

# Electric vehicles : now and tomorrow

Elizabeth Yeaman, Energy Efficiency and Conservation Authority  
Transportation Group Conference, March 2018

# Global EV momentum gathering pace

It took 20 years to sell the first million EVs globally, 18 months to sell the second million and 8 months to sell the third million

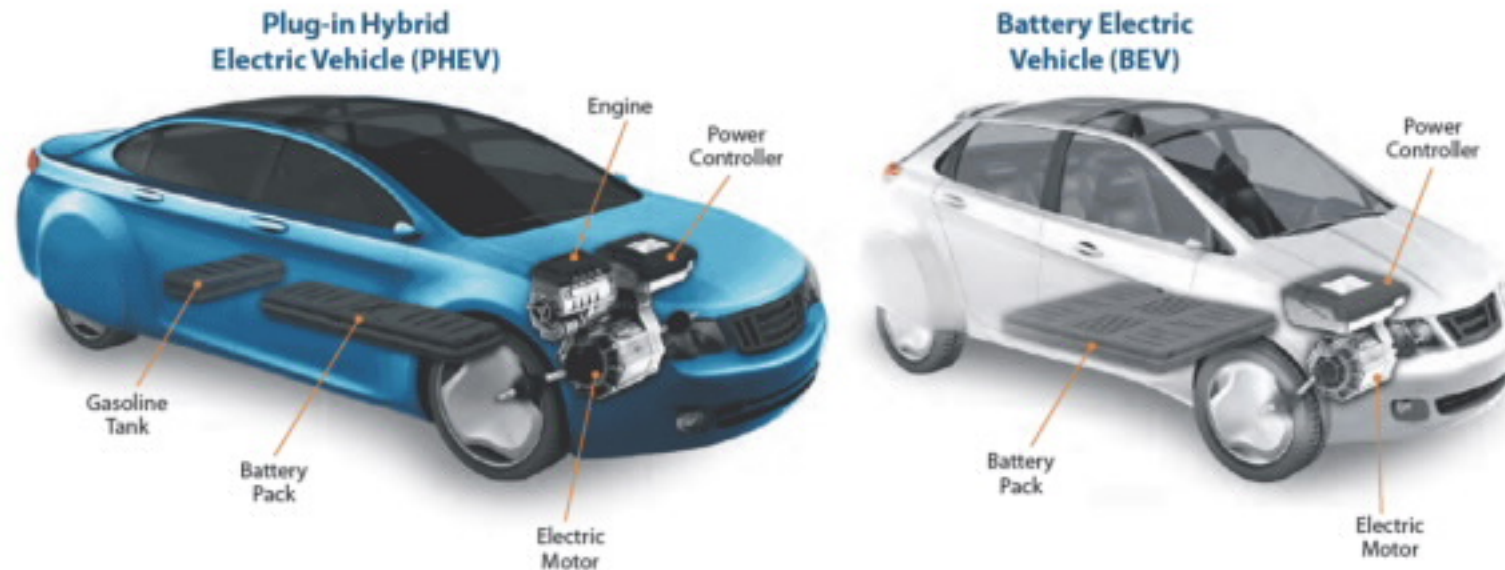


**Countries increasingly to ban the sale of ICE vehicles:**

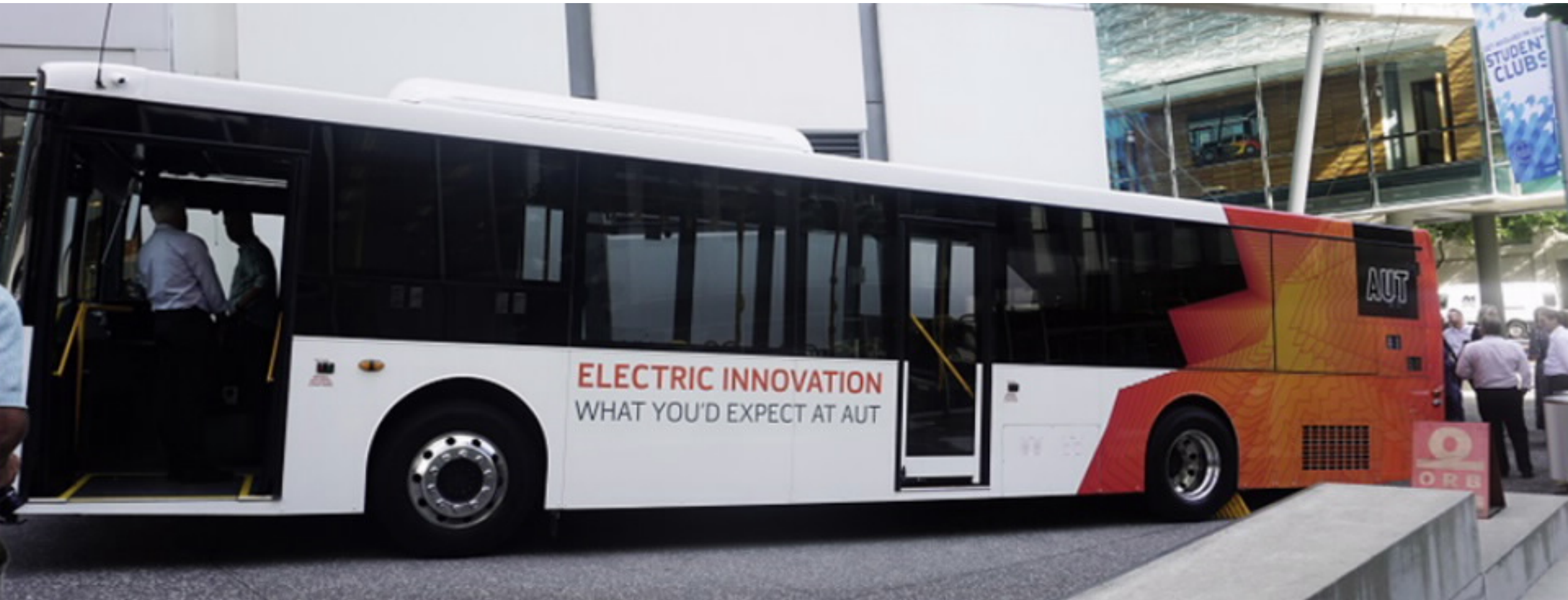
- 2025 - Norway, Netherlands; 2030 - Germany, Ireland; 2040 - France, UK

# What counts as an EV?

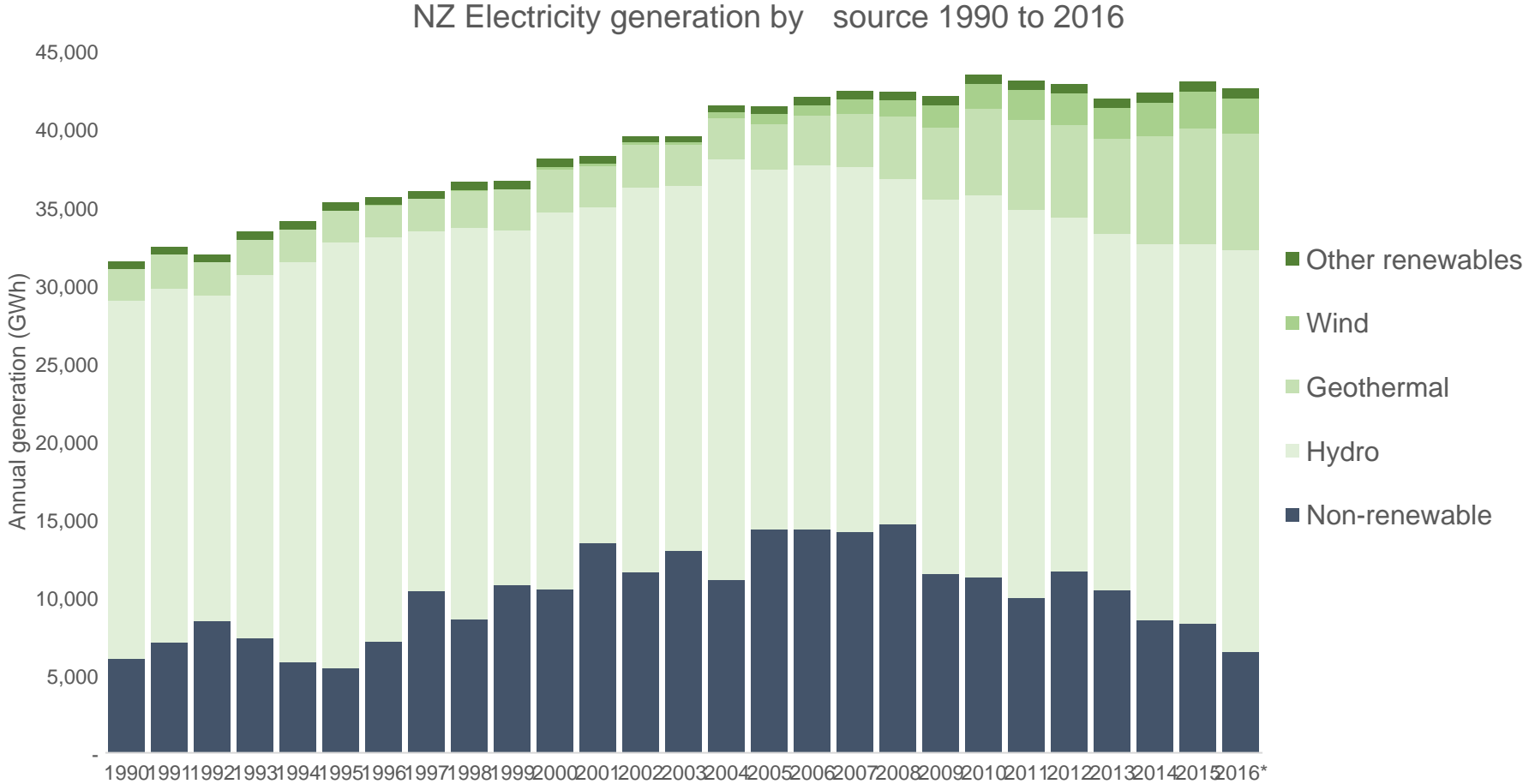
- Uses an external source of electricity for some or all of its motive power
- **You can plug it in**
- Battery Electric Vehicle (BEV) – 100% electric
- Plug in Hybrid Electric Vehicle (PHEV) – electric and petrol/diesel



# This includes heavy EVs



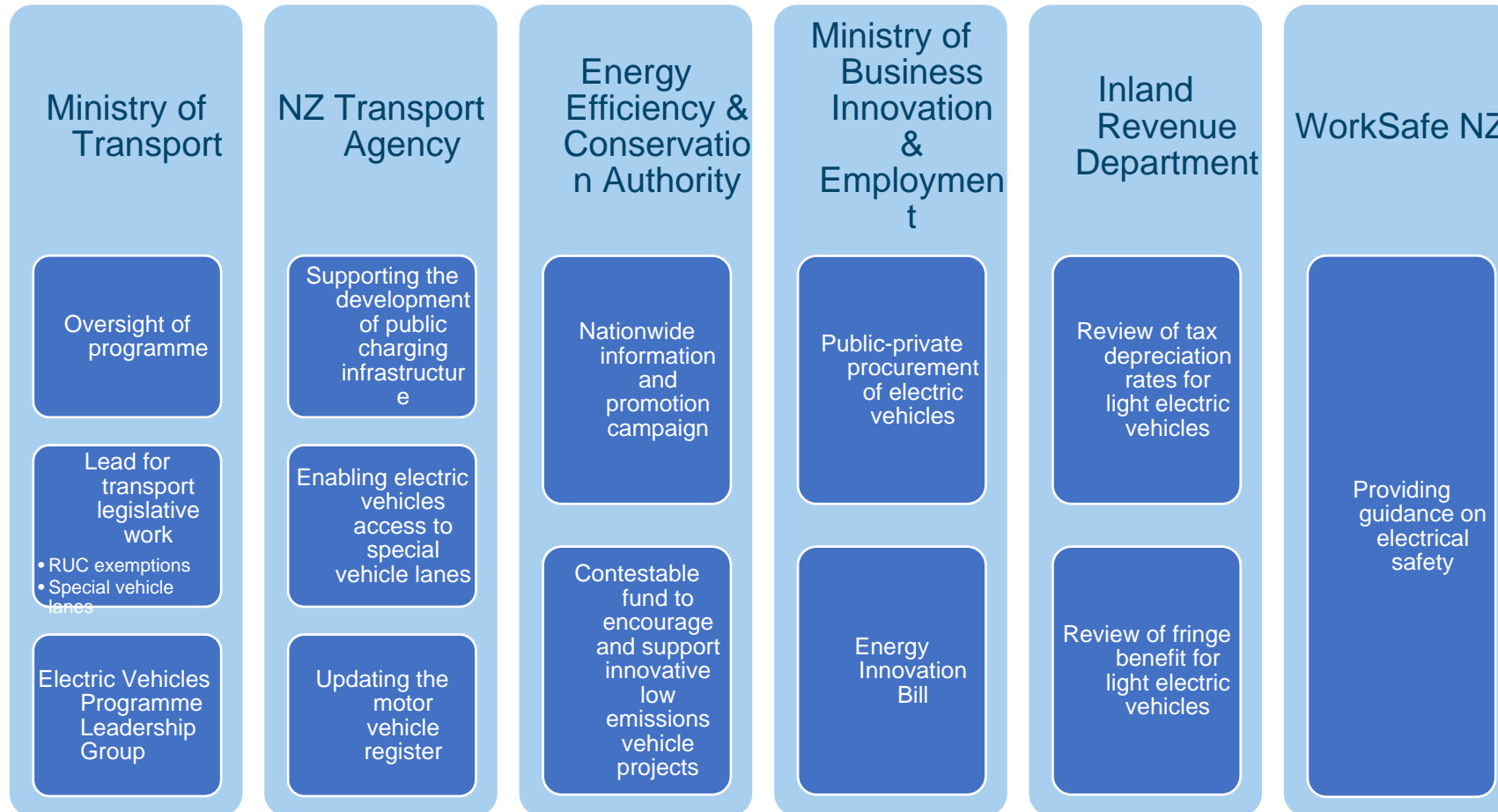
# 85% of NZ electricity generation is now renewable



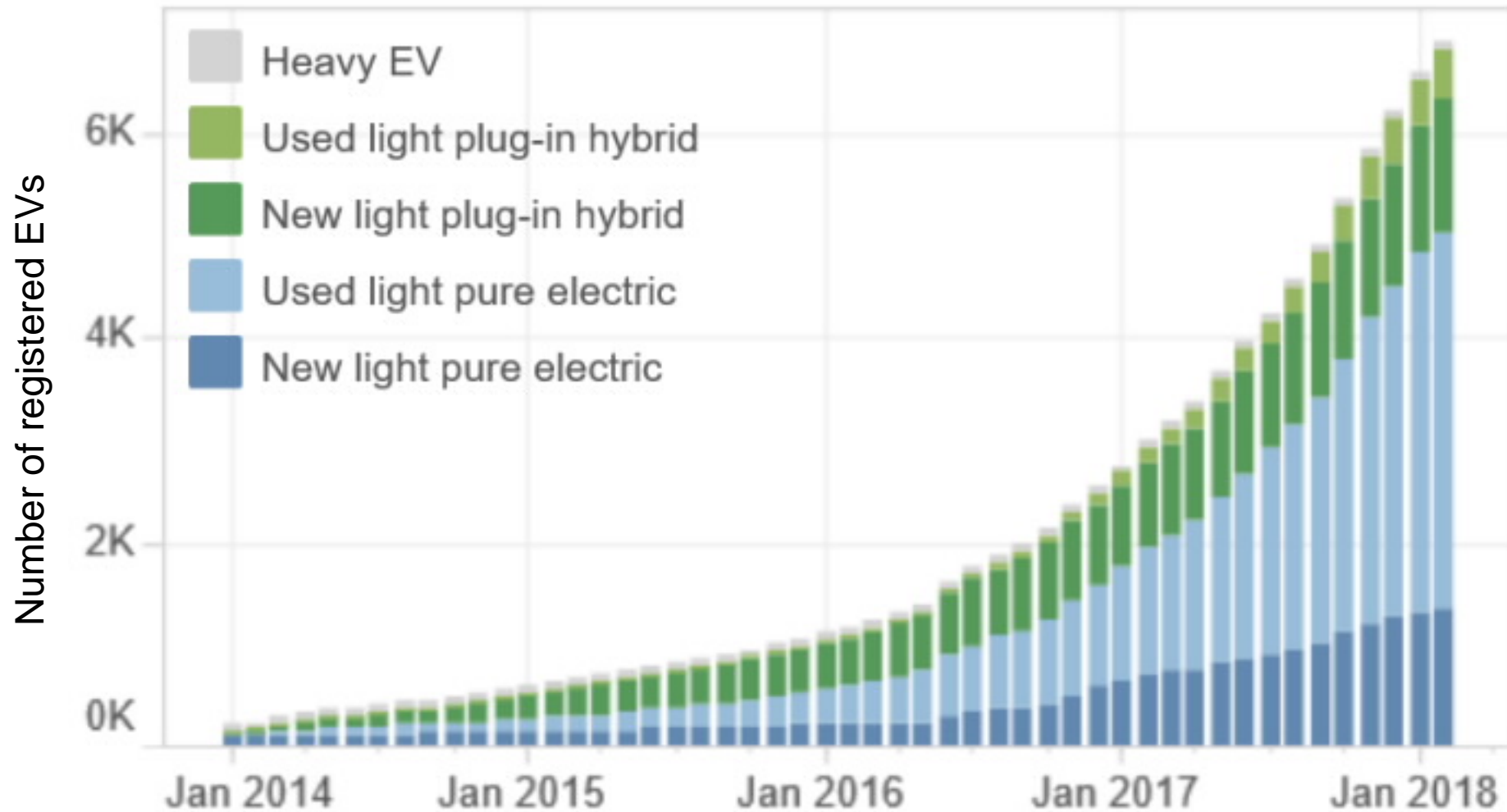
# New Zealand's EV advantage



# The Government's EV Programme



# EV uptake is more than doubling every year in NZ



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



# EV information campaign [www.electricvehicles.govt.nz](http://www.electricvehicles.govt.nz)



# Kiwis now as likely to consider an EV as a diesel vehicle

NETT likely to consider

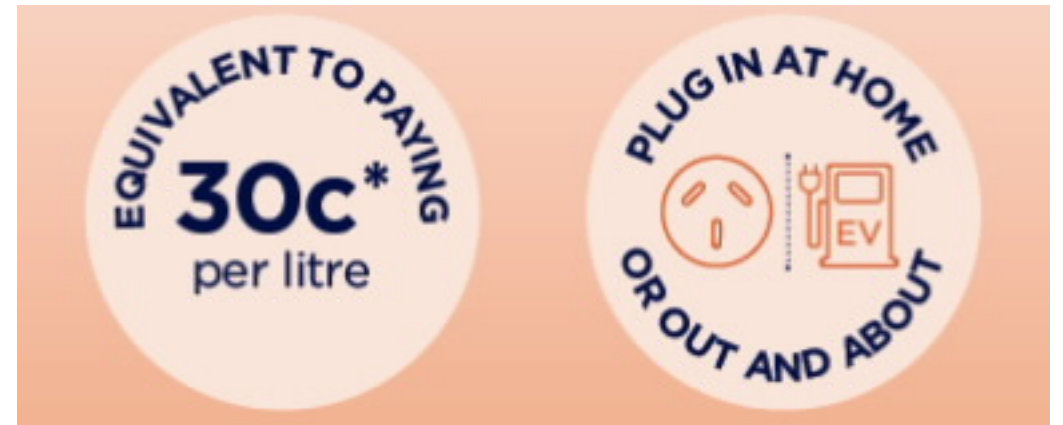


Petrol vehicle	74%	74%	75%	71%	73%
Diesel vehicle	25%	24%	25%	22%	26%

Oct-Dec '16 (n=712)    Jan-Mar '17 (n=716)    Apr-Jun '17 (n=718)    Jul-Sep '17 (n=717)    Oct-Dec '17 (n=707)

Only half of people know that EVs are cheaper to run

Charging concerns are the most significant barrier to EVs



*EVs for each of the following statements, please select the answer that best describes how you feel about electric vehicles.*

# Plug in at home or out and about



**It's easiest and cheapest to charge at home overnight** – 92% of EV owners in NZ prefer to charge at home\*

**Sometimes you may want to top up when you are out, or on a longer trip.** There's an ever increasing number of public charging stations around the country – to find one download an app



\* <http://flipthefleet.org/2017/media-release-electric-vehicle-owners-prefer-charging-home-filling-petrol-station/>



# EV fast charging infrastructure rapidly expanding



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



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# Low Emission Vehicles Contestable Fund

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

Rounds 1-3 were significantly oversubscribed

Round 4 open now – closes 11 April 2018

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



# Round 1 approved projects

## Demonstrations:

- 100% electric buses
- 100% electric delivery vans
- 100% electric taxis
- PHEV car share scheme

## Infrastructure:

- EV truck conversion facilities
- Smart poles with EV charging
- EV car charging at park and ride bus facilities
- Fast charging on tourist routes and other EV charging



# Round2 approved projects

## Demonstrations:

- 100% electric medium trucks
- 100% electric courier vans
- 100% electric shared fleet
- 100% electric rental cars
- 100% electric shuttle buses
- Opportunity charged electric buses
- EV battery refurbishment

## Infrastructure:

- On-street residential EV charging
- Filling EV fast charging network gaps





# Round 3 approved projects

## Demonstrations:

- Expansion of light EVs into new sectors
- 100% electric buses
- 100% electric vans
- 100% electric camper vans
- 100% electric 58 tonne truck

## Infrastructure:

- Filling EV fast charging network gaps

## Skills:

- Qualifications frameworks for EV inspection, servicing and repair



# Opportunities for EVs: intra-regional freight

78% of freight movements (million tonnes all modes) are within regions\*



\* <http://www.transport.govt.nz/assets/Uploads/Research/Documents/National-Freight-Demand-Study-Mar-2014.pdf> Table 3

# What's coming next.



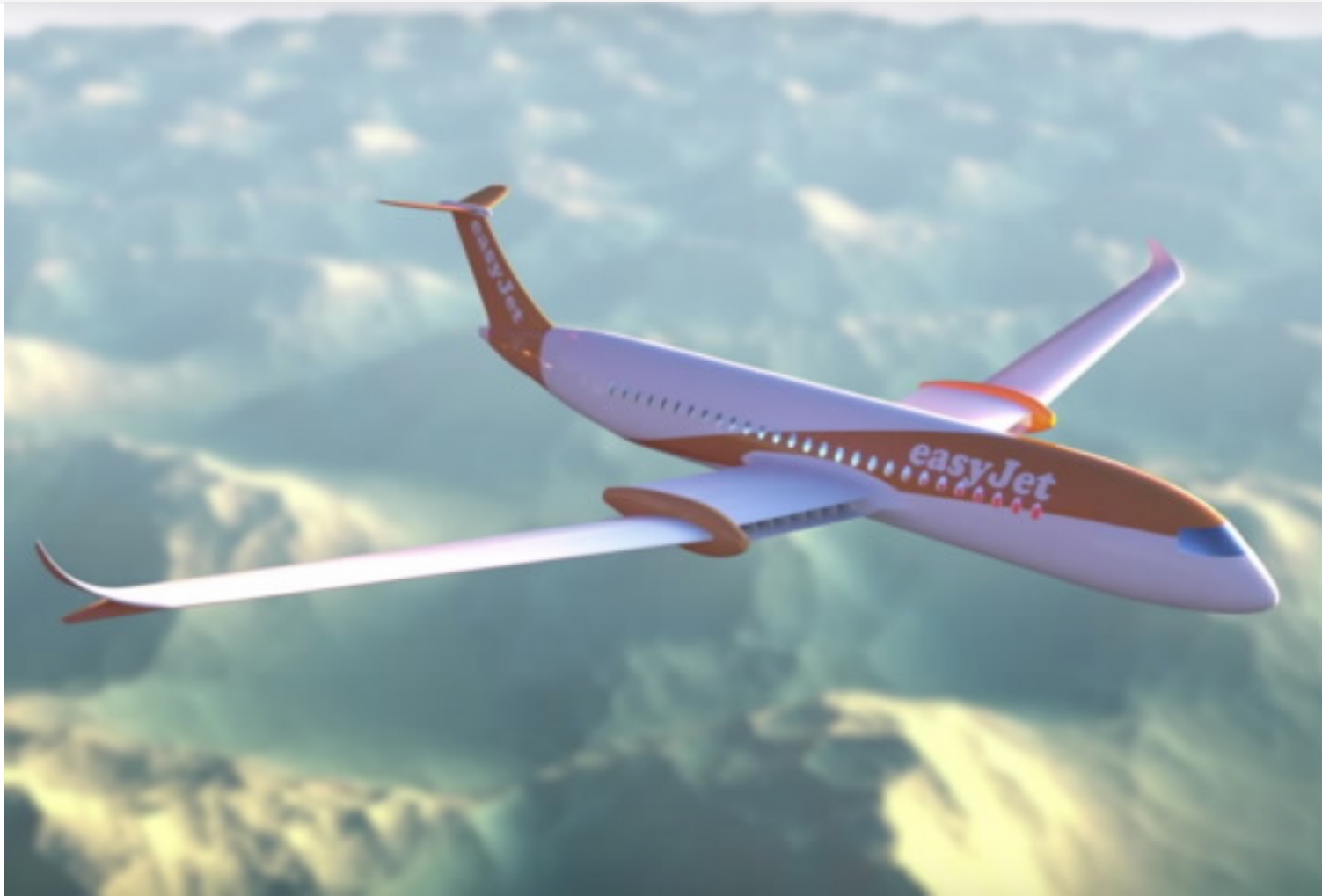
Two large ferries, Tycho Brahe and Aurora, are operating completely on battery power between Helsingør (Denmark) and Helsingborg (Sweden), a distance of approximately 4 km carrying more than 7.4 million passengers and 1.9 million vehicles annually

# 100% electric and autonomous cargo ship



Construction underway in Norway with manned operation scheduled from this year and autonomous operation in 2020

# Short range electric passenger aircraft



# What you can do now

1. Test drive an EV if you haven't driven one yet
2. Try out an EV through car share companies like Mevo in Wellington, CityHop in Auckland, and Yoogo in Christchurch, or from rental car companies like Hertz Auckland, Europcar, Blue Cars and Snap Rentals
3. Find out more about EVs for your household or organisation by visiting [www.electricvehicles.govt.nz](http://www.electricvehicles.govt.nz)
4. Consider an application to the Low Emission Vehicles Contestable Fund <https://www.eeca.govt.nz/funding-and-support/low-emission-vehicles-contestable-fund/>



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New Zealand Government