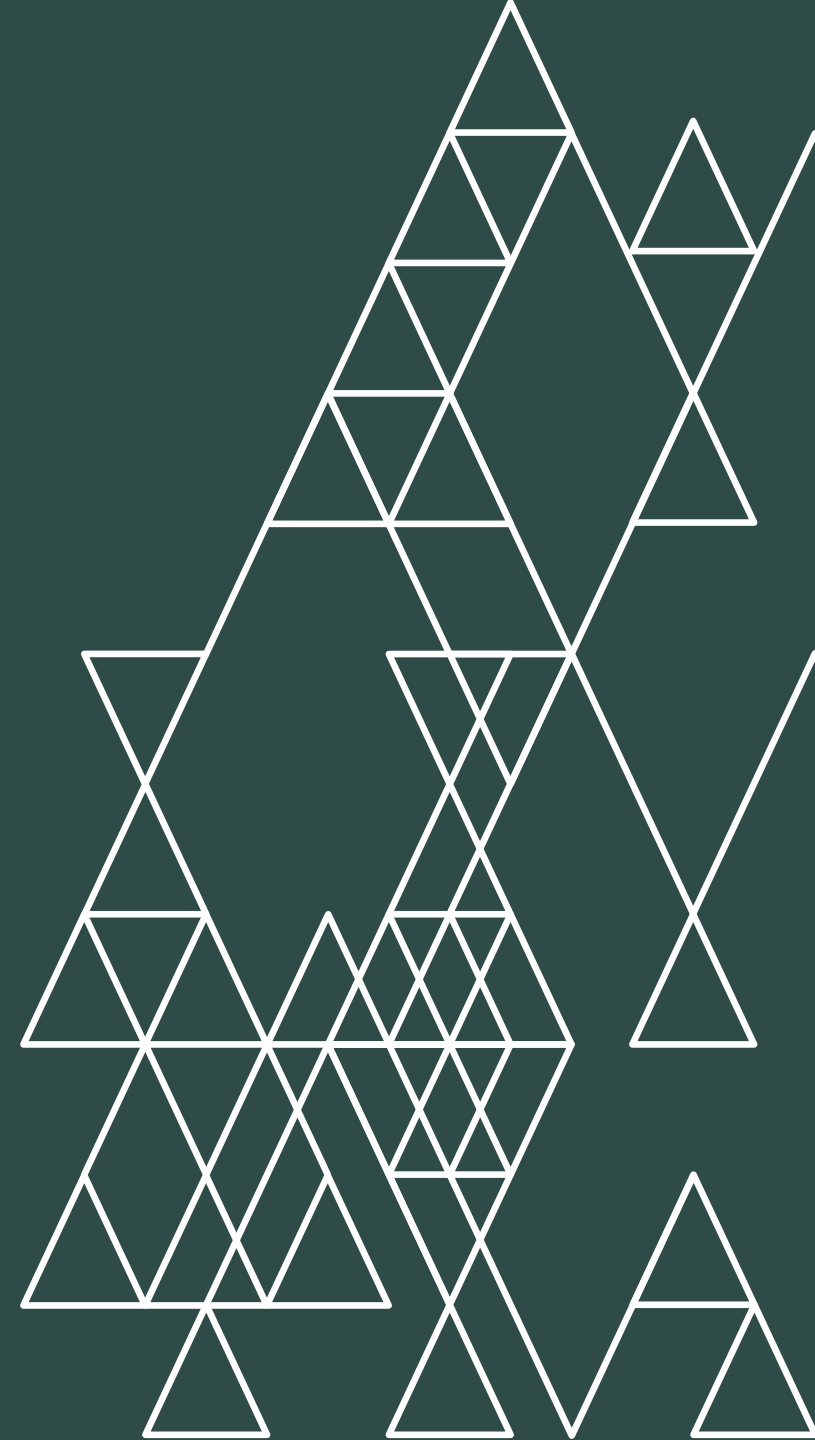


Richard Briggs Manager Transport Portfolio

Presentation to Electricity Engineers Association
22 November 2021





TE TARI TIAKI PŪNGAO
ENERGY EFFICIENCY & CONSERVATION AUTHORITY

Our purpose

Mobilise New Zealanders to be world leaders in clean and clever energy use

Our desired outcome

A sustainable energy system that supports the prosperity and wellbeing of current and future generations

Strategic focus areas



Productive and low-emissions business



Efficient and low-emissions transport



Energy efficient homes



Government leadership



Engage hearts and minds

Co-investment



EECA

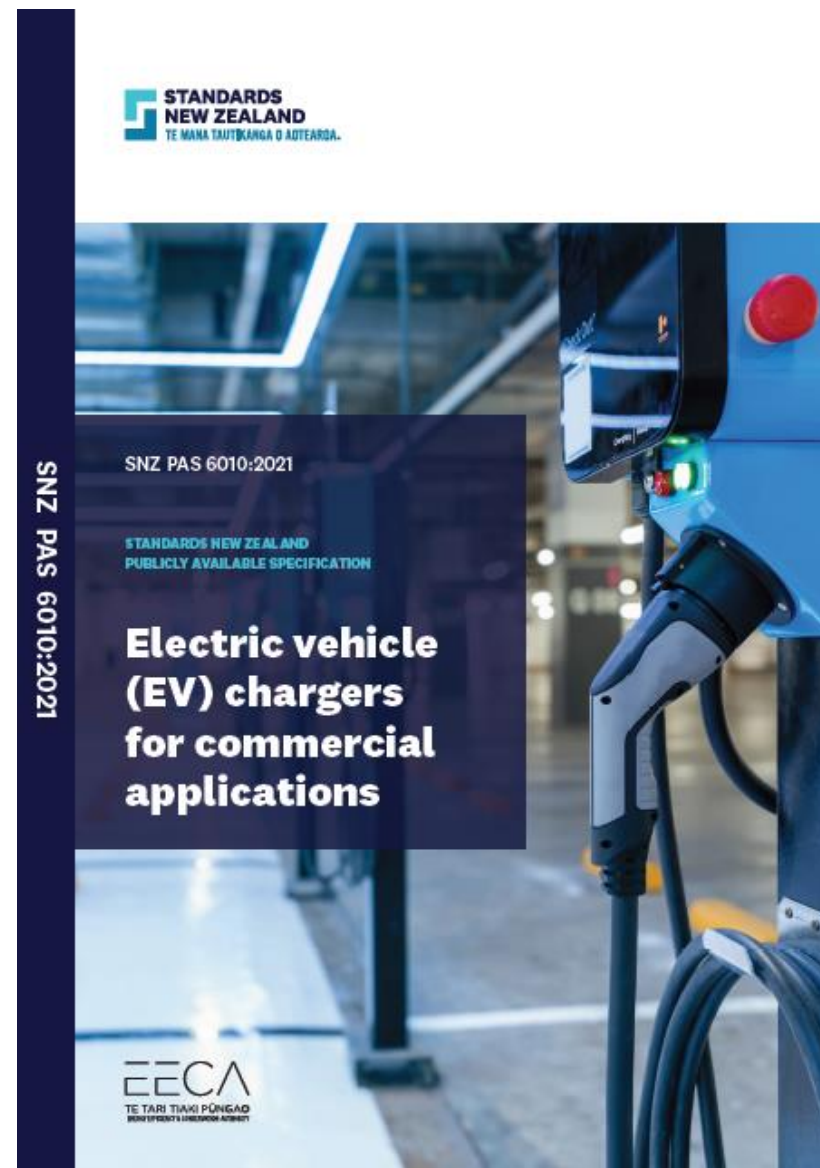
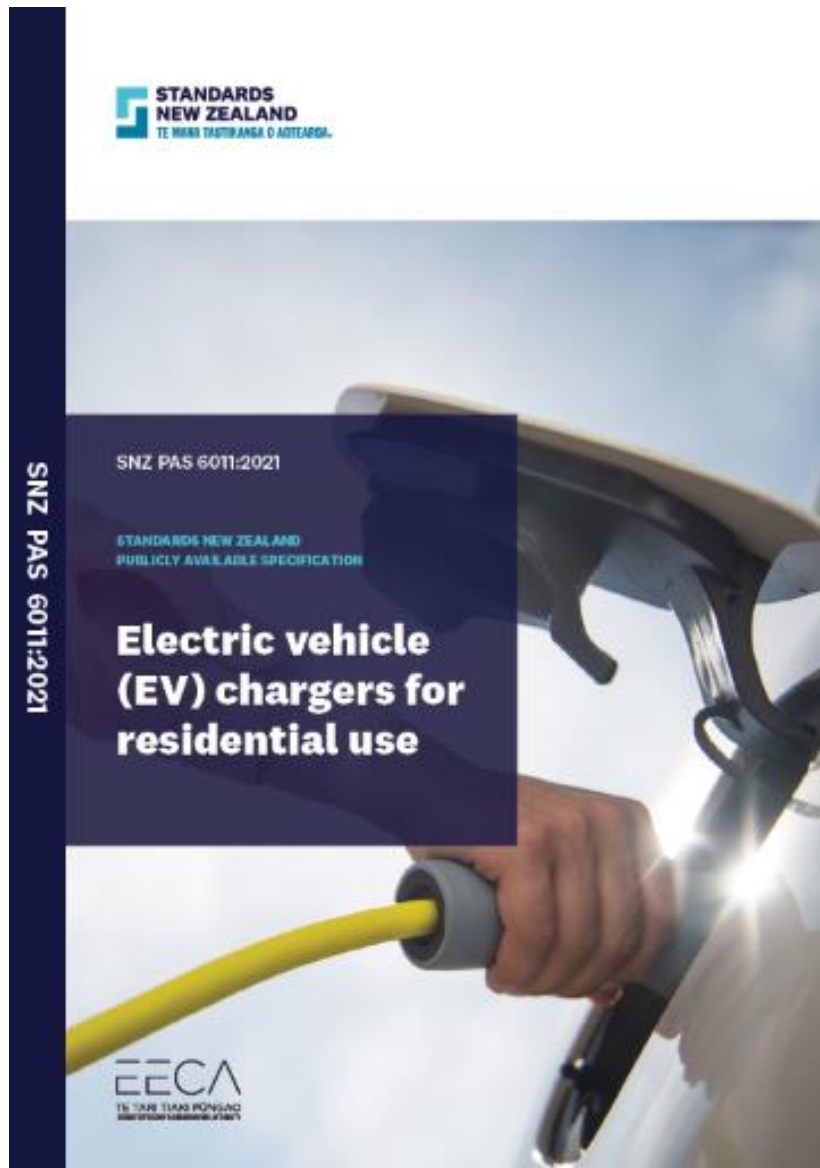
Positive systems
change



Regulation



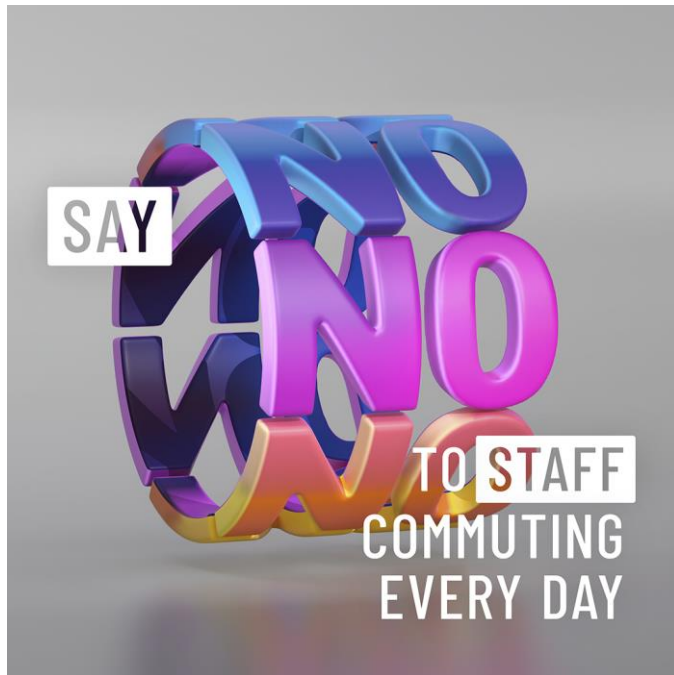
Motivation



Download free: <https://www.eeca.govt.nz/pas>



Gen Less: 'Say no to business as usual'



Purpose & Scope of Low Emission Transport Fund

Partnering on co-funding to develop and share learnings

New and emerging transport decarbonisation solutions

Acceleration of market take-up by individual organisations and through offering solutions to market

To support the **demonstration** and **adoption** of low emission transport technology, innovation and infrastructure to **accelerate** the decarbonisation of the New Zealand **transport sector**

Covering on- and off-road vehicles, vessels and aviation, low carbon refuelling and charging infrastructure, and technologies which decarbonise transport

Focus on moving people and goods – not on the whole transport system

- **Up to \$25M per year**
- **Part of the Government's climate change agenda**
- **Crown funding and Petroleum and Engine Fuel Monitoring Levy**
- **Builds on success of Low Emission Vehicles Contestable Fund**



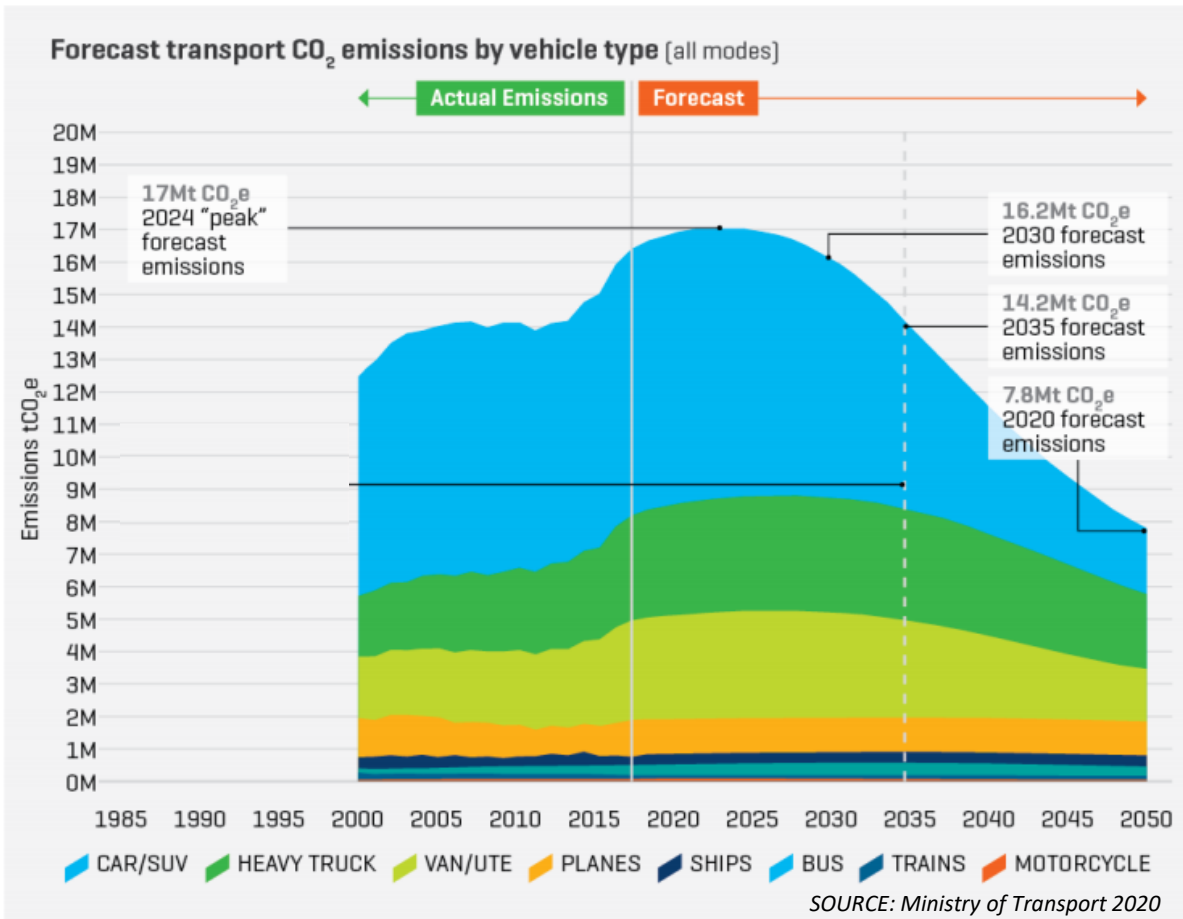
Unique to New Zealand vehicle characteristics

- 840/1000 largest fleet per capita in the world
- 46% used imports 54% new
- RHD market
- Proportion diesel & engine size in the light fleet is growing
- 30% of the fleet is over 20 years old
- 2020 car sales down 20%
- Cars growing at 3.5% pa, population growing at 1.5% pa
- 250,000 cars added pa; 160,000 scrapped (net increase 7,500 per month)
- 10,051 EV sales YTD (7 Nov 2021)
 - 50% more than 2020



“In order to transition 50% of the light fleet to electric by 2035, in average, nearly 150,000 electric vehicles need to be entering the fleet annually.”

Transport emissions increasing, system approach required in addition to current policies

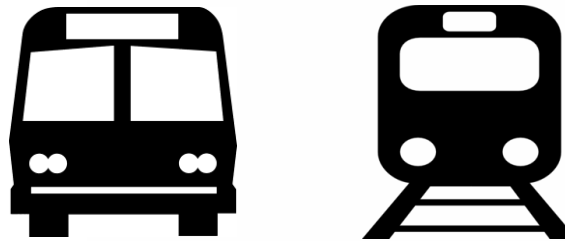


- Since 1990, transport emissions have increased by 90%. Emissions continue to rise.
- Emissions are expected to rise beyond 2024 as it considers it to be too optimistic (Ministry of Transport is remodelling this projection)

Move Healthy



Move Public



Move Shared EV



Move Private EV



MOT

AVOID
Reduce or avoid the need to travel

SHIFT
Shift to or maintain share of more environmentally friendly modes

IMPROVE
Improve the energy efficiency of transport modes and vehicle technology

Low Emission Vehicles Contestable Fund

10 Funding Rounds

200 projects

\$35.1 million

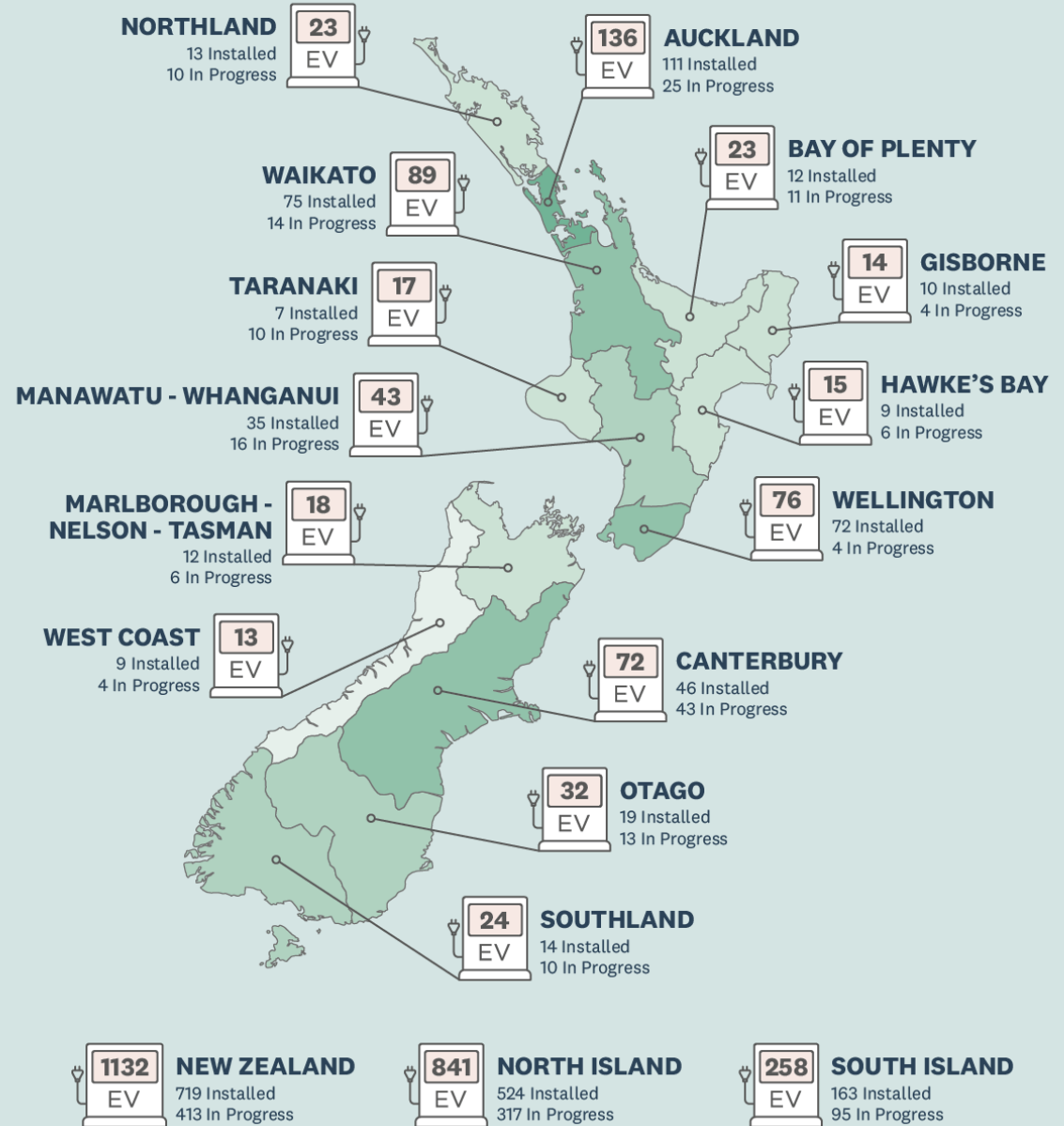
Government co-funding

\$111 million

Total project value

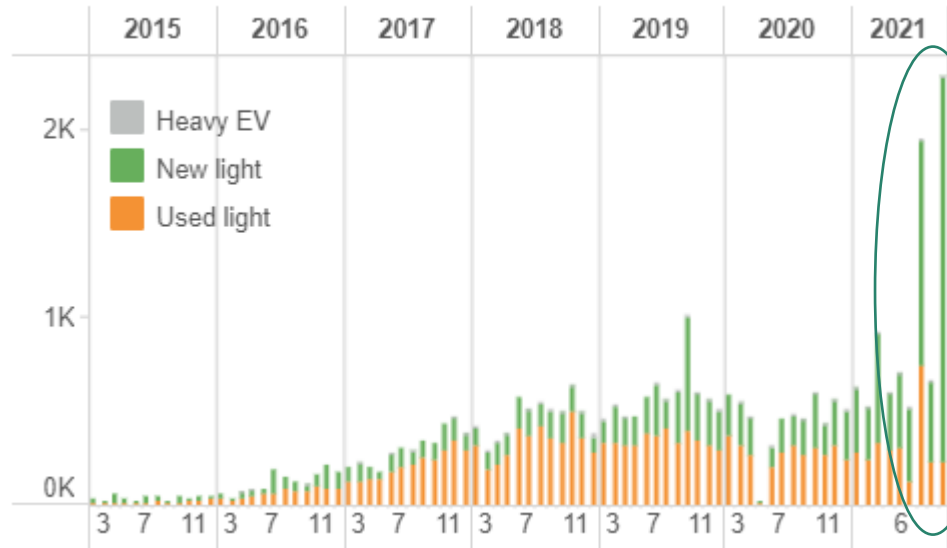
700+ EV Chargers

CO-FUNDED NATIONWIDE (PUBLIC AND PRIVATE)



Clean Car Discount has lifted sales of EVs

Monthly EV registrations



2,282 EV registrations in September, beating the previous record of 1,947 in July (the month the CCD started)

EV % of light registrations



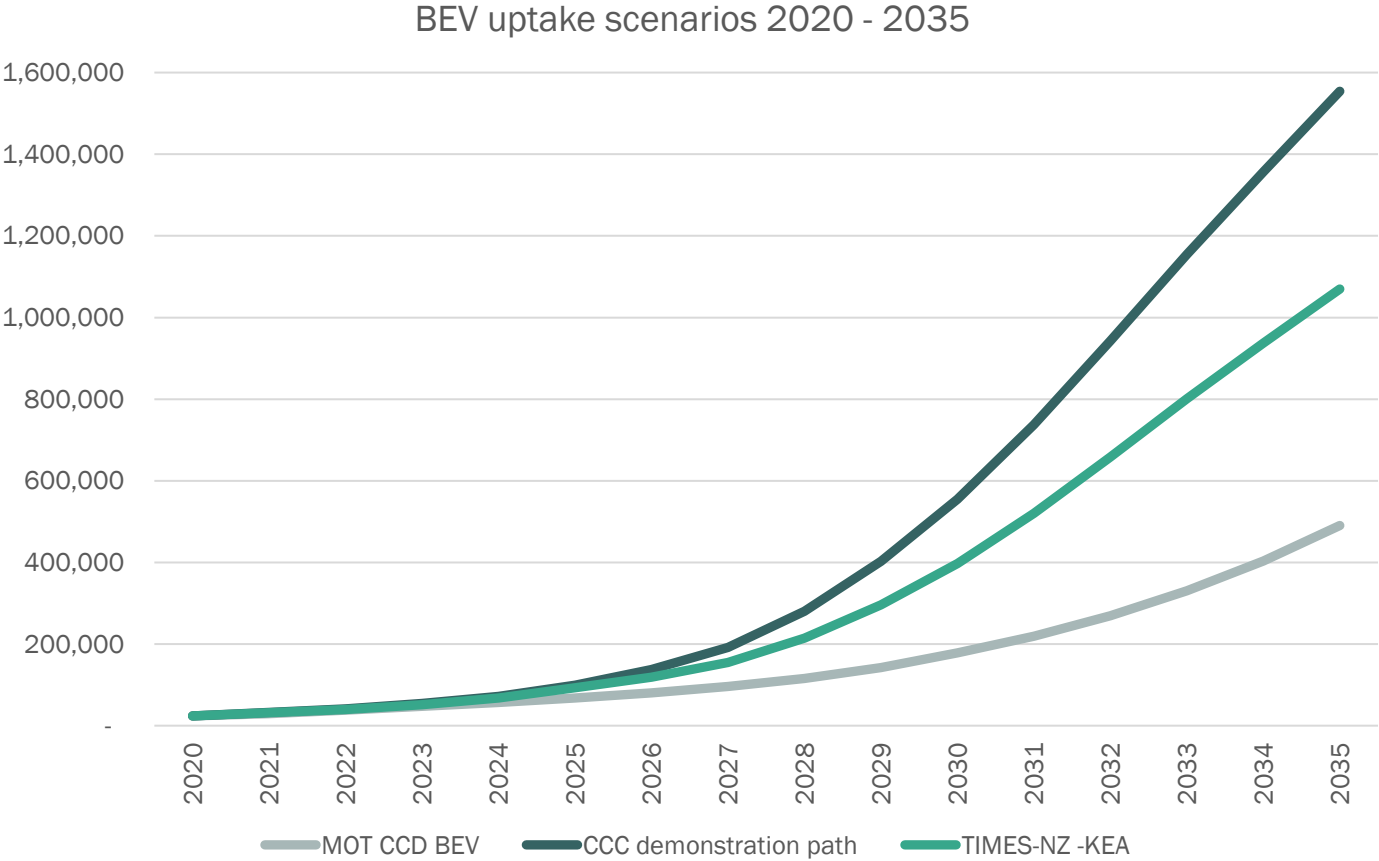
EVs accounted for 8.76% total light vehicle registrations

Make	Model	Registration count
FORD	RANGER	1,407
TESLA	MODEL 3	1,066
MITSUBISHI	OUTLANDER	963
TOYOTA	COROLLA	744
TOYOTA	HILUX	648
TOYOTA	RAV4	575
MITSUBISHI	ASX	473
MITSUBISHI	ECLIPSE CROSS	427
MG	ZS	328
MAZDA	CX-5	297
KIA	SPORTAGE	266
HYUNDAI	KONA	242

Tesla model 3 was second most popular



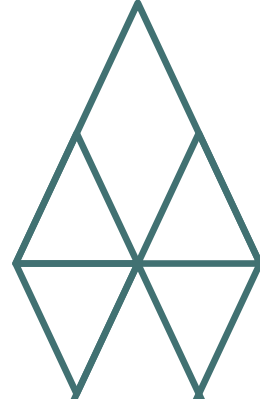
Add some rapid EV uptake...



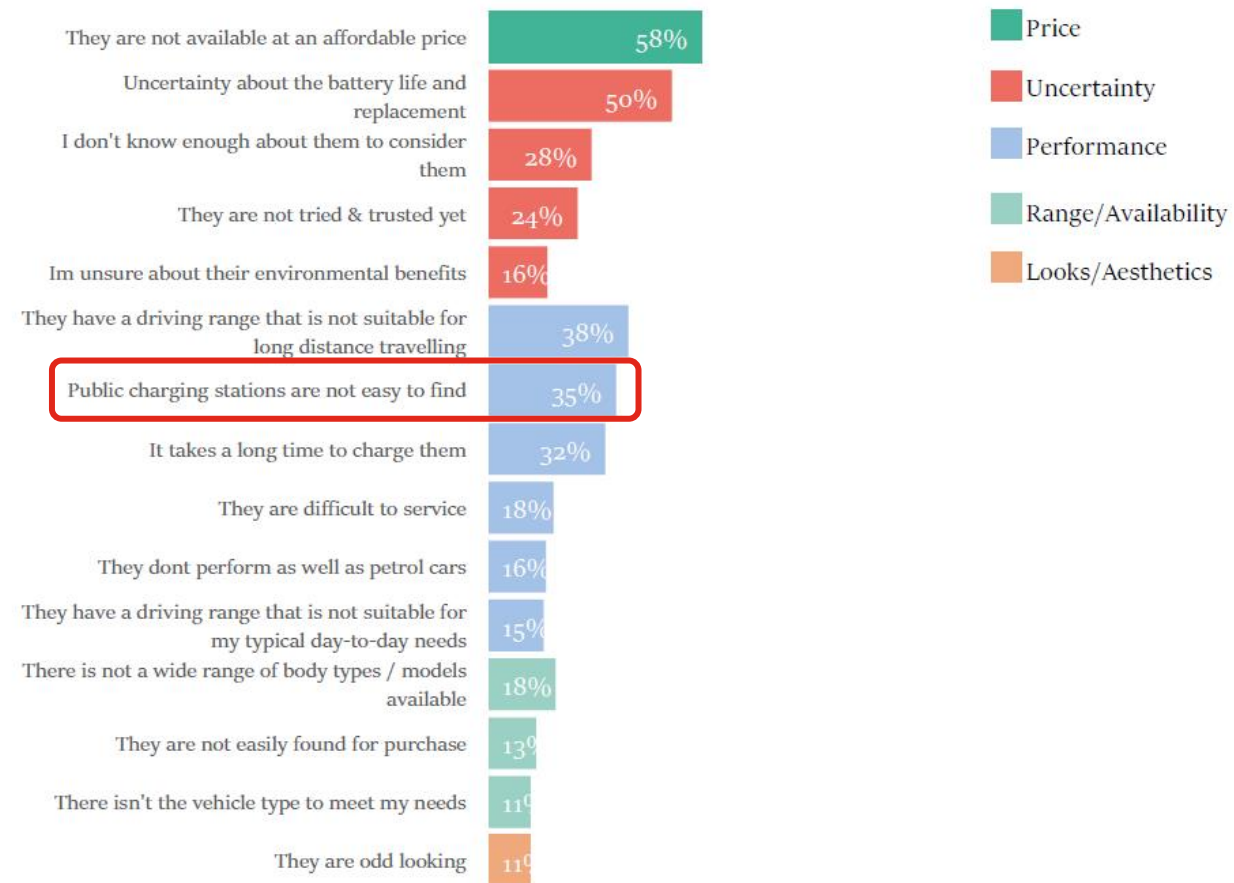
Cracks appearing?

Queuing for a charger **inhibited 41%** from using public chargers **more often**

EECA survey of EV owners – August 2021



EV Barriers



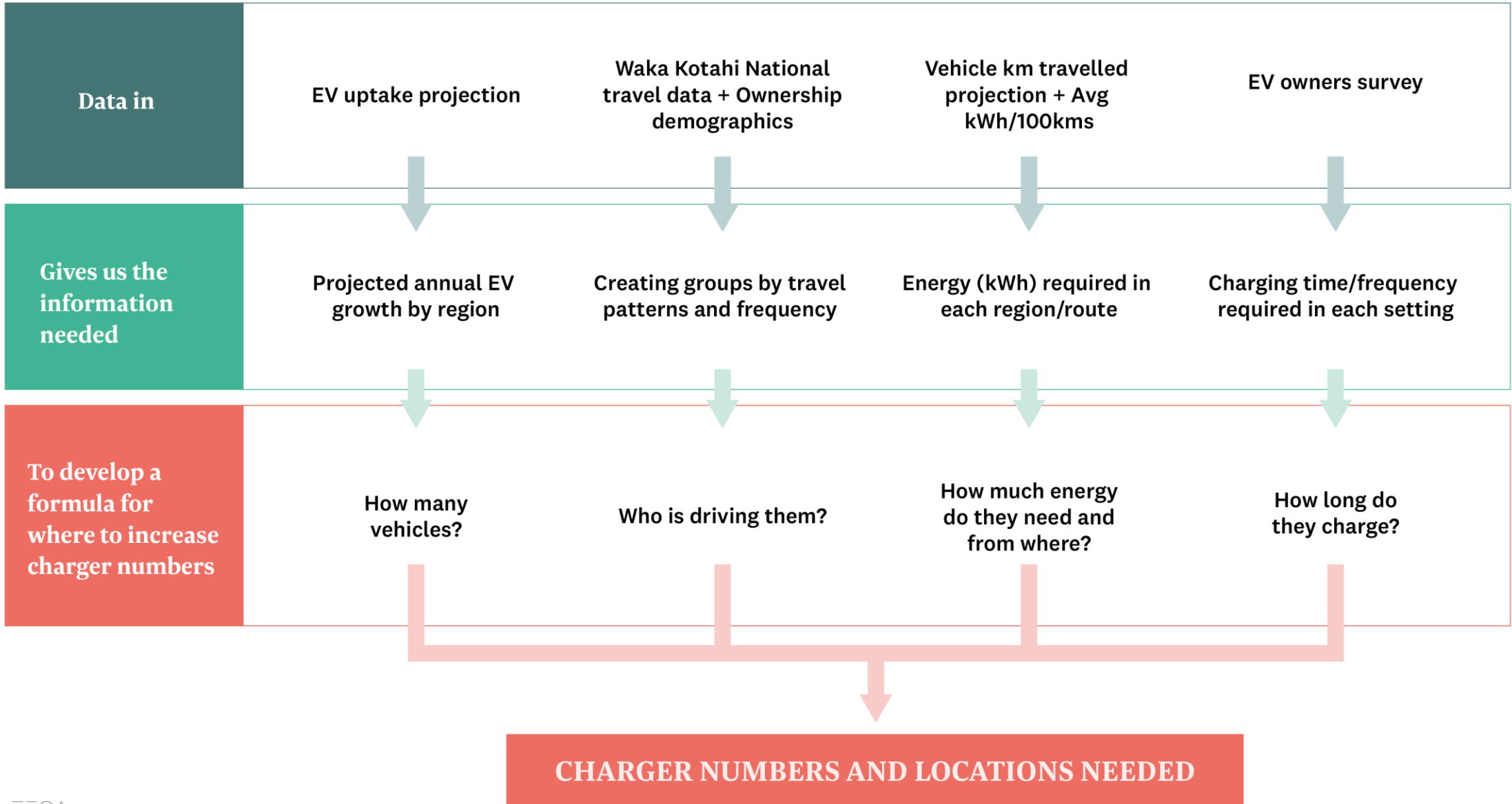
Charging Infrastructure Project

Vision; All users of Electric vehicles can access electric vehicle charging infrastructure when and where they need it

The initial roadmap and the more comprehensive roadmap to follow consider the provision of **fast public light EV charging infrastructure in the short-term (about five years)**.

- approaches for identifying locations and how to prioritise those locations.
- how the Government (and EECA specifically) is planning to approach our investment in public EV charging infrastructure
- By focussing on the near term, this roadmap intends to address the most immediate needs to support light EV uptake by New Zealand road users







Private Charging

This includes home and workplace charging. Home charging is the most convenient and cheapest form of charging; this is normally slow (3-7kW) charging done over-night. EECA's research suggests that about 82% of charging sessions are done at home. As for workplace charging, this can be slow or fast charging and is typically provided at private car parks. This is also a convenient way for company employees and fleets to charge their vehicles. EECA's research suggests that about 4% of charging sessions are done at workplaces.

Charger type

AC 3-22 kW

Charging time

4 hours +



Public – Destination Charging

This includes destinations such as supermarkets, malls, gyms, and cinemas. This is often provided by businesses to attract customers and in some cases is free of charge for a limited period. Destination and journey charging accounts for about 13% of EV charging activity.

Charger type

DC 25-50 kW

Charging time

30 min-2 hours



Public – Journey Charging

These are often used to charge batteries mid-way through or along journey routes. These chargers range from fast chargers, and will often have multiple charging heads. EV drivers normally plan one or more stopovers during their trip ahead of time and are advised to check the suitability of connectors and availability via mobile apps. Given the relatively recent introduction of ultra-fast charging to New Zealand, this makes up a relatively small proportion of charging activity.

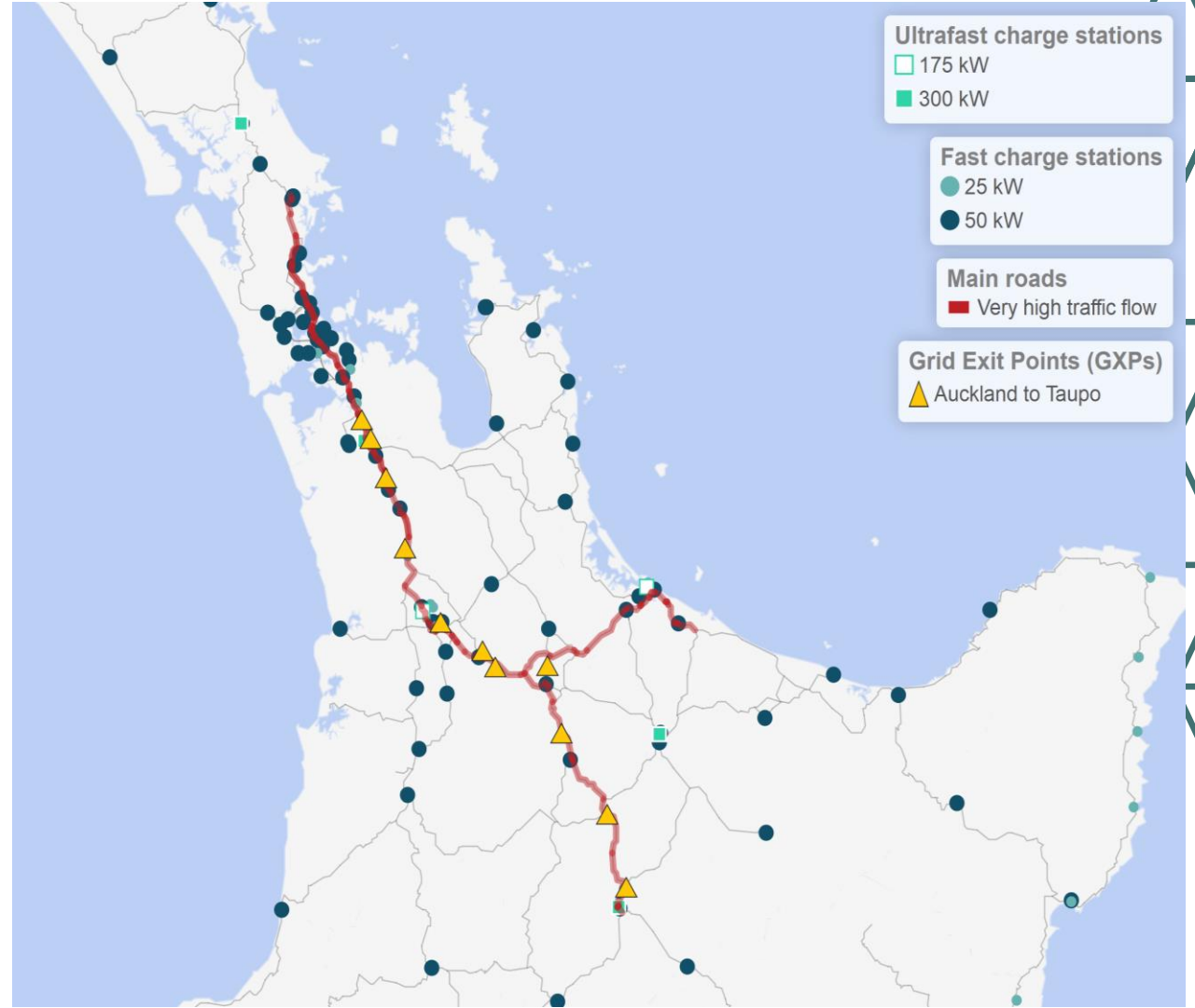
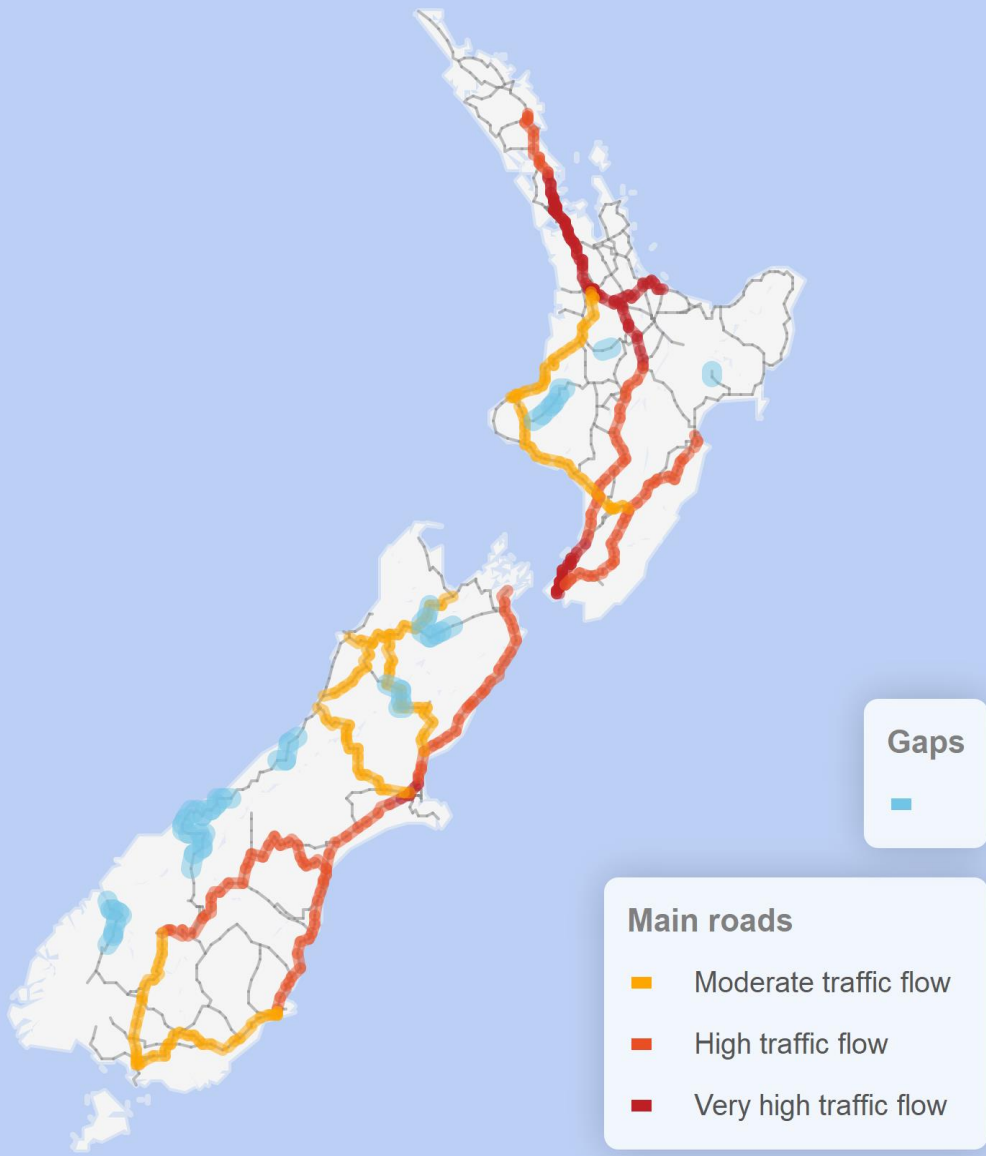
Charger type

DC 50-300 kW

Charging time

10-45 mins





Current Challenges

Home Charging

- **Smart Charging**
- **Access for Apartments, no off street parking, etc**
- **Subsidies?**

Public Charging

- **Rate of Growth and Public Charger demand**
- **Alignment of user convenience and grid access**
- **Site future proofing cost effectively**
- **Understanding the future role of the 24kWh Nissan Leaf (currently 80% of EV Fleet)**
- **Incorporating yet unknown vehicle/battery technology (range /DC charge capabilities)**
- **Accommodating Locations where power availability is constrained**
- **Multi role capabilities**
- **Accommodating seasonal demand**
- **Heavy vehicles; battery/battery swap v Hydrogen**

