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# EVtalk

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# EVtalk

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# CLEAN CAR PLAN A HOT TOPIC

The heat is still on the Government's clean car plan, which includes a feebate proposal and emission standards.

More than 1000 submissions were received by the public closing date of August 20, with automotive industry representative groups, the Motor Industry Association (MIA) and Imported Motor Vehicle Industry Association (VIA) – the latter outspoken about the emission standards aspect - due to have submissions in by September 10.

"The vehicle industry has a bit more time to respond and we expect to have ongoing discussion with industry representatives to ensure the policies are practical, fair and effective," a spokesperson for associate transport minister **Julie Anne Genter** says.

**Officials have yet to undertake a detailed analysis of submissions but EVtalk has been told 857 of the public submissions were online and 117 were emails.**

About 80% of the online submissions supported both policies – the Clean Car Discount and the Clean Car Standard.

Written submissions are still being reviewed by the ministry.

The submissions summary and any recommendations will be viewed with keen interest, especially by those in the EV industry seeking early implementation.

**Henry Schmidt** of Autolink Cars in Auckland, says the sooner something is in place the better, especially around the Clean Car Discount.

"Otherwise EV sales will be killed next year," he warns, adding that most potential EV customers will wait for the rebate which may not be introduced until 2021.

"Don't set a date – just bring it in."

"Perhaps knock off \$1000 or \$2000 now and phase in bigger rebates later so people don't have to wait."

The Clean Car Standard, which seeks to set emission standards, came under fire early from VIA's chief executive **David Vinsen**, likening it to "Soviet-era central control".

The MIA says the feebate scheme is "the most powerful policy" before the Government to influence car buying

decisions, but has concerns about the Clean Car Standard, which it says could have a "range of unintended outcomes", such as increased new vehicle prices and people retaining older polluting and less safe vehicles for longer.

**Then it was revealed Treasury officials considered "neither measure would have a significant impact on emissions" and suggested dumping the feebate scheme and considering just the fuel standards.**

Genter considers the Treasury findings wrong, adding the proposed policies could make a real difference.



Julie Anne Genter

The Treasury report explains Ministry of Transport (MoT) forecasts that the feebate scheme would reduce emissions by hardly more than 1.6 million tonnes over 20 years. New Zealand's gross emissions are reported to be 80.9m tonnes annually.

Genter says Treasury's advice doesn't compare with that from the Productivity Commission and many other developed countries.

She believes the MoT forecast doesn't consider that the fuel efficiency standards would be gradually increased.

The forecast also assumes there would be a reduction in pollution under the status quo, which Genter believes is too optimistic.

**She says overseas evidence shows such policies make a big difference in reducing transport emissions.**

That's perhaps referring to international keynote speakers at EVworld NZ in August, such as Sweden's **Jakob Lagercrantz** – who Genter listened to - saying a similar "bonus malus" feebate-style scheme operating in his country for about a year, had been successful with fine tuning.

He suggested a feebate scheme needs to be combined with road taxes, describing it like a "Robin Hood scheme – where the dirty guys pay for the clean guys".

The National Party has attacked the Clean Car proposals as a "car tax", forcing some car buyers to pay thousands more.

National transport spokesman **Chris Bishop** says: "Ministerial advice released

under the Official Information Act shows Treasury understands what Julie Anne Genter seemingly does not - that her Government's car tax is bad policy.

"Treasury warned the Government that implementing a car feebate would create a 'double burden' for those needing to buy higher-emitting vehicles, such as double-cab utes, while creating a 'double benefit' for those able to buy low-emission and electric vehicles.

"National could see from the outset that it wasn't fair to make families pay thousands more for a used seven-seater van while wealthy executives got discounts on a Tesla Model 3 or BMW i3."

Bishop says National warned Genter – "and it turns out Treasury did as well", while adding the Clean Car plan would reduce emissions by just 0.09% over 20 years.

**"National believes financial incentives, not penalties, are the best way to support this country's shift to electric vehicles."**

National Party leader **Simon Bridges** continues to criticise aspects of the plan.

More than 12,000 people have signed a petition opposing the Government's proposals, but it seems unlikely these will be considered during the submissions summary.

Bridges believes alternative policies, such as retaining the EV exemption from road user charges and National's 2017 target of making more than a third of the government car fleet electric by 2021, would "potentially have more effect".

Meanwhile, the Advertising Standards Authority found no grounds to proceed with complaints over the National Party's advertisements attacking the government's proposed feebate scheme.

Complainant J Cooper felt the advertisement was seeking to deceive those who viewed it about the scheme.

"I also believe they are seeking to deceive those they influence by implying that low income earners will be required to pay fees under the policy which only applies to newly imported cars," Cooper's complaint says.

"The advertising repeats the words 'small fee' without providing any broader context, a reasonable viewer would

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Chris Bishop

# HAYDEN PADDON PLANS WORLD'S FIRST EV RALLY CAR

Kiwi rally ace **Hayden Paddon** aims to have Hyundai-based electric rally cars built in Cromwell and start trialling a prototype from about April 2020 at suitable New Zealand events.

**He expects to have a second prototype developed to compete in the 2021 New Zealand Rally's full programme.**

Alternative Energy Motorsport Development (AEMD) has been established as a division of his Paddon Rallysport Group to build the EV racer.

It's based on the Hyundai Kona EV, but will be completely unlike the road version, Paddon says.

The rally EV requires all-wheel drive and to run at peak power levels for short events like hill climbs, also to be able to provide suitable torque vectoring for gravel and low grip situations.

Paddon, aged 32, says they're rebuilding the Kona EV to have the required componentry, including more batteries to provide about 600kW of power (compared with the road version's 64kW/h battery).

**While the Kona's road range on single charge is near 500km, Paddon says distance varies by event so the focus is more on that, so long as the EV rally car can last a full day of hard driving without perhaps needing a fast recharge.**

Paddon says having YES Power as its official power company is key for the project with race car charging solutions yet to be sorted.

He's also working with the University of Canterbury Engineering Facility's Motorsport project team (rated one of the world's best in the Formula student international electric racing programme) on mainly aerodynamics.

Describing the planned EV rally car as "like no other", Paddon says it will make a noise to warn of its approach. EVs are renowned for being quiet, many now coming with a pedestrian warning noise at low speeds. But this will be a high-speed alert, although just what sound the EV rally car will make hasn't been determined. "It won't sound like a

conventional race car though," Paddon says when asked if it might be like a rowdy V8.

He believes motorsport still needs to have an element of sound, even for safety.

Paddon is working with Motorsport New Zealand on guidelines for EV safety in motorsport.

The first year will be spent sorting performance, technical and reliability issues.

So how did Paddon develop the idea of an EV rally car?

**It came about after a discussion with a friend in 2017 who suggested EV racing offered a new approach to commercial investment. Paddon recalls his reaction was probably similar to many others in motorsport when first hearing about electric cars.**

But after thinking about it more he could see how going to EVs would stack up and started to talk about it with possible commercial partners.

That led to a technical partnership with Stohl Advanced Research and Development (STARD) in Austria and working with the University of Canterbury, Hyundai New Zealand, YES Power and others – with more to come on board.

Callaghan Innovation chipped in with funding and it was all go.

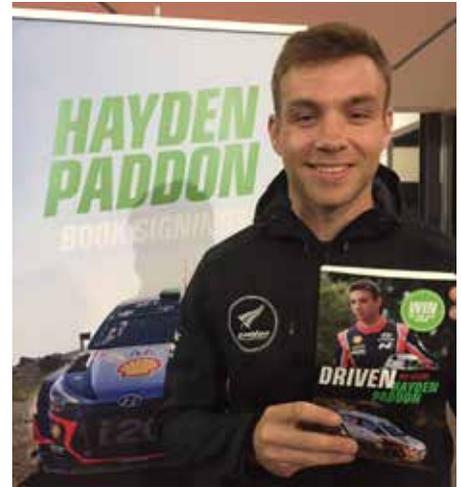
Paddon believes Kiwi ingenuity and New Zealand's environment (including renewable energy) make it the perfect place to try something like this.

**He believes motorsport has always been at the cutting edge in automotive technology.**

Paddon points to the growth of EVs in motorsport, such as the ABB FIA Formula E championship featuring Kiwi driver **Mitch Evans** and brother **Simon** in the support series Jaguar I-Pace eTrophy, the success of EVs in hillclimbs like Pike's Peak (**Seb Frances** of Petone is building an EV hillclimb car), and a new Extreme E off-road series.

"But there are no EVs in rally yet," he adds.

Paddon believes motorsport fans will eventually adjust.



Hayden Paddon at his book launch



A rally car based on the Kona EV will be trialled by Paddon Rallysport next year

**"Ultimately, the EV rally cars will be impressive and create a genuine, competitive and new form of EV motorsport. Everything will be different to what we think of now."**

He sees EV motorsports opening doors to people who don't watch it now.

It's also sending the right message for the environment and the growing global concern about emissions and climate change.

Paddon is excited by the challenge of developing a world-first EV rally car and says there are many unknowns to overcome.

Meanwhile, he took a brief break from driving to promote his autobiography, *Driven: My Story*, published on August 20, about the challenges he went through in life to get where he is, and growing up in Geraldine.

**He's never considered anything other than motor racing and encourages people with a passion for something to do it as best they can. ■**



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# KIA NIRO ADDS SPACE TO SUCCESSFUL EV SUV RECIPE

Last year Hyundai made a lot of noise about the launch of the Kona Electric SUV, and rightly so. It is one of the best electric vehicles available on the New Zealand market, and has been a relative hot seller.

**Kia on the other hand has been a little more reluctant to shout from the rooftops about its first full electric effort, the Niro EV, in spite of the fact it shares a lot of elements with the Hyundai. It has been on sale here for a few months now, but review units are only just starting to go out and marketing has been incredibly muted.**

That could be that they are in relatively short supply - *EVtalk* understands a limited number were initially secured by Kia New Zealand. There is definitely an argument that there is no point in spending marketing bucks on a car, then have to say no to prospective buyers because it is in too high demand.

While New Zealand seems to be getting a solid share for EV production,



that can still be small numbers considering how hard some are finding it to secure battery supply.

Kia is offering two versions of the

Niro EV, both largely the same save for the battery size and motor power. The EX 289 costs \$69,990 and features a

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39.2kWh battery, the motor puts out 100kW and 395Nm of torque, and goes, well 289km (WLTP). The EX 455 - you guessed it, the range is 455km - gets 150kW from its motor and features a 64kWh battery for just \$6000 more. Both batteries are actively cooled.

**Why anyone would consider the 289 is beyond me - 24kWh extra capacity for \$6000 is a bargain. Plus, the 289 is some \$10,000 more expensive than a 40kWh Leaf, and \$20,000 more expensive than the launch price of the MG ZSEV.**

The 455 though is more on the money. It sits between the two Kona models on price and spec, and the battery size gain makes it a worthwhile price step over the likes of the Leaf and Ioniq. The trickier question is why you would shell out \$2-\$3000 more than the price of a Model 3 Standard Range Plus? Some will prefer the backing of a nationwide dealer network, the SUV shape and others may just not be willing to jump on the Tesla hype machine yet.

For fleets, who want a vehicle that has zero learning curve over their other vehicles, the Niro is likely to appeal as well. Over the hybrid versions of the model the key differences are the now closed grille, which houses the CCS2 charging port, a revised centre console with a rotary-dial style shifter, paddles to vary regeneration attached to the wheel and a slightly revised LED dash screen.

**The Niro is not going to win any beauty contests, although it is attractive enough. The shape is SUV-ish, though it could be argued it is a large hatchback or a small wagon. The front has a hint of Soul (the other Kia EV) to it, while the rear just feels a little dated. There are some cool details, like the plug motif on the charging lid, and arrow-like driving lights.**

The centre console may seem a little detail, but it is one of the areas that splits



the Kona and Niro apart. I very much prefer Kia's dial for changing gear to Hyundai's buttons, but the centre console does feel a bit "tacked on", rather than the full, raised centre console in the Kona that adds a real premium feel to that vehicle.

**The interior is otherwise a very nice place to be, with excellent build quality and finishes, and it is roomy both front and rear. The touchscreen infotainment system is easy to use and features Apple CarPlay and Android Auto.**

The seats are part synthetic leather and very comfortable - though not heated.

A chat to a Kia spokesperson suggested that with the amount of range on offer, the argument over heated seats being more efficient was not really necessary. The cabin warmer/cooler is an efficient heatpump.

What you get in spades over the competition is interior space. The Kia is 200mm longer overall, 100mm of that in the wheelbase. That makes it roomier by pretty much any measure, and gives

it nearly 120 litres of extra boot space. The rear seats fold down - families and commercial users will both find this the more practical option.

It drives pretty well too. The Eco and Sport modes vary the amount for power available, and regeneration levels, or you can do that manually via the steering wheel paddles. In Sport mode the full 150kW and 395Nm are on offer, and it can scurry away from the line in haste.

The ride is comfortable, the steering is light and responsive, and the Niro feels very stable through corners. We did find in the wet, however, the eco-biased tyres felt a little underwhelming - not unsafe, but just lacking in a little bite.

**Eco mode drops the maximum speed of the vehicle down to 90km/h and reduces torque and response. It is a great way to be able to boost range without having to think too much about it.**

You get a full range of driver assistance features as well, including radar cruise control, a lane keeping

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system, blind spot detection, autonomous emergency braking and a rear vision camera with guidelines. Electronic stability control and seven airbags add to the safety equipment schedule.

**How is range? We didn't have the ability to do a full range test on the Niro, though found it easily passed 300km before we felt the need to plug in - with range to spare.**

We like nose-mounted charging ports, as in the Niro, as they work with almost every charger we have come across without the need to park across lines.

We did one large charge during our drive, an hour on an ABB 50kW unit to get to 80%, taking on 43.363kWh.

The onboard AC charger is a 7.2kW unit, and we must commend Kia for providing not only a portable charging unit, but also a type-2 to type-2 cable, adding around \$500 extra value to the package on that one cable alone.

Charging times are going to depend on your personal setup, although with this level of range it is safe to say that in normal use you do not need to plug in often.

**Kia has backed the Niro EV with a solid warranty programme. The battery is covered by a seven-year, 160,000km policy, while the whole vehicle is covered for five years or 100,000km.**

For its first official BEV effort in the New Zealand market, the Kia Niro is well packaged and very easy to live with. Model 3 aside, it is competitively priced in 455 form, and its added practicality may just give it a slight edge over its Korean EV SUV cousin. ■



## CLEAN CAR PLAN A HOT TOPIC

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believe that it applies to all car sales rather than just new and second-hand imports. This advertisement is clearly spreading misinformation about the proposed policy."

The complainant also felt the ad deceived viewers by claiming it is a Labour Party tax, when the minister pictured in it was the Green MP Julie Anne Genter. The complainant also implied her photo had been edited to make her appear less attractive.

The ASA chair noted the material

was an "advocacy advertisement", and as such National was "entitled to put forward its opinion of the policy being considered".

**The ASA said the implication the "tax" was a Labour one was not misleading, as the party is the major member in the coalition, and the policy would not go ahead without the party's backing.**

The chair also found there was no evidence the picture of Genter had been edited, and it did not meet the threshold to demean or denigrate the

politician.

The Green Party had earlier pulled a spoof advertisement likening Bridges to a used car salesman, because its members were unhappy with it.

The mock advert features an impersonation of Bridge's heavy accent, and television included it, when referencing a clip taken from an *Auto Media Group* video of Julie Anne Genter's explanation of the Government's clean car plan at a VIA function. ■

# HAMILTON ELECTRIC VEHICLES CHARGES ALONG

It's been seven months since the inaugural Hamilton Electric Vehicles, the city's only EV centre, opened in early February.

Dealer principal **Nicholas Down** says the enquiries have been huge, which is "absolutely phenomenal".

"We can't keep up with it!" Down says.

**Hamilton Electric Vehicles specialise in just battery EVs, and when Down was asked why there aren't any plug-in hybrid EVs, he jokingly said "they're stupid".**

"They still have petrol; they still have maintenance. They have over 2000 moving parts that can break down. With pure electric vehicles, you don't have any of those problems. The cost savings are phenomenal with a full, pure electric car," Down says.

**"We want to stay in our lane. Our lane is pure electric. We are pure EV. That's all we want to do, that's all our customers want as well."**

Down says they are breaking away from what he calls a "car sales" mentality.

"If we sell the car for this, and we discount the car for that, we can make some money off their trade if we do this or do that – all that mentality is old school, it's gone."

So, what's new school?

**"New school is giving customers service, education and support."**

Solving their problems and answering their questions, it's about giving them massive value, and price is never an issue.

Down says: "Price is always an issue in the absence of value".

"None of our staff are incentivised with bonuses or commissions. We aren't about



Hamilton Electric Vehicles exterior

trying to get customers to buy cars. We're here to help them, educate them, show them where the investment can be made and how much it can save them, and make sure the vehicle is fit for purpose."

Down says Hamilton is a great place to own an EV as everything is in commute distance – Morrinsville, Te Aroha,

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# HAMILTON ELECTRIC VEHICLES CHARGES ALONG

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Matamata, Otorohonga, Raglan, all 30-40 minutes from Hamilton.

Raglan has been called the “Leaf capital of the Waikato,” with Down regularly seeing 18 to 20 Leafs coming from Raglan way into Hamilton on the daily commute.

Down says electric is one of the answers in response to the massive challenges with global warming, oil crisis and climate change.

Amazed by the autonomous electric bus he took in Shanghai, Down questions why New Zealand is further behind in the uptake of alternative transport but says it’s all scale of economy.

**“But we’ve got to take that step,” Down says. “And we’ve done that with Wellington. We’ve done that with the full electric buses and in Christchurch.”**

He points out SEA Electric’s electric trucks and the fully electrified Nissan ute, which will “revolutionise” the market.

“It’s going to take some time to come to New Zealand with the scale of our market, but it will come,” Down says.

Hamilton EV differs from other EV dealerships as it’s the only dealership that is pure electric and showroom based.

Down says he did not want to replicate the car yard model like traditional dealerships, where customers are instantly on guard because of the old school car salesman techniques.

He credits his early days in the industry to the likes of **Garry Keith, Ian McLeod** and **PJ, (Peter Johnson, GVI Electric)**, people that taught him the worth of great customer care and value.

August was a good month, starting with 37 cars and only nine left in the showroom at the end of the month, with more sold, sight unseen (currently in transit).

**There is more stock arriving and the business can’t keep up with the demand.**

Even university students could afford an EV at \$29 a week – which Down points out is probably less than what they would spend on fuel or public transport.

“If we can’t show a university student that they will spend more on the bus or on petrol, then we’re doing something wrong.”

There is virtually no maintenance with an EV, compared to a warrant of fitness bill that could add up to \$500 (with an ICE car).

“You wouldn’t even spend \$500 a year with an EV,” Down says.

**Down says anyone who buys an EV from Hamilton Electric Vehicles will have a warrant of fitness for life – every year, a new warrant of fitness and service will be issued for free.**

“It’s part of the service we provide to our customers to support them and the huge repeat business this brings us.”

“If we looked after the customers from the start and continue to look after them, they will be customers for life.”

**Down takes the Hamilton EV philosophy from Tesla – “once you buy a Tesla you will never buy another brand and the majority of cars are sold by existing owners”.**

He compares his customer centric approach to banks, where banks often have special offers to generate new customers.

“They make all these amazing offers for new customers. What about the existing ones?” Down asks. “They say ‘hang on, I’ve been with you for 20 years, what are you going to do for me?’

“The bank says: “We’ve already got you; we only want new customers.”

Down uses this analogy as an anti-example of his approach to customers.

“We are customer centric. The grass is always greener on the other side of the fence, but if you water your side of the grass? We want to look after the existing customer.”

**“You can quote me on this: You will never see Hamilton EV in the disputes tribunal or MTA resolution with an unsatisfied customer.”**

Month on month, Down says sales and enquiries have increased. There was a small “blip” when **Julie Anne Genter** announced the government was looking at incentives such as extra taxes to convert people to buying EVs.

However, people were hesitant about buying EVs as the incentives were only going to take place next year and the year after.

“Why wait until then? Why not make the savings now?” Down asks.

He says the Nissan Leaf is by far the most popular EV and the best value, saying you can’t beat the benefits and value for money. Every electric car has its advantages and features.



Shane Hobson and Nicholas Down

Down says the Clean Car plans are fantastic, but if the government was serious about their intentions, they would introduce it immediately.

**“CO2 emissions are poisonous, and people breathe it in every day. It’s harmful on the environment, people’s health, our whanau and the planet.”**

Down applauds micro-mobility and alternative mobility options, such as e-scooters and ride-shares. He notes the new NIU e-scooters, which can do 80-100km on a single charge, will be hitting the streets of Hamilton and will be especially targeted towards the university market.

Car ride-share technologies are in infant stages, Down says.

“But it’s only a matter of time before people get their head around how much they can save.”

Hamilton Electric Vehicles will soon venture out towards electric motorcycles, with Zero and Evoke coming and expanding the range.

“As we grow the company, our focus is full electric transport. We are serious about what we do.”

At Hamilton Electric Vehicles, customers have the option to rent an EV from \$99.

This is similar to car subscription, where people can subscribe to a car for a certain amount each week. Down offers this to potential customers who want to test the waters before purchasing one – after making the investment, Hamilton EV will deduct the rental cost and put it towards a new EV.

So far, Down says there has been a 100% conversion.

Down was born and bred in Hamilton and lived in Dubai and then Wellington for years where he set up an EV dealership in Lower Hutt, (that has since closed) before being scouted to open Hamilton’s first pure EV showroom.

He co-manages the showroom with **Shane Hobson** and several team members. ■

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# EV SHARING IS GATEWAY TO AUTONOMY

**K**irsten Corson is one of the drivers at New Zealand's only sole electric car share service, Yoogo Share.

And it's going places fast.

The company has seven hubs in Christchurch city, including the airport, and is now due to open its second Auckland city hub in September.

**While the focus is on those two cities, Wellington will follow. Corson says Yoogo Share has been approached by other New Zealand centres and will consider further locations once it's established in those three cities.**

There's been plenty happening since Yoogo Share was launched by prime minister **Jacinda Ardern** in Christchurch in February 2018 with a 100 pure EV fleet and 100 chargers with 12 business customers.

In November that year Yoogo Share won the Smarter Transport award at the NZI Sustainable Business Network Awards with 50 tonnes of carbon savings for Christchurch, and is in the running again for this year's awards.

A Yoogo Share Club was introduced this year, providing after-hours subscription so members can drive an EV home. Yoogo Share has recently released a OneWay service between Christchurch Airport and two city downtown locations, both proving very popular.

**Then Genesis recently announced a \$2 million 40% stake in the company which will assist the growth into Auckland and Wellington.**

And there's more to come. An all-of-government contract for car sharing will also commence in September, for instance.

Yoogo Share operates Hyundai Ioniq and BMW i3 EVs but is also testing a Hyundai Kona Electric in Auckland.

"We challenge people as to whether they need to own a car," Corson says, explaining that many New Zealanders don't add up all their car ownership costs and evaluate how little they actually use it over a 24-hour period.

**She says in many cases it's better to book a shared EV when you need it than to have your own "sitting around all day in a carpark".**

Businesses like Christchurch Council, Aurecon, The Building Intelligence Group, Warren and Mahoney and Jacobs really

get that – they are great supporters of the service in Christchurch, Corson adds.

Admitting Kiwis do like to own cars, Corson says it will take a while for the "sharing economy" to truly flourish but that with autonomous vehicles (AVs) ahead of us then vehicle ownership is even less likely.

"I liken EV car sharing as the gateway drug to autonomy."

So how did Corson get into EVs and especially Yoogo Share?

**She started her career as a haematology nurse at Auckland Hospital ("the most humbling job I've ever had") before doing a post graduate diploma specialising in marketing then working in start-ups.**

While having three children, Corson established an on-line retail business working from home, set up another and then

sold up to re-enter the workforce looking for more challenge. At that stage **David Jenkinson** and **Kelvin James** were setting up Yoogo Fleet with the support of Maui Capital so she joined the team.

"We saw an opportunity to do something different." Putting GPS in cars initially showed that most of the time the cars sat in car parks.

Coupled with the high capital cost of EVs and chargers it can be prohibitive for businesses.

Corson, who was keen to see more EVs in New Zealand, wanted to do something about it and sharing them seemed really logical to her. She called it her "2am to 4am project" as an indication of the time to work on it.

**The Christchurch City Council really started the ball rolling, calling for expressions of interest for a shared EV fleet.**

Corson saw the opportunity and Yoogo Share was born, leading to Corson becoming its general manager and co-founder with David Jenkinson.

She points to the high costs of maintaining and servicing conventional fleets, also considering depreciation, insurance, repairs and other factors – plus the more than 1000 deaths annually from pollution related diseases here.

"With 86% renewable energy in New

Zealand we have a wonderful opportunity to innovate mobility options with electric."

**While car sharing is in its infancy in New Zealand, Corson says the introduction of Lime electric scooters, Uber and Air BnB got people into learning about sharing and optimising assets.**

Corson says it's about helping businesses make better decisions too.

She salutes the council for "walking the talk" on electrics and selling its 55 vehicles to join Yoogo Share. "It was a bold and visionary concept and the Christchurch City Council has been an amazing partner for us."

"It's a really exciting time to be involved," Corson says, adding Genesis' involvement will help with improving Yoogo Share's software platform and growth.

"So you will see a lot of improvements in the next 12 months."

**Debbie van der Schyff** is also passionate about EVs, particularly with her current job with technology leader ABB. As sales specialist for Electrification Business, she covers all things EV for ABB throughout New Zealand.

"I see customers, promote new products, market and sell EVs. In my role, I cover various aspects of marketing, sales and product installation."

Van der Schyff has worked for ABB for 24 years, starting in South Africa and then moving to New Zealand in 2009 to become wholesale account manager for low voltage products. She then moved into a sales specialist role for uninterruptible power supplies (UPS) and eventually took on her current role, after her predecessor moved to a regional role in 2017.

**"In one year we have moved from having just one EV charging product (a 50kW DC charger) to five (AC charger, DC wallbox, high-powered charger and bus charger)."**

Enjoying "the EV space", she encourages family and everyone she meets to try or buy an EV after seeing so many benefits.

She says New Zealand may seem a small country, but it is among the top 10 for EV product sales worldwide.

"I personally believe that the

*Continued on page 19*



Kirsten Corson



Debbie van der Schyff

# FIND YOUR NEW EVS HERE!

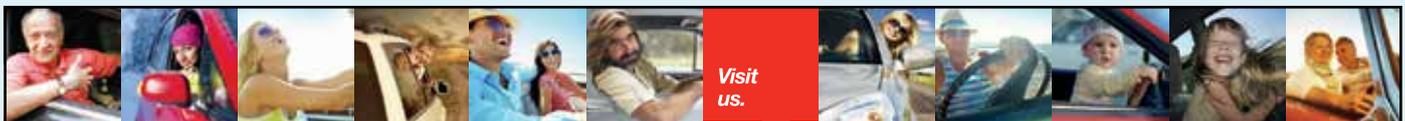
NEW EV CAR TYPES				
MAKE	MODEL	TYPE	PRICING RRP est.	APPROX RANGE kms
Audi	e-tron	BEV	\$148,500	417 km
BMW	i3	BEV	\$77,200	200 km
	i3s	BEV	\$85,900	200 km
Hyundai	Ioniq	BEV	\$59,990	220 km
	Ioniq Elite	BEV	\$65,990	220 km
	Kona	BEV	\$77,990	400 km
	Kona Elite	BEV	\$83,990	400 km
Jaguar	I-Pace S	BEV	\$144,900	470 km
	I-Pace SE	BEV	\$154,900	470 km
	I-Pace HSE	BEV	\$164,900	470 km
Kia	Niro EX289 (39 kWh)	BEV	\$68,990	289 km
	Niro EX455 (64 kWh)	BEV	\$75,990	455 km
LDV	EV80	BEV	\$80,489	180 km
Nissan	LEAF	BEV	\$59,990	270 km
Renault	Zoe 40 kWh	BEV	\$68,990	300 km
	Kangoo van	BEV	\$74,990	160 km
Tesla	S - Standard Range	BEV	\$129,700	520 km
	S - Long Range	BEV	\$146,500	630 km
	S - Performance	BEV	\$161,200	610 km
	X - Standard Range	BEV	\$139,200	375km
	X - Long Range	BEV	\$156,000	565 km
	X - Performance	BEV	\$170,700	540 km
	3 - Standard Range Plus	BEV	\$73,900	460km
	3 - Performance	BEV	\$94,200	560km
Volkswagen	e-Golf	BEV	\$68,490	220 km
Audi	A3 Sportback e-tron	PHEV	\$69,900	45 km + 600 km
	Q7 e-tron	PHEV	\$158,400	54 km + 800 km
BMW	i3 - Range Extender	PHEV	\$84,500	200 km + 130 km
	i3s - REX	PHEV	\$91,900	200 km + 130 km
	i8	PHEV	\$281,200	37 km + 400 km
	i8 2018 Coupe	PHEV	\$286,200	55 km + 400 km
	i8 2018 Roadster	PHEV	\$309,900	53 km + 400 km
	225xe	PHEV	\$69,800	41 km + 550 km
	330e	PHEV	\$91,600	40 km + 550 km
	530e	PHEV	\$136,400	50 km + 600 km
	740e	PHEV	\$202,700	48 km + 550 km
	X5 xDrive40e	PHEV	\$152,700	30 km + 800 km
Hyundai	Ioniq Plug-in	PHEV	\$53,990	63 km + 1040 km
	Ioniq Plug-in Elite	PHEV	\$59,990	63 km + 1040 km

Kia	Niro	PHEV	\$55,990	55 km + 850 km
Mini	Countryman	PHEV	\$59,900	30km + 500 km
Mitsubishi	Outlander	PHEV	\$55,990	50 km + 500 km
Mercedes Benz	C350 e Sedan	PHEV	\$96,400	31 km + 700 km
	C350 e Estate	PHEV	\$99,400	31 km + 700 km
	E350 e Sedan	PHEV	\$143,500	30 km + 600 km
	GLE500 e	PHEV	\$149,900	30 km + 700 km
	S500 e	PHEV	\$255,000	30 km + 700 km
Porsche	Cayenne S e-hybrid	PHEV	\$177,800	20 km + 750 km
	Panamera Turbo S e-hybrid	PHEV	\$428,400	30 km + 750 km
Toyota	Prius Prime	PHEV	\$48,490	50 km + 1000 km
Volvo	S90 T8	PHEV	\$125,900	34 km + 600 km
	XC90 T8	PHEV	\$134,900	44 km + 600 km
	XC60 T8	PHEV	\$94,900	40 km + 600 km

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USED EV CAR TYPES				
MAKE	MODEL	TYPE	PRICING RRP EST.	APPROX RANGE KMS
<b>BMW</b>	i3 - 22 kWh	BEV	\$35k - \$45k	120 km
	i3 - 33 kWh	BEV	\$52k - \$80k	200 km
<b>Hyundai</b>	Ioniq	BEV	\$47k - \$55k	220 km
	Ioniq Elite	BEV	\$57k - \$66k	220 km
	Kona	BEV	\$74k	400 km
<b>Kia</b>	Soul EV	BEV	\$30k	150 km
<b>Mercedes Benz</b>	B250 e	BEV	\$44k - \$47k	140 km
<b>Mitsubishi</b>	i-Miev	BEV	\$11k - \$14k	100 km
	B-Miev Van	BEV	\$16k	100 km
<b>Nissan</b>	LEAF Generation 1	BEV	\$9k - \$16k	120 km
	LEAF Gen 2 - 24 kWh	BEV	\$13k - \$34k	135 km
	LEAF Gen 2 - 30 kWh	BEV	\$26k - \$36k	180 km
	LEAF ZE1 - 40 kWh	BEV	\$43k - \$63k	250 km
	e-NV200 - 24 kWh	BEV	\$27k	140 km
<b>Renault</b>	Zoe 40 kWh	BEV	\$37k - \$68k	300 km
	Kangoo ZE Van	BEV	\$42k - \$46k	160 km
<b>Smart</b>	Fortwo	BEV	\$20k	100 km
<b>Tesla</b>	S P85D	BEV	\$95k - \$120k	330 km
	S 90D	BEV	\$125k	420 km
	X 75D	BEV	\$109k	340 km
	X 90D	BEV	\$129k	410 km
	X 100D	BEV	\$149k	480 km
	X P100D	BEV	\$230k	460 km
<b>Volkswagon</b>	e-Golf - 36kWh	BEV	\$63k - \$70k	220 km
<b>Audi</b>	A3 Sportback E-Tron	PHEV	\$41k - \$50k	45 km + 600 km
	Q7 e-tron	PHEV	\$125k	54 km + 800 km
<b>BMW</b>	i3 REX - 22 kWh	PHEV	\$33k - \$50k	120 km + 120 km
	i3 REX - 33 kWh	PHEV	\$50k - \$68k	200 km + 120 km
	225xe	PHEV	\$50k	41 km + 550 km
	330e	PHEV	\$50k - \$76k	37 km + 550 km
	530e	PHEV	\$140k	50 km + 600 km
	X5 xDrive40e	PHEV	\$140k	30 km + 800 km
<b>Hyundai</b>	i8	PHEV	\$110k - \$140k	37 km + 400 km
	Ioniq	PHEV	\$46	63 km + 1040 km
<b>Mercedes Benz</b>	C350 e Sedan	PHEV	\$63k - \$75k	31 km + 700 km
	GLE500	PHEV	\$130k	30 km + 700 km
	E350 e	PHEV	\$120k	30 km + 600 km

	S500 e	PHEV	\$96k	30 km + 700 km
<b>Mini</b>	Countryman Cooper SE	PHEV	\$68k	30km + 500 km
<b>Mitsubishi</b>	Outlander	PHEV	\$27k - \$56k	50 km + 500 km
<b>Porsche</b>	Cayenne S e-hybrid	PHEV	\$129k	20 km + 750 km
<b>Toyota</b>	Plug-in Prius	PHEV	\$17k - \$22k	26 km + 800 km
<b>Volvo</b>	XC60 T8	PHEV	\$115k	40 km + 600 km
	XC90 T8	PHEV	\$115k	44 km + 600 km

**BEV** - Battery Electric Vehicle  
**PHEV** - Plug-in Hybrid Electric Vehicle

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The Electric Motor Vehicle Company 03 218 7130   027 515 8799 info@electricmv.co.nz	Invercargill



# E-MOBILITY SAFETY AN ISSUE

**P**lenty has been reported about injuries suffered by riders of electric scooters, electric bikes and other forms of personal e-mobility.

Just e-scooters alone have prompted research such as a paper in the New Zealand Medical Journal titled *The Cost of Electric Scooter Related Orthopaedic Surgery*.

**Authors found the popularity of e-scooters was leading to some riders arriving at accident and emergency departments with injuries like those received in car crashes or falls, usually covered by ACC and resulting in a cost to taxpayers and healthcare systems.**

During 19 weeks to February 22, 2019, 21 people with e-scooter injuries needed surgery at Auckland City Hospital at a cost \$404,925, which also resulted in delays for others awaiting operations.

Recorded injuries ranged from head fractures to ankle and leg breaks.

**Greater public education and further studies on ways to prevent e-scooter injuries were needed, the paper concluded.**

ACC claims for e-scooter injuries exceeded \$4.3 million with more than 2000 claims lodged from October 2018 to July 2019, Auckland recording the most claims with 1271 (\$1.76m).

With summer around the corner and more e-scooters expected on the streets, what's out there to warn or help riders in avoiding accidents and injury?

Various agencies such as the NZ Transport Agency (NZTA) and Auckland Council (AC) provide advice.

Riding in a safe and considerate manner, giving way to pedestrians and mobility devices; riding at a safe speed and wearing helmets are among recommendations.

E-scooter riders must be aged 18 and over, although children (often on the same e-scooter as an adult) have



E-scooters are becoming more prevalent in our cities

been seen riding them.

The Auckland Council has an *E-scooter Shared Services Code of Practice* geared mainly towards e-scooter operators which includes safety and operations in its conditions.

**Organisations involved with e-scooters and e-bikes have also put out safety advice.**

Mercury, for instance, has some tips which include always wearing a helmet (many e-scooter riders don't wear one), keeping speed down especially around others, obeying the normal road rules, one rider per e-scooter, never using a smart phone while riding (unless remotely connected through a smart helmet and hands-free), ensuring riders and scooters can be seen at night or in dark conditions, wearing appropriate clothing and using common sense – such as ensuring conditions are suitable for riding, avoiding unstable surfaces, and getting off the e-scooter if necessary.

Warning signs have even been posted on popular e-scooter and e-bike pathways where necessary, some suggesting riders not overtake on blind spots and watch out for others on shared paths.

Auckland especially has seen a huge rise in cycling and e-mobility (e-scooters, e-bikes, e-skateboards). The city has seen nearly 50,000 new cyclists and e-bike riders alone since 2016.

More cycleways and shared paths have been introduced, with city fathers increasing their calls for key city areas to be more pedestrian, cycle and e-mobility orientated.

**The Auckland Council says it wants to remain flexible on allowing e-mobility while avoiding having too many shared service bikes and e-scooters.**

This summer will probably determine just how e-mobility users fare in our main cities and what more needs to be done. ■



This summer could determine how much more is needed around e-scooter safety



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# NEW PRESIDENT TO LEAD ITS NZ TO 2021



Simon McManus

BY SIMON MCMANUS,  
EXECUTIVE OFFICER, INTELLIGENT  
TRANSPORT SYSTEMS NEW ZEALAND INC

**S**tephen Hewett has been appointed the new president of Intelligent Transport Systems New Zealand, following board nominations and a vote by the board of directors.

The organisation will enjoy leadership continuity with **David Vinsen** as chair, while **Andrew Gurr** and **Mike Rudge** were appointed vice-president and treasurer respectively. The role of board secretary has now been combined into the executive officer role. **Emilio Marquez**, New Zealand operations manager for SICE has joined the board.

Newly appointed president **Stephen Hewett**, a director and transport advisor at Beca, has been a long-serving ITS NZ board member, and was involved in bringing the ITS Asia Pacific forum to New Zealand in 2013. In the past few years he has contributed significantly to the annual T-Tech conference which has doubled in size and attendance in three years, as well as leading the business plan setting out the organisation's strategy and goals.

As a director of transport advisory at Beca, his work outside ITS NZ involves consulting on traffic operations, transport technology and modern mass rapid transit.

**"It's an exciting time for ITS, with innovations and disruptions affecting almost every facet of transport," Hewett says.**

"New technologies and business models are disrupting traffic operations and improving data, mobility as a

service and multi-modal journeys are creating better choices, not to mention exponential innovations and new modes in passenger, freight and modern mass rapid transit vehicles.

"ITS NZ has never been in a better position, and much of that is through the hard work of a committed board of directors and especially the work of my predecessor **Mohammed Hikmet** who has contributed immensely to our growth here, and New Zealand's reputation and participation internationally," Hewett says.

**"We have our core board appointed last month and will be co-opting representation from the NZ Transport Agency and Ministry of Transport. We will also be co-opting representation from academia and a youth board member as we hope to further develop succession planning within the board and encouraging skills development for the sector.**

"Our current operational focus is preparing for the ITS World Congress in Singapore and planning for T-Tech 2020 and we will also begin work on our strategy through to 2022."

#### Planning for T-Tech 2020 under way

T-Tech dates have been set as April 1 and 2, 2020, in Wellington.

ITSNZ is seeking interest from the industry to join the T-Tech planning team - a great opportunity to contribute to this growing event and raise your profile.

Anyone interested should contact **Simon.McManus@itsnz.org** for more information.

*Continued on page 19*

## WHAT'S HAPPENING?

**Innovations in Freight and Logistics**  
September 17th, University of Auckland  
Details and Registrations via [ITSNZ.org](http://ITSNZ.org) soon

**ITS World Congress, Singapore**  
@ Suntec, October 21-24  
Preliminary programme published  
\*Contact ITSNZ for promo opportunities & networking events

**ITSNZ Awards**  
Entries open soon.  
Awards night TBC, February 2020

## LOCAL EVENTS

**Tuesday September 17, 2019**  
Presentations on Freight, Logistics, Technology

## INTERNATIONAL EVENTS

**October 21 - 25 2019**  
ITS World Congress  
Singapore  
Themed *'Smart Mobility, Empowering Cities'* the ITS World Congress attracts 10,000 delegates and covers all aspects of Intelligent Transport and Smart Cities. ITSNZ has an expo stand and events planned.

**May 25 - 29 2020**  
ITS Asia-Pacific Forum  
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## THE GREAT FEEBATE DEBATE

The Government has recently proposed the introduction of a vehicle efficiency standard and feebate scheme to incentivise consumers to buy more efficient vehicles.

### The Productivity Commission's recommendation

The Productivity Commission outlined a central strategy for efforts to reduce greenhouse gas emissions (GHG). Specifically, they argued that the price of goods should accurately reflect the costs of GHGs that good creates.

**Then, and this is really the most important part, "emissions pricing can and should be used as the central policy lever to incentivise businesses and individuals to make decisions that lower their GHG emissions".**

The transport sector accounts for about 20% of GHG emissions in New Zealand.

What we need is a stronger carbon tax on petrol and diesel.

What we have received is a complex and convoluted vehicle efficiency standard and a feebate system. In theory, this is a good start or even a good complement, but the devil is in the detail. The efficiency standard is so rife with loopholes that utes can and will be driven right through them.

**For instance, they do not apply to private imports. This means that the cars can just be imported in the name of the buyer, making it a private import and completely bypassing the standard.**

Of course, this also means the buyer loses all protections under consumer law.

This will have a direct and detrimental impact on the viability of traditional business models.

As for the feebate, well we know where most utes are driven, and we know where most EVs are driven. I am not sure how well a wealth transfer from rural to urban will go over, but I have my doubts.

Don't get me wrong, I think with significant effort, both policies can be made to work (and loopholes closed). In their current state, however, they will just lead to higher prices, less safe vehicles, and people using vehicles that are not fit for purpose (due to the right vehicles either no

longer being available or being priced out of reach of most consumers).

There is also an issue with implementing too many initiatives at once; how do you measure the effectiveness of each when you cannot separate the variables or effects?

**The standard and feebeats also do nothing to address the biggest issue, high GHG emitting vehicles already in the fleet.**

### Internalising the negative externality

A carbon tax on fuel is ideal because it specifically targets those who use the most fuel, and therefore emit the most GHGs. There are no loopholes, no one escapes.

The carbon tax should be directly tied to the price of carbon. This way as the price of carbon increases, the tax automatically increases.

The biggest problem, oddly, is that the price of carbon is set so low that it would hardly be noticed, much less an influencing factor on whether to buy a more efficient vehicle or not.

Why this is the case is an important question for government. The price of carbon has been set for use by NZ ETS for the sole purpose of using it to deter GHG emissions.

**That said, the Productivity Commission did also recommend the price of carbon be increased.**

Recent research out of the University of Auckland suggests the price of carbon should be set at \$75/tonne CO<sub>2</sub>e (opposed to the current \$25/tonne CO<sub>2</sub>e) and increased \$20 per year. The proposal from Auckland University also suggested the money collected from this tax would be enough to allow for lowering the GST to 12.5%, stimulating the economy.

This is very similar to policy recommendations from policy researchers at MIT in the US.

**The research looked specifically at the effectiveness of petrol taxes versus vehicle standards.**

"With a vehicle efficiency standard, your costs won't increase unless you buy a new car, and even better than that, policymakers will tell you you're actually saving money. As my colleague likes to

By **Kit Wilkerson**,  
VIA analyst and  
adviser, on behalf of  
ITS NZ.



say, you may see more money in your front pocket, but you're actually financing the policy out of your back pocket through your tax dollars and at the point of your vehicle purchase."

Fuel standards, they argue, hide the true costs of the policy.

They continue by pointing out that while drivers of more efficient vehicles might save at the pump, it rarely matches the increased cost of the vehicle. And consumers who pay less at the pump often drive more, offsetting reductions in emissions.

In addition, emissions standards cost between three and seven times as much as a petrol tax for the same GHG emissions savings.

**The Government has balked at the idea of a further fuel tax, claiming it is regressive. Instead, efficiency standards have been proposed even though we know they cost more.**

But ... what if the fuel tax was not regressive?

It would then be cheaper and better target the intended purpose, both at the point of vehicle sale and in the fleet.

Researchers have found that in general fuel taxes become "more progressive as the income of the country in question decreases". Additionally, they propose a solution that would always make fuel taxes progressive.

Why not fully or partially refund the money collected from the tax evenly among all a country's ratepayers?

Most people with lower incomes would likely get more back than they put in. Over time, as the price of carbon increases and more taxes are collected, the refund can be complemented with programmes such as underwriting long-term, low-interest loans for EVs.

**This is not even wealth redistribution, it is the price we each pay to each other to use our shared resource – our planet. ■**

# THAI2GO EV DELIVERIES

**J**ames Porteous has turned a rundown Thai restaurant in Queenstown into something special – providing home deliveries and organic produce to customers using a fleet of EVs.

**He has four Gen 2 Nissan Leaf EVs bought about a year ago to replace Suzuki Celerios, covering up to a 24km radius from the Frankton restaurant and organic store.**

After growing up Christchurch, Porteous spent 25 years in Tokyo, working mainly in IT.

Deciding to return to New Zealand with his Japanese wife, **Porteous**, bought the restaurant sight unseen and says the power and gas were about to be turned off when he walked in the door.

That was about five years ago, and his organic and sustainable business venture has taken off since then.

**Porteous found more of a market for Thai home deliveries, opting for organic produce in the restaurant and sourcing his vegetables from an Oamaru organic farm.**

“I needed to do something a bit different and decided to get integrity into our vegetables so that customers knew where the vegetables were coming from.”

It did so well people even began to want the organic vegetables for themselves, so he leased a former physio’s shop in front of the restaurant to sell them from.

Demand grew to the point where Porteous bought the Oamaru farm and is now thinking about another.

Sticking to his sustainability guns, Porteous has had buy in from other food businesses towards a commercial worm farming operation which turns food and even shopping bags into compost for the organic farm which he says is the biggest of its kind in the South Island.

**A truck operates between Oamaru and Queenstown, which is also used for Turners & Growers deliveries, that Porteous hopes to have converted to electric drive as well.**

How does Porteous charge up the EVs?

He has staff accommodation behind the restaurant, so had the electrics there beefed up to better allow overnight EV charging.

Sometime Porteous will take an EV back to his Cromwell home where he



James Porteous

recharges it.

He’s keen to talk to ChargeNet NZ about installing a fast charger outside the restaurant as it’s near a busy intersection.

**There’s little need to charge the cars when out and about, and most deliveries are after 4pm.**

Cold and grit can affect EVs, but Porteous says most deliveries are within a short distance so temperature and road surface don’t really impact on range.

The biggest impact on his business from having EVs is the saving in fuel and maintenance, which can amount to more than a \$10,000 saving per vehicle annually.

“It’s not just that but when you put a car in for servicing or work you can lose the use of it for about three days, an added expense.”

EVs are all part of Porteous’ sustainability plan.

**And it’s proving such a hit with customers he’s got a similar Thai2Go venture under way in Timaru.**

There’s little doubt a lot more of his branded EVs will be seen on South Island roads in future. ■

## EV SHARING IS GATEWAY TO AUTONOMY

*Continued from page 12*

community is largely supportive of EVs, and with supporting policies and programmes like the low emission vehicles contestable fund and proposed ‘clean car’ changes, these add up to creating a welcoming environment for EVs,” van der Schyff says.

**She enjoys the opportunity to drive one of ABB’s pool EVs, consisting of a Nissan Leaf, Hyundai Ioniq and two Mitsubishi Outlander PHEVs.**

However, van der Schyff is also aware of typical drawbacks for driving EVs, having experienced the same in her own personal EV journey, such as lack of public awareness on EV charging infrastructure.

Her daughter, who lives in Auckland, is considering buying an EV or electric scooter but was uncertain about the availability of charging infrastructure until shown a map available in an online app.

“It’s important to raise public awareness to increase buy-in for EVs and dispel concerns. We in the industry understand and appreciate, because we’re involved. But Joe Bloggs down the road perhaps is not aware of existing EV infrastructure around the country.”

Van der Schyff also believes the private sector can do more to invest in EVs and support EV uptake.

**“We need to get people who are not interested in EVs on board.”**

She believes EVs are the future, particularly with concerns around climate change and the environment.

“Our kids won’t know a world without EVs,” says van der Schyff, who has shown her seven-year-old grandson how to charge an EV.

**“I’m excited to see the new generation thinking about the environment and helping create a better planet.” ■**

## NEW PRESIDENT TO LEAD ITS NZ TO 2021

*Continued from page 17*

**Outgoing ITS NZ president recognised in Entrepreneur of the Year Awards**

**Mohammed Hikmet** has been recognised as one of five finalists in the EY Entrepreneur of the Year Awards, taking out the technology and emerging industries category.

Hikmet stood down from the board after four years in the president’s role and over 10 years serving ITS New Zealand, contributing significant time and effort to international events, including the ITS Asia-Pacific Board, the ITS World Congress Global Ambassador and head of the New Zealand delegation to the ISO TC204 standards committee and more. ■

# WE'RE COMMITTING TO EVs

EVTalk checks out how some of the New Zealand companies are doing with their commitment to electrify at least 30% of their vehicle fleets by the end of 2019. Westpac is among 30 of the country's employers to agree on the deal.



ABB Ltd.  
Air New Zealand  
BMW  
Contact Energy  
Fonterra  
Foodstuffs North Island  
Fuji Xerox  
Fujitsu  
Giltrap Group  
Hyundai New Zealand  
ISS Facility Services  
Kiwirail  
Leaseplan  
OCS  
Opus  
Powerco  
Renault New Zealand  
SG Fleet  
Spark  
The Warehouse  
Transpower  
Turners Auctions  
Unison  
Vodafone  
Waste Management  
Watercare  
WEL networks  
Westpac  
Xero

## WESTPAC BANKING ON EVs

**W**estpac New Zealand has achieved 26% electrification of its vehicle fleet and, following an order with Hyundai for 16, will have more than 30% completed from October.

**Once that target is passed, Westpac will still have about 200 internal combustion engine (ICE) vehicles in its fleet.**

"Over time we will be converting the fleet to more efficient vehicles as the range of vehicle choice improves and additional infrastructure is installed," Westpac New Zealand general procurement senior commercial manager **Dan Harris** says.

Westpac has installed more than 50 chargers in Auckland, Hamilton, Tauranga, Wellington and Christchurch.

"We plan to install more in Takapuna, Upper Hutt and Christchurch," Harris says. "If the vehicle is a battery electric vehicle (BEV), it has a dedicated charger and parking space. For the plug-in hybrid EVs (PHEVs), we have a pool of chargers in each location that can be utilised." Other options include using public or home charging.

**Harris explains the Westpac EV fleet comprises a combination of passenger BEVs and PHEVs with the Hyundai Ioniq being the vehicle of choice. It also has a few BMWs which were among the original EV test vehicles.**

Asked if anything made the transition difficult, Harris says charging and range anxiety were the main early concerns. "But we've addressed these by educating and familiarising our people with the vehicles."

Harris says buy-in and support from senior leaders and staff has been tremendous, with feedback very good after the initial issues were addressed.

"All our workers get an education session from Hyundai when they receive an EV. They're able to go back to a Hyundai dealer at any time for additional training when necessary. Hyundai has been supportive of us and it has helped with the fleet transition."

**Westpac's fleet manager Custom Fleet manages Westpac's EV fleet requirements, and Westpac has also collated a comprehensive list of frequently asked questions on its intranet for quick reference.**



Dan Harris. Photo: Jessica Satherley, REDnews

Harris says all its vehicles are "tools of trade" for employees, with a small number designated pool vehicles.

"Our EVs are used for a range of business purposes, including visiting both urban and rural customers."

**Having greater access to more EV types, such as utes, would have allowed Westpac to replace light commercial vehicles in the fleet with an EV alternative, Harris adds. That's expected to happen once these become available.**

Another issue is around public chargers. "A lack of public charging infrastructure means our staff sometimes have to queue, but as an early technology adopter we have to be prepared for these challenges," Harris says.

He says Westpac believes business has a big role to play in reducing New Zealand's carbon emissions – "which is why we are one of the founding members of the Climate Leaders Coalition".

"The EV transition is part of a wider Westpac sustainability goal of reducing our enterprise emissions by 25% (from 2016 levels) by mid-next year.

**"We've invested in GPS for all of our new vehicles, so we envisage that the fleet will change in character and composition as we obtain utilisation data," Harris adds.**

"As part of our EV journey, we have compiled a document for other businesses seeking to transition to EVs. We encourage others to read it and talk to us if they have any questions."

Visit <https://www.westpac.co.nz/assets/Who-we-are/Sustainability-and-Community/Westpac-EV-Case-Study-2019.pdf> for more information. ■

# ENERGY COMPANIES SURGE AHEAD

Electricity companies like Mercury, Meridian Energy, Genesis and Contact are reporting a profitable financial year, a generally rosy outlook and more investment in electric vehicles and renewable energy.

Mercury chair **Joan Withers** steps down on September 27 on a high note, the company again announcing a record net profit after tax of \$357 million – up 53%.

Tribute was paid to her guidance and input over 10 years by chief executive **Fraser Whineray** at Mercury's financial year results briefing which included references to electric transport and renewable energy.

Withers has championed those two factors.

**“Joan has been hugely committed as chair of the company,” Whineray says, describing her track record as “tremendous”.**

Withers is looking to replace her long-running Mitsubishi Outlander PHEV with a new EV but hasn't decided what sort.

And EVs will continue to play a major role in Mercury's future.

Whineray says solid long-term demand growth is anticipated as renewable electricity's advantages are unlocked through technology advances in areas such as transport.

“We will continue to explore inspiring ways to encourage the transition to electrified transport for the long-term benefit of the country as well as our owners,” he says in reference to Mercury's highly successful electric ‘Evie’ 1957 Ford Fairlane promotions.

Whineray talks about the “awesome foursome” of renewables – sun, water, steam and wind – the latter involving Mercury's first wind farm underway at Turitea near Palmerston North.

“The great thing about renewables is that they do not require another party – just nature,” he says.

**Mercury is ready for an expected boost to EV uptake in New Zealand and has itself converted every vehicle it can to EVs with more than 84 of Mercury's 115 fleet now electric, including PHEVs.**

Meridian Energy reports record earnings and net profit off the back of its strong hydro conditions, trans-Tasman

customer growth and higher wholesale market prices.

**Renowned for supporting EVs, Meridian says its net profit reached \$339 million, up from \$201m.**

The company has been supportive of the government's Electricity Pricing Review.

“We support action and policies that result in a genuinely fairer, more affordable, competitive and efficient energy market,” chief executive **Neal Barclay** says.

Meridian has also continued to lead the industry's response to climate change, strongly backing the Zero Carbon Bill while announcing plans to reforest 1000 hectares and halve its operational emissions by 2030.

The company is among finalists in the **2019 NZI Sustainable Business Network Awards**.

“Enhanced by our new identity that underscores Meridian's commitment to 100% renewable generation from wind, water and sun, we're working with government, industry, communities and individuals to make the bold changes needed to achieve a net zero carbon New Zealand,” Barclay says.

Earlier this year, Meridian joined the international EV100 initiative, pledging to operate a 100% electric fleet by 2030.

**It also has an Electric Car Plan providing cheaper rates and other benefits for residential EV owners.**

Genesis Energy has also stepped up on EVs, the electricity retailer investing \$2 million for a 40% stake in Yoogo Share, an EV car-sharing company helping businesses and individuals reduce their carbon emissions.

With 200 tonnes of CO2 already saved by Yoogo Share, Genesis is excited about what the new partnership will achieve.

Yoogo Share's experience in EV fleet management and charging infrastructure, combined with Genesis' customer



Fraser Whineray and Joan Withers



Peter Kennedy from Genesis, left, Yoogo Share's Kirsten Corson and David Jenkinson, and James Magill of Genesis

and brand reach, will go a long way to achieving momentum in this essential and growing sector, retail markets executive general manager **James Magill** says.

“There is a groundswell of activity from individuals, business and government to support NZ's emissions reduction targets, and we hope to support that. Partnering with Yoogo Share enables a solution to help our customers further reduce their energy costs and carbon emissions.”

In announcing the deal, as part of its annual results, Genesis chief executive officer **Marc England** says this will provide significant opportunity for Genesis' business customers, many of whom are on the verge of transitioning pool car fleets to EVs.

Yoogo Share chief executive officer **David Jenkinson** says the traditional fleet industry is changing.

“Research suggests that by 2024 car-sharing will have grown to 40,000 cars in New Zealand and Australia. With a solid base in Christchurch and expansion

*Continued on page 22*

# CHARGEMASTER POWERS UP

A leading advocate of green initiatives throughout New Zealand, Chargemaster is powering up its profile.

**When it comes to EV charging and other EV components, the company has the vision of improving energy efficiency across homes and businesses nationwide through renewable and sustainable alternatives.**

Through innovation and creative thinking, we aim to lower the costs involved with purchasing electric car charging units, with the intention of helping in New Zealand's ambitious green energy goals, general manager **Frano Covic** says.

Chargemaster delivers a broad range of intelligent EV charging systems, just recently teaming up with Bosch to bring out its chargers mainly for home use and with some commercial applications.

The charging solutions we are introducing to the market are fast, reliable, and 100% clean, Covic says.

**"We believe that EV charging solutions don't have to be complicated. At Chargemaster we cut through the 'tech talk' and help our customers find solutions that are easy and affordable."**

Climate change is the key focus for Chargemaster, supporting Kiwi non-profit organisation Trees That Count in projects

planting native trees throughout the country.

Covic comes to the role with corporate sustainability experience in other fields and has switched from a diesel Toyota Hilux to an electric BMW i3. It's not just walking the talk but is also saving him about \$4800 annually in fuel costs alone. He says his EV also saves him road user charges (RUC), while power for the EV costs only about a third as much per kilometre as buying diesel. The BMW i3 is much quieter too.

**"We anticipate that the sale of electrified vehicles is accelerating in the Asia Pacific region, and we are committed to meeting our customers' needs in re-imagining a future that will have long-term prosperity, in building a business that encompasses attention to such issues as climate change and working towards the country's goals of zero emissions."**

Chargemaster is part of a long-running family business and was formed as an independently operated company by the founders of Partmaster Automotive, **Filip** and **Steve Covic**, who have collectively been involved in the automotive industry for more than 40 years.

The Covic family has been in the automotive industry for 60 years, as



Frano Covic

Steve and Phillip's father Tony started Covic Motors in Auckland, which became Partmaster Automotive.

Partmaster is the largest Kiwi-owned automotive parts supplier in the country, specialising in aftermarket car parts servicing for the New Zealand auto-trade market, having many close relationships with aftermarket brands.

This portfolio continues to grow annually as the pair foster new relations through innovation and implementation, continuing to embrace new initiatives.

Frano Covic says the EV charging market is expected to witness significant growth.

"As electric cars are an expensive investment for most people, Chargemaster knows that within the auto industry prices will eventually have to

*Continued on page 27*

## ENERGY COMPANIES SURGE AHEAD

*Continued from page 21*

into Auckland and Wellington under way, we're delighted to have Genesis' support which enables us to meet the increasing market interest in our service."

**Genesis has committed to transitioning 100% of its light vehicle fleet to EVs by 2020 and 50% of trucks by 2025. About 41% of the light vehicle fleet has already been converted and four hybrid trucks have begun service.**

Genesis says its prior year's \$20 million net profit has increased to \$59m, with underlying earnings increasing 16% to \$67m.

Reliable electricity is central to New Zealand's decarbonisation and this year Genesis' flexible generation assets have ensured energy security

for all New Zealanders during a period of unplanned and significant natural gas supply constraints and low hydro inflows, England says.

"Through our Future-gen programme we are committed to supporting New Zealand's transition to a lower carbon future; offsetting our emissions through local forestry, improving efficiencies across our generation business and partnering to build a new wind farm in South Taranaki."

Commenting on the Yoogo Share investment, England says the Yoogo model, supported by Genesis, will reduce average running cost per kilometre, avoid unneeded capital expenditure, lower carbon emissions and enable more flexible transportation for New Zealand businesses and their

employees.

Contact has also boosted profit to \$345 million, up 161% from \$132m.

**It's moving toward developing a renewable power station at Tauhara with a commitment to drill four appraisal wells there.**

"New Zealand is undergoing a transformation from reliance on fossil fuels to renewable electricity," Contact chief executive **Dennis Barnes** says.

"Contact is well placed to meet the expected growth in electricity demand which will result in meaningful reductions in the nation's carbon emissions by developing our large scale consented geothermal development options backed by our world-class geothermal capability and strong balance sheet." ■



ABB and Audi's joint display at the EVworld NZ expo (Photo: Audi New Zealand)

# ABB PRESENTS LATEST E-MOBILITY SOLUTIONS

**A**BB showcased its latest EV charging solutions at the 2019 EVworld NZ expo, which attracted about 4300 visitors.

Participating in the event at the ASB Showgrounds in Auckland on August 1-3, ABB presented its recently launched compact DC Wallbox and market leading Terra high power (HP) charger.

**Both products are designed to meet the increasing demands for sustainable e-mobility, supporting New Zealand's goal to become carbon neutral by 2050.**

The DC Wallbox was developed for offices, dealerships and public parking places, where it will provide direct current (DC) that offers a shorter charging time than a conventional alternating current (AC) device. With an output of 24 kilowatts (kW), it is compatible with all existing 500V battery EVs, as well as the next generation of high-voltage vehicles.

Depending on the vehicle, it can have drivers topped up and back on the road within one to three hours.

**Connectivity is key to success in EV charging. Featuring ABB Ability Connected Services, the DC Wallbox enables authentication, payment, monitoring, remote diagnostics and**

**repair, as well as wireless updates and upgrades.**

"The new DC Wallbox will support increased adoption of e-mobility by private vehicle owners and businesses alike," ABB EV charging sales specialist **Debbie van der Schyff** says.

"ABB's DC charging infrastructure offers reliable fast charging along with digital connectivity."

ABB also showcased its Terra HP charger, hooked up to Audi's newest full-size SUV e-tron, at the expo stand.

The Terra 54 charger offers a 50kW DC charge and fits well with the normal use of a dealership stop. As earlier announced, Audi will also install ABB Terra 175kW DC chargers in selected Audi dealerships nationwide.

**These have the capacity to charge an Audi e-tron up to 80% in less than 40 minutes.**

Both the DC Wallbox and Terra HP chargers are part of the ABB Ability portfolio of connected solutions, enabling authentication, integration with back offices and payment platforms, monitoring, remote diagnostics and repair, as well as cloud-based updates.

ABB has sold more than 11,000 DC fast



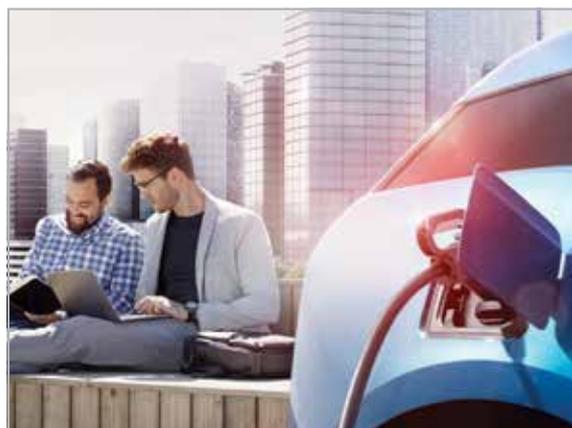
ABB New Zealand managing director Ewan Morris and Debbie van der Schyff

chargers across 76 countries.

The DC Wallbox and Terra HP offering extends ABB's comprehensive EV charging portfolio in New Zealand, which ranges from a smart single-phase AC Wallbox for home charging to 350kW high power charging.

ABB also offers various charging solutions for electric and hybrid buses, as well as electrification solutions for ships and railways.

**ABB's e-mobility leadership is also demonstrated by its partnership with Formula E, the world's first fully electric international FIA motorsport series. ■**



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**ABB**

# EVS WOULD USE 10% OF TODAY'S POWER

Only 10% of the total power being generated in Australia would be required by 100% of EVs by 2040.

**If Australia achieves EV targets of 50% of new car sales by 2030 and 100% by 2040, it would require only 28 gigs of electricity or 10% of the average demand today.**



Ian Kay

**Ian Kay**, chief financial officer of the Australian Renewable Energy Association (ARENA), describes this target as a “big figure - challenging but not daunting”.

Kay was speaking on “bringing EVs to market” at the Electric Vehicle Transition Conference in Sydney on August 26 and 27.



He says the key to generating this amount of energy is to encourage “distributed energy resources” (DERs) in homes.

“DERs involve having aggregated control over the use and timing of energy inputs in the

home,” Kay says.

This can be complemented with solar power (generated by rooftop panels in the home) - but the real answer comes with storage of power generated.

**“This is where EVs with their batteries come into the picture,” Kay says, with their ability to take power from the home, store it, and return it to the home with V2H [vehicle to home] technology.** ■

## POWER DEALS FOR EV USERS

Company	Energy Deals	Where	Cost to charge LEAF*
 Meridian.	<b>Electric Car Plan:</b> Super-low night rates from 9pm until 7am daily. Available for your entire home's electricity needs. Rates are fixed for 3 years. Plus get a year's worth of free EV charging on us! (bill credit of up to \$300)	Auckland Wellington Christchurch	\$4.91 \$4.15 \$2.82
 Mercury	<b>Plug-in Vehicle Fuel Package</b> 20% discount on your energy bill from 9pm – 7am, available on multiple properties, guaranteed discount for 2 years from signing up to offer, 12% PPD is included in these calculations.	Auckland Wellington Christchurch	\$5.75 \$5.82 \$5.63
<b>Contact Energy</b>	<b>Everyday Bonus Fixed:</b> Excellent night rates, no fixed term, check if the matching daytime kWh rate will affect your overall bill.	Auckland Wellington Christchurch	\$5.57 \$4.60 \$3.28
<b>Ecotricity</b>	<b>Low Solar:</b> Low Usage plan for EVs & can buy back solar energy, no fixed term	Auckland Wellington Christchurch	\$7.09 \$5.47 \$5.48
<b>Electric Kiwi</b>	<b>One Plan with Hour of Power:</b> Free hour of off-peak power daily – included and calculated to be 2 kWh for charging at 8 amps. Note: this could be different depending on your designated Hour of Power.	Auckland Wellington Christchurch	\$6.82 \$6.86 \$6.71
<b>Flick Electric</b>	<b>Wholesale rates plus their Flick Fee:</b> No fixed term, EV rate in Wellington. Calculated using an average spot price of 5.7c per kWh.	Auckland Wellington Christchurch	\$5.80 # \$5.75 # \$3.46 #
<b>Genesis Energy</b>	<b>Classic plan:</b> Excellent night rates, no fixed term, 10% PPD has been included, check if the matching daytime kWh rate will affect your overall bill.	Auckland Wellington Christchurch	\$6.81 \$4.23 \$3.73
<b>Paua to the People</b>	<b>Cheap As Plan with EV night rates:</b> No fixed term. Calculated using an average spot price of 5.7c per kWh	Wellington	\$4.42 #

\*Approximate cost for a full charge of a 24kWh LEAF in the 3 largest centres of NZ.

Please note that rates vary around New Zealand – the above costs were from Mt Wellington in Auckland, Northland in Wellington and Linwood in Christchurch. They can also depend on your meter type & the company you use. Prices vary at the different times of the day eg charging during the day may have higher costs and could increase your overall bill. Flick Electric in Christchurch has higher daytime rates in Winter due to variable pricing from the lines company. The rates we have used above are calculated each month using a low user cost, overnight rates, includes 10% charging loss, prompt payment discounts (PPD) if available and GST, excludes daily charge. Please note that prices were correct at time of publishing and are subject to change. Please contact us if you would like any clarification.

# Spot prices can go up and down as they are affected by demand in energy and weather conditions. We have calculated these prices using the average spot price of 5.7c per kWh at night over the last 7 years, however this is no guarantee of current or future prices.

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Kirsten Corson and Jacinda Ardern

# SHARING IS CARING WITH YOOGO SHARE AND MEVO

New Zealand is getting into car sharing, and Yoogo Share is the country's only electric car share service.

Running in Christchurch, with two small hubs in Auckland, Yoogo Share general manager **Kirsten Corson** (see page 12) says there is a big opportunity for businesses to optimise their fleets and make smarter mobility decisions.

"The answer for New Zealand is not to keep doing what we have always done, which is buy petrol cars that are hardly utilised," Corson says.

In 2016, Corson and co-founder **David Jenkinson** saw an opportunity for car share with electric vehicles, and quietly started work on it.

**"Over 1000 New Zealanders die every year from air pollution-related diseases in New Zealand," Corson says. "I look at this and go "we have to do something different; we have to innovate."**

Corson notes that most cars sit stationary 95% of the time, and all this capital is tied up in depreciating assets.

"How do we optimise assets? How do we help businesses make better decisions?"

The Yoogo Share car share fleet tackles those problems and is available for private and business customers.

Corson says Christchurch City Council has been an amazing partner for Yoogo

Share, and since February 2018, 200 tonnes of carbon has been saved just in Christchurch.

**Yoogo Share has 2000-plus bookings a month and 3000 subscribers in Christchurch.**

Corson says as a city it has shown great leadership.

With Yoogo Share, you are able to book a vehicle for the amount of time you want. Parking, insurance and fuel is all taken care of.

"A car is the second biggest expense, after buying a house," Corson says.

"Mobility is changing, and this is an exciting time to be involved."

Yoogo Share has also introduced an after-hours "Club" subscription which has got Cantabrians selling their cars. Club members have a car available every evening and weekend, costing \$99 a week.

Two EV models are available with Yoogo Share – the Hyundai Ioniq and BMW i3.

"It's a really compelling offer," Corson says. "Many club members have said they would spend over \$100 a week on petrol, so driving pure EV saves them money and makes them feel good."

When Yoogo Share launched, it was New Zealand's only pure electric car sharing business, and it still is.

Admittedly, Corson says Kiwis love to



Kirsten Corson

own their own cars, so it will take a while for the sharing economy to really flourish.

In August, New Zealand's largest electricity retailer Genesis invested \$2 million for a 40% stake in Yoogo Share.

"It's exciting, Genesis is a wonderful partner," Corson says. "We are expanding into

Auckland, and Wellington will follow."

**Over 50 businesses are subscribed to Yoogo Share in Christchurch, which gives them access to pure electric vehicles and parking in the CBD in a premium carpark close to work.**

Yoogo Share launched one-way airport travel two months ago, which Corson says has made a big difference to the business.

This new service is a "mobility game changer," \$22 for 90 minutes travel time between the airport and CBD.

**"It's convenient, cost effective and you are doing your bit to improve air quality," Corson says. "We even have customers that pick up our cars the night before, for an early morning flight. It's cheaper than a taxi."**

There are eight team members at Yoogo Share, including Corson. Since being involved with the car share service, she has sold her car and has converted to

*Continued on page 27*

Continued from page 26

a club membership.

**Mevo is another car-sharing service, exclusively operating in Wellington. Recently, Mevo secured \$500k EECA funding, which will be going towards adding 100 fully battery electric vehicles (BEV) in early 2020.**

“It’s a pretty exciting time for us,” says Mevo chief executive **Erik Zydervelt** says. “The number of trips our members are taking has been growing on average 20% every month since we launched our first cars over two years ago.”

Zydervelt echoes Corson’s thoughts, saying the average car is used around 4% of its life.

**“International research shows that for every car share vehicle deployed, 10 cars are taken off the network,” Zydervelt says.**

“Mevo does tens of thousands of trips every year, with thousands of members.”

However, Zydervelt says Mevo differs from other car-sharing services as once you pick up a Mevo car, you are not required to drop the car off at the original place of pick up.

Free-floating sets Mevo apart from others.

**“There’s where we differ quite a bit,” Zydervelt says. “We’re working with local government to create a future mobility that doesn’t look like booking and returning. That’s just not more convenient than private ownership.”**

Mevo also has the added option of hybrid plug-in Audis, which Zydervelt says is great as more people can experience that electric driving experience.

“With the plug-in hybrids you have that really comfortable, stable feeling that the car isn’t going to go dead once the battery runs out,” Zydervelt says. “With the VW Polo option, we give members a cost efficiency,



Mevo founding directors Erik Zydervelt and Finn Lawrence

and consistency in the look, feel, and a consistent product experience.”

“Since the start we have tried to be very pragmatic about our approach to environmental impact.”

Mevo monitors and offsets carbon emissions, and reduces emissions by charging its hybrid electric models on New Zealand’s 80% renewable grid.

Mevo has dealerships that partner with the service. The car-share works with local dealerships Armstrong Prestige Wellington and Gazley. European Motor Distributors, a subsidiary of the Giltrap Group, is also an early investor in Mevo, alongside Z Energy.

“We do move a few vehicles through



Erik Zydervelt

dealerships.”

**Zydervelt says Mevo is approaching different markets from dealerships, for people with different needs.**

“For many people in the future, vehicle ownership won’t be the most desirable option. The total number of vehicles on the road will decrease by some magnitude within 10 years.”

But Zydervelt says dealerships are good at what they do.

**“Running a car share is incredibly different from a dealership and requires a different skill-set. We are not an automotive company; we are a tech company.”**

The two vehicle options at Mevo are the Volkswagen Polo and the hybrid plug-in Audi a3 e-tron. ■

## CHARGEMASTER POWERS UP

Continued on page 22

come down as the electric phenomenon catches on.

**“We envision a not-to-distant future where we can provide affordable home charging solutions that are hassle free and forward thinking in their performance.”**

In this regard, Bosch provides commercial and residential Level 2 charging equipment, as well as low-power Level 3 solutions primarily for

fleet and auto dealer use.

Its Level 2 chargers are non-networked while the Level 3 is open charge point protocol (OCCP) network capable. Bosch, a reputable and world-renowned brand, answered all the questions by addressing charging solutions at home, work, and on the road, Covic says.

**Depending on the charging station, an app and an RFID card allow customers to find and use all the types of charging stations.**

Bosch’s EV charging networks comprise 40,000 charging points throughout Europe, and Covic hopes to replicate a charging network on a scale that’s suitable for the New Zealand market.

“Once the stock has arrived, we’ll be setting up a showroom to showcase these products,” he says.

“It’ll be an interactive exhibition where customers can come and learn about the products while seeing their functionality and viability.” ■

# EV REGISTRATIONS EXCEED YEAR'S 16K TARGET

**E**lectric vehicle registrations have jumped to 16,031 for August – 610 up on July's 15,421.

That's a healthy increase, coming in above July's 550 rise and May's 567 increase on the previous month, although below June's 638 rise, Ministry of Transport registration figures show.

The newly released figure already exceeds the 16,000 EV end-of-year target, with the goal a doubling of EVs every year to get 64,000 on our roads by 2021.

**Used light pure EVs still lead the charge, the category rising 276 from July's 8858 to 9135, compared with a 335 rise in July from June's 8523.**

New light pure electrics followed on 2902, up 192 on July's 2710. That's a much better increase than the 75 rise in July on June's 2625.

And new light plug-in hybrids (PHEVs)

reached 2552 registrations. This sector is 86 more than July's 2466 registrations which was itself an increase of 60 on June's 2406.

Used light PHEVs totalled 1294 in August, up 49 on July's 1245 which that month rose 68 on June's 1177.

Six more heavy EVs were added to the fleet for the month, bringing that category to 148.

Auckland continues to lead the country in EV uptake with 7291 registrations, followed by Canterbury on 2337 and Wellington on 2063.

Some prospective EV customers may be waiting for the introduction of potential rebates under the Government's proposed Clean Car Discount or feebate scheme, but that's certainly not indicated in the latest figures.

Submissions on the Clean Car



Martin Harwood



Henry Schmidt



Hayden Johnston

Discount and the clean car standard, the latter relating to emissions, closed on August 20 for the public and with September 10 the deadline for some automotive representative groups.

Ministry officials are wading through more than 1000 public submissions with a summary expected to be released later in the month.

**Henry Schmidt** of Autolink Cars in Auckland, which specialises in EVs, doubts the 64,000 EV target by 2021 will be reached unless "radical" changes are made.

**That includes introducing a proposed feebate scheme as soon as possible.**

To make the 2021 goal, there should be many more EVs now than the 16,000, he says.

The aim is to more than double EV numbers each year, with a target of 32,000 set for the end of 2020.

"Then it's double that again to reach 64,000, but it's not working out that way," Schmidt says, fearing a slow down.

He says unless policies like the feebate scheme are set in place soon, he says of the 64,000 target, "I don't see this happening".

Other incentives such as reintroducing special lanes for EVs on motorway access points or letting EVs use bus lanes perhaps outside peak bus use times would encourage more EV uptake, Schmidt believes.

"It creates a talking point."

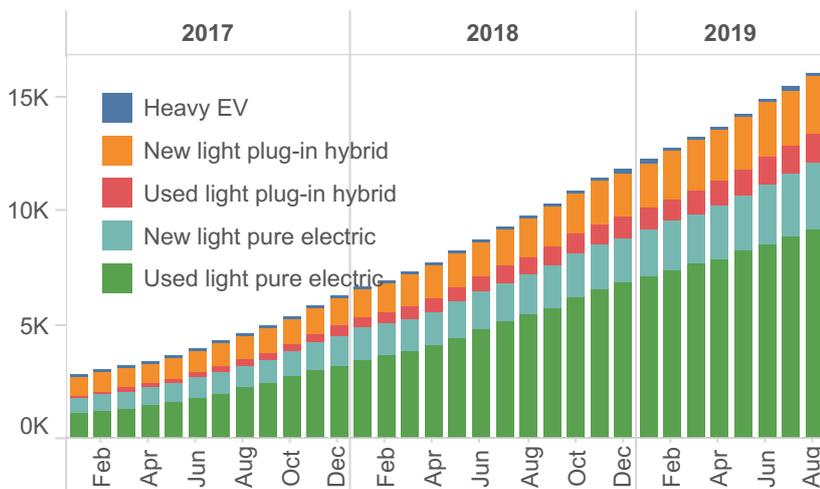
**Hayden Johnston** of GVI Electric says he's optimistic the 64,000 goal will be reached but reckons there needs to be more EV fleet purchases to "bump up the numbers".

**He says GVI has had good EV sales in August following a strong July, with September also tracking well.**

"It will be interesting to see new Nissan Leaf sales and also how the Tesla Model 3 is going."

*Continued on page 29*

## EV fleet size



	2013	2014	2015	2016	2017	2018	2019
Jan	194	235	595	1,117	2,758	6,630	12,200
Feb	194	246	625	1,153	2,986	6,918	12,725
Mar	202	286	683	1,226	3,193	7,255	13,186
Apr	202	329	716	1,319	3,377	7,632	13,659
May	204	367	745	1,405	3,661	8,200	14,229
Jun	207	391	796	1,599	3,969	8,707	14,867
Jul	208	418	844	1,751	4,258	9,249	15,421
Aug	210	442	873	1,875	4,593	9,759	16,031
Sep	213	467	917	1,989	4,926	10,255	
Oct	221	494	957	2,153	5,361	10,891	
Nov	226	527	1,002	2,374	5,840	11,380	
Dec	230	554	1,056	2,555	6,216	11,752	

# TESLA MODEL 3 A DRIVING FORCE

The newly arrived **Tesla Model 3** is taking New Zealand by storm.

**August sales figures reveal it's sold 57 in its first month - ahead of all new EV brands.**

And at 60 in year-to-date (YTD) sales, the Tesla Model 3 is on par with the **Jaguar I-Pace** (61 YTD), the **Tesla Model X** (59 YTD), the **Audi e-tron** (58 YTD), and **Kia Niro EV** (57).

The new **Nissan Leaf** was also up there in August sales, recording 39 in second place behind the Model 3 and 41 YTD, while the **Hyundai Kona EV** clocked 32 for the month and a new EV table topping 267 YTD. The **Audi e-tron** was next with 30 sales for August.

While only two **Hyundai Ioniqs** sold in August, the model recorded 119 YTD, second to the Kona in the new EV YTD stakes.

In the new plug-in hybrid (PHEV) sector, the **Mitsubishi Outlander** topped that segment with 53 sales in August, also recording 313 YTD.



Tesla Model 3



Nissan Leaf

The **Toyota Prius** followed in the PHEV tables with 12 for the month and 71 YTD.

Guess what tops the used EV sales segment? Yes, still the **Nissan Leaf** with 257 August sales and a massive 2249 YTD total.

Nothing else is even in double figures for August in the used EV category.

But the **Mitsubishi Outlander** again tops the used PHEV sales with 39 for August and 262 YTD. Next in that segment is the **Toyota Prius** with seven for the month and 88 YTD.

**BMW**s make up the rest of the used segment – the **BMW i3** selling five in August (50 YTD) and **330E** two (50 YTD). ■

*Continued from page 28*

Johnston says talk of introducing the Clean Car plan – particularly the feebate scheme – in 2021 could lead to some holding off their EV purchase especially if it's a “want or luxury purchase” rather than a “need” such as replacing an existing car.

**“While people might wait three to six months or even a year for their next luxury purchase depending on how much they will save, I doubt they’ll hold off for more than a year.”**

He also wants to see a feebate scheme introduced sooner rather than later.

**Martin Harwood** of EV sellers Harwood Cars says he tells customers to buy an EV now to save money on their fuel bill, then buy a new EV using the savings when and if the feebate is introduced in 2021 as forecast.

“Don’t wait two years to buy an EV – get one now and use the savings [to upgrade or buy another] when the time

comes.”

Harwood suggests the two main political parties should also stop bickering over the Clean Car proposals and work towards the low to zero transport emissions goal.

Otherwise he doubts the 64,000 EV target by 2021 will be achieved. ■

USED IMPORTS AUGUST 2019			
MAKE	MODEL	AUG'19	YTD'19
<b>BEV - BATTERY ELECTRIC VEHICLE</b>			
NISSAN	LEAF	257	2249
BMW	I3	4	19
NISSAN	E-NV200	3	17
JAGUAR	I-PACE	1	3
NISSAN	NOTE	1	1
	OTHER	2	52
<b>Total</b>		<b>268</b>	<b>2341</b>
<b>PLUG IN HYBRID</b>			
MITSUBISHI	OUTLANDER	39	262
TOYOTA	PRIUS	7	88
BMW	I3	5	50
BMW	330E	2	10
	OTHER	3	26
<b>Total</b>		<b>56</b>	<b>436</b>

NEW MAKES AND MODELS 2019		
MAKE AND MODEL	AUG '19	TOTAL 2019
<b>ELECTRIC</b>		
TESLA MODEL 3	57	60
NISSAN LEAF	39	41
HYUNDAI KONA	32	267
AUDI E-TRON	30	58
BMW I	9	32
JAGUAR I-PACE	7	61
KIA NIRO	4	57
RENAULT KANGOO	3	4
TESLA MODEL S	3	41
VOLKSWAGEN GOLF	3	92
LDV EV80	3	11
HYUNDAI IONIQ	2	119
TESLA MODEL X	2	59
RENAULT ZOE	0	2
FACTORY BUILT YUTONG	0	1
FACTORY BUILT EV10	0	1
FUSO ECANTER	0	1
<b>Total (Autobase)</b>	<b>194</b>	<b>907</b>
<b>PLUG-IN HYBRID</b>		
MITSUBISHI OUTLANDER	53	313
TOYOTA PRIUS	12	71
HYUNDAI IONIQ	7	45
AUDI A3	6	38
MINI COUNTRYMAN	3	61
BMW 3 SERIES	1	2
BMW I	1	2
KIA NIRO	1	8
MERCEDES-BENZ S-CLASS	1	1
VOLVO XC60	1	11
BMW I3	0	21
PORSCHE CAYENNE	0	17
LAND ROVER RANGE ROVER SPORT	0	12
VOLVO XC90	0	8
BMW 2 SERIES	0	4
LAND ROVER RANGE ROVER	0	3
PORSCHE PANAMERA	0	3
BMW 5 SERIES	0	1
MERCEDES-BENZ GLE	0	1
<b>Total (Autobase)</b>	<b>86</b>	<b>622</b>

# PLUGGED IN!

Stay connected to the EV community with useful links below.

EECA	NZ government's EV information website <a href="https://www.electricvehicles.govt.nz/">https://www.electricvehicles.govt.nz/</a>
Drive Electric	Advocacy group for the EV industry <a href="https://driveelectric.org.nz/">https://driveelectric.org.nz/</a>
EV Association of Aotearoa	EV owners association <a href="https://www.evaa.co.nz">https://www.evaa.co.nz</a>
Charge Net	Nationwide EV charging network <a href="https://charge.net.nz/">https://charge.net.nz/</a>
Electric Heaven	NZ electric car guide <a href="http://www.electriceaven.nz/">http://www.electriceaven.nz/</a>
NZ EV Podcast	Monthly podcast about EVs <a href="https://www.podcasts.nz/nz-ev-podcast/">https://www.podcasts.nz/nz-ev-podcast/</a>
Flip the Fleet	EV Community data sharing project <a href="https://flipthefleet.org/">https://flipthefleet.org/</a>
NZ Electric Bikes Review	Independent electric bike reviews <a href="https://electricbikesnz.com/">https://electricbikesnz.com/</a>

## EV OWNERS FACEBOOK GROUPS – ONLINE CHAT GROUP FOR THE NZ EV COMMUNITY

### Nationwide

NZ EV Owners	<a href="https://www.facebook.com/groupsNZEVOwners">https://www.facebook.com/groupsNZEVOwners</a>
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### Regional

Auckland EV Owners	<a href="https://www.facebook.com/groups/291373964545996/">https://www.facebook.com/groups/291373964545996/</a>
Wellington EV Owners	<a href="https://www.facebook.com/groups/WellyEV/">https://www.facebook.com/groups/WellyEV/</a>
Waikato EV Owners	<a href="https://www.facebook.com/groups/WaikatoEV/">https://www.facebook.com/groups/WaikatoEV/</a>
Dunedin EV Group	<a href="https://www.facebook.com/groups/403816650002889/">https://www.facebook.com/groups/403816650002889/</a>
Christchurch EV Group	<a href="https://www.facebook.com/groups/ChristchurchEVGroup/">https://www.facebook.com/groups/ChristchurchEVGroup/</a>
EV Owners - Manawatu	<a href="https://www.facebook.com/groups/1847252468838484/">https://www.facebook.com/groups/1847252468838484/</a>
Nelson Tasman EV Owners	<a href="https://www.facebook.com/groups/365895557107117/">https://www.facebook.com/groups/365895557107117/</a>
Northland EV Group	<a href="https://www.facebook.com/groups/northlandEVgroup/">https://www.facebook.com/groups/northlandEVgroup/</a>
Bay of Plenty EV Owners	<a href="https://www.facebook.com/groups/BayOfPlentyEVOwners/">https://www.facebook.com/groups/BayOfPlentyEVOwners/</a>
Central Otago Lakes EV Owners	<a href="https://www.facebook.com/groups/521978908249518/">https://www.facebook.com/groups/521978908249518/</a>
Naki EV Owners Group	<a href="https://www.facebook.com/groups/375210949597565/">https://www.facebook.com/groups/375210949597565/</a>
South Canterbury EV Owners	<a href="https://www.facebook.com/groups/southcanterburyev/">https://www.facebook.com/groups/southcanterburyev/</a>
INVER-ELECTRIC-CARGILL	<a href="https://www.facebook.com/groups/250609535293325/">https://www.facebook.com/groups/250609535293325/</a>



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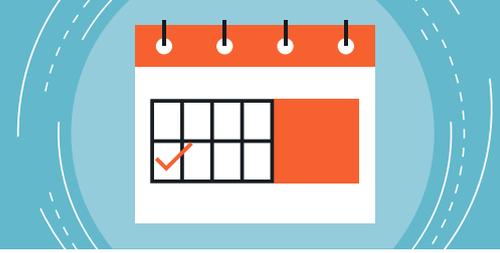
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## NZ HYDROGEN PLAN RELEASED

**A** national vision for hydrogen, which includes its use in transport, has been launched by energy and resources minister **Megan Woods**.

Announcing a Green Paper - *A Vision for Hydrogen in New Zealand*, she says it fits with the Government's strategy to combat climate change, including greater support for low emission vehicles.

**The paper outlines the role hydrogen can play in New Zealand's economy, and what can be done to accelerate its use.**

"I consider green hydrogen as one of the potential tools that will help assist us to reduce global emissions," Woods says.

"With hydrogen, we have opportunities to create new jobs, convert heavy



Megan Woods

transport away from fossil fuels, enhance our security of electricity supply and even generate significant export revenue.

"For a country blessed with abundant renewable energy, the ability to convert our clean electricity into green hydrogen which can fetch a premium on global markets is a major economic opportunity."

Woods says clear international interest in hydrogen sourced from New Zealand already exists.

"Last year, we signed a world-first memorandum of co-operation with Japan to encourage collaboration between us on hydrogen initiatives.

"We're already seeing significant investment in hydrogen locally, with

projects like the joint venture between Ballance Agri-Nutrients and Hiringa Energy to produce commercial-scale green hydrogen in Taranaki and Tuaropaki Trust's partnership with Japanese multinational Obayashi Corporation to construct a pilot hydrogen production facility using geothermal electricity near Taupo."

**Woods says the paper is part of a renewable energy strategy work programme also looking to address barriers to investment in new renewable energy.**

The aim is to reach 100% renewable electricity by 2035 and to transition to a clean, green and carbon neutral economy by 2050.

Submissions on the Green Paper close on October 25. ■

## VECTOR TO HELP ELECTRIC ISLAND WAIHEKE

**V**ector gets a \$180,000 grant towards co-funding of a range of smart chargers on Waiheke Island, assisting it to become the world's first fully electrified island.

**The grant approved by the Government's low emission vehicles contestable fund allows Vector to install and manage at least 80 EV 7.2kW smart chargers in homes across the island, along with 10 similar public EV chargers and one mobile charger.**

The funding will support the technology needed to help Waiheke's goal, Vector product, technology and innovation general manager **Cristiano Marantes** says.

"Residents will be offered the ability to use smart, network-ready EV chargers as well as access public charging infrastructure for the first time, as there are no public EV chargers on Waiheke."

Using smart EV charging technology will enhance network resilience and avoid the addition of costly and disruptive traditional network infrastructure, Marantes adds.

Waiheke receives its electricity from two 6km long marine cables.



Cristiano Marantes

With EV numbers on the island doubling between December 2018 and June 2019 to more than 100, and six electric buses due to arrive in 2020, this new technology will better manage the expected surges in network demand from increased EV uptake.

The new chargers will connect to Vector's intelligent utility networking system (Distributed Energy Resource Management System), which the company has co-developed to help manage and optimise the growth in solar, battery, EVs and other distributed energy sources and network connected devices.

"This initiative will make owning or using EVs on Waiheke more viable for more people, including visitors from the mainland, and will increase the resilience of the network as adoption increases," Auckland mayor **Phil Goff** says.

"Together with the new electric buses, we are working towards the vision of Waiheke becoming pollution and carbon emission free. This initiative is a great step towards that vision."



Cath Handley

Waiheke Local Board chair **Cath Handley** says the board backed advocacy group Electric Island Waiheke to lead on achieving the infrastructure the island needs for EVs.

**"The results of this collaboration with Vector are breath-taking! This is such great news for our community."**

Electric Island Waiheke spokesperson and EVtalk publisher **Vern Whitehead** says Vector's initiative will also be the first stage in bringing smart charging to Waiheke homes, which will defer any need to upgrade the power cables to Waiheke Island.

"It also brings closer Electric Island Waiheke's aim of having an electric only community - possibly the first residential island in the world to do so - by 2030."

Increasing smart chargers will allow continued strong adoption of EVs on Waiheke.

**The chargers will be placed in private and public spaces with details to be determined in consultation with the Waiheke community.**

The grants scheme is administered by the Energy Efficiency and Conservation Authority (EECA). ■

# EV CHARGING LOCATIONS

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FORWARD TOGETHER

## Fast / Super Charger Locations – North Island

- |   |   |
|---|---|
| <b>Pukenui</b> Houhora Fishing Club, 4126 Far Nth Rd    | <b>Te Kaha</b> Te Kaha Bch Res, 3 Hotel Rd        |
| <b>Coopers Beach</b> Four Square, 9 Coopers Dr          | <b>Te Araroa</b> 22 Rata St (25 kWh)              |
| <b>Kaitaia</b> Te Ahu, 28 South Rd                      | <b>Rotorua</b> 1134 Haupapa St                    |
| <b>Kaitaia</b> Pak'nSave, 111 North Rd                  | <b>Tokoroa</b> New World, 72 Bridge St            |
| <b>Kerikeri</b> 1 Butler Rd                             | <b>Matawai</b> 6522 Matawai Rd                    |
| <b>Opononi</b> Four Square, 29 SH12                     | <b>Tolaga Bay</b> 43 Cook St (25kWh charger)      |
| <b>Kaikōhe</b> Library Carpark, 14 Marino Pl            | <b>Te Kuiti</b> New World, 39 Rora St             |
| <b>Kawakawa</b> 4 State Highway 1                       | <b>Murupara</b> Pine Drive Car Park, Pine Dr      |
| <b>Tikipunga</b> Paramount Plaza, 1 Wanaka St           | <b>Taupo</b> Firestation, 1 Kaimanawa St          |
| <b>Whangarei</b> 11 Alexander St                        | <b>Taupo</b> Tesla, 1 Kaimanawa St                |
| <b>Raumanga</b> McDonalds, 130 Taurua St                | <b>Gisborne</b> 21 Gladstone Rd                   |
| <b>Dargaville</b> Totara St Park, 113 Totara St         | <b>Morere</b> Hot Pools, 3968 SH2 (25 kWh)        |
| <b>Kaiwaka</b> 1 Kaiwaka-Mangawhai Rd                   | <b>Rangitaiki</b> Lodge Café, 3281 SH5            |
| <b>Warkworth</b> New World, 6 Percy St                  | <b>Turangi</b> 1 Pihanga Rd                       |
| <b>Warkworth</b> BP, 67 Auckland Rd (SH1)               | <b>New Plymouth</b> 66 Courtenay St               |
| <b>Orewa</b> New World, 11 Moana Ave                    | <b>Opunake</b> Business Centre, 23 Napier St      |
| <b>Silverdale</b> 17 Hibiscus Coast Hwy                 | <b>Wairoa</b> 75 Queen St                         |
| <b>Albany</b> The Warehouse, 186 Don McKinnon Dr        | <b>Putorino</b> 5466 State Highway 2              |
| <b>Rosedale</b> McDonalds, 14 Constellation Dr          | <b>National Park</b> Four Square, 4354 SH4        |
| <b>Kumeu</b> New World, 110 Main Rd                     | <b>Ohakune</b> New World, 30 Ayr St               |
| <b>Henderson</b> Pak'nSave, 224 Lincoln Rd              | <b>Taihape</b> New World, 12 Huia St              |
| <b>AKld CBD</b> Vector, 21 Hobson St                    | <b>Te Haroto</b> Mc Vicar Rd, 4237 SH5            |
| <b>Beach Rd</b> Z Station, 150 Beach Rd                 | <b>Waiouru</b> Cnr SH1 & Hassett Dr               |
| <b>K Road</b> Tesla, 501 Karangahape Rd                 | <b>Hawera</b> Pak'nSave, 54 Princes St            |
| <b>Newmarket</b> 1 Gillies Ave                          | <b>Napier</b> 200 Dickens St                      |
| <b>Greenlane</b> McDonalds, 320 Gt Sth Rd               | <b>Hastings</b> 106 Queen St W                    |
| <b>Pakuranga</b> BP, 322 Pakuranga Rd                   | <b>Mangaweka</b> Papa Cliff Café, 2 Koraeui St    |
| <b>Botany Downs</b> Z Station, 550 Te Irirangi Dr       | <b>Whanganui</b> Pak'nSave, 167 Glasgow Rd        |
| <b>AKld Airport</b> Shopping Ctr, George Bolt Mem. Dr   | <b>Waipukurau</b> 34 Russell St                   |
| <b>AKld Airport</b> Z Skyway, George Bolt Mem. Dr       | <b>Dannevirke</b> 248 Gordon St                   |
| <b>Takanini</b> 30 Walters Rd                           | <b>Woodville</b> i-SITE, 43 Vogel St              |
| <b>Takanini</b> Pak'nSave, 345 Great South Road         | <b>Palmerston Nth</b> i-SITE, 126 The Square      |
| <b>Coromandel</b> 44 Woolams Rd                         | <b>Palmerston Nth</b> Tesla, 365 Ferguson St      |
| <b>Whitianga</b> 4 Lee St                               | <b>Levin</b> New World, 21 Bath St                |
| <b>Tairua</b> Carpark, 6 Tokoroa Rd                     | <b>Otaki</b> New World, 155-163 Main Hwy          |
| <b>Pukekohe</b> King Street Carpark, 56 King St         | <b>Paraparaumu</b> Kapiti Pak'nSave, 132 Rimu Rd  |
| <b>Pukekohe</b> Counties Power, 14 Glasgow Rd (Bus hrs) | <b>Raumati</b> 15 Raumati Rd, Paraparaumu         |
| <b>Waiuku</b> Kitchener Rd Carpark                      | <b>Paekakariki</b> 7D Wellington Rd Paekakariki   |
| <b>Thames</b> 505 Mackay Street                         | <b>Masterton</b> Queen Elizabeth Park, 3 Dixon St |
| <b>Whangamata</b> 100 Hetherington Road                 | <b>Porirua</b> 2 Serlby Pl                        |
| <b>Hampton Downs</b> Gate 1, Motorsport Park            | <b>Featherston</b> SuperValue, 42 Fitzherbert St  |
| <b>Te Kauwhata</b> 16 Wayside Rd                        | <b>Upper Hutt</b> Dowse Art Museum, 1 Stevens Gr  |
| <b>Waihi</b> New World 35 Kenny St                      | <b>Wellington</b> Grey St Parking                 |
| <b>Huntly</b> Countdown, 18 Tumate Mahuta Dr            | <b>Petone</b> Z Station, 60 Hutt Rd               |
| <b>Morrinsville</b> New World, 79/89-97 Thames St       | <b>Te Aro</b> Z Station, 174 Vivian St            |
| <b>Te Rapa</b> WEL Networks, 114 Maui St                | <b>Te Aro</b> Barnett St Carpark, 11 Barnett St   |
| <b>Rototuna</b> Countdown, 160 Peachgrove Rd            | <b>Te Aro</b> Inglewood Parking, 68 Inglewood Pl  |
| <b>Matamata</b> New World, 45 Waharoa Rd                |   |
| <b>Hamilton</b> Tesla, The Base, Te Rapa Rd             |   |
| <b>Hamilton</b> Countdown, 551 Anglesea St              |   |
| <b>Claudelands</b> Countdown, 160 Peachgrove Rd         |   |
| <b>Hamilton</b> Caro St Carpark, 7 Caro St              |   |
| <b>Hamilton</b> Countdown, 4 Bridge St                  |   |
| <b>Ruakura</b> Waikato Innov. Pk, 9 Melody Ln           |   |
| <b>Raglan</b> 43 Bow St                                 |   |
| <b>Mt Maunganui</b> Bayfair, 19 Girven Road             |   |
| <b>Mt Maunganui</b> New World, 1 Tweed St (25 kWh)      |   |
| <b>Cambridge</b> 73 Queen Street                        |   |
| <b>Pirongia</b> Four Square, 270 Crozier St             |   |
| <b>Te Awamutu</b> 10 Scout Lane                         |   |
| <b>Whakatane</b> i-Site, 30 Quay St                     |   |
| <b>Opotiki</b> i-Site, 70 Bridge St                     |   |

- Fast Charger Locations
- Destination Charger Locations
- Tesla Charger Locations



## Fast / Super Charger Locations – South Island

- |   |   |
|---|---|
| <b>Takaka</b> 16 Willow St                      | <b>Amberley</b> Countdown, 123 Carters Rd                 |
| <b>Havelock</b> Four Square, 68 Main Rd         | <b>Rangiora</b> Pak'nSave, 2 Southbrook Rd                |
| <b>Motueka</b> New World, 271 High St           | <b>Northwood</b> New World, 2 Mounter Ave                 |
| <b>Karamea</b> Four Square, 103 Bridge St       | <b>Harewood</b> Raeward Fresh, 800 Harewood Rd            |
| <b>Nelson</b> i-SITE, 81 Trafalgar St           | <b>Addington</b> Z Station, 40 Moorhouse Ave              |
| <b>Richmond</b> Library, 11 Mcglashen Ave       | <b>Halswell</b> New World, 9 Nicholls Rd                  |
| <b>Spring Creek</b> 2226 SH1, Blenheim 7202     | <b>Christchurch</b> Tesla, The George Hotel, 50 Park Tce  |
| <b>Blenheim</b> Pak'nSave, Springlands          | <b>Rolleston</b> New World, 90 Rolleston Dr               |
| <b>Ward</b> Flaxbourne Café, 7326 SH 1          | <b>Lincoln</b> New World, 77 Gerald St                    |
| <b>Westport</b> New World, 244 Palmerston St    | <b>Little Rakaia</b> 4235A Christchurch Akaroa Rd         |
| <b>Reefton</b> Four Square (25 kWh) 47 Broadway | <b>Rakaia</b> 41 Bridge St                                |
| <b>Greymouth</b> 13 Tarapuhi Street             | <b>Ashburton</b> 109 West St                              |
| <b>Kaikoura</b> 51 West End                     | <b>Tekapo</b> Lake Tekapo Tavern, SH8                     |
| <b>Kaikoura</b> New World, 124 Beach Road       | <b>Fairlie</b> Opp. 53 Main St                            |
| <b>Hokitika</b> New World, 116 Revell St        | <b>Geraldine</b> Cox St Carpark, 14 Geraldine-Fairlie Hwy |
| <b>Culverden</b> 27A Mountain View Rd           | <b>Temuka</b> New World, 185 King St                      |
|   | <b>Twizel</b> Events Ctr, 61 McKenzie Dr                  |
|   | <b>Timaru</b> 26A North St                                |
|   | <b>Omarara</b> 2 Sutherland Rd                            |
|   | <b>Omarara</b> Tesla, Hot Tubs, 29 Omarara Ave            |
|   | <b>Wanaka</b> Wynyard St                                  |
|   | <b>Queenstown</b> 42 Ardmore St                           |
|   | <b>Frankton</b> Tesla, Remarkables Park Town              |
|   | <b>Cromwell</b> Pak'nSave, 302 Hawthorn Dr                |
|   | <b>Waimate</b> i-Site, 2 The Mall                         |
|   | <b>Oamaru</b> 125 Queen Street                            |
|   | <b>Ranfurly</b> Eden St Carpark, 3 Eden St                |
|   | <b>Alexandra</b> 31 Charlemont St E                       |
|   | <b>Hampden</b> 9 Thompson St, Bridge Hill                 |
|   | <b>Nth Dunedin</b> 33 Lincoln St                          |
|   | <b>Dunedin</b> University of Otago, 71 St David St        |
|   | <b>Mosgiel</b> Filleul St Carpark, 193 Moray Pl           |
|   | <b>Milton</b> New World, 10 Hartstonge Ave                |
|   | <b>Roxborough</b> Four Square, 207 Union St               |
|   | <b>Lumsden</b> 22 Jedburgh St                             |
|   | <b>Winton</b> Four Square, 14 Diana St                    |
|   | <b>Gore</b> Four Square, 19 Ross Pl                       |
|   | <b>Balclutha</b> New World, 293 Great North Rd            |
|   | <b>Balclutha</b> New World, 8 Irk St                      |
|   | <b>Balclutha</b> 23 Charlotte St                          |



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