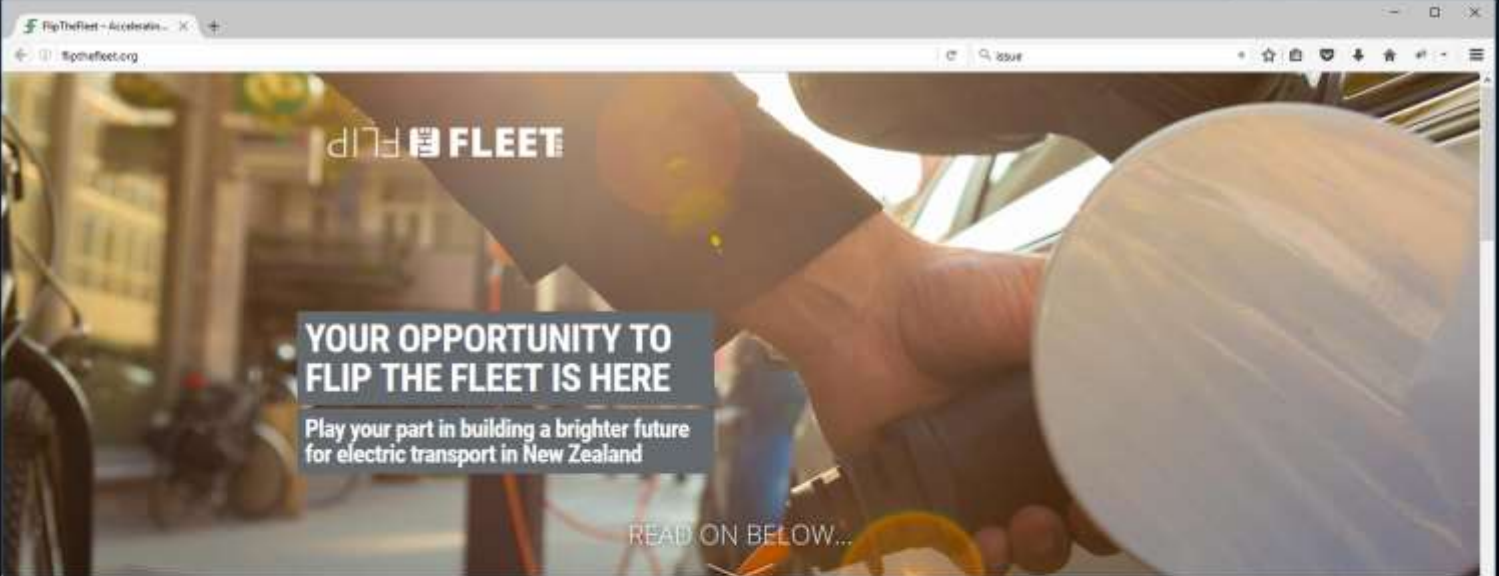




A citizen science approach to accelerating uptake of low emission vehicles in New Zealand



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Our goal is to accelerate uptake of electric vehicles in New Zealand by:



Providing scientific data

on EV use, cost savings, efficiency, battery health and environmental benefits.



Us, helping each other

by sharing data on our vehicles' performance in New Zealand conditions so that business investment in infrastructure, public policy and our own



Informing the debate

so that we can reliably counter misperceptions about EV constraints and benefits.





Add data for JFL445

- View reports
- Add reports
- Edit reports
- Add data
- Settings

Period of report:	Oct - 2016	Sep - 2016
Odo (at month end) *	29,057.00	27,869.00
Odo (first regd)	7,840.00	7,840.00
(EVs only) Average efficiency (km/kWh)	6.50	6.40
Purchase price *	19,950.00	19,950.00
Battery bars	11.00	12.00
Battery SOH (%)	79.00	80.00
Rapid charges (lifetime total)	81.00	78.00
Slow charges (lifetime total)	969.00	925.00
Range estimate at full charge (at month end) *	120.00	120.00
Kms travelled on rapid charges during the month	100.00	150.00
National electricity grid power percentage est *	100.00	100.00
(PHEVs only) fuel litres used	e.g. 60	

My Fleet Statistics Panel

https://dashboard.flythefleet.org/My_Vehicle

flythefleet FLEET

Dashboard My Vehicle << < > >>

Dima Ivanov (JFL445) Sign out

View reports

Add data

Settings

Km travelled each month

Efficiency (km/kWh) 56.9

\$\$\$ saved each month

Return On Investment

My vehicle's breakeven forecast

Range (in kms) per 1 "remaining battery bar"

Range (in kms) per 1% "State-Of-Health"

KGs of CO2e saved since first registered in NZ

Auckland-London 1-way flight worth of CO2e savings from driving my EV

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Powered by PowerStats





\$\$\$ saved each month

- View reports
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From the start of: To the end of: Intervals: Compare with:

Model filters: Region filter: Use filter: Export / email:



Risks

- Panel representativeness?
- Mistrust of Citizen Science?
- Funding? ... *expensive to set up, then inexpensive to run*
- Contributor fatigue and retention
 - Keep it quick ... *5-10 mins per month*
 - Incentives *e.g. decoders & software*
 - Keep it relevant



Opportunities (1)

- Making it personal ... *My Car Rules!*
- Benchmarking ... *how do I compare?*
- Feedback ... *within milliseconds*
- Pluralism: *\$\$, environment, social*
- Social networking .. *becoming members of 'The EV Club'*
- Co-design and co-discovery
- Fleets and individual families



Opportunities (2)

- Changing hearts and minds through monitoring
- Evidential authority to direct policy
 - Massive data ... *what we lose in precision we gain in statistical coverage*
 - Fine-grained data
 - It's local
- Leading on to research and modelling
 - ... *C'mon, join the team!*



Future Research?

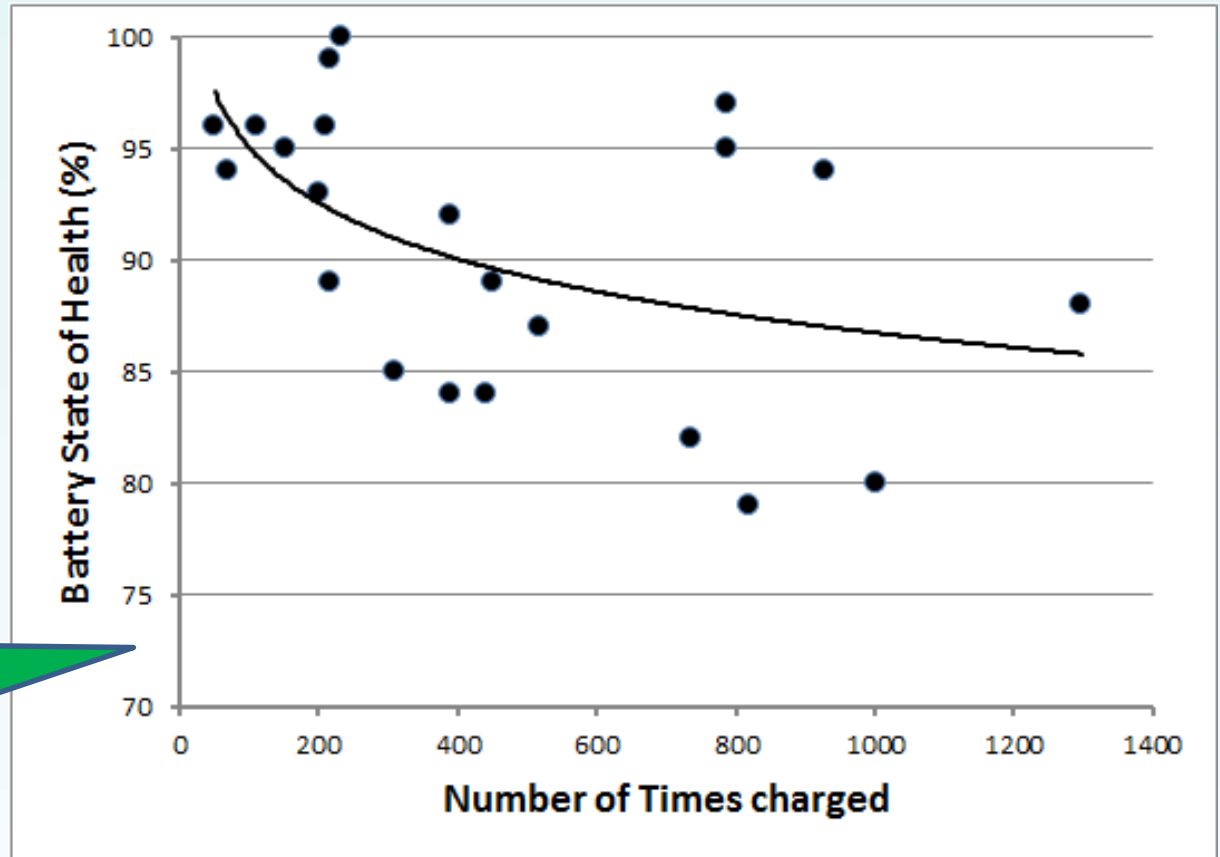
- EECA, Ministry of Transport, MfE, Statistics NZ, MBIE support the concept
 1. Carbon foot printing
 2. Battery decay rates
 3. Travel patterns (especially PHEVs cf. Evs)
 4. Electricity demand
 5. Efficiency
 6. Safety
 7. EV fleet profile and business opportunities



Test Panel

- since Sept 2016
- + historical data
- n = 31 vehicles
- n = 2 fleets

DCC
Otago Museum



It's not rocket science

- Broadly, facts known, all we are doing is making them visible and believed
- Advocacy in private places and times
- Reaching people not swayed by mainstream media
- Big emphasis on marketing and reporting



One-click Opinion Surveys

1. LEVs should be allowed to use bus lanes
2. I take fewer longer road trips now that I own an LEV
3. When available, I will much prefer to hire an LEV Camper Van than a conventional hybrid or ICE
4. I regularly experience a hold-up of more than 30 minutes to access public rapid chargers
5. NZ is likely to reach its target of 64,000 LEVs by 2021



Framing numbers on human scales

- Number of virtual trees planted last month?
- Proportion of AKLD-LHR flight mitigated?
- How many dairy cows have I compensated for?
- Volume of ice prevented from melting in Antarctica?
- Number of asthma inhalers avoided?
- Days of car hire possible for long holiday trips?



Discussion Questions

- Who else should be involved?
- Do you want to join?
 - Individual LEV owners
 - Fleets
 - Institutes and businesses
- What would success look like?
- Are we likely to succeed?



Kia ora!

Thanks for getting us started!

**CURIOUS
MINDS**

HE HIHIRI I TE MAHARA



EV Hardware
www.nzev.co.nz



www.EvPositive.com

PowerStats

Ecosystems Consultants

Register your LEV or
get in touch with us at

www.flipthefleet.org

Thank you!

