



Energy Efficiency Policy Workshop 2019

Growth of electric vehicles in New Zealand

Name	Elizabeth Yeaman
Institution	Retyna Limited, New Zealand
Date	18 March 2019, Hong Kong



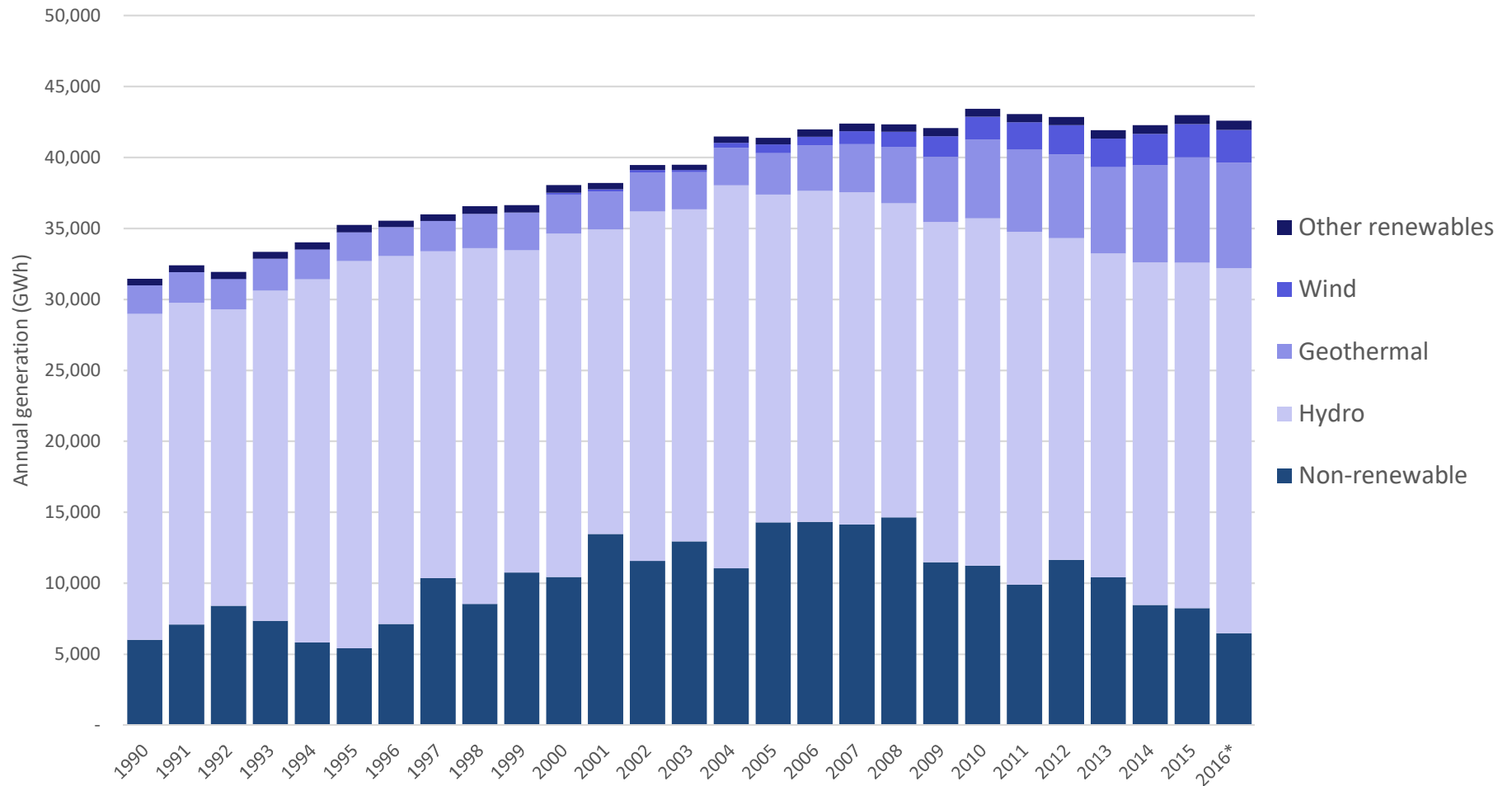
About New Zealand

- Population 4.7 million
- 3.5 million light vehicles
- Right hand drive vehicles
- Accepts vehicles to four international standards: EU, Japan, Australia, US
- 55% of new entrants to the national fleet are used imports



85% of electricity generation in NZ is renewable

NZ Electricity generation by source 1990 to 2016



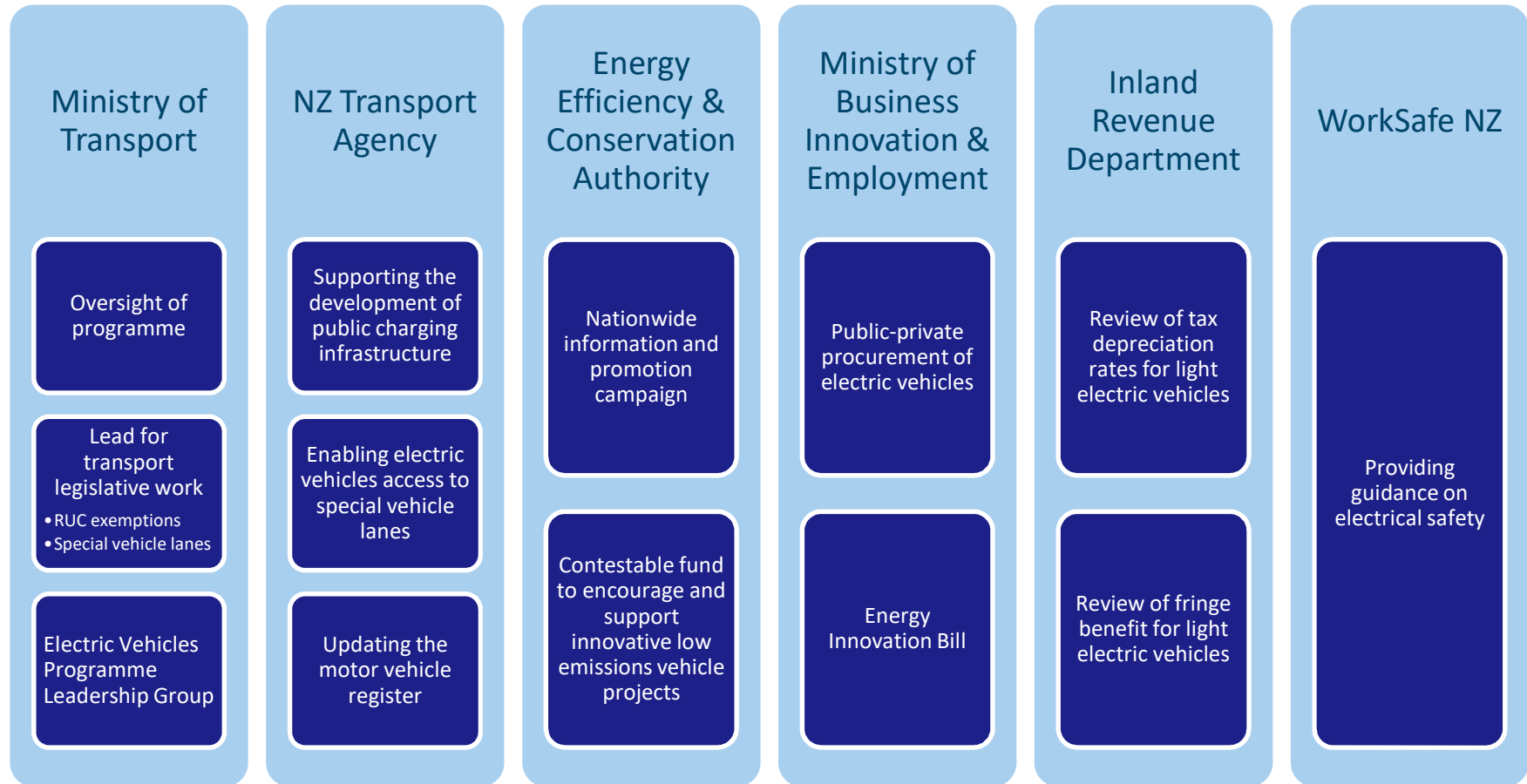
Advantages of EVs in New Zealand

- 80% reduction in CO₂ emissions compared with petrol vehicles
- Electricity for EV driving ≡ NZ\$0.30 per litre (USD0.20/L) compared with NZ\$1.80-\$2.20 per litre for petrol
- Driving range of entry level EVs meets majority of driving tasks
- 85% of NZ residences have off-street parking



EV policy in New Zealand

Ministry of Transport – EV programme coordination



Some fiscal support for EVs

- Petrol vehicles pay fuel excise at the pump, all other vehicles including EVs and diesel vehicles pay Road User Charges (RUC) for each km driven
- **Light vehicles:** Light EVs (eg cars and vans) exempt from RUC until 2021
- **Heavy vehicles:** Heavy EVs are exempt from RUC until they make up 2% of the heavy vehicle fleet
NZD1.00≈USD0.67

Vehicle type	Definition	RUC rate	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

EECA Low Emission Vehicles Contestable Fund

- Funding of \$7 million/year to co-fund innovative projects
- Industry are the innovators and can move quickly. Fund is a clever way to encourage this private-sector growth and help overcome first mover risk.
- Foreign companies can be partners in a project in NZ, but the funding application must be led by NZ organisation
- www.eeca.govt.nz/funding-and-support/low-emission-vehicles-contestable-fund/



Examples of projects supported by the fund



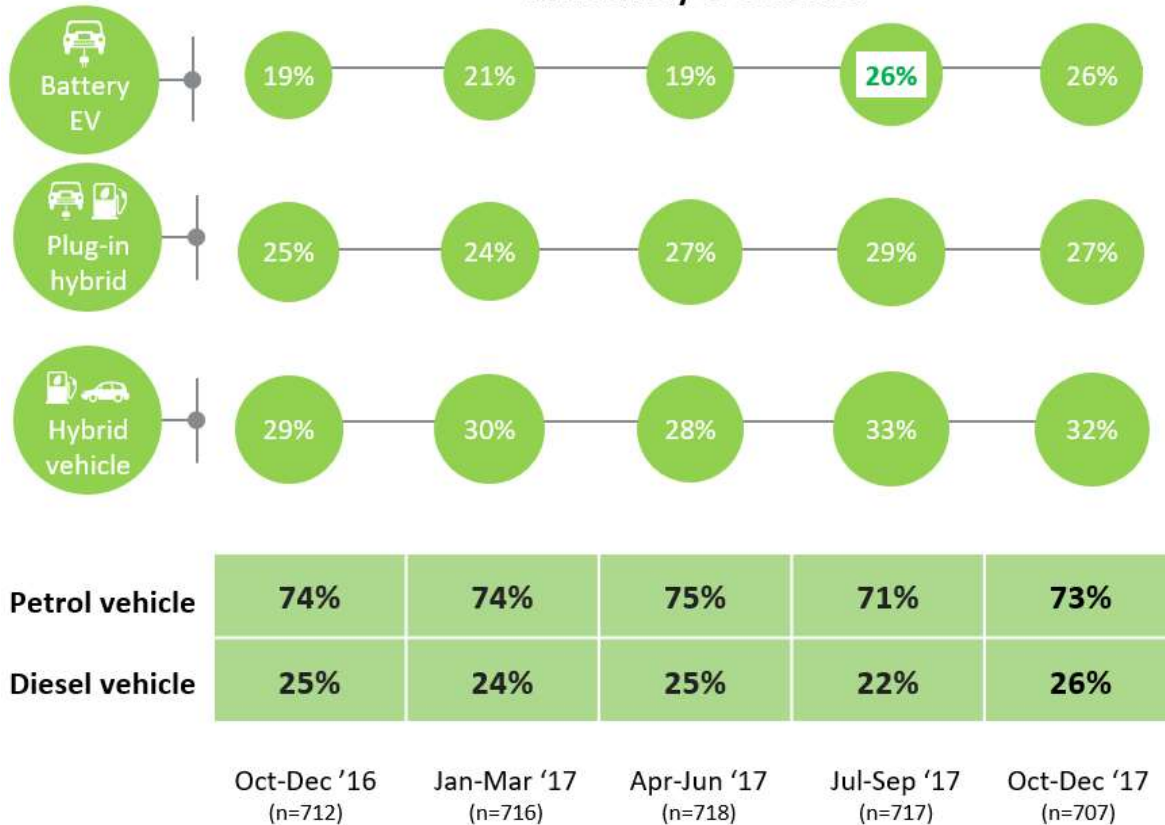
Support for fast charging infrastructure

- Over 90% of charging is at home
- Private investment in public 50 kW DC fast charging with co-funding from the EECA Fund
- Public charging guidelines in place
- Over 150 fast chargers covering 95% of state highway network
- NZTA national public EV charging database “EV Roam” provides API for apps and navigations systems



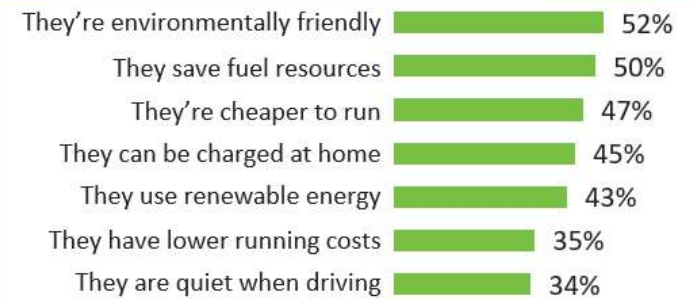
Promotional activities underpinned by market research

NETT likely to consider



Why would consider EVs

(n=707)



Why would not consider EVs

(n=707)



Note: Top-7 reasons for considering and not considering shown in charts.

Public outreach important part of government campaign



Information resources: www.electricvehicles.govt.nz

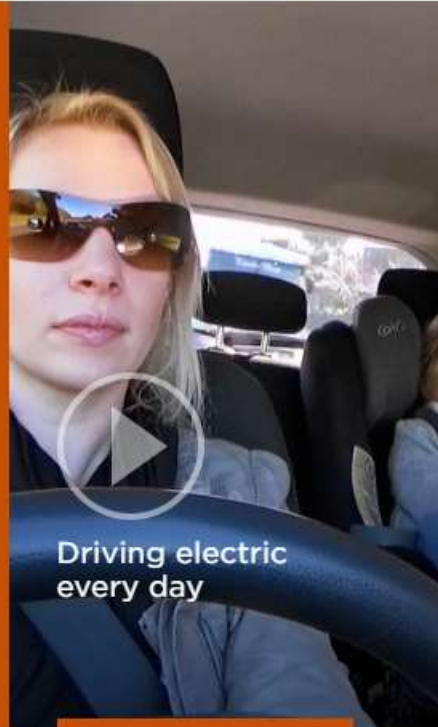


ABOUT ELECTRIC VEHICLES WHAT NZ IS DOING WHAT CAN I DO NEXT?

I love my ev.

Curious about electric vehicles?

Find information and links to start your journey here.



Driving electric every day

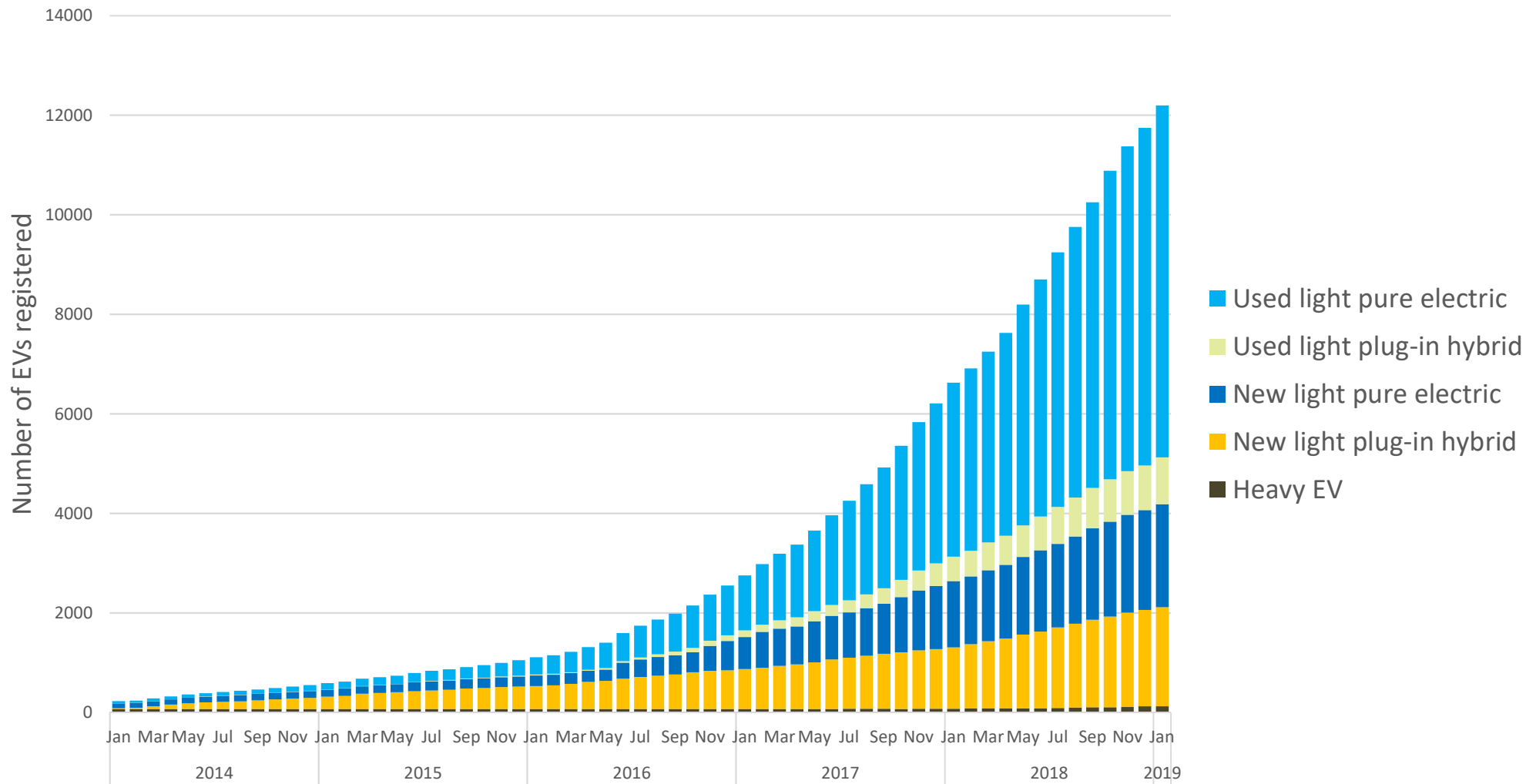


Mythbusting - TV3's The Project



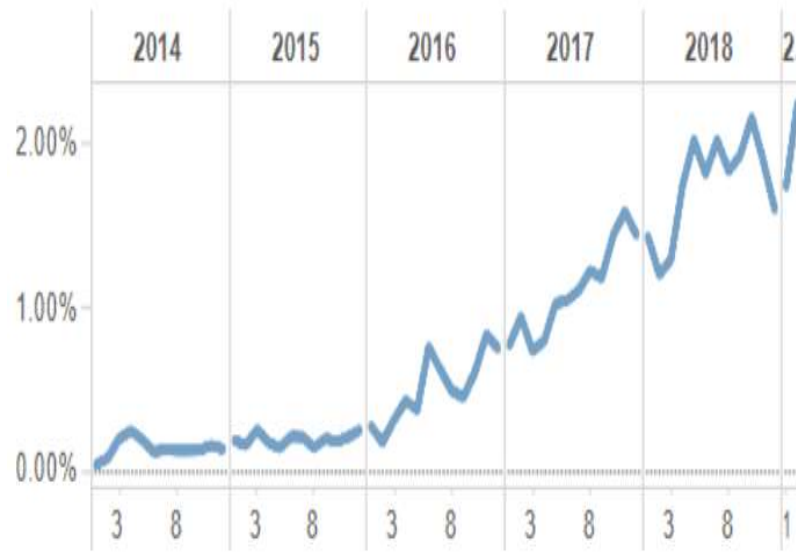
EV charging at home and about

Growth of EV registrations in New Zealand

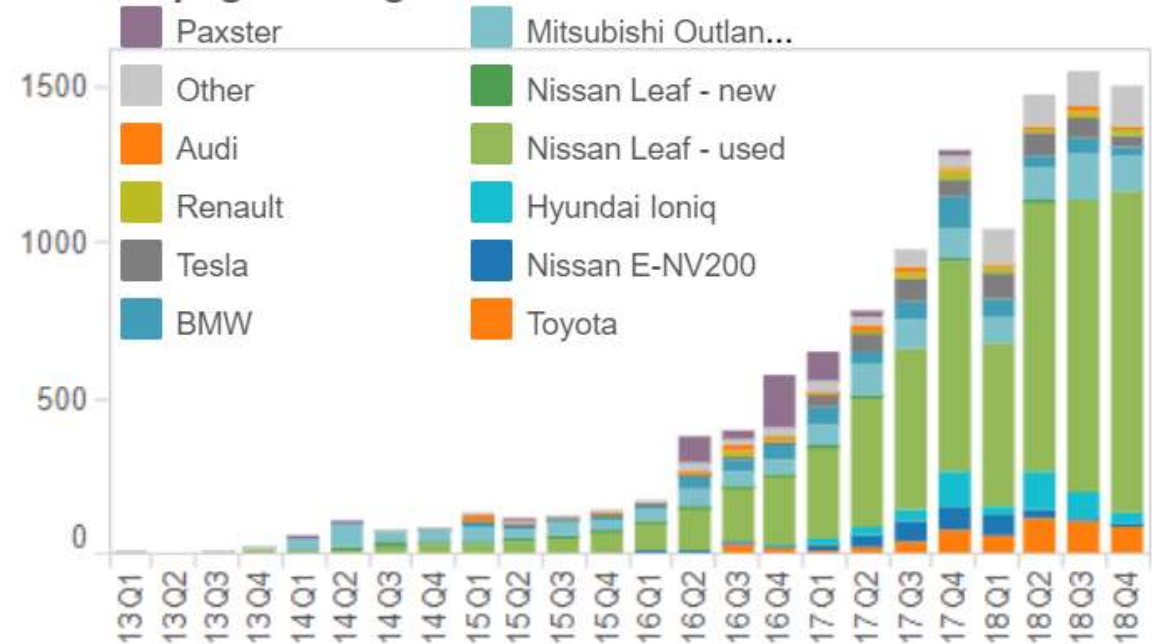


EVs now over 2% of all light vehicle registrations

EV % of light registrations



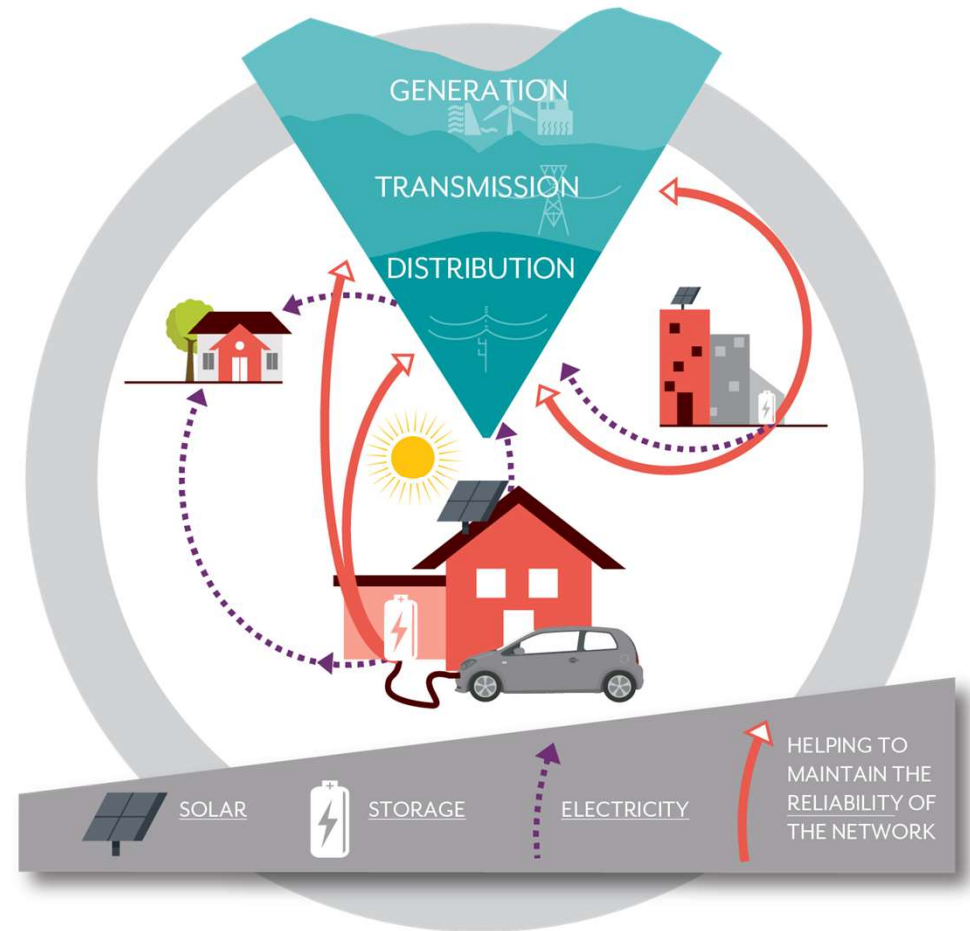
Quarterly light EV registrations - main makes and models



<https://www.transport.govt.nz/mot-resources/vehicle-fleet-statistics/monthly-electric-and-hybrid-light-vehicle-registrations/>

NZ's open and competitive electricity system

- Open, competitive, permissive electricity market
- Half-hourly spot market with wide diurnal 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 retailers offer special EV tariffs for EV owners



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Electric Car Plan

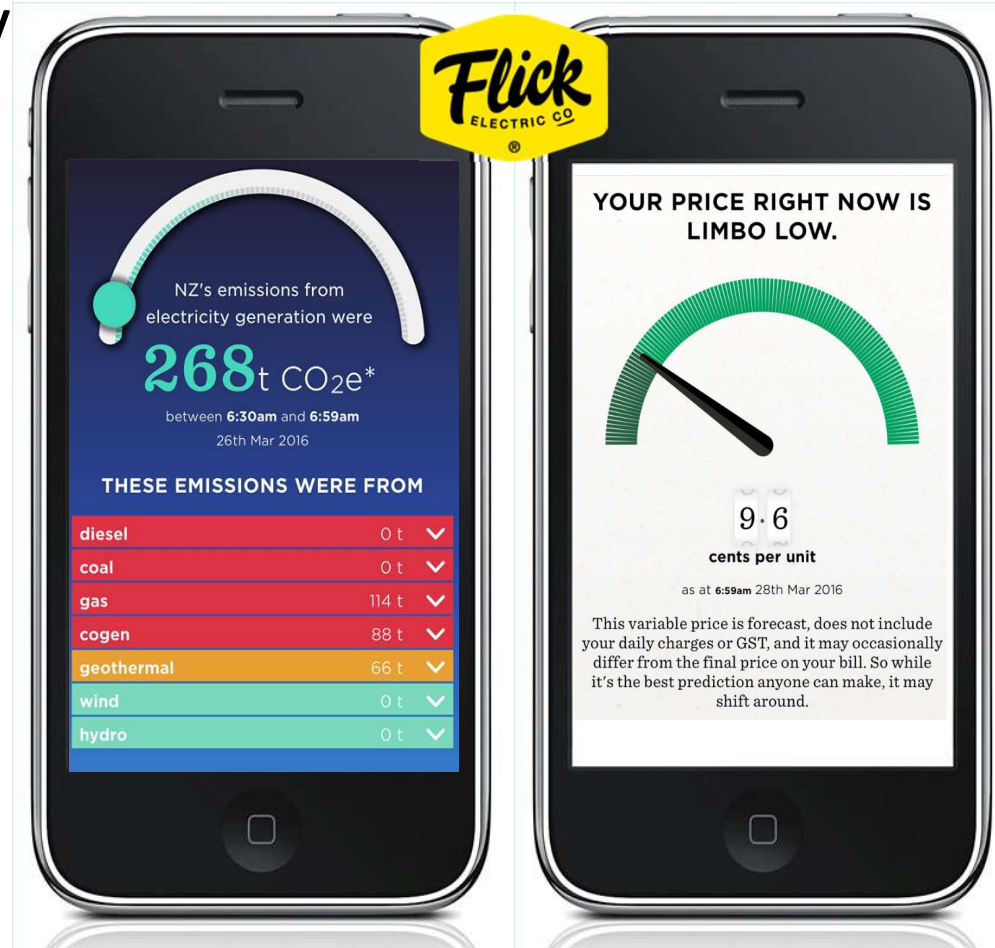
You've shopped around, and got yourself a shiny new electric car. Now, all you need is the right power plan to fill it up. You can power your electric car for less, with one of the sharpest EV plans in the market.

[SIGN UP NOW](#)



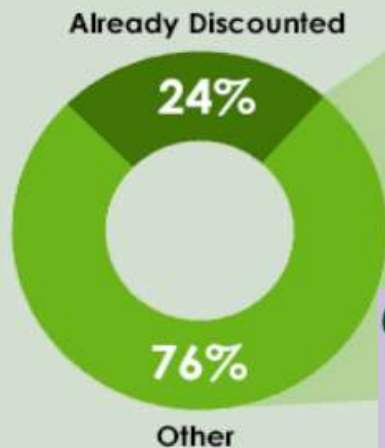
Innovation in retailing electricity

- Some retailers offer half-hourly spot market pricing to residential customers, plus fixed margin
- Customers set phones to receive an alert when prices or CO₂ emissions are low or high
- EV owners can use alerts to know when to start or stop charging

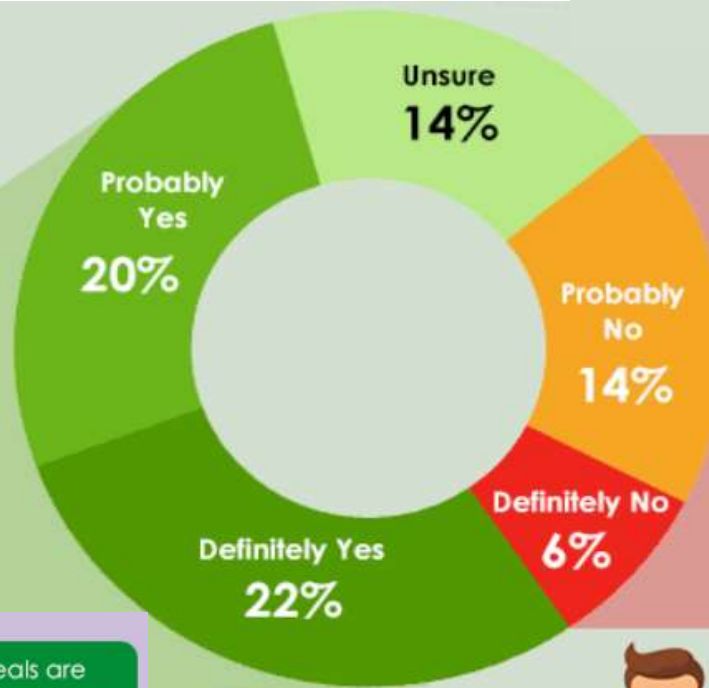


Most New Zealanders willing to charge off-peak

Likelihood to switch electricity supplier to one that offers night-time discounts for EV / PHEV owners



“Off-peak night deals are the best price, convenient time to charge and have high chance of being 100% renewable energy.”



Reasons behind reluctance toward switching to a night-time deal:



Other household demand makes alternative cheaper, doesn't suit home charging rhythm or solar generation



Investment in smart meter or timer equipment needed to schedule night charging



“My electric bill for my EV is peanuts. I have no need to chase a cheaper deal.”

<http://flipthefleet.org/2017/media-release-ev-owners-targeting-night-time-charging-deals/>

What's coming next in NZ: 100% electric 130 pax ferry



Summary

- 85% renewable electricity generation
- Fiscal support: NZ\$7 million/year fund for innovative EV projects and RUC exemption but no purchase price subsidies (previous failures with CNG and LPG vehicle subsidies)
- 95% state highway coverage with 50 kW DC fast chargers
- EVs now over 2% market share with no purchase price subsidies but with used-EV imports at close to price parity
- Electricity retail pricing innovation enabling platform for next generation of charging ... aggregated/managed charging



Kia ora

