fuel generation is mostly gas, plus a small amount of NZ-mined coal.

9.8, 9.9, 9.10, 9.11, 9.12, 9.13, 9.14

Figure 34 - **Annual electricity generation in New Zealand 2000 - 2024**



Source: Hīkina Whakatutuki | MBIE 9.7

DISTRIBUTED ENERGY GENERATION IS GROWING

Households and businesses are becoming energy producers as well as energy users.

The rapid growth of rooftop solar and distributed electricity generation is changing how electricity flows through New Zealand's energy system. Over the past decade, the number of homes and businesses installing solar systems has increased significantly.

Combined with EVs, battery storage and smart charging, distributed energy can improve resilience, reduce pressure on the electricity network, shift electricity demand away from peak periods and reduce household and business energy costs

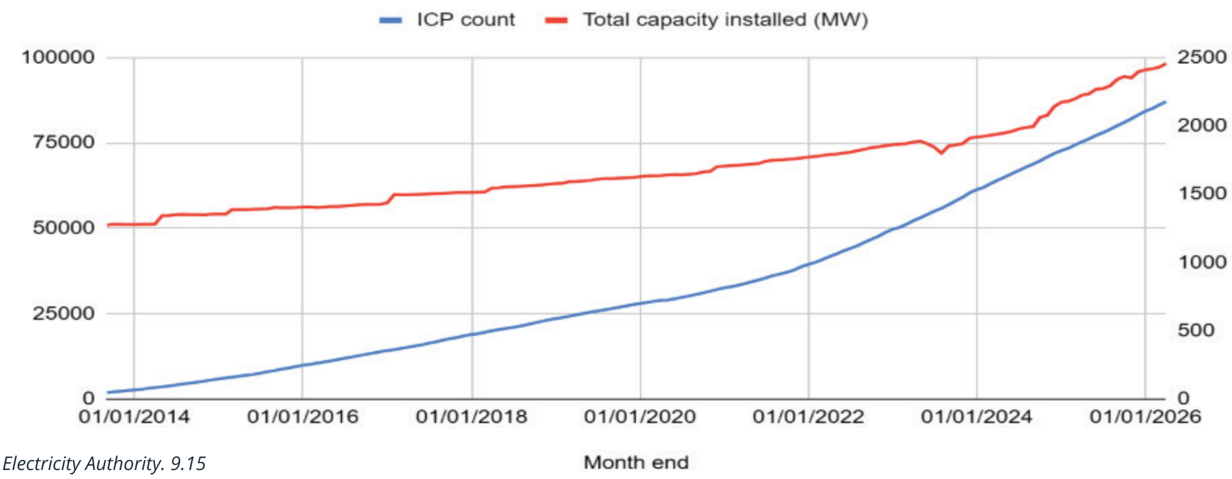
A NEW WAVE OF RENEWABLE ENERGY

After a decade of relatively slow electricity demand growth, New Zealand is now entering a major new phase of renewable energy development.

Large-scale wind, solar and geothermal projects are being built across the country as electricity demand increases from electrification, population growth and new technologies. [9.18]

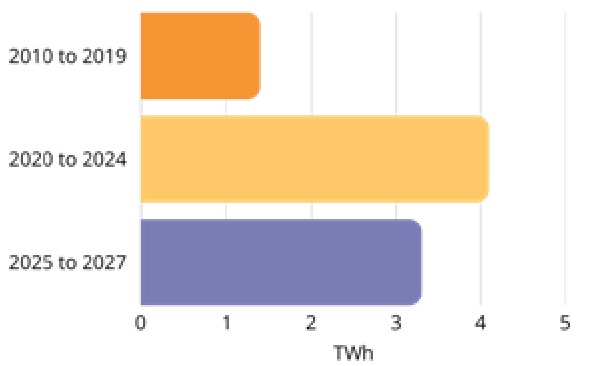
Planning reforms and fast-track consenting processes are expected to accelerate new renewable generation further over the coming decade.

Figure 35 - **Growth in distributed generation and solar connections in New Zealand 2014-2026**



Source: Electricity Authority. 9.15

Figure 36 - **Net generation commissioned between 2010-2024 and forecast 2025-2027 (terawatt-hour (TWh)**



Source: Boston Consulting Group (BCG) 9.18

EVS IN THE ENERGY SYSTEM

EVs are changing the relationship between transport and electricity.

EV charging can often be shifted to periods when electricity demand is low and renewable generation is abundant. Increasingly, smart charging systems can automate this process through off-peak pricing and intelligent charging software.

Electricity retailers, Energy Flexibility Providers and charging providers are developing EV-specific electricity plans designed to encourage charging outside peak demand periods.

Managed charging can reduce pressure on the electricity network while lowering charging costs for consumers.

Over time, technologies such as vehicle-to-grid (V2G) will allow EVs to play a larger role in New Zealand's energy system by storing and supplying electricity when needed. (As detailed in the Vehicle-to-Grid (V2G) chapter).

THE TOTAL COST OF CHARGING EV vs ICE with petrol

Charging a BEV at home is the **cheapest way to drive 100km in New Zealand** even with RUCs

Less than $13.00 to charge at home.

Even less if you take advantage of off-peak times. [9.19, 9.20]

$23.80 using public **DC charging** [9.21]

$31.50 using petrol [9.22]

ANNUAL SAVINGS FROM EVS HOUSEHOLDS

With 69% of EV drivers taking advantage of off-peak pricing and current fuel cost volatility the annual savings can be significant.[3.24]

AVERAGE EV ANNUAL SAVINGS BASED ON USAGE

Low use	$1,286	8,000km [9.21]
Average use	$1,850	11,500km [9.21]
High use	$5,456	20,000km [9.21]

Assumptions and sources: Average NZ annual km driven - 11,500 km/year (ICE); 14,100 km/year (EV)9.26
EV energy consumption - 18 kWh/100 km (typical BEV) 9.27, 9.28
Home electricity — off-peak / EV plan rate (primary) ~$0.20/kWh (range $0.12–$0.22). 9.29
EECA: 97% of NZ EV drivers charge at home, predominantly overnight.
Home electricity — standard rate (reference only) $0.30/kWh9.30
Petrol price — normalised 12-month avg $2.55/L (91 octane regular) 9.31, 9.32
Petrol price — current (price sensitivity) $3.41/L (91 octane, April 2026). Elevated due to Strait of Hormuz supply disruption. 9.33
Petrol vehicle consumption 8 L/100 km; typical NZ light passenger vehicle 9.34
BEV RUC $76.00 per 1,000 km and PHEV RUC $38.00 per 1,000 km; RUC admin fee$12.44 per purchase (online); $13.71 in person; effective 1 April 2024.9.36
Petrol road contributionEmbedded in fuel excise duty (~64c/L); no separate RUC 9.31, 9.36

Assumptions and sources: RUC costs for BEVs = $76/1,000km. Excludes RUC admin fees ($12.44 per online purchase; $13.71 in person) in addition to the price they pay for the kW they use to charge. 9.23
kWh/100km is the electricity drawn from the grid (including charging losses, ~10–15%), measured under WLTP test conditions
Cost per 100km is calculated by multiplying kWh/100km by the electricity rate including + $7.60 RUS
EV — home off-peak: 20c/kWh off-peak rate
EV — home standard: 30c/kWh average residential rate
EV — public fast charger:Based on 90c/kWh
Petrol car (~9L/100km): $3.50/L, April 2026

VEHICLE-TO-GRID (V2G)

EVs are not just vehicles. They are mobile energy assets that could reshape how New Zealand generates, stores, and uses electricity.

Vehicle-to-Grid (V2G) technology enables bidirectional EV charging. Energy can flow two ways; into the vehicle, and back out again. A compatible charger enables an EV to supply electricity to a home, a building, or the national grid — automatically, on demand, and with the potential to earn money.[10.0]

This turns EVs into flexible energy assets. They can store electricity when it is abundant and return it when it is needed most — helping to balance supply and demand across the system.

WHAT CAN EVS POWER? THE V2X SPECTRUM

Vehicle-to-Everything (V2X) describes how energy flows from an EV — from simple on-site use to full grid participation. The further it connects, the higher the system value. [10.02]

If 30% of New Zealand's fleet were V2G-enabled the combined output would be comparable to **all of New Zealand's power stations running at full capacity**.[10.1]

THE OPPORTUNITY

V2G is not a single technology, it is a system – shaped by the vehicle, the charger, and how the energy is used.

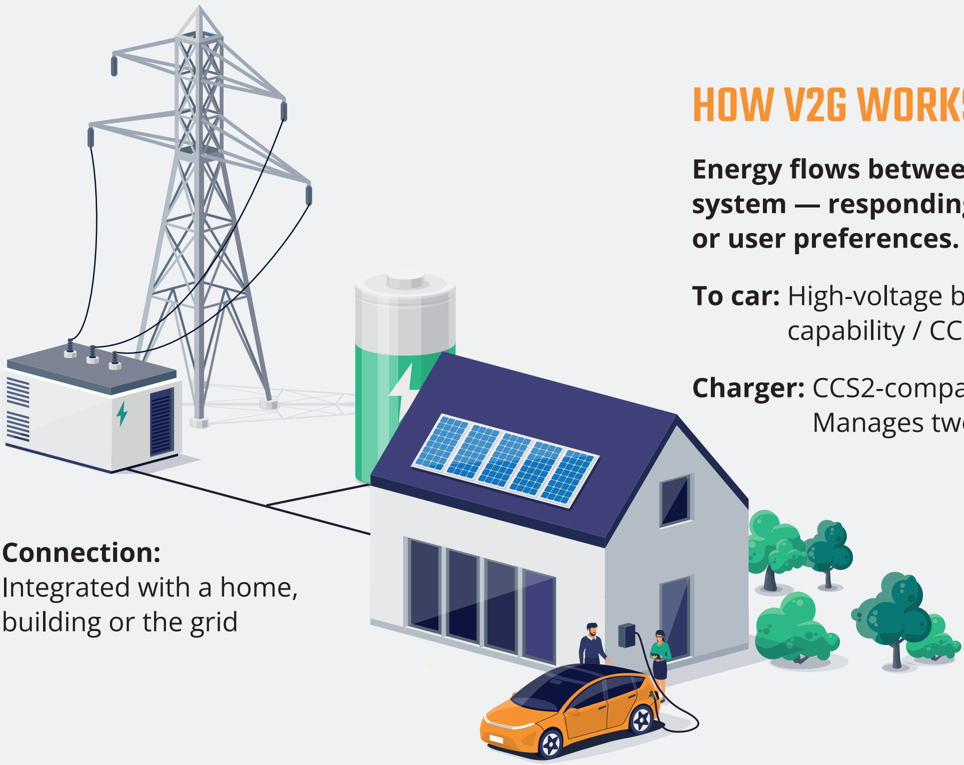
Key components of this system are already present in New Zealand, and early use cases are beginning to emerge. At its simplest, the model is clear: charge when electricity is cheap, then use or export it when it is most valuable.

The opportunity is immediate, but not fully unlocked.

These are not technical barriers. They are coordination challenges — across vehicle software, electricity networks, and market rules. OEM activation, consistent connection processes, and revenue pathways all need to align.

V2L	V2H	V2B	V2G
Vehicle-to-Load Power appliances and tools	**Vehicle-to-Home** Run homes, including during outages	**Vehicle-to-Building** Support commercial buildings and reduce peak demand	**Vehicle-to-Grid** Export to the grid, earn revenue, and support the national energy system

Simpler to enable → **Highest system value, requires grid connection**



HOW V2G WORKS

Energy flows between the vehicle and the wider system — responding to price signals, grid needs, or user preferences.

To car: High-voltage battery with bidirectional capability / CCS2 Connector

Charger: CCS2-compatible / AS/NZS 4777 compliant / Manages two-way energy flow via ISO 15118

Connection:
Integrated with a home, building or the grid

V2G SYSTEM USE CASE OPPORTUNITES

PRIVATE EVS

At home, EVs charge overnight during off-peak hours or from rooftop solar, then supply stored energy back to the home, or grid during peak periods.

The charger manages AC/DC conversion, while the vehicle's battery system ensures enough charge remains for daily driving.

Barriers

V2G capability exists in many vehicles but is not yet enabled for New Zealand — a market signal issue rather than a technical constraint.

LIGHT COMMERCIAL FLEETS

Fleet vehicles can charge overnight at depots and export energy during morning and evening peaks.

Aggregators combine multiple vehicles into a single resource, enabling participation in energy markets that individual vehicles cannot access alone.

Barriers

The Electricity Authority (EA) market rule reform must allow V2G to earn revenue across both charging and discharging. Aggregators require formal access to wholesale and ancillary service markets. [10.3]

HEAVY EVS AND SPECIALIST FLEETS

Heavy EVs carry the largest batteries and often operate on predictable schedules, with long idle periods.

In sectors such as dairy, milk tankers may be inactive for extended periods — aligning with times of peak grid demand.

Large depot charging infrastructure and industrial energy management systems can coordinate charge/discharge cycles around grid signals and wholesale price movements.

Barriers

The business case depends on the EA resolving market access and pricing structures, to both wholesale and ancillary services.

CUSTOMER VALUE PROPOSITION

The value of V2G differs by use case, but in all cases it improves asset utilisation.

HOUSEHOLD SYSTEMS

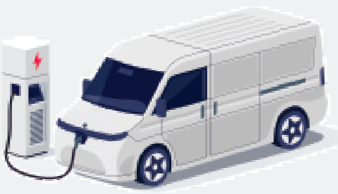
Potential value of
up to $2,000
per vehicle, per year[10.4]

For households, the value is practical and immediate.

- Lower power bills by charging off-peak or using solar
- Potential income from exporting energy during peak periods
- Greater value from rooftop solar by storing energy and using it later
- Resilience during outages using V2H

A typical 60 kWh battery can power an average NZ home for 2–3 days[10.5]

LIGHT COMMERCIAL FLEET SYSTEMS



Potential value of
up to $10,000
per vehicle, per year[10.4]

For business fleets, V2G strengthens the economics of electrification.

- New revenue from grid services
- Reduced electricity costs through peak demand management
- Backup power for operations
- Faster return on investment

A 20-EV fleet with 80 kWh batteries has 1.6 MWh of aggregated grid storage.[10.6]

Meeting the minimum ancillary service bid threshold and generating revenue alongside transport operations.

HEAVY AND SPECIALIST FLEET SYSTEMS

Potential value if
up to $25,000
per vehicle, per year[10.4]

Heavy vehicles offer the highest value potential due to the largest battery capacity.

- Participation in wholesale and ancillary energy markets
- Reduced depot energy costs
- Strong alignment between idle time and grid demand
- Strategic value as large-scale, distributed storage

At scale, electrified fleets could act as a national energy reserve during periods of system stress.

If Fonterra electrified 600 milk tankers with 300 kWh batteries the resulting 180 MWh V2G system would have the potential annual value of ~$15M[10.7]

COMMUNITY AND GRID BENEFITS

As EV uptake grows, V2G benefits extend beyond individual drivers to the wider electricity system.

Even at modest levels of adoption, V2G-enabled vehicles can:

- Smooth evening demand peaks
- Reduce pressure on local networks
- Improve resilience during outages

When connected and coordinated, EVs act as a distributed battery across the country — storing energy when it is abundant and returning it when it is needed most. This can defer costly grid upgrades, support renewable integration, and strengthen energy security at a national level.

As uptake grows, EVs shift from individual assets to system infrastructure.

THE AUSTRALIAN BENCHMARK

Australia has emerged as a leading market for V2G deployment. In just 18 months the nation went from proof-of-concept trials to declared market readiness by moving five policy levers at the same time.

Figure 37 - **Australian V2G deployment milestones - November 2024-December 2025**

NOV 2024
Standards Australia updates AS/NZS 4777 to explicitly enable V2G connections

FEB 2025
ARENA & RACE for 2030 publish National Roadmap for Bidirectional EV Charging — 18 priority actions across 5 domains

APR 2025
Essential Energy & CSIRO declare CCS2 V2G technology market-ready, using the same connector standard as New Zealand

JUL 2025
Ausgrid becomes the 3rd distributor to allow V2G connections. South Australia Power Networks already treating V2G as a battery

NOV 2025
V2Grid Australia's Numbat becomes first Clean Energy Council (CEC)-certified bidirectional EV charger. Amber Electric begins residential installations

DEC 2025
Federal Government launches the Vehicle-Grid Network (VGN) — $3.5M programme running to 2029

Sources: Standards Australia | Australian Renewable Energy Agency (ARENA) | Racefor2030 | CSIRO | Essential Energy | Ausgrid | SA Power Networks | ZeCar | EV Infrastructure News. 10.9, 10.17, 10.18, 10.19, 10.20, 10.21, 10.22, 10.23, 10.24

The result is a clear template: coordinated policy enables rapid market activation.

Australia's REVS trial demonstrated that a fleet of 51 V2G-capable vehicles and bi-directional chargers could be configured to provide market contingency Frequency Control Ancillary Services (FCAS) at fleet scale, with ARENA describing it as the first use of a vehicle fleet to supply FCAS to the National Electricity Market. [10.10, 10.11]

Australia was the 3rd largest utility BESS market globally in 2025.[10.12]

$70 kWh — **The 2025 stationary storage pack price dropped 45% from 2024.[10.16]** — **45% DROP**

WHAT THIS MEANS FOR NEW ZEALAND

2026 sees the launch of New Zealand's first comprehensive V2G pilot in Queenstown. This trial is being delivered in partnership with EECA, Rewiring Aotearoa and the Queenstown Electrification Accelerator (QEA).

The technology is ready. The system is not.

New Zealand and Australia's shared standards framework (AS/NZS 4777) enables grid-connected, bidirectional charging, creating a clear pathway for compatible vehicles and chargers. Under Trans-Tasman Mutual Recognition, Australian-certified hardware can enter the local market.[10.13, 10.14, 10.15]

The constraint is not hardware. It is coordination.

Unlocking V2G in New Zealand requires progress across five areas:

Technical standards alignment: A national EDB connection standard, with mutual recognition of Australian-certified CEC-listed chargers.

Network connection consistency: A consistent, transparent process across all 29 EDBs, with V2G treated as a distributed energy resource — like a battery.

Market access: V2G must be able to earn revenue for both charging and discharging. The EA must enable aggregators and resolve current barriers in ancillary services markets.

Vehicle enablement: Bidirectional capability must be enabled by manufacturers. Government fleet procurement can help create early demand and scale.

Pricing signals: Tariffs that reward flexibility and peak export. Energy retailers and the EA must ensure the economics work for consumers.

THE OUTLOOK

The distinction between transport and energy infrastructure is beginning to disappear. V2G and grid-scale battery storage are converging into a shared, flexible system.

Three forces are bringing this into the near term.

Costs continue to fall

Battery costs are reducing the price of both EVs and stationary storage — accelerating the case for bidirectional systems.

The orchestration layer is maturing

Virtual Power Plants are emerging as a new form of energy infrastructure — aggregating thousands of assets into a single flexible resource.

This is enabled by orchestration software that coordinates EVs, batteries, and solar as a single energy asset In response to grid and market signals.

BATTERIES

EV batteries are the engine of the electric transition — and not all batteries are the same.

They vary in cost, safety, range, and lifespan. Understanding the differences shapes how vehicles are used, how fleets are built, and how energy systems evolve.

Battery costs have fallen sharply over the past decade, transforming EVs from niche products into mass-market vehicles.

Global battery pack prices have
dropped 89% since 2010
reaching approximately
USD $108 per kWh [11.0]

For years, the EV industry has competed on headline range. Yet the data shows most drivers do not need it.

The average New Zealand driver travels just
35–40 km a day[11.1]

Even modest EVs offer 250–300 km per charge
enough for a week of driving.[11.2]

The real question is not how far an EV can go, but which battery chemistry best fits how the vehicle is used.

BATTERY CHEMISTRIES

Higher energy density means a battery can be smaller, lighter, and more efficient.

A battery's chemistry – the materials used in its cells and the state of its electrolyte – determine how it performs. This includes how much energy it can store, how much it weighs, how quickly it can charge and discharge energy, how long it lasts and how safe it is.

EV batteries have been based on lithium-ion technology with liquid electrolytes. These are evolving rapidly, with new chemistries reducing cost, improving durability, and lowering reliance on problematic and expensive minerals.

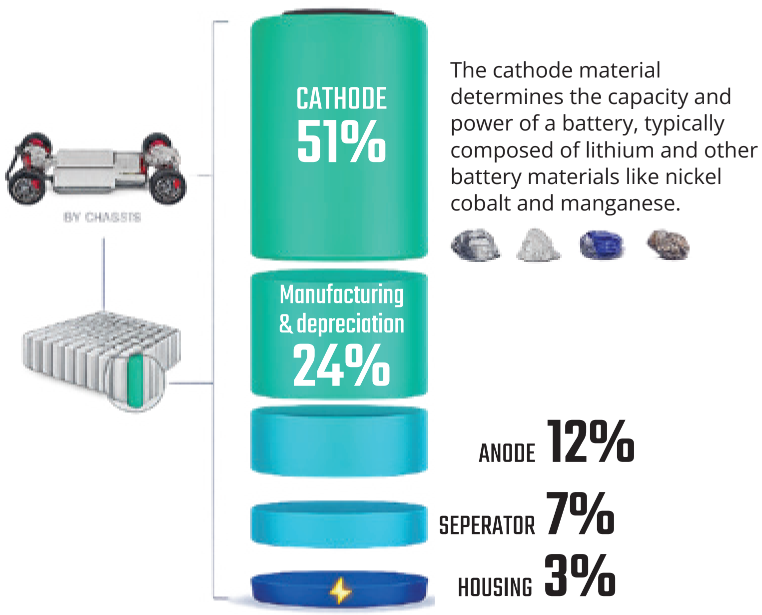
Today, two chemistries dominate the global market — each suited to different use cases.

The cost of making an EV battery cell

The average cost of lithium-ion batteries is declined by 89% since 2010

A battery pack consists of multiple Internet connected modules, and each module is made up of hundreds of individual cells.

$101/kWh
Average cell cost in 2021.[11.15]



MATCHING BATTERIES TO USE

Different use cases require different battery characteristics.

- Everyday drivers and urban fleets: LFP provides the lowest cost, longest life, and best overall fit
- Commercial, rural, and high-kilometre fleets: NMC supports longer distances and heavier loads
- Heavy vehicles and specialist applications: Higher energy density chemistries remain critical, with emerging technologies expected to improve performance further

As the market matures, battery selection is becoming a strategic decision — not just a technical one.

LFP Lithium Iron Phosphate

Best for most New Zealand households and urban fleets

Lower cost, long life, and stable performance make LFP the default choice for everyday driving.

Approximately 30% cheaper per kWh than NMC[11.1]

3,000+ charge cycles, supporting long vehicle lifetimes [11.1]

Can be charged to 100% daily without significant degradation

Strong safety profile due to stable chemistry

Well suited to urban driving, family vehicles, and high-utilisation fleets

Common in models such as BYD Atto 3, BYD Seal, Tesla Model 3 (Standard Range), and Nissan Leaf.

Trade-offs include lower energy density (around 20% less than NMC) and reduced performance in colder conditions.

NMC Nickel Manganese Cobalt

Best for high-demand, high-range applications

Higher energy density allows NMC batteries to deliver longer range and support heavier loads — where performance and payload must coexist.

Higher range per kilogram of battery weight

Typically 1,000–2,000 charge cycles[11.0]

Mature global supply chain

Used in premium, long-range, and commercial vehicles

Common in models such as Hyundai Ioniq 5 and 6, Kia EV6 and EV9, BMW i-series, and Ford F-150 Lightning.

Trade-offs include higher cost, greater sensitivity to heat, and reliance on cobalt — a material associated with supply chain and ethical challenges. More than 60% of global cobalt supply originates from the Democratic Republic of the Congo.[11.14]

EMERGING CHEMISTRIES

New battery technologies are entering the market, focused on reducing cost, improving performance, and strengthening supply chains.

Sodium-ion (Na-ion)

A lower-cost alternative that eliminates the need for lithium, cobalt, and nickel.

Sodium is widely abundant, and early deployments are already underway in China. Na-ion performs well in cold conditions but has lower energy density, making it better suited to short-range vehicles and stationary storage. [11.4]

Lithium Manganese Rich (LMR)

An evolution of lithium-ion chemistry designed to reduce cobalt content while maintaining high energy density.

Expected to enter commercial vehicles in the late 2020s. [11.3]

EMERGING TECHNOLOGIES

Battery innovation is accelerating, with several technologies developing in parallel.

Solid-state batteries

Replace flammable liquid electrolytes with solid materials, improving energy density and fire safety. Early versions are expected later this decade, with wider adoption in the 2030s.

Current costs remain high at
USD $400–800 per kWh
450 Wh/kg 80% higher energy density than today's lithium-ion. [11.3]

Silicon anodes

Increase energy storage capacity within existing lithium-ion cells. This enables improved range and faster charging without redesigning the battery system.

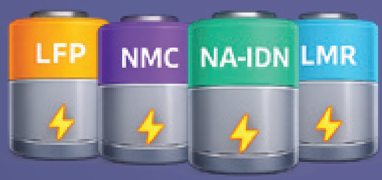
10× more energy storage per gram than graphite [11.5]

Advanced cooling systems

New thermal management approaches like immersion cooling will enable faster charging and improved durability by controlling heat more effectively.

Early prototypes
targeting 70% charge in around five minutes [11.6]

These technologies will improve performance over time, but today's batteries are already well suited to most New Zealand use cases.



BATTERY LIFE CYCLE

The battery life cycle challenge is not a distant issue — it is arriving now.

After 8–12 years in a vehicle, an EV battery typically retains 70–80% of its original capacity. At this point, it is often retired from transport use but still holds significant value.[11.0]

These batteries can be repurposed for stationary energy storage for 10 years or more before being recycled and returned to the supply chain.

The global market for second-life batteries is projected to grow
from US $58.9B in 2024 to US $204.8B by 2033 [11.7]

THE LIFE CYCLE OF EV BATTERIES

STAGE 1 Raw Materials
Lithium, cobalt, nickel, manganese, iron, phosphate mined globally

STAGE 2 Manufacturing
Cells assembled into modules and battery packs

STAGE 3 First-Life
8–12 years in a vehicle with ~2% degradation per year

STAGE 4 Second-Life
Repurposed as stationary storage for 10+ years

STAGE 5 Recycling
Recovery of key materials for reuse

SECOND LIFE AND RECYCLING

Repurposed EV batteries are already being used in:

- Commercial battery energy storage systems (BESS)
- Residential solar storage
- Grid-edge and community energy systems

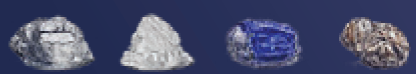
These applications reduce peak demand, improve resilience, and support renewable energy integration.

Second-life systems
can cost up to
50% LESS than new battery storage while delivering comparable performance [11.8]

RECYCLING TECHNOLOGIES ARE ALSO IMPROVING

98% of an EV battery is recyclable
After 10+ years in stationary applications, at least 11.8

Hydrometallurgical processes can recover 80–95% of key materials, including lithium, cobalt, nickel, and manganese [11.0]



Recycling could reduce global lithium demand by up to 10% by 2040 [11.0]

New Zealand does not yet have a mandatory product stewardship scheme or large-scale processing facilities for lithium-ion batteries.

Without the right policy settings, end-of-life battery packs risk being stockpiled, exported as hazardous waste, or sent to landfill — despite their second-life value.

The New Zealand Battery Industry Group (BIG) has established a strong foundation for second-life and recovery. Backed by more than 170 organisations, BIG's circular stewardship programme sets out practical pathways to manage battery waste streams safely and effectively. It is ready for implementation with legislative backing.[11.12]

GLOBAL CONTEXT

Australia is leading the way

In 2025, Nissan Australia and Melbourne-based Relectrify repurposed nine Nissan Leaf batteries to power a 120 kWh energy storage system at Nissan's Victorian casting plant — paired with 100 kW of rooftop solar.

The system uses cell-level control technology to maximise the remaining life of each individual battery, demonstrating how second-life EV batteries can deliver reliable, high-value energy storage.

The Australian Renewable Energy Agency (ARENA) has committed AUD $25 million to scale this technology, supporting the commercialisation of second-life battery systems.[11.10]

This project demonstrates a clear opportunity for New Zealand. Tens of thousands of early-generation Nissan Leafs are approaching end-of-first-life.

The technical pathway is clear — now there is an urgent need for product stewardship legislation, certified second-life integrators, grid connection standards and regulatory clarity.

THE EU BATTERY PASSPORT

From February 2027, every EV battery sold in the European Union will include a digital battery passport.

The QR-accessible record will detail the battery's chemical composition, carbon footprint, full charge-discharge history, and recycled content.[11.10] Over time, this requirement will flow through global supply chains to New Zealand. The result is greater transparency, stronger accountability, and better decision-making across the battery life cycle — from procurement through to reuse and recycling.

THE NEXT DECADE

NOW (2026)

LFP dominates as the most cost-effective option.
Na-Ion has entered early markets.
Silicon anodes and immersion cooling are emerging.

NEAR-TERM (2026–2028)

Silicon anodes mainstream.
LMR batteries will enter the market from Ford and GM.
First solid-states will appear in premium EVs.
EU Battery Passport becomes mandatory.

MID-TERM (2028–2030)

Na-ion global expansion.
Solid-state in mid-range EVs.
Second-life market scaled globally.
Recycling recovers 80–95% of materials.

LONG-TERM (2030+)

Solid-state enters the mass-market and cobalt-free chemistry dominates.
High energy density becomes standard and 800+ km range is mainstream.
Circular battery economy matures

POLICY CONSIDERATIONS

The battery life cycle challenge is not a distant problem — it is arriving now, with tens of thousands of EVs in New Zealand approaching end-of-first-life.

New Zealand does not yet have a comprehensive system to manage EV batteries at scale. To realise second-life applications and recovery opportunities, coordinated action is needed across five key areas.

Mandatory Product Stewardship

Designate large lithium-ion batteries under the Product Stewardship Act. Implement BIG's circular programme with a disposal levy funding collection and processing infrastructure.

Second-Life Certification Framework

Establish safety and connection standards for repurposed battery systems in stationary applications. Align with AS/NZS 4777 standards and enable certified second-life integrators to connect repurposed EV packs to homes and the grid.

Battery Tracking and Provenance

Require batteries to be registered on arrival in New Zealand and tracked through reuse and recycling. Embed Battery Passport readiness in all new EV fleet procurement — the EU's QR-accessible life cycle data standard will reach New Zealand through global supply chains.

Domestic Recycling Infrastructure

Like other forms of recycling, scale is a barrier to investment in New Zealand. Coordinating with Australia's ARENA-funded recycling ecosystem should be considered.

Chemistry-Aware Procurement

Government and large fleet procurement should specify LFP chemistry for urban and standard-range use cases — maximising second-life suitability, minimising supply chain ethics risk, and lowering TCO. Embed these criteria into supplier contracts.

THE BATTERY DECADE

Battery technology is improving, costs are falling, and a circular economy is beginning to emerge.

Today's LFP batteries offer the safety, durability, and affordability that make them the right choice for most New Zealanders. At the same time, higher-performance chemistries and new technologies continue to expand what is possible.

The question is no longer whether to go electric. It is whether New Zealand is ready to manage, use, and recover the batteries already on our roads – and to treat them as a critical part of the energy system.

SPONSORED BY EV FireSafe

UNDERSTANDING EV SAFETY AND FIRE RISK

Safety is a critical consideration in the transition to electric transport. Lithium-ion battery fires, while rare, present different risks to those of ICE vehicles and require clear understanding from drivers, industry, and emergency services.

For every
100,000 vehicles,
fires are experienced by:

25 BEVs	3,475 PHEV /HEVs*	1,530 ICE vehicles

**Likely due to the complexity of combining high-voltage systems with flammable liquid fuel).* [12.0]

EV battery fires are less common than ICE vehicle fires, but global data remains limited and not always directly comparable due to differences in reporting methods, vehicle age, and classification.[15.0]

EV fires behave differently and require specific response approaches.

WHAT MAKES EV FIRES DIFFERENT

Unlike ICE vehicle fires, which are driven by liquid fuels, EV battery fires involve stored electrical energy and chemical reactions within the battery pack.

These incidents can:

- take longer to extinguish
- require larger volumes of water to cool
- reignite hours or days after the initial event

As a result, EV fires present unique challenges for emergency responders, as well as those involved in recovery, towing, repair, and salvage. [12.0]

THERMAL RUNAWAY

Thermal runaway is a chemical reaction that can occur if a lithium-ion battery is damaged or faulty.

It produces heat, flammable off-gases, flames and explosions. Once initiated, it can be difficult to control, as the chemical process generates its own heat and oxygen.

INCIDENTAL DATA FROM NEW ZEALAND AND AUSTRALIA

Verified incident data in New Zealand and Australia shows that EV battery fires remain rare and are typically associated with external events rather than spontaneous failure.

As at March 2026 - New Zealand 100,000 EVs:

- 2 external fire exposures
- 1 arson incident
- 1 submersion event
- 2 collision-related incidents
- 1 unknown cause

Australia 475,000 EVs:

- 5 high-speed collisions
- 2 arson incidents
- 3 external fire exposures
- 3 unknown causes
(including one suspected faulty pack).[12.1]

These figures highlight that most EV battery fire incidents are linked to damage, environmental exposure, or deliberate action, rather than normal operation.

CHARGING AND FIRE RISK

Approximately 15% of EV battery fires occur while a vehicle is connected to a charger.[12.0]

In most cases, charging is coincidental rather than causal. Under normal operating conditions, a compliant EV connected to a properly installed charging unit is not expected to trigger a battery fire. Built-in safety systems ensure that power only flows when conditions are safe.

Where charging-related incidents do occur, they are typically linked to:

- manufacturing defects
- water damage
- Exposure to other fires

poor charging practices, such as unsafe wiring, extension leads, or under-rated adaptors

The use of dedicated AC or DC charging equipment, installed to recognised standards such as AS/NZS 3000, significantly reduces these risks. [12.2]

MICRO-MOBILITY AND PUBLIC PERCEPTION

Most lithium-ion fire incidents reported in New Zealand are associated with small devices such as e-bikes, e-scooters, power banks, and vaping devices.

These systems often use lower-cost battery packs and may be charged using non-compliant equipment or unsafe practices.These incidents are often overrepresented in media coverage and online discussions.

The frequency of these incidents can shape public perception, leading to the assumption that EVs carry similar risk profiles. In practice, EV battery systems are subject to far higher engineering, safety, and compliance standards.

EMERGENCY RESPONSE AND STANDARDS

Emergency response capability is evolving alongside the growth of EVs.

The Austroads AP-R746-25 report 'Incident Response to Low and Zero Emission Vehicles' provides coordinated standard for Australia and New Zealand and includes 17 recommendations for improving preparedness across road networks, emergency services, and recovery systems. [12.3]

This guidance is supported by Waka Kotahi NZ Transport Agency through updates to traffic management and incident response frameworks.[12.4]

These standards ensure that first responders are equipped to safely manage EV incidents across a wide range of scenarios, including passenger vehicles, heavy vehicles, and the transport of lithium-ion batteries.

PREPAREDNESS AS THE SYSTEM SCALES

EV battery fires are rare, but they are different.

As electric transport scales, the focus must shift from perception to preparedness — ensuring that safety standards, infrastructure, and emergency response capabilities evolve alongside the technology.

Clear guidance, compliant charging infrastructure, and continued investment in training and standards will ensure that EV safety keeps pace with adoption, supporting a safe and confident transition to electric transport.

POLICY

Transport is responsible for nearly 18% of New Zealand's GHG emissions[18.0] and is one of the sectors the Climate Change Commission identifies as capable of almost fully decarbonising before 2050.[18.1]

The pathway for transport decarbonisation is increasingly clear, and New Zealand has much of the foundation in place. The Climate Change Response (Zero Carbon) Amendment Act 2019 — passed with bipartisan support — established a 2050 net-zero target, emissions budgets, and an independent Climate Change Commission.[18.2] New Zealand also ratified the Paris Agreement in 2016, alongside 193 other countries.

Globally, transport electrification is accelerating.

1 in 4 cars sold worldwide is electric.[18.4]

New Zealand's EV market accelerated rapidly between 2021 and 2023. By 2023, EVs represented **over 27% of new vehicle sales**,[18.5] driven by a combination of supply-side, demand-side and infrastructure policies.

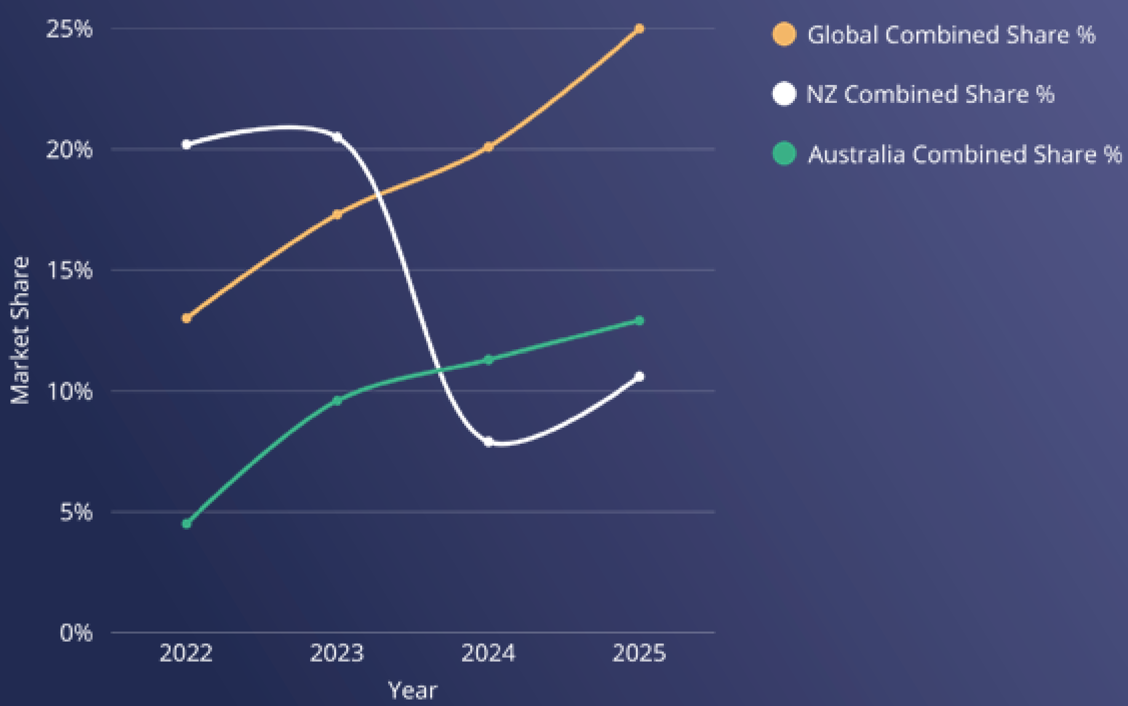
Key policies included:

- The Clean Car Standard (CCS), which encouraged importers to supply lower-emission vehicles
- The Clean Car Discount (CCD) feebate, which reduced the upfront cost of cleaner vehicles
- A Road User Charge (RUC) exemption for light EVs

Together, these measures were forecast to reduce transport emissions by **3.4 million tonnes** and reduce petrol imports by **1.4 billion litres by 2035**.[18.6]

The central challenge facing New Zealand is no longer technological readiness — it is policy consistency.

Figure 38 - **New EV Combined Sales Comparison 2020-2025**



Sources: IEA | Electric Vehicle Council |Drive Electric 18.5, 18.7, 18.8, 18.9, 18.23

Since January 2024, several major policy changes have altered the trajectory of transport electrification:

- The Clean Car Discount was repealed[18.20]
- EVs entered the RUC system, taxed at the same rate as diesel[18.20]
- The Clean Car Standard was weakened twice[18.21]

The economic implications are significant.

A 2026 report by the Sustainable Business Council and Climate Leaders Coalition — representing more than 150 businesses and approximately 45% of private sector GDP — found that a successful low-emissions transition could add $22.6 billion annually to New Zealand's GDP by 2035, rising to $33.6 billion by 2050. Transport electrification was identified as a major contributor to that opportunity. The report also identified policy coherence and medium-term certainty as the largest barriers to investment.[18.22]

Our current settings risk undermining both.

While global momentum continues to accelerate, New Zealand's transition has slowed.

Importance of Policy for the Light Fleet

Norway began incentivising EVS with a focus on the light fleet in 1990. After 35 years of consistent policy, just over 30% of all vehicles on Norwegian roads are electric — with 96% of new cars sold in 2025 battery electric.[3.24] The lesson: set a realistic electrification target, craft policy to support the goal, and refrain from changing the policy direction every few years.

New Zealand has one instrument remaining from its Clean Car Programme — the CCS. In 2026, the Government reduced the penalty rate to NZ$15 per gram of CO_2 per vehicle - a fraction of its initial level.

In contrast, the Australian NVES penalty rate applied to new imported vehicles is AU$50 per gram of CO_2 per vehicle above the target. Regulated entities have a two-year window to offset any deficit through credit trading before a penalty becomes payable; if unresolved, the rate doubles to AUD $100 per gram.[3.26]

The Treasury has estimated New Zealand could face a Paris Agreement liability of $3.3 billion to $23.7 billion by 2030 if emissions targets are missed.[3.27]

GLOBAL POLICY SETTINGS

Across major markets, EV adoption is being driven by a combination of three policy settings:

Supply policies: Measures that ensure manufacturers supply low-emission vehicles through emissions standards or mandates.

Demand policies: Measures that reduce the upfront cost difference between EVs and ICE vehicles through tax incentives or financial mechanisms.

Infrastructure policies: Building nationwide charging networks that make EV use practical.

Regions combining all three are seeing the fastest rates of EV adoption.

Figure 39 - **Global Policy Data Impact**

Country / Region	EV Share of New Vehicle Sales 2025	EV Share of New Vehicle Sales - YTD Mar 26	V share of fleet	EV ratio to All Public Chargers	Policy Direction	
Global	**25.0%**	21.5%	4.0%	1:15	-	-
Norway	**95.9%**	98.4%	32.4%	1:24 (Home charger ratio 1:1)	Strong alignment across supply, demand and infrastructure	Norway continues to lead global EV adoption through long-term policy stability, strong tax incentives and nationwide charging infrastructure.
China	**49.0%**	53.9%	12.1%	1:19	Large-scale industrial and infrastructure investment	China remains the world's largest EV market, supported by manufacturing policy, large-scale charging investment and industrial strategy.
European Union	**26.8%**	22.0%	7.0%	1:13	Long-term emissions regulation and charging mandates	The European Union has combined fleet emissions standards with legally mandated charging corridors across member states.
Australia	**13.1%**	14.9%	3.0%	1:90*	National fuel efficiency standards introduced in 2025	Australia, while historically slower to adopt EVs, introduced the New Vehicle Efficiency Standard in 2025 and continues expanding national charging infrastructure through coordinated federal and state investment.
New Zealand	**11.0%**	18.4%	3.3%	1-52*	Slower progress following policy weakening	

Sources:18.24 - 18.46

New Zealand retains many structural advantages:

- high renewable electricity generation
- increasing consumer familiarity with EVs
- growing charging infrastructure
- growing industry capability across transport, energy and technology sectors

The remaining challenge is not whether transport electrification can happen in New Zealand — but whether policy settings remain stable enough for households, businesses and infrastructure providers to invest with confidence.

**The charger ratios for Australia and New Zealand are marked with an asterisk because public charger data is inconsistently tracked in both countries — particularly AC destination chargers at shopping centres, workplaces and hotels, which are not comprehensively counted in official datasets.*

APPENDIX I – TERMS USED IN THIS REPORT

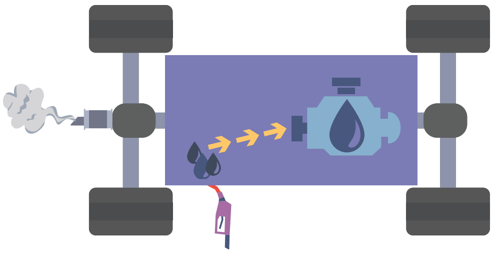
WHAT'S AN EV?

EV stands for electric vehicle, which is a plug-in vehicle powered at least partly by electricity. This includes battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs).

The term 'EV' doesn't just cover cars; electrified options are developing for most modes of transport. E-bikes and e-scooters, electric trucks, vans and buses are gaining global traction, and electric drivetrain technologies for boats and planes are developing at pace.

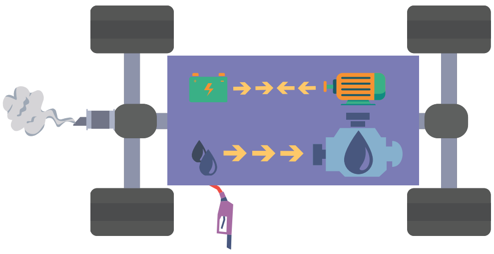
ICE (Internal Combustion Engine)

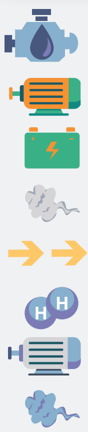
An engine in which the combustion of a fuel (normally petrol or diesel) occurs with an oxidiser (usually air) in a combustion chamber. This has historically been the main engine for almost every motorised vehicle.



HEV (Hybrid Electric Vehicle)

Combines an ICE with a small electric motor, but cannot be plugged in to charge. Electric propulsion is usually achieved via regenerative braking.





Petrol / diesel

Electric motor

EV battery

Tailpipe emissions

Energy flow

Hydrogen

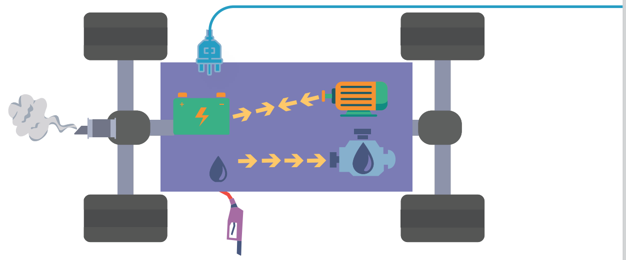
Hydrogen Electric motor

Water vapour

Sources: Drive Electric, Standards New Zealand, Gen Less [2.0, 2.1, 2.2, 2.3]

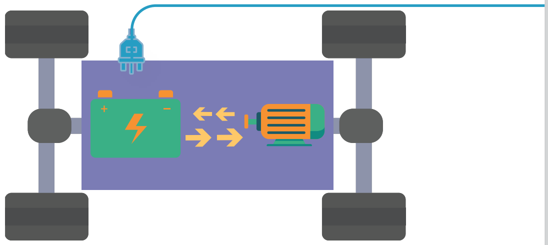
PHEV (Plug-In Hybrid Electric Vehicle)

Operates on both an ICE and an electric motor. Can be plugged into a power source to recharge its battery, extending the distance it can travel on electricity alone before switching to ICE propulsion.



BEV (Battery Electric Vehicle)

Operates entirely on an electrically powered motor.

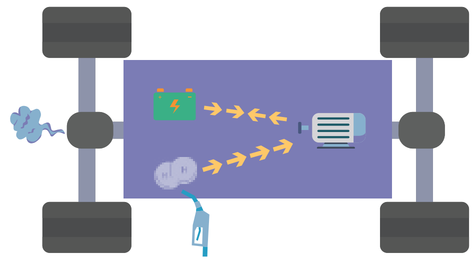


Electric Vehicle or 'plug-in vehicle'

Can be recharged from an external source of electricity, such as wall sockets or an EV charging station, and the energy is stored in rechargeable battery packs.

FCEV (Fuel Cell Electric Vehicle)

Runs on electricity generated by fuel cells within the vehicle; the fuel is typically hydrogen.



ZEV (Zero-Emission Vehicle)

Emits no exhaust gas (tailpipe emissions) from the on-board source of power. This usually refers to both BEVs and FCEVs.

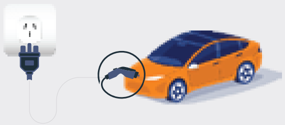
APPENDIX II - CHARGING TERMINOLOGY

CHARGING MODES IN NEW ZEALAND

MODE 1

~1.8kW
Domestic socket

AC only

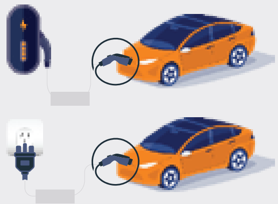


Mode 1 charging uses a portable charging cable to draw power from the standard 3-pin socket found in New Zealand homes. It is the slowest form of charging, and is only allowed in domestic settings. Mode 1 charging must still be protected by a Type A Residual Current Device.

MODE 2

~1.8 - 7kW

AC only

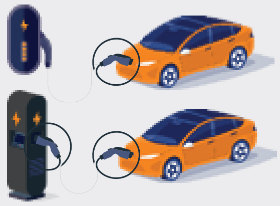


Mode 2 charging also uses a 3-pin plug, but via a charging cable with an integrated control box that regulates the charging process, providing safety against electric shocks or fires, and protecting your car from potential faults. It is suitable for charging low-medium power BEVs and PHEVs in a domestic setting only.

MODE 3

22 - 50kW

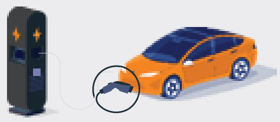
AC only



Mode 3 charging uses a dedicated charging station or wallbox with a Type 2 connector. It delivers a higher charging rate, and is designed to communicate with the vehicle to ensure safe and efficient charging. Mode 3 charging is suitable for all types of EVs, including high-power EVs with large battery capacities.

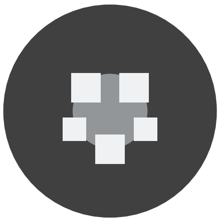
MODE 4

22 - 350kW **DC**
50kW **AC**



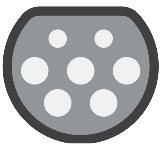
Mode 4 charging is the fastest and most efficient form of EV charging. It can be accessed at some high-powered AC stations and any DC station in New Zealand. Some earlier-model BEVs and PHEVs can't accept DC fast charging, so make sure you check the specifications of your vehicle before using this mode.

CHARGING CONNECTORS IN NEW ZEALAND



Type 1

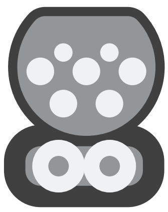
An AC plug used in North America and Japan. You can use adaptors to charge EVs with this inlet in New Zealand.



Type 2

(Mennekes)

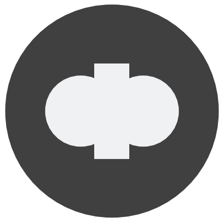
A European plug for AC charging that has been adopted by New Zealand.



CCS

(Combined Charging System)

Most common fast charging connector for the majority of New Zealand new vehicles.



CHAdeMO

A DC standard, compatible with some Japanese manufacturers.

Tesla

Specifically designed for Tesla EVs and Superchargers.

SOCKETED

Socketed chargers are simply a socket for a BYO cable to be plugged into. In NZ, this is generally a universal Type 2 socket.

TETHERED

Tethered chargers have a cable permanently attached to the charger, with the plug corresponding to the vehicle's connector Type. These cables are usually 5-6m long and are hung with the charger.

Sources: Standards New Zealand

DRIVE ELECTRIC

Drive Electric extends its sincere thanks to the many organisations, industry leaders and subject matter experts who contributed to the State of the Nation: Electric Transport in Aotearoa New Zealand 2026 report.

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