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9(2)(j)	to enable a Minister of the Crown or any public service agency or organisation holding the information to carry on, without prejudice or disadvantage, negotiations (including commercial and industrial negotiations)

TE MANATŪ WAKA
MINISTRY OF TRANSPORT

BRIEFING

6 April 2022 OC220233

Rt Hon Jacinda Ardern
Prime Minister

Hon Michael Wood
Minister of Transport

ELECTRIC VEHICLE SUPPLY: CHALLENGES AND OPPORTUNITIES

Purpose

This briefing provides an introduction to the current and potential future challenges and/or opportunities of light electric vehicle (EV) supply in New Zealand. We propose some actions to improve EV supply ahead of further advice s 9(2)(f)(iv) [redacted]

Key points

- As of April 2022, there are over 30,000 zero emission battery electric vehicles (EVs) and over 10,000 plug-in hybrid EVs (PHEVs) in New Zealand, which in total make up almost one percent of our light vehicle fleet.
- The Emissions Reduction Plan sets a target for zero emission vehicles to reach a 30 percent share of the fleet by 2035. This will require about 1.5 million more EVs over this timeframe, including around 200,000 EV vans and utes[1]. As used cars account for around half of the vehicles entering New Zealand, this implies either half of the EVs to meet the 2035 target need to be used imports, or, that the consumer market adjusts to buying a greater proportion of new vehicles.
- New Zealand has experienced a tripling of new EV and PHEV sales since rebates were introduced mid-2021, and over 100 models of these vehicles are now available for sale, up from 24 options in 2015. However, waitlists for most popular new models now extend well over six months as demand and popularity surges. s 6(a) [redacted]
- Achieving our 2035 EV target, as well as achieving the vehicle carbon dioxide (CO_2) reduction targets for 2023-2027 legislated through the Clean Vehicles Bill requires New Zealand to successfully secure enough EVs in a fiercely competitive global market. Without support, distributors may struggle to achieve these targets.

[1] The average shares of light passenger and commercial light vehicles in the light vehicle fleet over the past 20 years were 86 percent and 14 percent, respectively.

- EV demand is rapidly growing in Europe, UK, China and North America due to strengthening climate policy and fuel price inflation. EV manufacture and supply is constrained due to limited EV production lines, combined with world events including Covid-19 related disruptions to manufacturing and shipping. Divestment from Russian oil, rare metals and automotive parts will further disrupt supply.

- To improve EV supply in New Zealand, we recommend officials and Ministers seek opportunities to raise the profile of the New Zealand market with relevant governments, organisations and automakers key to the manufacture and supply of EVs. A number of local distributors have indicated this effort would be helpful.

- Globally, regions differ markedly in terms of EV production/export, demand, and policy support. China currently leads globally across all of these areas. Europe and the UK are performing well, and have significant long term targets. The US is less uniform, however Tesla dominates production and California features strong policy and demand.

- s 6(a) [redacted]

Recommendations

We recommend you:

1 **Note** global demand is outstripping supply of low emissions vehicles and New Zealand may be particularly exposed

2 **Agree** to seek opportunities to engage with automakers and governments to raise the profile of our vehicle market, including incentives and regulations supporting EVs — Yes / No

3 **Note** that officials have engaged with US and Chinese manufacturers to promote supply, but further work and high-level support is needed

4 **Note** that supply of light commercial EVs (inc vans and utes) is scarce globally, but strong engagement with manufacturers could help lift the share available here

5 s 9(2)(f)(iv) [redacted]

Ewan Delany
Manager, Environment, Emissions and Adaptation, Ministry of Transport
6 / 4 / 22

Rt Hon Jacinda Ardern
Prime Minister
..... / ..... / .....

Hon Michael Wood
Minister of Transport
16 / 04 / 2022

Minister's office to complete: ☐ Approved ☐ Declined

☐ Seen by Minister ☐ Not seen by Minister

☐ Overtaken by events

Comments

s 9(2)(g)(i)

s 9(2)(f)(iv)

Contacts

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ELECTRIC VEHICLE SUPPLY: CHALLENGES AND OPPORTUNITIES

EV and PHEV registrations are surging in New Zealand due to government policy, improving technology and rising fuel prices

1 Following the introduction of rebates on electric vehicles (EVs) and plug-in hybrid EVs (PHEVs) in July 2021, their sales have tripled from about 500 to over 1500 per month.

2 This is most pronounced within the new passenger vehicle segment, where EV and PHEV combined uptake rose from one percent in 2020 to eight percent in 2021, and achieved a new record of almost 20 percent in March 2022. This means New Zealand is rapidly catching up with major global markets that feature strong EV or vehicle carbon dioxide (CO_2) regulations (Europe, UK, China, and the US):

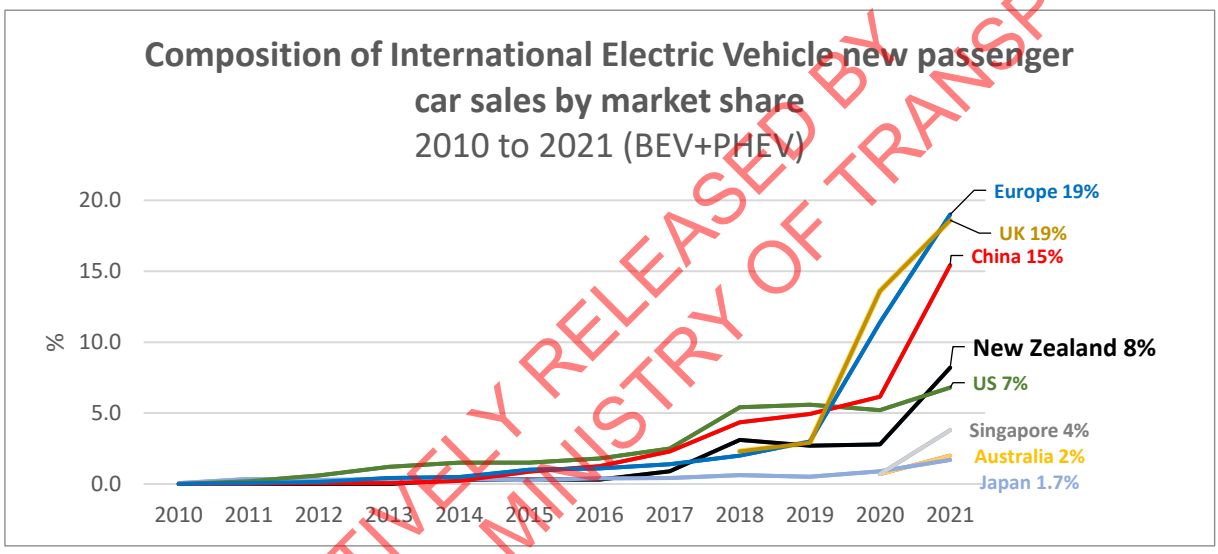

Figure 1: Selected country's EV+PHEV uptake 2010-2021

3 Commercial (van and ute) EVs market share remains low, at less than one percent of sales. This is also experienced in other markets and is due to limited global production of these vehicles. This is set to improve, with the New Zealand Motor Industry Association forecasting 32 van and 10 ute models by 2025 in either hybrid, PHEV, or EV format. However, the popularity of the ute segment in the New Zealand market presents an additional challenge to achieve supply; in other markets such consumers tend to buy a large car or van.

4 The increase of models across the fleet is important to supporting EV growth by ensuring there are a variety of price points and types of vehicles to suit differing needs. The quantity of distinct EV and PHEV vehicle models rose from 24 in 2015 to over 100 at the end of 2021:

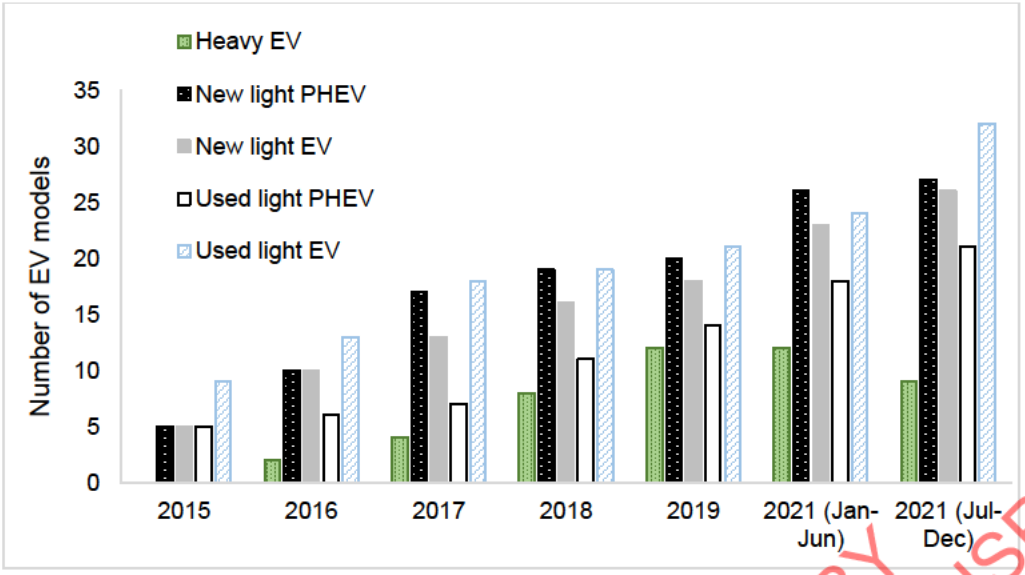

Figure 2: Number of EV and PHEV models registered between 2015 and 2021

Manufacturers are responding to New Zealand's strong subsidies and regulations

5 Ambitious CO_2 targets legislated by the recently passed Clean Vehicle Act together with rebates is leading to new brands and models entering New Zealand in 2022, including:

- **Tesla** (USA, built China) will launch a new SUV this year to New Zealand, likely enabling it to continue its position as top selling EV brand by volume *(see appendix 2)*. Tesla achieved record manufacturing volume in Q1 2022 but faces extraordinary demand globally, including from New Zealand where delivery times have extended to 6-9 months.
- **LDV** (China) will introduce the first electric ute to New Zealand within 12 months. s 9(2)(b)(ii) LDV sell several electric vans at prices starting around $65,000.
- **MG** (China), and Hyundai and Kia (both South Korea) are currently popular EV brands in New Zealand and are increasing volume, and model choice, but continue to face difficulties keeping up with demand. MG sells New Zealand's most affordable new EV, priced at approximately $50,000.
- **BYD** (China) is one of several major Chinese automakers now exporting to western markets, and will enter New Zealand with EVs this year. s 9(2)(b)(ii) BYD recently chose to end sales of petrol vehicles to focus exclusively on EVs and PHEVs, a first for an established automaker.
- **Opel** (Germany) brand will enter our market this year, and will only sell vehicles eligible for rebates. Sibling European brands Peugeot and Citroen are increasing car and vans models soon, and targeting the sale of zero/low emission vehicles.
- **Other European** manufacturers have indicated they will be providing greater EV model choice to New Zealand, such as BMW, Audi, and soon Skoda and VW.
- **Ford** (USA) will introduce their first EV (a van), and a number of hybrids, but are yet to explain when its European market transition (all passenger and commercial vehicles, including utes, being available there as hybrid or EV between 2024-2026) will take place in our market.

- **Japanese brands** to date are under represented in EV sales in New Zealand. Only Nissan, Mazda, and Lexus currently sell new EVs and at very small volume here. Toyota has announced it will introduce an EV later this year, but has not confirmed dates for introducing other models, such as an electric ute; this is concerning given Toyota is overall our market volume leader for petrol/diesel vehicles. Toyota is providing significant volume of hybrids, providing an interim step for both the new and used import market, however. Mitsubishi sells plug-in hybrids s 9(2)(b)(ii)

We will soon have enough models, but not enough volume of new EVs

6 The growth of new brands and models as described above provides confidence that New Zealand will have a broad range of new EVs at a variety of price points and capabilities. However, other than Tesla, none of the distributors appear to be in a position to supply in volume (over 1000 units per year). This is causing significant wait times for all new passenger EV models, and a pattern where models sell out before they arrive s 9(2)(b)(ii)

7 All brands supplying EVs into New Zealand state they cannot secure sufficient allocations to meet demand. This is a global issue, not limited to New Zealand. Rapidly rising global production of EVs *is* occurring (see Appendix 1), however this is more than overwhelmed by even more quickly growing demand for EVs, particularly from China and Europe and UK, but also California, and a number of smaller markets with strong EV policy.

8 Recent world events are slowing the pace of EV supply growth, and are increasing the rate of EV demand; for example, in the case of actions by various countries to reduce dependence on Russia for oil, raw materials and manufactured components. This constrains all vehicle supply but EVs contain more electronics and more materials at the outset (for the battery), although their operation is less affected by global commodity prices, ie oil.

9 From 2023, importers of vehicles in New Zealand need to achieve targets or face penalties. This gives them strong leverage to work with manufacturers, especially from 2026 when our targets match ambition levels currently enacted in the US and Europe. However, New Zealand is a small market and global automakers and foreign governments are not yet familiar with our significant ambitions.

10 A concerted effort is needed to ensure New Zealand is prioritised by vehicle suppliers. This effort is needed both in the short term, to ensure growth in the first half of this decade, but also over the long term, in order to achieve targets set out by the Emission Reduction Plan that set a goal of lifting EVs from less than one percent to 30 percent of the fleet in 2035, which relies on more than 1.5 million new EVs entering New Zealand.

s 6(a)

11 ***We may be approaching the limit of the used import EVs Japan can supply*** due to its low domestic EV uptake (Japan shifted from below one percent to two percent in 2021). Used EVs currently represent half of imported EVs, but without additional supply this will drop. s 9(2)(g)(i)

12 If the used import market continues to represent close to half of sales, this implies we need 650,000 used EV imports by 2035. While some fresh models of EVs have been recently launched (a single vehicle each by Nissan, Mazda, and Honda) or *are* being launched (Toyota SUV), quantities are expected to remain low while Japanese government policy and automakers focus on hybrids and long-term hydrogen projects.

13 s 9(2)(g)(i) This suggests that over first half of this decade, a growing variety, but likely low volume of Japanese, South Korean, and European used vehicles could in turn be imported by New Zealand from Japan.

14 s 9(2)(b)(ii) The plentiful supply of hybrids from Japan will support our needs in the short to mid term. s 9(2)(g)(i)

15 s 9(2)(g)(i) Alternatives to *used* Japanese imports include increasing used import levels from the UK (which has a vibrant EV market), or consumers migrating to low cost new EVs potentially from China. Alternatives to *new* Japanese vehicles are much greater, as American, European, and Chinese automakers are increasing supply.

16 s 6(a) Many manufacturers treat New Zealand and Australia as a single market and/or have their regional HQ in Australia. The current focus in Australia's approach is to enable the private sector to commercially deploy low emissions road transport technologies at scale. Prominent in the Australian Government's framing is the concept of "consumer choice" and "empowering" Australians in making "new technology decisions" regarding their vehicles. The opposition Labor party has, however, set out a proposed National Electric Vehicle Policy – including a discount scheme – ahead of national elections in May.

Engagement with global markets may support supply to NZ

17 ***Other types of vehicles – small and large – should be included in international conversations.*** Japan, China and Europe also produce very small compact 'micro EVs' that are affordable and could an option for urban use, and would widen options for supply, if they can meet relevant safety requirements.

18 A number of global manufacturers of trucks are now beginning to commercialise zero emission electric and hydrogen fuel cell trucks and are setting ambitions for mass production. For example, the European truck manufacturing sector is targeting 43% zero emission truck sales by 2030. When talking with governments and automakers, we should note New Zealand has strong ambitions to reduce truck emissions to ensure we are prioritised for their supply.

19 ***A high ambition long term position will help New Zealand with supply.*** New Zealand has set ambitious targets on vehicle imports in legislation out to 2027. We are also one of many countries at COP26 that signed a declaration that governments work towards all sales of new cars and vans being zero emission globally by 2040, and by no later than 2035 in leading markets. New Zealand is also one of 15 leading countries that have committed to working together to enable 100 percent zero-emission new truck and bus sales by 2040 with an interim goal of 30 percent zero-emission vehicle sales by 2030. Raising awareness of these declarations, and formally adopting zero emission only timeframes into government policy will help New Zealand feature prominently, for its size, on the global automotive landscape, and encourage governments and manufacturers to prioritise our market for zero emission vehicles.

20 ***We are starting to analyse the opportunities presented by other vehicle markets.*** There is currently a high degree of uncertainty about the extent to which other markets can help meet our need for low emissions vehicles. Engagement by Ministers and officials with automakers and counterparts in other jurisdictions initially should aim to raise the profile of New Zealand's market, our future needs and the increasingly favourable market and regulatory conditions for EVs here. There may also be potential for using public procurement to aggregate and raise the profile of our demand.

21 ***The following table summarises some key features of our target markets:***

Region	Production/Export	Consumption/Demand	s 6(a)	s 9(2)(g)(i)
China	Global leader Most new EVs supplied to NZ are assembled in China irrespective of brand (e.g. Tesla, MG). Many major Chinese brands are not well known to NZers.	Global leader China overwhelmingly buys more EVs than any other market (500,000+ per month).		
Europe / UK	Strong. UK and Ireland are right-hand drive. Rich diversity of brands, several of which are now increasing supply to NZ due to Clean Vehicles Act and rebates (e.g. Opel).	Strong Widespread consumer acceptance of EVs.		

Region	Production/Export	Consumption/Demand	s 6(a)	s 9(2)(g)(i)
US	Strong, but primarily due to one brand (Tesla).	Moderate, primarily due to one state (California)		
Japan	Low. Limited Japanese EV production is geared towards Europe/China, starving Japanese domestic and other markets. Japan has shifted from a major supplier to a minor supplier of new EVs to NZ.	Low		
Australia	None	Low		
Singapore	None	Small market size but growing EV demand. RHD market.		
Other markets deserve watching.	-	-		

Next Steps

22 We will coordinate with The Ministry of Foreign Affairs and Trade (MFAT) to ensure that upcoming international engagements include options for Ministers to engage on zero emission vehicle supply. Transport officials have sector knowledge and some relationships with automakers and international government counterparts. MFAT has been supporting this to date by identifying and facilitating opportunities for engagement with manufacturers, co-operation and commitments between countries.

23 We have been asked to provide Cabinet with advice in October on strategy for gaining greater access to the low- and zero-emission light vehicle import market, to ensure New Zealand can build a clean vehicle fleet in the future [CPC 22 MIN 0008 refers]. s 9(2)(f)(iv) We will expand on options for a broader programme of engagement in this advice.

24 We are monitoring Japanese used EV availability and auction prices and will update you on this to support the initial review of Clean Car Discount settings later this year.

Appendix 1: Selected global EV market and automaker statistics

1 Four Chinese brands (BYD, BAIC, Geely and SAIC), two American brands (Tesla and GM), three European brands (BMW, Volkswagen and Renault) and three Japanese brands from Japan (Nissan, Mitsubishi and Toyota) have sold 200,000 or more EVs in the last decade:

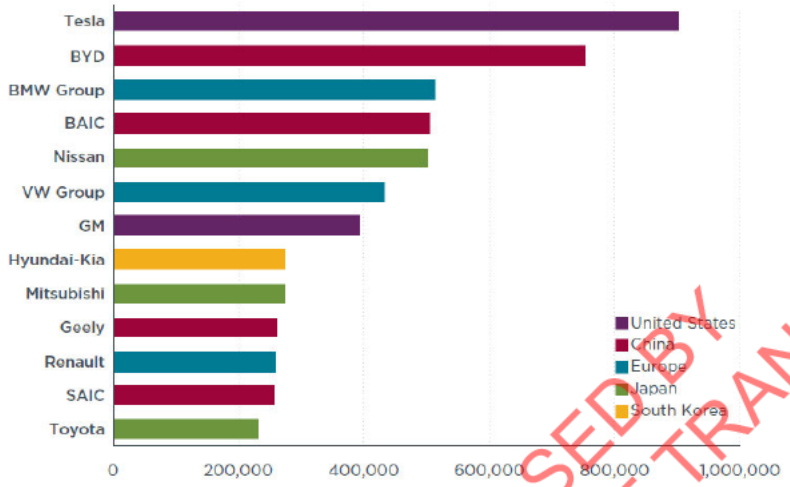

Figure 3: Major automakers that sold over 200,000 in the last decade

2 German companies are the largest investors into EV technology, with investments split between China (49 percent) and Germany (51 percent). China is estimated to be receiving US$136 billion in new investments, 50 percent of which is from Germany (including Volkswagen/Audi/Porsche with $45.5 billion and Daimler, $22 billion) and 42 percent from Chinese companies.

Announced industry electric vehicle investments ($billion) by origin (rows) and destination (columns):

Destination	China	Germany	USA	South Korea	Japan	France	Other	Total
Origin								
Germany	67.8	71.7						139.5
China	57							57
USA	5		34					39
Japan	4.8				18.9		0.7	24.4
South Korea				20				20
France	0.4					10.4		10.8
India							6.4	6.4
UK							2.3	2.3
Sweden	0.7							0.7
Total	135.7	71.7	34	20	18.9	10.4	9.4	300.1

Appendix 2: 2022 YTD brand market share for in New Zealand – EVs and wider market.

The following graph shows that almost all used import EVs (orange) are Nissan Leafs, and that Nissan NZ is by comparison selling few brand new EVs (blue). It also shows that Tesla is the significant leader in selling new EVs, followed by Hyundai, MG, Kia, and Polestar (aka Volvo). Japanese brands do not feature.

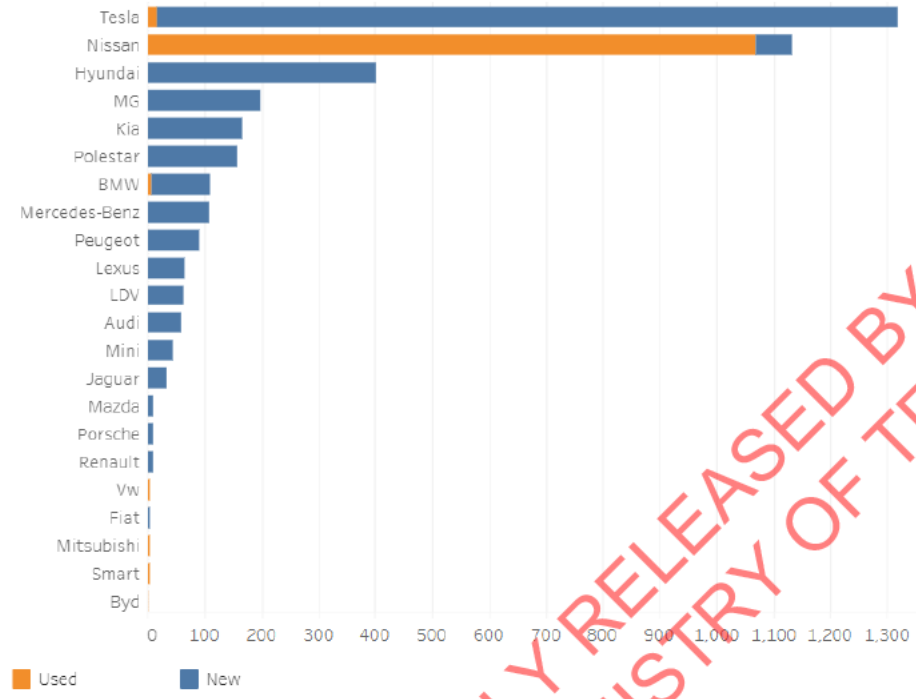

Figure 4: EV new and used volumes by brand entering New Zealand Q1 2022 (Does not show PHEVs).

In contrast, the wider vehicle market over the same period of time is dominated by Toyota and other Japanese brands. The graph below includes both new and used vehicles for Q1 2022, but illustrates fuel type by colour to indicate the types of vehicles imported:

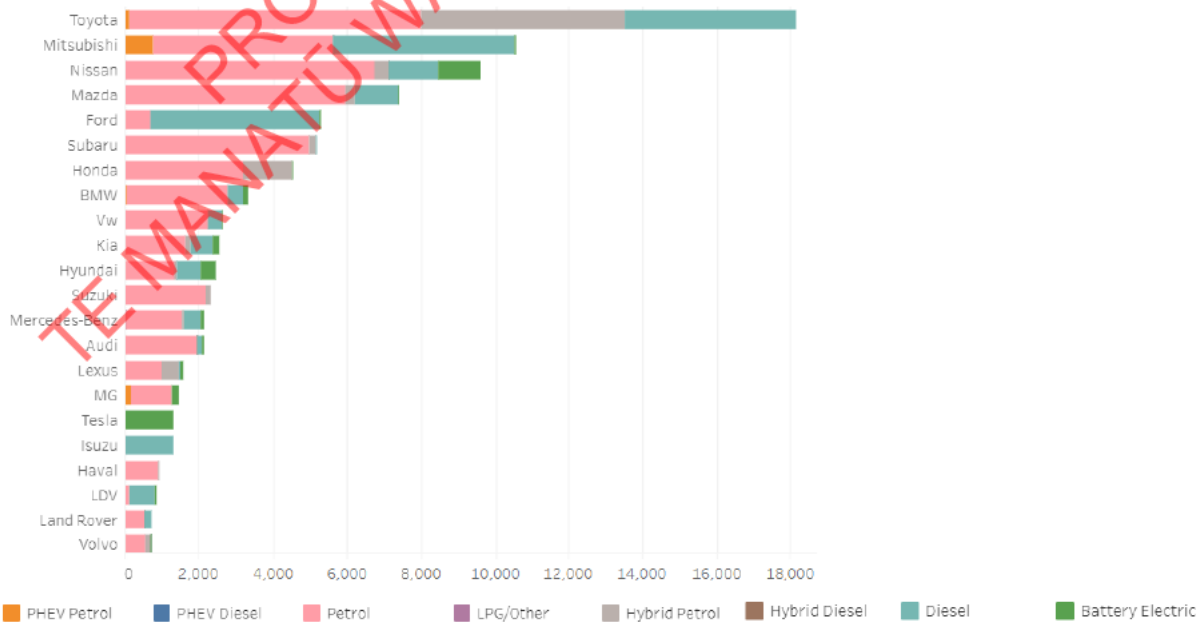

Figure 5: Brand volumes by brand entering New Zealand Q1 2022 (new and used, showing fuel type).