

# Charging Infrastructure and Light Electric Vehicle growth in New Zealand

James Cozens, ChargeNet NZ Limited, New Zealand  
CEM - EVI Pilot City Forum, Helsinki, Finland, May 2018



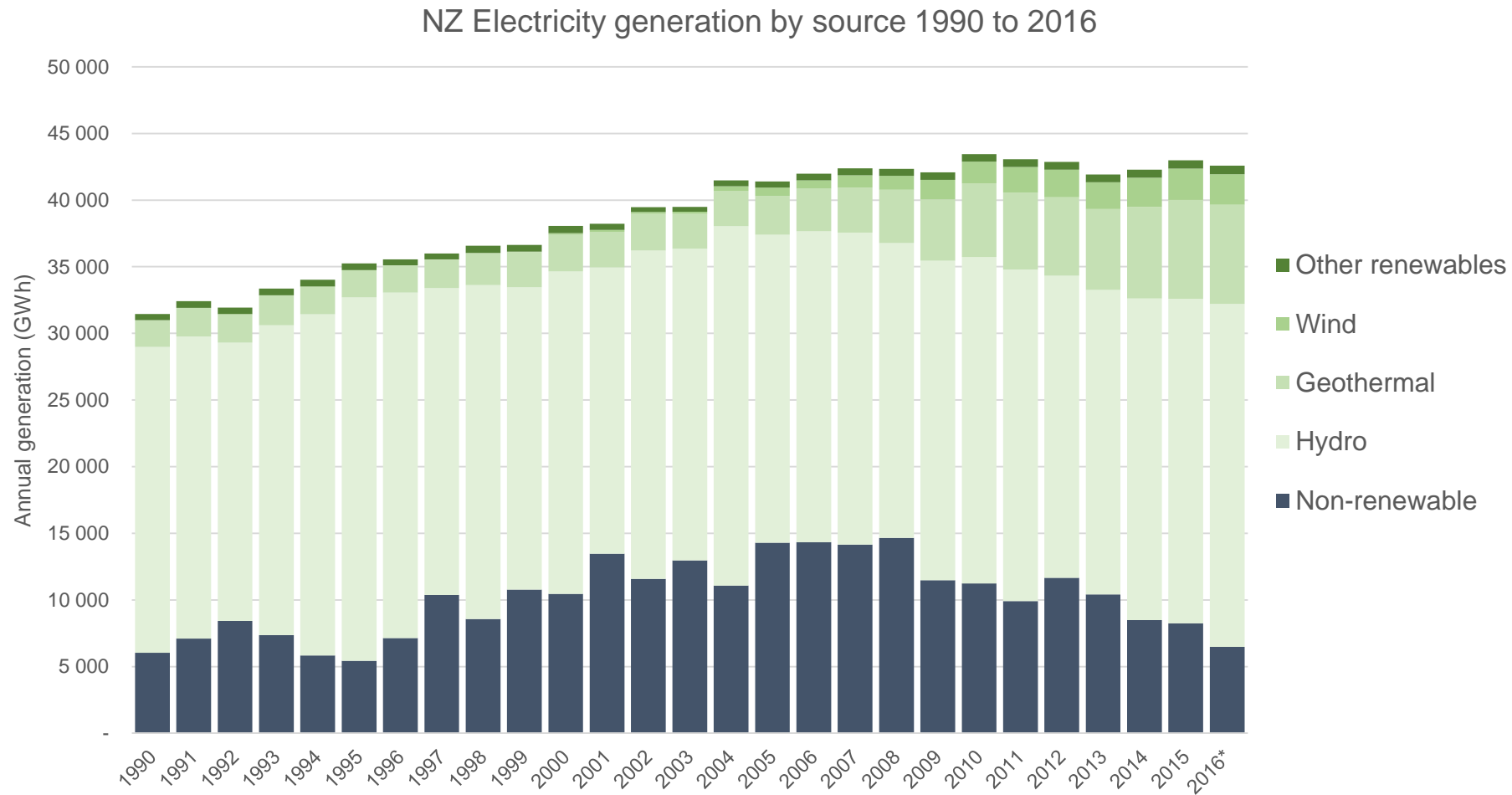
[www.electricvehicles.govt.nz](http://www.electricvehicles.govt.nz)

# About New Zealand

- Population 4.7 million
- 3.5 million light vehicles
- Right hand drive
- Accept vehicles to four international standards: EU, Japan, Australia, USA
- 55% of new entrants to the national fleet are used imports
- 85% of homes have off-street parking



# 85% of NZ electricity generation is now renewable



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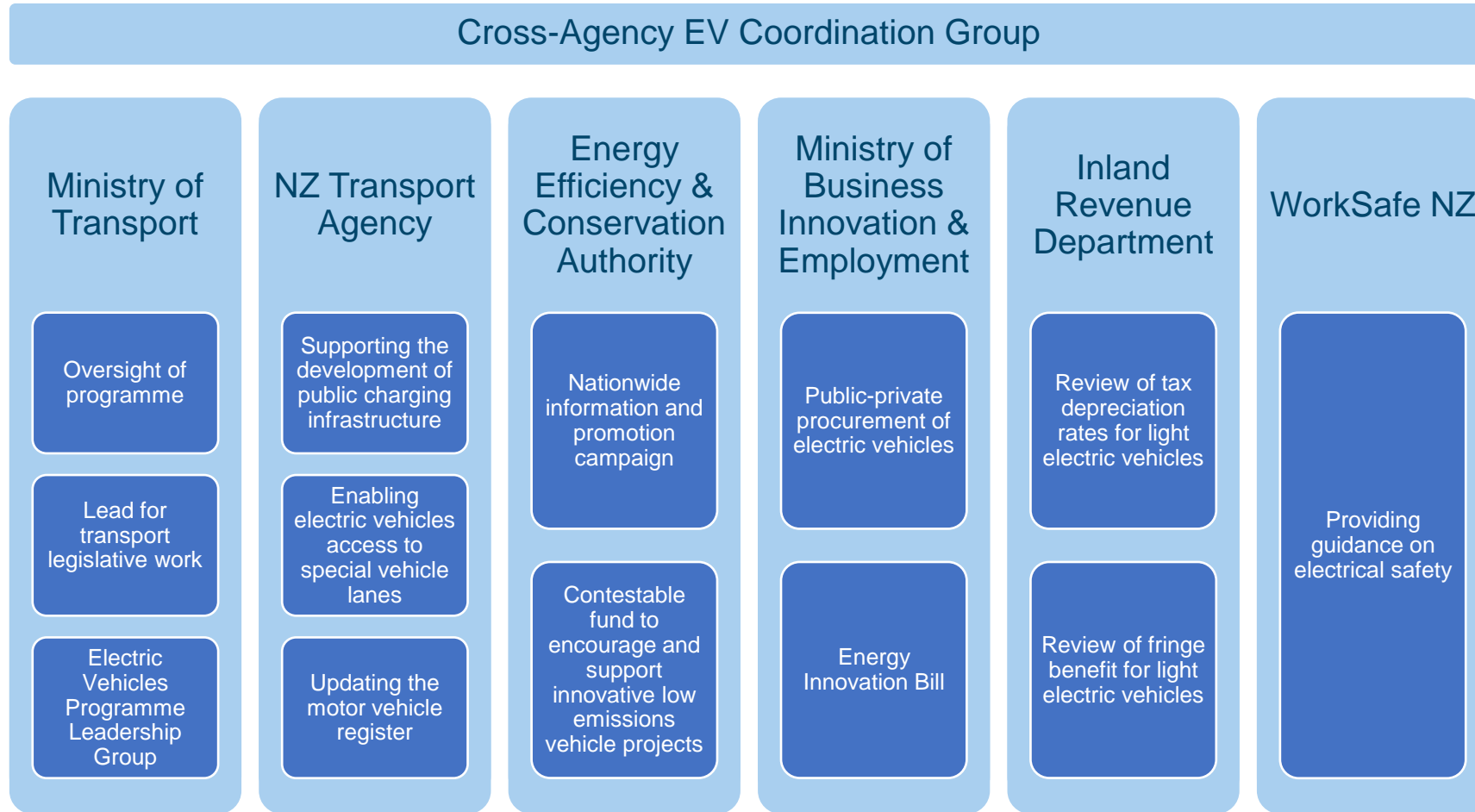
Power Generation	(as at) 19 May 2018 21:46
<b>North Island</b>	
Wind	106 MW
Hydro	872 MW
Geothermal	905 MW
Gas/Coal	0 MW
Gas	460 MW
Diesel/Oil	0 MW
Co-Gen	108 MW
<b>South Island</b>	
Wind	24 MW
Hydro	1949 MW

## % Renewables Generating

% Renewables (as at): 19 May 2018  
21:46



# The Government's EV Programme





# Information and promotion programme

Funding of \$1 million per year for a nationwide electric vehicle information and promotion campaign over five years.

- TV Advertising
- #Leading the Charge – Better NZ Trust – community engagement
- Website
- Collateral – brochures, clothing, car stickers, banners etc

# Low Emission Vehicles Contestable Fund

Funding of up to \$6 million per year to co-fund innovative projects

Rounds 1,2,3 and 4 significantly oversubscribed

Round 4 results June 2018

Foreign companies can be partners in a project, but bid must be led by NZ organisation

<https://www.eeca.govt.nz/funding-and-support/electric-vehicles->



# Road User Charges exemption for EVs

Petrol vehicles pay fuel excise, all other vehicles pay RUC for each km driven

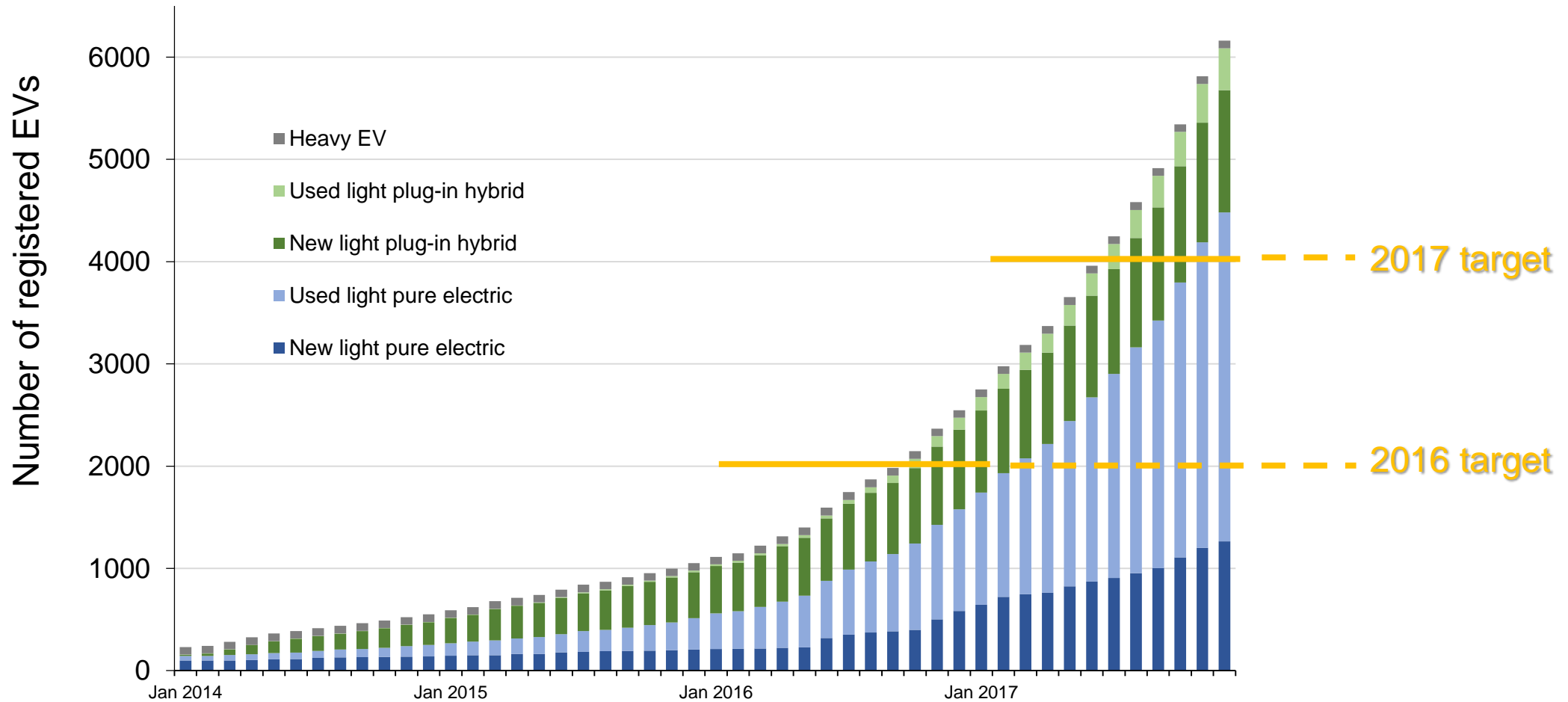
**Light vehicles:** Light EVs (eg cars and vans) are exempt from RUC until 2021

**Heavy vehicles:** Heavy EVs are exempt from RUC until they make up 2% of the heavy vehicle fleet

Vehicle	Definition	RUC rate (GST incl)	Example annual distance	Example RUC exemption saving
Light vehicle	Under 3.5 tonnes	NZ\$62 / 1,000 km	15,000 km	NZ\$ 930 / year
Small delivery truck	Under 6 tonnes, dual rear wheels	NZ\$66 / 1,000 km	30,000 km	NZ\$1,980 / year
Medium freight truck	12 – 18 tonnes, 3 axle	NZ\$292 / 1,000 km	75,000 km	NZ\$21,900 / year

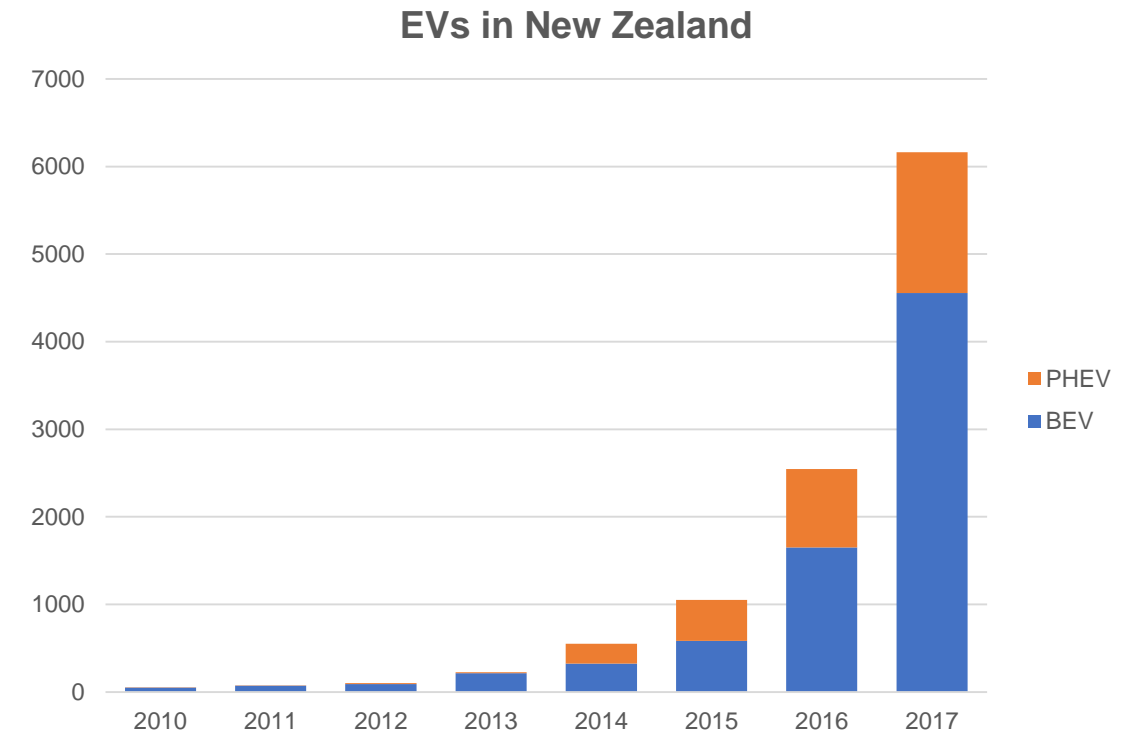
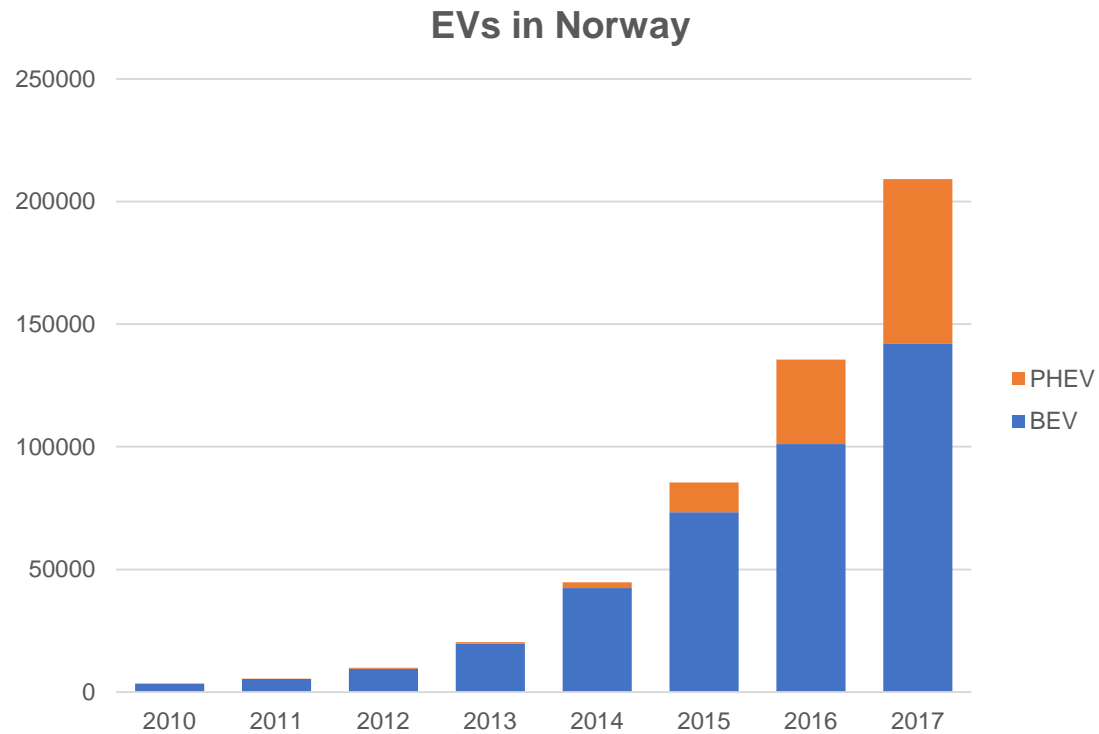


# New Zealand's EV target: 2x EVs every year to 2021



<http://www.transport.govt.nz/research/newzealandvehiclefleetstatistics/monthly-electric-and-hybrid-light-vehicle-registrations-dec-2016/>

# EV Uptake in New Zealand

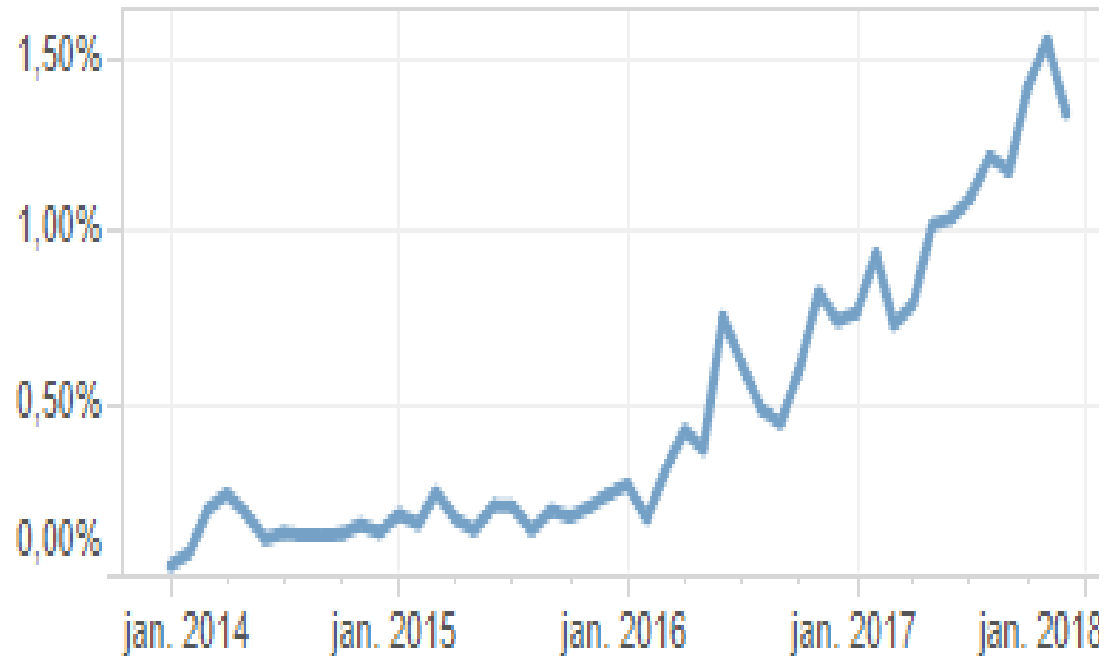


In 2018 we are about where Norway was in 2012

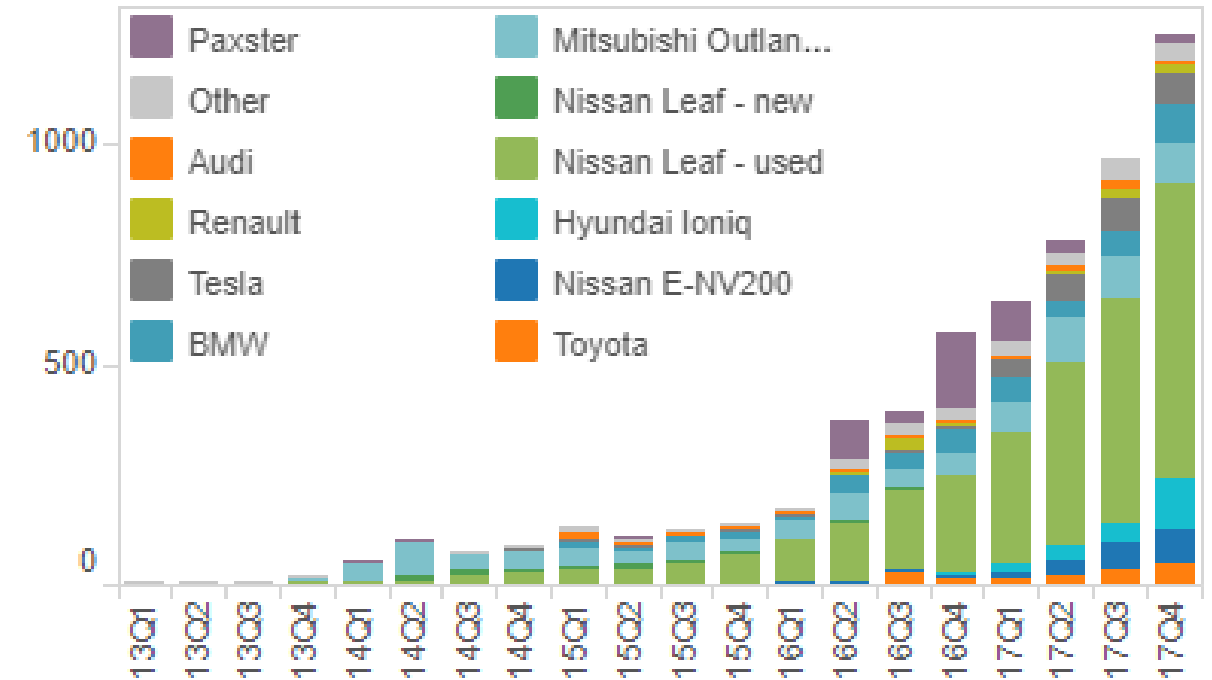
In 2017, 39% of car sales in Norway were plug-in

# 1.5% EV market share with no purchase subsidies

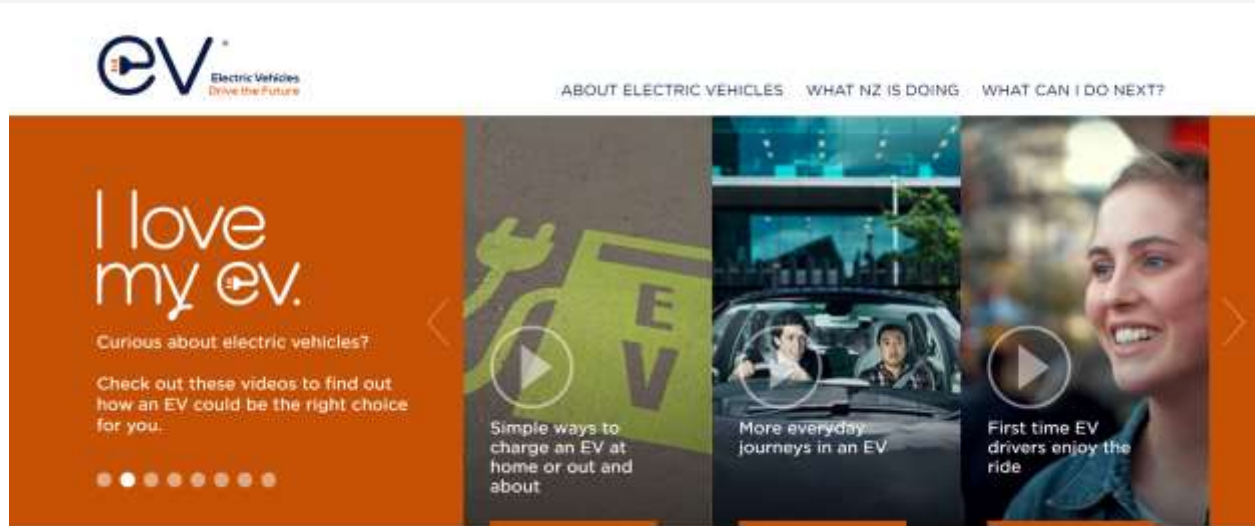
EV % of light registrations



Quarterly light EV registrations - main makes and models



# Information and promotion programme





# Information and promotion programme



## Drivers ready to jolt consumers' awareness on tour about the benefits of EV cars

CHRYSLER GROUP LLC  
Last updated 16:17, March 20 2019



American electric-vehicle advocate Chelsea Taylor says her next car will be an EV.



# Examples of projects supported so far by NZ Government under contestable fund





# EV fast charging infrastructure rapidly expanding



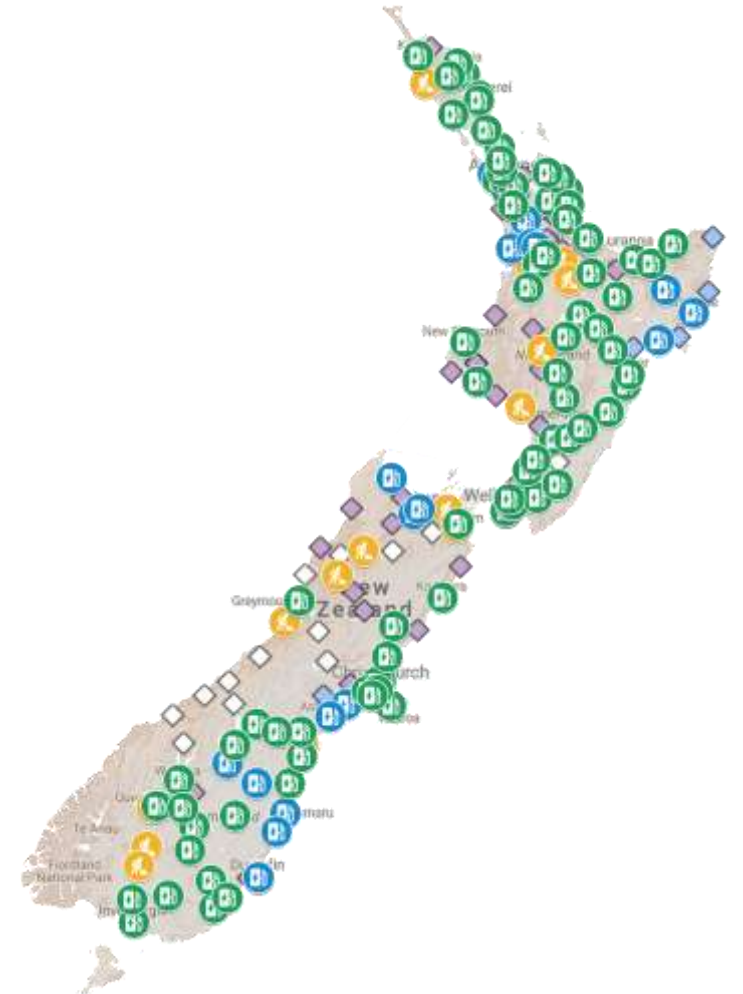
# State of Play as of Today



## ChargenNet.nz

New Zealand-wide Network of DC Fast Charging Stations for EVs

- Founded in Jan 2015
- First charger Nov 2015
- 50kW DC CHAdeMO + CCS
- 87 chargers open
- 21 under construction
- 120 chargers by end of 2018



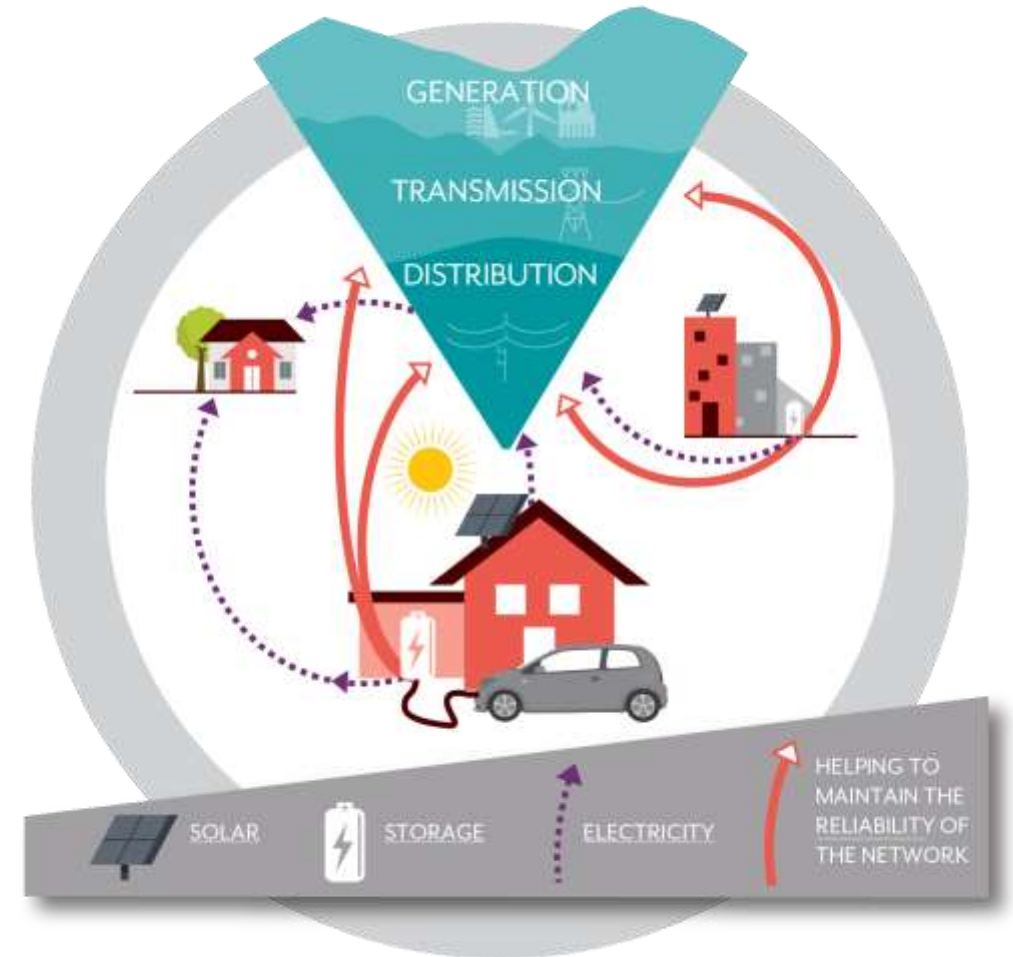
# Collaboration

By working with partners, we accelerate the process of building the network



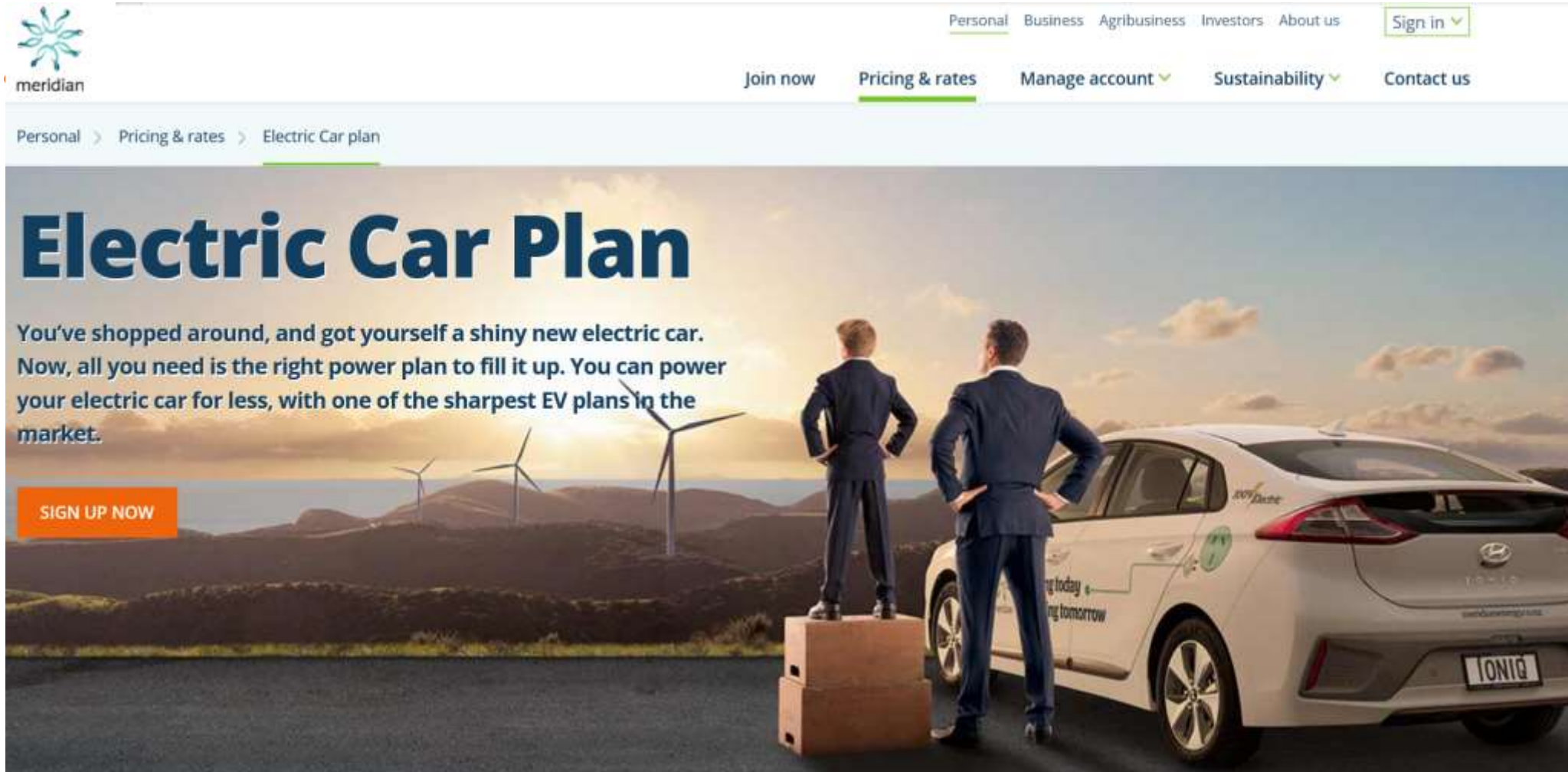
# NZ's innovative electricity market

- Open, competitive, permissive electricity market
- Half-hourly spot market with wide daytime and seasonal variations
- Markets for frequency keeping, voltage support, black start and demand response; hedge market
- 80%+ voluntary smart meter uptake
- 37 electricity retailers compete, setting their own pricing; annual switching rate over 20%
- 8 major generators, 650 small generators + PV





# Some electricity retailers offer tariffs for EV owners



The screenshot shows the Meridian Energy website's 'Electric Car Plan' page. The Meridian logo is in the top left. The top navigation bar includes links for Personal, Business, Agribusiness, Investors, and About us, with a 'Sign in' button. A secondary navigation bar features 'Join now', 'Pricing & rates' (which is underlined), 'Manage account', 'Sustainability', and 'Contact us'. The breadcrumb trail at the top of the main content area reads 'Personal > Pricing & rates > Electric Car plan'. The main heading is 'Electric Car Plan' in large blue font. Below it, the text reads: 'You've shopped around, and got yourself a shiny new electric car. Now, all you need is the right power plan to fill it up. You can power your electric car for less, with one of the sharpest EV plans in the market.' An orange 'SIGN UP NOW' button is positioned to the left of the main image. The background image depicts two men in suits standing on a road, looking at a white Hyundai Ioniq electric car. One man is standing on a stack of cardboard boxes. In the background, there are rolling hills and several wind turbines under a sunset sky. The car has 'IONIQ' on the rear and 'e-Drive' on the side. A small graphic on the car says 'Driving today, driving tomorrow'.

meridian

Personal Business Agribusiness Investors About us Sign in

Join now Pricing & rates Manage account Sustainability Contact us

Personal > Pricing & rates > Electric Car plan

## Electric Car Plan

You've shopped around, and got yourself a shiny new electric car. Now, all you need is the right power plan to fill it up. You can power your electric car for less, with one of the sharpest EV plans in the market.

SIGN UP NOW

IONIQ

# Initial V2G trials

- New Zealand's largest electricity distributor, Vector, has V2G trial underway in Auckland
- Vector also installed Asia Pacific's first grid scale battery: 1 MW Tesla Powerpack in suburban Auckland in 2016





# Summary

- 85% renewable electricity generation
- EVs currently 1.5% market share with no purchase price subsidies
- 136% growth in EV sales in 2017
- Easiest place in the world to become an electricity retailer
- Pricing innovation can get the most out of V2G
- NZ\$6 million/year fund for innovative EV projects

Any Questions?

charge.net.nz

*Charging Into the Future*

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