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HYPER FUTURE FOR CHARGENET

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THE REVOLUTION HAS ARRIVED



By **Geoff Dobson**,
Editor

The electric era is upon us.

And it's getting a charge from ever more dire warnings about climate change, including the latest from the Intergovernmental Panel on Climate Change (IPCC) which says "unprecedented" events are happening or coming.

You'd have to be living on another planet not to be concerned about extreme heat, fires, floods, severe storms and other catastrophes around the world – with New Zealand no exception.

That's driving more people to EVs and other e-mobility transport forms, particularly as governments globally move to encourage renewable energy generation and reduce the carbon footprint in their country or region.

Automotive manufacturers have generally seen the light and, on the whole, are gearing for mass EV production.

Alternatives to having your own car are also gaining traction, like EV subscription services, EV car share, e-scooter and e-bike hire, and others.

Electric public transport is improving too but may take a while to bounce back after the COVID pandemic (even if mandatory mask wearing sticks around).

That issue isn't over just yet as new strains emerge with vaccinations still to catch up.

Agencies like councils are also declaring zero emission zones in key central city areas, mainly to reduce pollution and improve air quality, which will encourage "last mile" electric deliveries.

Our government's introduction of the Clean Car Discount (EV rebate) from July 1 this year and the planned imposition of penalties (the "fee" part of the "feebate" scheme) next year on polluting vehicles – plus the extension of rebates to other transport forms not yet qualified – has started the ball really rolling locally.

But it's also produced a backlash, especially from people (particularly in the rural sector) fearing they'll be penalised for continuing to use utes and other ICE

vehicles because relatively cheap electric alternatives aren't yet available. I reckon that will change quickly, possibly next year.

That EV backlash has also been seen in comments (especially on social media) blaming EV charging for contributing to power restrictions in parts of the North Island following increased electricity demand during a cold snap.

EV charging had nothing to do with it, but the situation does highlight the need for more education about EVs.

Autolink Cars managing director **Henry Schmidt**, who sells EVs, has long called for the Government to step up and help educate people about EVs, perhaps with experts manning shopping centre stands.

Many agencies, like the Energy Efficiency and Conservation Authority (EECA), already have advice and tips on their websites.

Too often, it seems, EV dealers are left to field questions from potential customers themselves, and some of the myths like those around EV range seem to die hard.

Perhaps every social media site needs an expert to counter some of the incorrect information coming from misinformed people.

A few just seem to be anti-EV – not matter what! I wonder if they might be similar in sentiment to the "anti-vaxxers" threatening to torpedo COVID-19 vaccination programmes?

Here at *EVs and Beyond* we do our best to enlighten as many as possible, even hosting our own conference (February 21 and 22 next year) on Waiheke Island immediately following Electric Island Waiheke events on the previous two days.

It pays to be informed about EVs and more – after all, smartphones have to be plugged in regularly (would that have contributed to the power cut issue?) and most people now can't do without them.

Geoff Dobson
EDITOR



CHARGENET PLANS 'HYPER' FUTURE

Leading charging infrastructure provider ChargeNet is now well underway with its roll out of 300kW 'HyperCharger' stations around the country. But there is more to the plan than just speed.

It is more a combination of the speed and capacity - with the units capable of recharging three vehicles simultaneously and quickly, says ChargeNet chief executive and co-founder, **Steve West**.

"Being able to charge three cars at once at each location, in the initial instance, is a massive improvement on the current situation."

"But the network we've built so far has really been about making sure that there was at least one charger everywhere you could possibly want to drive.

"It isn't to say we've got a charger in every location that we desire but we're well on the way."



The Government's acceptance of the Climate Change Commission's view on EV uptake, has "signalled a massive increase in EVs", West says.

"And then of course, subsequent to that, the Government announced a Clean Car rebate, which is having a stimulatory effect on the market."

West says that "in the relatively near future" ChargeNet will see a massive increase in capacity by offering 300kW charging and increasing the capacity at each location.

"For most locations that's a six car increase."

However, he says ChargeNet doesn't want to see "more of our existing sites replaced with a multiple, 300kW charger, six-bay set-up."

West says the arrival of 300kW charging doesn't mean the end of the roll-out for 50kW units.

"We see 50kW units serving a very important purpose as virtually every EV on the road today uses 50kW charging," he explains.

"We need to keep providing for those customers, while also building the network that's going to serve the needs of the coming cars that are capable of 150, 200, even 300kW charging speeds."

A 50kW charger needs to be viewed "in the context of the electricity network, the distribution network which, if you think transformers on the side of the street, they typically have a capacity from 100 to 500 kVA. kVA is roughly equivalent to kilowatt in this context".

The availability of a substantial amount of power is a key factor in finding a HyperCharger site.

Compared with 50kW sites, HyperCharger centres need "a different set of locations that are optimal, and that's proven by the



feeders - the high voltage lines that feed the transformers - on the existing transformers on the network."

ChargeNet's 300kW charging stations are getting good use, West says. "The first HyperCharger site we opened, in Bombay, is already the busiest site in the country, all round.

"When you look at the range of vehicles being released today and in the near future, virtually all of them offer charging speeds of 150kW or more.

"And when you take into account the trajectory of battery technology improvement, both price and performance, then you can see that not only are electric vehicles going to be kept at price parity in the relatively near future, but that the capability of charging at both speeds is going to become ubiquitous."

Taking account of The Climate Change Commission's preferred path, and correlating it with existing usage of the public charging network, "it's relatively straightforward to work out how many

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chargers we'd need", West says.

"If we'd stuck to 50kW chargers, we'd need thousands of them. That would be absurd. So, it's much, much easier for us to meet that demand using hypercharging if the vehicle can accept it."

Initially, HyperChargers would be close to major highway routes, where people are travelling, rather than being where people are just doing daily battery top-ups.

However, Wellington would be "an obvious exception".

"We have a lot of demand from daily commuters who aren't en route to a long-distance destination, but commute into the city."

"While they're there they want to pick up some charge, and the HyperCharger going into Wellington will serve those customers." But most HyperChargers will be highway focused.

"We've found a location on the North Shore (in Auckland), then there's Tauranga, a location in the Waikato, Bulls, Wellington, Christchurch, and I think, Dunedin.

The Government has been "fantastic in their support of our HyperCharger roll-out", West says. "I understand the nature of the EECA funding model is due to change, but...I'll just say they have been very supportive and continue to be supportive."

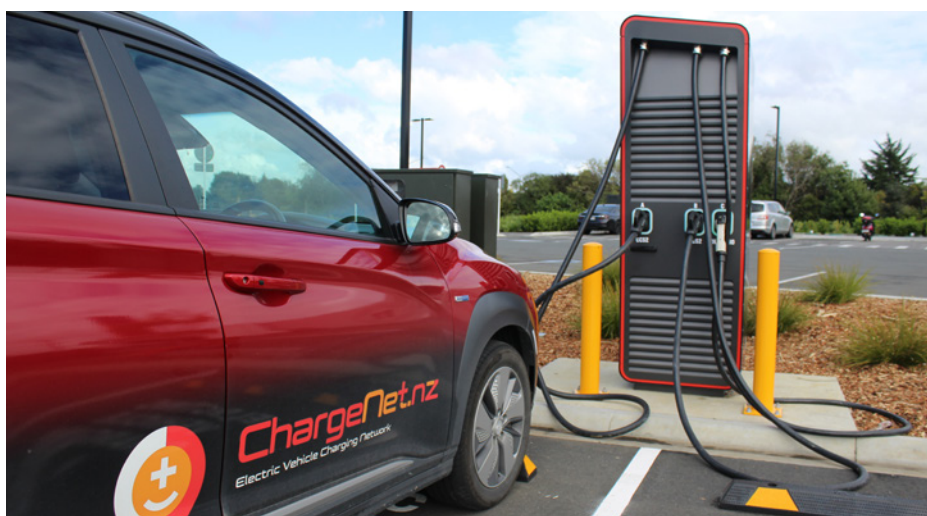
Does New Zealand have the population density to justify carpark or service station-style charging set-ups like those in Norway?

West thinks that will be "highly location-dependent. The more routes that a location serves the busier it's going to be. Bombay is a good example of that where, as the fleet of EVs grows, we expect the demand to grow."

As the mixture of vehicles changes from 50kW-limited vehicles, and the average moves closer and closer to 300kW, "the actual throughput of those sites increases as well.

"So, it's difficult to say precisely how many outlets will be needed at each location.

"But another nice feature of the HyperChargers is the modularity allows us to expand the site capacity very easily. In terms



of the logistics of installing the charger, it's very straightforward."

Charger manufacturer Tritium does a 75kW machine that's a drop-in replacement for a 50kW and can charge two vehicles at once, West says. "That's a nice, straightforward upgrade, which we're planning to deploy at the 50kW locations."

Will idle fees at charging stations – currently being trialled at Giltrap Audi in Auckland – become more widespread?

West says it's "not all that often that people are overstaying (after charging their cars). Most of them are pretty good about moving

on when their charge is complete.

"But on the occasion that it does happen, it's very, very annoying for the other customer that's got to wait.

"So, we're keen to deploy that across the whole network."

ChargeNet's plans are much bigger than 18 HyperChargers, West says.

We're going to blanket the country with HyperChargers."

When might NZ reach the stage of having 100 HyperChargers?

"I don't think I can say just yet," he says. "But sooner than you think."

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CHANGES COMING TO EECA FUND

The Government's Low Emission Vehicles Contestable Fund is expanding and has changed its name to the Low Emission Transport Fund (LETF).

That might seem like mere semantics but there's more to the changes than first meets the eye.

The words "vehicles" and "contestable" have been dropped for good reason as the fund broadens its horizons but remains administered by the Energy Efficiency and Conservation Authority (EECA).

Its funding will grow from about \$6 million to \$7 million annually to \$25m a year by 2023-2024.

The LEVCF was never intended to go beyond a five-year programme, says EECA transport manager **Richard Briggs**.

"It came out in 2016 when there were only a few Nissan Leafs and Mitsubishi i-MiEVs about in those EV pioneering days."

Since then, the fund has dished out more than \$30m in co-funding (matched by more than \$75m from its recipients) to in excess of 200 projects.

They can be viewed on the EECA's website at **Approved LEVCF projects | EECA**.

About a third of the money has gone into public EV charging projects, including to ChargeNet NZ, which has established a national network and is providing hyperchargers which can charge new generation EVs like the Porsche Taycan within minutes rather than hours.

In fact, EV charging will become a separate funding stream under the new programme.

It will prioritise expanding the public charging network, and other forms of EV charging. Induction, where the vehicle charges by passing over a plate in the road or appropriate area, would now be in scope.

Briggs says EECA is considering mainly "journey" charging where "speed is of the essence" with EV drivers stopping and charging EVs in the shortest time possible.

"Destination" charging where people stop at supermarkets, shopping centres and other venues for around half-an-hour to two hours would be considered to some extent.

So, too, would be a third operation for AC charging over more than six hours around the home or office.

"We need to look more at the demand side," Briggs adds. That could include some form of load management, like smart charging.

Briggs wonders if some businesses like supermarkets which give out fuel discounts as incentives would consider something similar for EV charging.

EECA will publish an EV charging roadmap to ensure the growing number of EV drivers know where to find the right charging stations when they need to.

"The aim is to have EV charging stations around 200km apart so people can easily reach them," Briggs says, noting that most new EVs are expected to have anywhere from 400km to nearly 1000km range.

It will also help EECA to work with electricity lines companies and Transpower to ensure electricity supply is adequate for charging stations and to



RICHARD BRIGGS

future-proof sites.

Eventually, the LETF's expanded funding and scope will allow it to consider other areas such as off-road vehicles, boats, biofuels and more.

"It's not about going out and replacing all 4.5 million vehicles in New Zealand with EVs," Briggs says. "We've got to get people out of cars or we will still have congestion and other issues."

That may include many other forms of e-mobility or public transport – mostly electric.

Potentially, it could include forms of travel not yet commonplace, such as electric take-off and landing (eVTOL) "air taxis", electric and hydrogen ferries, autonomous transport services, and technology yet to come.

In a sense, it's about future-proofing the fund too.

"We're also trying to break down barriers for new entrants," Briggs says.

He believes many more EV ride-share and car-share services could be encouraged through better integrated Mobility as a Service (MaaS) applications.

Briggs expects much more to come from the new funding arrangement, which will be launched by October this year.

NEW RENAULT ZOE GOES FURTHER

The third-generation Renault Zoe has arrived in New Zealand with increased power and range alongside tech improvements, including DC charging.

It has a 52kWh battery delivering up to 395km range (WLTP) and more charging options (50kW DC capability and 22kW AC charging as standard) along with a new R135 (100kW) motor option making it the quickest, most responsive Zoe yet.

The completely redesigned interior (some parts made from 100% recycled plastics) has a more modern and elegant environment, with the addition of more premium materials and the latest

connectivity and features.

These include Renault's EasyLink infotainment system with Android Auto and Apple CarPlay and a configurable 10-inch TFT driver display.

A new B Mode increases regenerative braking and allows one-pedal operation to make urban driving easier, while a range of advanced driving aids make journeys safer and more enjoyable.

"The improvements made to the Zoe across the board, the ability to travel up to 395km, the DC charging capability, plus with the Government rebate make this new

generation Zoe a very popular small electric car choice," says Renault New Zealand general manager **Sam Waller**.

Customers have an expanded colour choice and can view and test drive the Zoe in dealerships this month.

Prices start from \$55,365 for the Zen model after the Government's Clean Car Discount of \$8625.

The battery has an eight year/160,000km warranty while an unlimited vehicle warranty applies for three years.

Visit www.renault.co.nz/electric-cars/zoe-ev for more information.

AUDI E-TRON GT TAKES OFF

Audi gave a little hint as to what was in store for journalists at the launch of its new flagship e-tron GT as we landed at Bay of Islands Airport.

As the Air New Zealand Q300 came in to land we could see the cars lined up, not in the carpark, but on the tarmac.

We quickly guessed that there would be a chance to try the GT on the airport's 1190-metre runway.

But first it was time to check out the car and experience a little of the life someone who can afford a \$200k car may enjoy.

We've covered the specifications of the two GT models before. The e-tron GT quattro carries a price tag of \$194,500, and the RS e-tron GT is \$273,500. From here on in this story we'll call them the GT and RS respectively.

Differences outside will be best left to the enthusiasts: the RS gets bigger wheels and exclusive RS trim.

The actual biggest difference is in the drivetrain. Both are twin-motor but the RS gets a two-speed transmission on the rear axle to

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improve both performance and efficiency.

The GT is rated at 350kW with 630Nm of torque - slightly more in "boost" mode - allowing a 4.1 second 0-100km/h sprint. The RS produces 440kW and 830Nm, peaking at 475kW under boost and launch mode, for a 3.3 second sprint time.

The battery has a 93kWh net capacity in both vehicles, and is 800V, allowing recuperation generation of up to 265kW and DC charging up to 270kW.

AC charging is currently 11kW, with 22kW capability arriving from November build.

Range is 487km for the GT and 472km for the RS. It is thermally managed.

It's hard to argue the GT isn't a good-looking vehicle, and Audi has done a solid job of distancing it from the Porsche Taycan with which it shares a platform.

It's a big car, bigger than it looks at a centimetre short of five metres long, and 4cm short of two metres wide.

It's long, low (1.41m) and its sleek yet aggressive looks are matched by a 0.24 drag coefficient.

The lights are impressive, with an LED Matrix with laser light set-up. The rear lights are LED with animations.

Inside, the cabin is very much Audi, probably a good thing for buyers moving within the brand.

A slick digital dash feeds information to drivers while the brand's MMI system takes care of the infotainment.

Audi NZ has optioned high-end sports seats for both models, and they're super comfortable. The rear is tight but doable for adults, with a



"foot garage", a gap in the battery under the car to give more leg space, helping.

I like this interior more than the Porsche's. It works just a little bit better and feels a little more aggressive and sports like than the sports car brand's attempt.

How does it drive? Sublime. The steering is crisp, ride firm but comfortable, and grip exceptional, even on wet Northland roads.

The RS features rear air suspension. The car even felt composed on the gravel roads heading to our overnight lodgings at Peter Cooper's The Landing estate.

I found both models suffer from an issue I've found in most high-performance EVs - a lack of drama.

There are no, pops, roars or other aural delights that you'd find in a twin-turbo V8.

Audi has included a sound enhancement system that does give a hint of a V8 burble on maximum acceleration. I guess silence will need to become the new sports sound.

You do have the usual drive-select options in the GT and RS as other models, allowing you to priorities economy, comfort or sport as needed.



Brakes on the GT are exceptional, the Tungsten Carbide coated units on the RS more so. You can upgrade to Ceramic, but I'm not sure why you'd want to pay the five-figure bill to do so.

So after a night of luxury, it was back to the airport, and the chance to take the RS on to the runway.

With instructor **Tiffany** on board I get the chance to idle out to the runway start, load up on launch control - a simple matter of putting the car in sport, loading up the brake, loading up the accelerator then releasing the brake.

You can watch the whole thing on AutoTalk's YouTube channel, but the force with which the take-off forced me back into my seat was impressive.

I'm told there was a little wheelspin but I couldn't feel it - just linear acceleration through until...well officially 200km/h.

Both the GT and RS are impressive, and seemingly popular with over 90 units already spoken for. It's an impressive vehicle, and for now, an impressive flagship.

I look forward to reviewing it fully soon!



300,000km. That is a lot of driving. And it is arguably well past the point of usability for most vehicles, and if the experts in the comments on Stuff are correct, three or more times the life of an electric vehicle.

Tell that to the BYD E6, somewhat of a legend in electric vehicle circles worldwide, which has now landed in New Zealand in used form with some super-high mileages on them, and confusingly, potentially, in two new forms.

But first we need to discuss the E6's history. Why is it a legend?

It comes from BYD, better known for its buses and investment from **Warren Buffett**. This Chinese vehicle builder, while no longer a volume leader, was and remains a forerunner in EV technology. Toyota thinks enough of the brand to partner with it on battery production, and its new 'Blade' battery is being lauded as one of the industry's best.

The E6 was launched in China in 2009, the first BYD electric vehicle, though it had already produced a range of plug-in hybrids. It is a large hatchback with near SUV proportions - it is over 4.5m long, over 1.8m wide and 1.6m high - in a similar style to the new Hyundai Ioniq 5.

That date means it beats the Nissan Leaf and Tesla Model S, as one of the first 'modern' electric vehicles to enter volume production. It was the top selling electric vehicle in China in 2016 when 20,605 were sold.

BYD's focus for the model, and hence its odd proportions, was taxis and fleets. And that caught the eye of operators outside of



its home market. The BYD has done service as a taxi in, among others, China, Indonesia, Colombia, Belgium, the USA, Netherlands, the UK and Singapore. Yes, those last two markets are right-hand drive, hence the

vehicles coming to New Zealand now.

By our understanding there are a few-dozen here already, most de-fleeted in Singapore due to a taxi company collapse in the middle of COVID. At least one - the one we drove -

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spent time in Wellington as a taxi on trial, though it is now back in Auckland.

The price? Well, the industry seems a little cautious in telling us as they are working that out themselves, but we are guessing between \$18-\$25,000 depending on mileage or condition.

So what do you get for that money? In the all-important battery stakes you get a 61kWh LiFePO4 battery - China's favoured formula as it is more durable and tolerant at a cost of a lower energy density (the E6 weighs 2020kg). That gives a claimed range of 300km, though real-world expect a little over 200km.

The complication? No DC charging. The best you get on this generation E6 is AC, but like the original Renault Zoe it is 'fast' AC, peaking out at approximately 42kW. For fleets this is actually not a big problem, as infrastructure for this is not unachievable at a base, and at full AC power a full charge takes around an hour and a half.

For an individual owner most charging is going to need to be done at home, and this is a car where the fitment of at least 7kW of capacity at home would be helpful. Away from home 7-11kW options are not hard to find, and 22kW are out there. We filled from a 22kW cabinet in Mangawhai in under three hours. There are 43kW units out there, a few I have seen tied to ABB DC chargers, but they are a hard find.

So the E6 is probably best left doing hard work in the city.

And hard work is what it feels built for. Everything in this car feels heavy and solid, right down to the way it rides. The doors close with a solid 'thump', the plastics and leather feel thick and made to survive a million taxi rides, and the controls are all chunky and durable.

Space is excellent, you feel like you are sitting in a large saloon in the front, while the rear seat is so wide its actually a little bit of a mission to slide across the centre seat. The boot is not huge, but sufficient.

There are no gauges in front of the driver, instead you get multiple digital screens in the middle of the dashboard with your speed, range, battery details and so forth. It is a little complicated but easy enough to read.

It is certainly interesting to drive. Firstly there are a lot of whirrs, clunks and noises during startup and when initially driving away. Performance is, adequate, when set to 'power' mode but otherwise tepid. Handling also adequate once underway, it drives like an SUV - lots of roll but also decent grip. Ride is soft and comfortable.

At 300,000km how was the car holding



together? Exceptionally well. Aside from a dodgy 12-volt battery everything worked. It certainly did not feel new, but my passengers were surprised when I told them the age. It feels like it has done half that mileage.

So the E6, would I buy one? Well yes, we have even put in a request for pricing for a city-based member of our team. This is not the electric vehicle for anyone, but for fleets, taxis or the EV nerd, it is a 'solid' option.

NEW E6?

I mentioned earlier that the E6 could come here new in two forms. The first is - and this is not confirmed yet - in the current form but with a larger 80kWh battery. These are more likely to be parallel imported than officially new.

The second way is as a new-new vehicle through NexPort, the Australian-based BYD distributor. They have put the car on sale in



Australia for NZ\$42,000, though they only have 15 units and specifications for that base model are interesting - for example AC charging is an option.

But the key thing is BYD is coming. They have a range of EVs that appear to be world-class at exciting price points. The Dolphin hatch, Han sedan and Tang SUV present tastier options for the future.

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GENESIS REVEALS IMAGES OF ELECTRIC GV60

Korean carmaker Genesis has released exterior and interior images of its first electric car, the GV60.

It's based on a dedicated EV platform E-GMP (Electric-Global Modular Platform), marking the brand's move towards electrification.

The GV60 is due to be launched in Australia in the first half 2022, among three Genesis EVs expected to be launched locally then. Whether Genesis EVs will come to New Zealand is not clear.

The "G" in GV60 represents Genesis, while the "V" represents the vehicle's versatility. The number "60" is the lowest in the Genesis line-up and comes as the brand evolves its model-naming scheme to fit its "Athletic Elegance" identity.

Lower numbers will emphasise athleticism under the scheme, with elegance represented by higher numbers. Based on this system, the GV60 is Genesis' most athletic model yet.

The GV60's exterior design highlights its high-performance image along with a dynamic and smooth appearance and a sleek silhouette.

The front of the GV60 features a design optimised exclusively for the EV. The



progressive two-line quad lights add character to a refined and voluminous body.

A wider and more athletic crest grille has been placed below the quad lights to emphasise the

dynamic performance of the GV60 and increase the cooling efficiency of the high-voltage batteries in the underbody.

The GV60 will also see a new wing emblem

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NIO ET7 COMPLETES WINTER TEST IN NZ

Nio has winter-tested its ET7 electric luxury sedan in New Zealand as it gears up for mass production which is due to begin in early 2022.

In July 2021, the Chinese brand spent a month testing the ET7 at the Southern Hemisphere Proving Grounds near Wanaka.

The proving grounds have about 37 snow flats, ice flats, and handling tracks which helped Nio verify ABS, ESC, TCS, and other systems to ensure the ET7's stability and controllability.

The EV has three battery options – 70kWh, 100kWh and 150kWh battery – the last-mentioned delivering about 965.6km of range.

It will continue to go through a series of rigorous global tests, Nio says.

Nio unveiled the ET7 in China this January at a Nio Day event in Chengdu.

The car retains many design cues of the 2019



Nio ET Preview concept car.

The ET7 has two electric motors, one in the front and rear of the car, producing a combined output of 480kW of power and 850Nm torque which can push the car to 100km/h in 3.9 seconds.

The EV has an autonomous driving system called Aquila, which uses 33 sensors, including

11 eight-megapixel high-definition cameras and a long-distance high-definition camera, a high-resolution Lidar with a 500m range, 5mm wave radars, 12 ultrasonic radars, and two high-precision positioning units.

The Aquila autonomous driving system generates eight gigabytes of data a second which is analysed by an onboard computer called Adam.

CORPORATE CABS ELECTRIFYING ITS FLEET

New Zealand taxi company Corporate Cabs aims to be the first of its kind to introduce electrified cabs for its clients.

While the “white cab” side of the franchise business is moving to Skoda Superb plug-in hybrids (PHEVs), Corporate Cabs is also launching its “Switch” EV cabs business using the MG ZS EV to cater for environmentally aware professionals and executives.

A “handful” of the Skoda PHEVs is currently available, but Corporate Cabs will soon have about half its 300-cab fleet using them while the rest comprise Holdens which will eventually be changed for electrified vehicles.

Market research identified “Switch” as an ideal and recognisable name for the new aspect of the business, says Corporate Cabs chief executive **Cameron Allison**.

Switch is designed to cater for environmentally aware customers, usually the young, well-informed executives or professionals, he says.

Switch will launch in Auckland when COVID-19 alert levels allow, possibly in September, before being rolled out to other regions like Wellington, Christchurch, Queenstown and Dunedin by the end of the year.

That will mean about 60 EVs will be available, mainly through owner-drivers who will charge their vehicles at home but also have access to other EV chargers for longer trips.

“We’re in discussions with EV charging providers about using EV chargers around the country,” Allison explains.



The company is also working with Auckland Airport to have a dedicated EV charger available there as the airport is a major destination for Corporate Cabs’ clients.

Corporate Cabs has tested the MG ZS EV and says its 270km real world range means it won’t need a top-up charge too often, and would need one mainly for longer trips.

“We’re trying to make a change to the taxi industry,” Allison adds. “People are open with their comments about the industry with some saying it’s slow to react to change, but this will send a clear message that we’re prepared to give it a go.”

Using EVs is also expected to make it more

economical for Corporate Cabs’ owner-drivers, slashing fuel costs and even reducing maintenance and service expenses.

Shipping constraints and the COVID-19 situation have contributed to delays in getting the EVs here, but Allison expects that could be sorted soon.

He says the company has been working on using EVs for some time and is ready to move once pandemic restrictions allow.

“As a business we’re well known as a reputable brand,” he says.

“While we want to be the first taxi company here to operate mainly EVs, it’s only a matter of time before all taxis are EVs.”

...Continued from previous page

applied to the grille, with the emblem’s thickness reduced by nearly 80% from previous models’.

Genesis has opted, too, for a clamshell bonnet for the first time, a single panel which combines the bonnet and fenders.

Viewed from the side, the GV60 has the dynamic profile of a high-performance coupe.

Genesis says the chrome line flowing from the windscreen to the top of the daylight opening (DLO) window extends to a C-pillar garnish design that embodies the image of “electric”, adding a distinctive characteristic to the EV model.

Digital side mirrors are connected to the camera and monitor system, and an electric door handle pops up automatically when the

driver approaches the car.

At the rear are two-line combination lights and a fixed wing spoiler.

The GV60’s interior design follows Genesis’ Beauty of White Space theme and aims for a spacious and comfortable cabin.

The most noticeable feature in the GV60’s interior design is the crystal sphere, a sphere-shaped shift by wire (SBW) that informs drivers intuitively when the vehicle is ready to drive.

When the vehicle is turned off, the crystal sphere provides mood lighting. When ready to drive, the sphere rotates and the SBW appears.

The floating console, where the crystal sphere is mounted, looks like it’s hovering

in the air, working with other features like the slim cockpit and flat floor to provide passengers with a “maximum level of openness”.

The crash pad inside the GV60 is designed in a wide and slim shape with a wide-screen integrated indicator (connected car integrated cockpit) that connects with the cluster and audio, video, navigation, and telecommunication systems.

Circular details are used on the crystal sphere, the horn cover, door handles, and side mirror controllers.

Specifications and features listed are for the Korean market, with international market features to be confirmed.

HOW TO OVERCOME EV RANGE ANXIETY

EROAD has provided a blog to answer frequently asked questions about EV range.

It also talks to a fleet lifecycle expert about how forward-thinking organisations are making the transition.

When people think about switching to EVs, price is usually the biggest hurdle for fleet operators and consumers.

But as EROAD has demonstrated with total cost of ownership, which factors in whole-life operating costs less residual value, if you play your cards right, you'll come out ahead.

That's especially when you add incentives like the Clean Car rebate and road user charge (RUC) exemption to the mix.

The next most common objection to buying an EV is range anxiety.

WHAT IS RANGE ANXIETY?

Simply put, it's the worry that the vehicle battery will be depleted and the driver stranded somewhere and unable to charge.

In the early days of EV development, it was a valid concern, as manufacturers' mileage claims were sometimes exaggerated and charging stations were nearly non-existent.

But lithium-ion batteries have come a long way, and public chargers are now located at least every 75km on most of the state highway network.

That number is growing all the time, with a focus on covering major routes.

The free PlugShare app can help you plan your journey or find the nearest charging station should you need to, and if you're in Auckland, Vector can show you where to charge for free.

And, of course, home charging is available to most New Zealanders. Charging at home overnight is still the easiest, cheapest, and most convenient way to top up.

If you drive an average of 25km to 30km a day, as most people do, charging an EV will cost the equivalent of 30 cents per litre, or 15% of the cost of running an equivalent petrol vehicle. Even charging all night will cost about \$1.

"BUT I CAN'T WAIT THAT LONG!"

Many would-be EV drivers are put off when they hear that it can take 60 hours to fully charge an EV using a standard household

outlet.

Even if you drive 50km a day – which most Kiwis don't – you can leave your EV plugged into a regular outlet overnight and be confident you'll charge up enough to replenish the power you used that day without changing anything else about your lifestyle. You don't even need to waste time (or power) driving to a charging station.

WHAT DOES THE DATA SAY?

In most cases, people have a poor awareness of actual distances travelled and greatly overestimate their range needs (and vehicle usage).

The Ministry for the Environment says 90% of daily vehicle travel in New Zealand is 90km or less, and the average is around 30km – well within the single-charge range of all EVs.

Yet range anxiety persists and is still cited as a reason why fleets have yet to make the switch – but it's one that can be debunked using telematics data.

You can't manage what you don't measure, so a utilisation study is essential to determine your fleet's actual requirements.

How do I perform a utilisation study?

First, you must document all travel all your fleet vehicles do. GPS technology can automate this task and ensure data that is accurate and complete.

To establish a baseline pattern of use and be able to draw meaningful conclusions, you'll need at least six months' worth of data. If you don't yet have fleet telematics installed, consider it as soon as possible.

A robust telematics platform can capture, sort, store, and export your fleet data automatically: the more information you have, the better.

Jack Gordon-Crosby, the founder of OptiFleet, is a lifecycle consultant who works closely with government agencies including EECA and IRD.

Frequently, he recommends EROAD for its functionality and usability. EROAD is also an authorised NZTA agent.

Once you know how far each vehicle travels daily, you can choose an EV that can match your business requirements and range needs – or have OptiFleet recommend

several models for you.

"If it does 100km, for example, and the vehicle we're recommending does 200km, you can safely say you could use this vehicle. You're not going to run out," says Gordon-Crosby.

"So, it's having that information about what things are currently doing and then knowing what the range of the replacement vehicle is."

LEADING THE CHARGE

Understanding your fleet's real-world use will dispel range anxiety while having access to charging infrastructure will eliminate the underlying cause.

Plan early for the installation of onsite chargers and any necessary power upgrades to your facilities, as this requires lead time and coordination with your local energy provider.

Be aware that in some cases, your default provider may be unable to meet your energy requirements, so build in enough time to allow for plan B or even C.

As part of the analysis, OptiFleet performs site assessments before making recommendations about what type of charging infrastructure a client will require.

"We specify what chargers you need rather than what you think you need," Gordon-Crosby says.

Building reticulation direct versus AC/DC power supply, projected power consumption, how long cars sit on site, and what time they come and go are some variables it considers.

Based on EV charging in his own household, Gordon-Crosby estimates that charging three passenger vehicles costs \$10 or \$12 dollars on average.

"It's not expensive. Old bar heaters probably cost more to run. We haven't really noticed any difference in our electricity bills to charge and run these cars, but we've certainly noticed the difference in our fuel bill.

"The fuel company is charging us \$5 a month [for account management] instead of \$300 or \$400 a month."

One of these cars is a Tesla Model 3.

"If I drive out to Palmerston North and put it on the supercharger, to fill it up from empty

Continued on following page...



EV LIBRARY SERVICE HAILED AS NZ'S FIRST

An electric mobile library service which starts in Upper Hutt in early September is billed as a New Zealand first.

The EV library, dubbed "Mangaroa" by Upper Hutt Libraries, was blessed on July 22 by Matua Kura Moeahu of Te Ati Awa and joins the existing mobile library bus Purehurehu which began working last year.

The EV service will visit community spaces, including schools and rest homes.

Mangaroa was custom-built with the EV chassis and cab bought from a Lower Hutt dealer and MF King Industries building its custom storage pod.

"We're delighted with Mangaroa and are very proud to have the first EV mobile library service in New Zealand," says Upper Hutt Libraries manager **Marion Read**.

"Our purpose-built EV has been worth the wait and we're looking forward to connecting with more of our local community."

In line with the revival and acknowledgment of local place names, flora and fauna once abundant in the upper reaches of the Te Awa Kairangi (Hutt River), the name Mangaroa (long stream) was selected to acknowledge the Mangaroa River in the Remutaka Ranges' western foothills.

The EV's artwork is by **Christopher Davidson** and includes illustrations of solar panels.

When the service begins, the vehicle will be used as a multipurpose outreach unit working with the Upper Hutt community.

...Continued from previous page

is \$23 dollars and it'll do that in 10 or 15 minutes, giving me a 500K range."

People worry about reimbursement costs, but they're addressed easily with smart chargers, which talk to the Internet and can report on power consumption and cost.

"And, voila! That's how much the driver should be reimbursed," Gordon-Crosby says. "They're trying to solve what they

think is a multi-thousand-dollar problem, which it just isn't. It's just not an issue."

Transitioning to EVs isn't only feasible but a foregone conclusion, and offers a competitive advantage to businesses that make it a priority.

Remember, you need at least six months' data to assess your fleet's utilisation, so the sooner you embark on the journey, the

better.

Considering electrification of your organisation's light vehicles?

Download EROAD's free eBook to lower operations costs and hit environmental goals.

Contact **EROAD** on **0800 437 623** or email **sales@eroad.co.nz** for more information.



GIVING VEHICLES THE SENSE OF TACTILITY

THE MISSING PIECE OF THE AV PUZZLE - TACTILITY

Widespread deployment of fully autonomous vehicles (AVs) may be a few years away, but before they hit the road, self-driving cars must overcome a formidable obstacle – public acceptance.

In US drivers' organisation the AAA's 2021 automated vehicle survey, 54% of Americans say they'd be afraid to ride in an AV, while 32% are unsure how they'd feel about it.

Before convincing the public to trust them, AVs will have to demonstrate clearly that they can mimic and surpass human drivers' capabilities.

Pilot programmes like the one California just launched with Cruise to provide driverless rides to Golden State residents will play an important role in fostering more public support for AVs.

But nothing will be more effective than advances in AV technology.

That's what makes tactility the missing piece of the AV puzzle.

Just as human drivers can "feel" the road under their vehicles' tyres without much thought – using this perception to avoid hazards and drive more safely – AVs need to go beyond vision-based capabilities and "feel" the roads themselves.

Equipped with software-based tactile sensors that utilise information from existing physical sensors, vehicles will be able to collect insights

on road conditions, including slipperiness, puddles, pavement surface quality, distresses, and more.

What could this mean for how AVs navigate roads?

Consider an AV moving through a torrential downpour. Tactile sensors could detect the impact on road friction and, harnessing machine learning algorithms, help determine the maximum speed the vehicle should drive at to avoid aquaplaning.

The data collected by tactile sensors – on potholes and other road distresses, for example – can be used to help authorities optimise road infrastructure maintenance.

Those insights, which can be visualised in the form of crowdsourced tactile maps, detail road features like gradients, corners, normalised grip levels, and the location of potholes and other damage.

The maps offer a real-time view of driving environments and support road authorities' and councils' planned maintenance, live hazard detection, post-accident analysis and more.

And they transmit the insights back to vehicles, providing them with data on the road ahead, improving safety and user experience reaction time.

The tactile data on vehicle-road dynamics that can be fed into AI-based systems help with vehicle control and ADAS, enabling better



BY YAGIL TZUR
VICE PRESIDENT OF PRODUCTS AT
TACTILE MOBILITY

driving decisions.

Adaptive cruise control, drivetrain management, and active suspension systems can be enhanced with real-time tactile sensing and data – making vehicles not only safer but also higher-performing.

By delivering technical sophistication and peace of mind to consumers, tactile capabilities will prove critical to getting self-driving cars operational.

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RANGE		PRICE
50kWh	336km	\$135,500
55kWh	417km	\$150,500

BMW i3 BEV



RANGE		PRICE
335km		\$70,075

HYUNDAI IONIQ BEV



RANGE		PRICE
311km		\$57,365

HYUNDAI KONA BEV



RANGE		PRICE
64kWh	448km	\$71,365
39kWh	305km	\$61,365

JAGUAR i-PACE S BEV



RANGE		PRICE
470km		\$144,365

KIA NIRO BEV



RANGE		PRICE
455km		\$69,365

NISSAN LEAF BEV



RANGE		PRICE
270km		\$53,365

MG ZS EV BEV



RANGE		PRICE
250km		\$40,365

RENAULT ZOE BEV



RANGE		PRICE
395km		\$54,365

TESLA S BEV



RANGE		PRICE
520km		\$129,700

TESLA X BEV



RANGE		PRICE
375km		\$139,200

TESLA 3 BEV



RANGE		PRICE
460km		\$61,365

*Range is WLTP combined where available.

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BEV

VOLKSWAGEN E-GOLF BEV



~~was \$69,490~~

RANGE **232km** PRICE **\$60,865**

HYUNDAI IONIQ 5 BEV



~~was \$79,990~~

RANGE **348km** PRICE **\$71,365**

EV FRANCHISE DEALER LIST	
NAME	
AUDI / HYUNDAI / VOLKSWAGEN	
Farmer Auto Village 07 578 6017 info@farmerautovillage.co.nz 116 Hewletts Road, Mt Maunganui	Mt Maunganui
HYUNDAI	
Energy Motors 06 759 8070 hyundai@energymotors.co.nz Cnr Gill & Eliot Streets, New Plymouth	New Plymouth

LIGHT COMMERCIAL

LDV EV80 LIGHT COMMERCIAL



RANGE **180km** PRICE **\$80,489**

FUSO e-CANTER LIGHT COMMERCIAL



RANGE **150km** PRICE **POA**

RENAULT KANGOO LIGHT COMMERCIAL



RANGE **200km** PRICE **\$74,990**

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~~was \$74,990~~

RANGE **200km** PRICE **\$66,365**

MERCEDES-BENZ EQA



RANGE **480km** PRICE **\$85,990**

AUDI E-TRON GT



RANGE **487km** PRICE **\$194,500**

**with Clean Car discount applied*



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PHEV

BMW 225xe PHEV



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PRICE \$73,200

MITSUBISHI OUTLANDER PHEV



RANGE 50km
PRICE \$55,990

TOYOTA PRIUS PRIME PHEV



RANGE 50km
PRICE \$48,490

MINI COUNTRYMAN PHEV



RANGE 30km
PRICE \$59,900

HYUNDAI IONIQ PHEV



RANGE 52km
PRICE \$53,990

EV FRANCHISE DEALER LIST

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info@farmerautovillage.co.nz

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Mt Maunganui

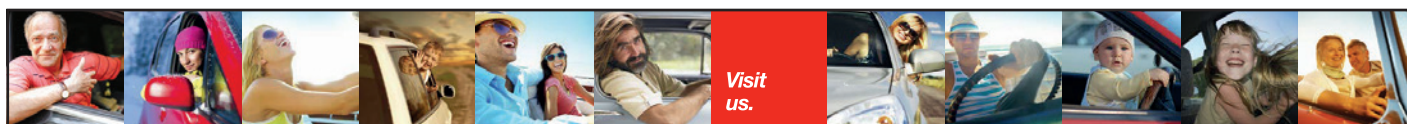
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USED EV CAR TYPES				
MAKE	MODEL	TYPE	PRICING RRP EST.	APPROX RANGE KMS
BMW	i3 - 22 kWh	BEV	\$33k - \$45k	120 km
	i3 - 33 kWh	BEV	\$52k - \$86k	200 km
Hyundai	Ioniq	BEV	\$47k - \$55k	220 km
	Ioniq Elite	BEV	\$57k - \$66k	220 km
	Kona	BEV	\$69k - 83k	400 km
Kia	Soul EV	BEV	\$30k	150 km
Mercedes Benz	B250 e	BEV	\$44k - \$47k	140 km
Mitsubishi	i-Miev	BEV	\$8k - \$13k	100 km
	B-Miev Van	BEV	\$16k	100 km
Nissan	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
	e-NV200 - 40 kWh	BEV	\$60k	200 km
Renault	Zoe 40 kWh	BEV	\$29k - \$60k	300 km
	Kangoo ZE Van	BEV	\$42k - \$46k	160 km
Smart	Fortwo	BEV	\$20k	100 km
Tesla	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
Volkswagon	e-Golf - 36kWh	BEV	\$49k - \$69k	220 km
Audi	A3 Sportback E-Tron	PHEV	\$41k - \$50k	45 km + 600 km
	Q7 e-tron	PHEV	\$125k	54 km + 800 km
BMW	i3 REX - 22 kWh	PHEV	\$33k - \$50k	120 km + 120 km
	i3 REX - 33 kWh	PHEV	\$50k - \$68k	200 km + 120 km
	225xe	PHEV	\$42k	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
	i8	PHEV	\$94k - \$140k	37 km + 400 km
Hyundai	Ioniq	PHEV	\$46	63 km + 1040 km
Mercedes Benz	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
Mini	Countryman Cooper SE	PHEV	\$68k	30km + 500 km
Mitsubishi	Outlander	PHEV	\$22k - \$58k	50 km + 500 km
Porsche	Cayenne S e-hybrid	PHEV	\$129k	20 km + 750 km
Toyota	Plug-in Prius	PHEV	\$11k - \$20k	26 km + 800 km
Volvo	XC60 T8	PHEV	\$115k	40 km + 600 km
	XC90 T8	PHEV	\$115k	44 km + 600 km
Kia	Soul First Edition 64kWh	BEV	\$75,990	450km
Honda	E Advance	BEV	\$69,990	220km
Peugeot	e-2008 GT 50kWh	BEV	\$75,880	320km
	e-2008 Allure 50kWh	BEV	\$70,880	320km
Vauxhall	Corsa Elite 50kWh	BEV	\$70,880	320km
Volkswagen	iD3 1st Edition 62kWh	BEV	\$79,990	330km
BEV - Battery Electric Vehicle		PHEV - Plug-in Hybrid Electric Vehicle		

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NAME	CITY
Autolink Cars 09 378 9090 autolinkcarsltd@gmail.com BMW i3, Nissan Leaf, Volkswagen e-Golf	Auckland
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Auckland City Electric Vehicles 0800 248 9387 www.acev.co.nz BMW i3, Nissan Leaf, Volkswagen e-Golf, Mitsubishi Outlander PHEV	Auckland
Volt Vehicles 0800 PH VOLY 022 480 0722 david@voltvehicles.co.nz Nissan Leaf, Mitsubishi Outlander PHEV	Auckland
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Drive EV 027 521 0429 07 378 0082 steve@driveev.co.nz MG MG-5 Excite, Nissan Leaf, Vauxhall Mokka-e Elite, Vauxhall Corsa-e, Volkswagen ID 3, Kia Soul, Honda E	Taupo
Coventry Cars Hybrid & Electric 04 384 4536 salesteam@coventrycars.co.nz Nissan Leaf, Mitsubishi Outlander PHEV, Nissan eNV200	Wellington
Harwood Cars 027 492 2218 www.harwoodcars.com	Auckland
EV City 03 972 5505 contact@evcity.kiwi BMW i3, Nissan Leaf, Nissan eNV200, Mitsubishi Outlander PHEV	Christchurch
Metro Christchurch 03 348 5855 chrisn@metrochch.co.nz Nissan Leaf	Christchurch
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This family-size all-wheel drive SUV is the countries second most popular used plug-in vehicle and has been popular new as well.

It has enough range for most daily commutes, a petrol motor for longer runs and some versions DC fast charge.

This is also a plug-in that can tow a trailer, so you can impress your mates with that!



2020 PEUGEOT E-2008 GT



2020 HONDA E ADVANCE



2020 KIA SOUL



2020 VAUXHALL CORSA ELITE



2020 VOLKSWAGEN ID3



2012 NISSAN LEAF



OPEL MOKKA



NISSAN ENV200



VOLKSWAGEN GOLF



VOLKSWAGEN ID4



BYD E6



MITSUBISHI IMIEV

LOCKY DOCKS OPENING AROUND



Wellington's first Locky Dock secure e-bike and e-scooter storage and charging post has been unveiled by transport minister **Michael Wood**.

It's at the corner of Willis Street and Ghuznee Street, and there's the promise of more to come.

Big Street Bikers (BSB) has developed the Locky Dock network over the last four years and says the next site will be at Wellington Hospital.

BSB is talking with the Wellington City Council about future Locky Docks in the central city, and with the Hutt City Council about extending the network through Hutt City and over to Wainuiomata.

The first solar-powered Locky Dock Parklet (a smaller version of the Locky Dock), co-funded by the Energy Efficiency and Conservation Authority (EECA), will be installed in the Paraparaumu civic centre with the Kapiti Coast District Council.

Locky Docks will continue to pop up around the country, and BSB has requests from councils and property owners in Auckland, Hamilton, Whakatane, Rotorua, Taupo, Tauranga, Napier, Palmerston North, Dunedin, Queenstown, Central Otago, Hokitika, and Invercargill.

"We're so pleased to have our first Wellington Locky Dock launched on a street which is notorious for inner-city

car congestion," says BSB founder **Cleve Cameron**.

"It's just near a former motorway off-ramp which is a safe cycling route, and our first Wellington Locky Dock is set to catch people's attention."

Cameron says that by making biking to work safe, secure and normal, BSB aims to reduce commuter traffic and use the extensive bike lanes around various cities.

Guests at the opening included Wellington city councillors, Mercury chief marketing officer **Julia Jack**, BSB advisory board chair **Sir Bob Harvey**, and Dutch Embassy representatives.

Locky Docks are free to use and activated by an app or local public transport cards, funded through media and brand partners and supported by Mercury.

BSB has adapted the Locky Docks to include screens for advertising and showing safe bike routes around cities.

"Thanks to the partnership with Mercury and Tauhara North No.2 Trust, and the provision of an outdoor media platform, there are minimal CAPEX or installation costs for the property owner," BSB says.

"Placement next to key destinations – schools, cafes, bars, venues, offices, malls, hospitals, universities, libraries, parks and other council facilities – creates convenience for users.

"To be in the ground in Wellington is a big step towards achieving our goal we set out with Mercury to have hundreds of Locky Docks around the country."

The Wellington Locky Dock site is on Waka Kotahi NZ Transport Agency land.

The agency is supporting a year's pilot and research for the maps in Christchurch which have become the template for Locky Dock's digital maps nationwide.

Christchurch City users have reported their key motivators for travelling by bike are getting from A to B more quickly by avoiding time spent in traffic, and for saving money on parking, petrol and vehicle upkeep.

Many users were aware of the changes coming to motor vehicles and reported they were happy to invest in electric mobility.

"With bike thefts rising during the last year by 57%, particularly of e-bikes, establishing secure bike parking is essential to remove fear and protect people's bikes," BSB adds,

Other Locky Dock locations include those in Auckland at Commonsense, Mt Eden; Garage Project, Kingsland; Les Mills, Victoria St West; Silo Park, Jellicoe St; Morningside Tavern; Unitec - Student Central; Orakei Bay Village, and 12 Christchurch sites.

Locky Docks are also on Kiwi Property locations at malls in Christchurch, Palmerston North, Hamilton, and Auckland.

UBCO BIKES HAVE MANY USES, WHETHER FOR FARMING, HUNTING, COMMUTING, PIZZA DELIVERY – EVEN IN THE MILITARY.

TEST RIDE AN ELECTRIC UBCO 2X2 WITHOUT MOVING



Mount Maunganui-based electric utility vehicles provider UBCO has launched an immersive “virtual test ride” experience.

The virtual test ride, which can be viewed as a 360 video or through a VR headset, allows people to experience what it’s like to ride an electric utility vehicle from, well, virtually anywhere.

The virtual test ride offers a way to interact with UBCO and electric motorbikes in general, says UBCO chief marketing officer Neil Tierney.

“It’s a fantastic way to see what the bike can do,” he says.

“How quiet is it? Can it handle the hills? What’s it like in the mud? How fast does it go?”

“We’re hoping this first taste will encourage people to want to find out more or share the experience with friends.

“It’s about raising awareness and opening eyes to the possibility of what an UBCO 2X2 can do.”

The virtual test ride isn’t just a one-hit-wonder. The video’s modular design means UBCO can switch-in ride segments from around the world and can show any number of applications and locations.

One minute you could be riding in the backcountry of New Zealand, and the next through a bustling New York City street.

The company has also designed an UBCO VR



NOW YOU CAN TEST RIDE A UBCO 2X2 ELECTRIC UTILITY BIKE WITHOUT GETTING OUT OF YOUR CHAIR.

cardboard headset so customers can enjoy the full VR experience.

“We want everyone who is curious to be able to experience the magic of an UBCO 2X2,” says Tierney.

“Given how immersive the virtual test ride experience is we’re confident that once someone tries the virtual test ride for themselves, it’ll be hard not to tell friends and family about it – so word of mouth is also key here.”

Tierney says EVs like UBCO’s are inherently more sustainable than petrol equivalents during their in-use life, which is great for New Zealand and the rest of the world.

“Our 2X2s are reducing emissions daily, and the more widespread the adoption, the more

savings that can be made,” he says.

“And while it’s awesome that our bikes don’t use petrol or produce emissions, we’ve also made a commitment to do more.

“As a largely electronic product with a high-capacity lithium-ion battery, we’ve defined end of life and product stewardship as the big sustainability issues we need to tackle head on.”

The virtual test ride launch follows a huge first half to the year for UBCO which has just won \$14 million in funding for international growth.

Visit www.ubcobikes.com for more information.

ITSNZ AGM WILL SEE NEW BOARD APPOINTED



By **Simon McManus**, executive officer, Intelligent Transport Systems New Zealand Inc.

The ITSNZ AGM is set for September 22 in Wellington and though AGMs are typically dry affairs we're spicing it up by pairing the AGM with the T-Tech Networking Function, featuring transport minister **Michael Wood** and guest speakers.

The AGM will update members and prospective members on what we've been up to and how we're tracking against our business plan. It's also time to put board positions to a membership vote.

Board members are appointed from the membership for a two-year term. The positions are voluntary and board members meet seven or eight times per year for board meetings as well as contributing to sub-committees and work around the T-Tech Conference.

We're calling for nominations from ITSNZ members. It's a great opportunity to help grow the organisation and your own profile, steer the direction of ITSNZ events, including the T-Tech Conference, also providing communications, skills development and advocacy activities.

Please get in touch with **Simon McManus** if you have any questions.

T-TECH REBOOT EVENTS UNDERWAY

The T-Tech Reboot events are underway and proving very successful and making for a very busy calendar of future transport events to finish off 2021.

The Reboot events are free for members and for people who were registered to attend the T-Tech Conference in June which was called off because of a COVID-19 scare in Wellington. It's not too late to join ITSNZ if you wish to attend future Reboot events or the AGM.

The first T-Tech Reboot happened on August 4 with three speakers from the Ministry of Transport and five speakers from Waka Kotahi NZ Transport Agency. It was a hybrid event with 95 people attending in person and another 40 or more online.

Kicking off from the ministry, **Dave Hadley** discussed work underway on policy for Autonomous Vehicles (AVs), **Iain McGlinchy** talked about road pricing and revenue and **Shrividya Ravi** covered its newish transport

Continued on following page...



MICHAEL WOOD

GOLD members



SILVER members



JOIN THE FUTURE
TRANSPORT CONVERSATION

ITS New Zealand leads the Future Transport conversation, promoting research, development and adoption of solutions for safer, more efficient and sustainable transport.

EVENTS

September 2

On-Demand Transport Webinar
Online

September 22

ITSNZ Annual General Meeting
Wellington

September 22 5pm - 7pm

T-Tech Reboot Networking Function
Te Papa Wellington
With transport minister Michael Wood

October 20 5pm - 7.30pm

YTP Mentoring Programme Launch
Auckland, Wellington and
Christchurch (Hybrid)

October TBC

T-Tech Reboot Spotlight on Aviation
Wellington
Panel discussion and networking

Join us to explore how powerful technology can address the integration and optimisation of shared and on-demand mobility in urban transport projects.

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modelling work using "Agent-based modelling".

From Waka Kotahi NZTA, **Ian Leach** outlined the ITS Standards work, **Dave Schumacher** discussed the ITS Network and its new relationship with Vodafone.

Also from Waka Kotahi NZTA, **Anna Nord** outlined data at the innovating streets projects, **Claire Pascoe** covered urban mobility and **Shane Avers** talked about digital engineering.

T-TECH NETWORKING FUNCTION AND FUTURE EVENTS

The networking event on September 22 is not to be missed. It's an opportunity to meet senior leaders from Waka Kotahi NZTA, the Ministry of Transport, as well as industry leaders from transport consultancy, mobility and telematics companies, technology suppliers and service providers.

Headlining the event is the transport minister **Michael Wood** who will be joined by guest speakers from key government agencies.

The minister's recent speech about the Government's approach to transport innovation was very positive (see T-Tech page of the website).

We look forward to some solid

announcements to encourage innovations, research and development.

Also coming up we'll have more T-Tech Reboot events featuring transport innovators, aviation innovators, rail operations and technology as well as other events yet to be announced.

YOUNG TRANSPORT PROFESSIONALS TO LAUNCH MENTORING PROGRAMME

ITSNZ Young Transport Professionals (YTP) has announced an exciting initiative connecting up-and-coming transport professionals with experienced mentors.

Meeting once a month over eight months, the scheme hopes to build relationships between leaders and new entrants to the sector, also to share knowledge and address the emerging skills gaps.

More details are available on the website and the programme will be launched officially at an event on October 20 with a keynote address by Dr Mahsa Mohaghegh, director of Women in Technology and a senior lecturer at AUT's School of Engineering, Computer and Mathematical Sciences.

This will be a hybrid event in Auckland, Wellington and Christchurch.

As always, we hope to see you there.

EVS ON A ROLL

July EV registrations and August evidence back up what EV dealerships are saying – that EVs are flying out the door.

That's particularly true for new light pure electrics like the Tesla Model 3, and even new light plug-in hybrids (PHEVs) such as the Mitsubishi Outlander.

EV registrations recorded in July (the first month the Clean Car Discount or rebate part of the "feebate" applied) surged by 1916 from 27,938 in June to 29,854 in July, the latest Ministry of Transport figures reveal.

New light pure electrics went up 755 from 7023 in June to 7778 in July, while used light pure electric registrations rose 520 (from 13,819 to 14,339). Most of those were Nissan Leafs with 488 sold.

Registrations of new light plug-in hybrids (PHEVs) during July also hit some records, up 430 on the previous month (4237 to 4667) with used light PHEVs up 203 (2604 to 2807).

Heavy EVs are up by eight to 263 in July.

Hayden Johnston of GVI Electric says that from his calculations, June used light EV registrations were down 58% from May and July used light registrations are up 148% from a usual month (about 300 registrations).

"So we're up 90% net".

Johnston says though that's a great result he wonders whether it will be sustainable.

"August will be the telling month for used EV sales with prices rising on average 35% (\$5000-\$7000) and quality fresh used EVs under \$20,000 almost a thing of the past."

Stock remains limited in Japan, Johnston adds. "And I don't think this will change dramatically until we have a new EV model release for people to trade up into."

"Launch edition (Nissan) Ariya is touted for release end of 2021 so that should help, but until then I don't see a reason for prices to move."

Johnston points out that Australia continues to be strong in EV trading.

"Quality fresh imported used EVs have never been so out of reach for the New Zealand public," he says.

"We went from EVs being the most affordable they have ever been to the most expensive they've been in years."

Johnston says the Clean Car Discount (rebate) has been wonderful for new EV sales and this will mean a flow-on of used stock in two to three years' time.

"But our injection of quality, well priced used EVs into the middle of the market looks compromised."

Dave Boot of EV City in Christchurch says there's been no sign of weakening customer demand.

"Sales have remained at the new higher level since June."

"It's pleasing to see a noticeable increase in EV TV commercials. This is a nice side effect of the government rebate."

Boot says EV supply is difficult but not impossible.

Trade Me Motors head **Alan Clark** says there was a 14% increase in EV numbers listed onsite in July compared with the same month last year.

"Following the Government's EV incentives kicking in last month, we saw an impressive 51% increase in watchlists on electric vehicles when compared with July last year."

The average price for an EV onsite in July was \$37,356.

The Nissan Leaf was again the most popular EV onsite in July, followed by the BMW i3 and the Hyundai Kona.

Volt Vehicles director **David Lees** says it's great to see the huge jump in EV uptake by the end of July. "The Clean Car rebate is working, promoting increased sales in BEV and PHEV vehicles."

"I'm sure I wasn't the only dealer standing in line with a handful of MR2As on July 1 down at VTNZ."

Stocks are lower now, Lees says.

"Replenishment is proving very competitive."

"Leaf auction prices have jumped by more than 10% with the demand for them being so strong in Japan," he adds.

"While RORO shipping from Japan hasn't been affected greatly, sourcing from other markets that use containerisation is far more uncertain, making this less attractive."

"Inevitably, this increase in demand will see an increase in retail market prices here in the short term at least."

Hadley Hargadon of Auckland City Electric Vehicles says business has remained flat out.

"It just hasn't stopped," he says.

Hargadon says many EVs have been presold, including a number that have come in recently and just undergone compliance.

Though supply is managing to keep up with demand, Hargadon believes more public EV education is needed, especially for people new to EVs and still worried about some myths such as range.

He says though people are continuing to switch to EVs, many will want to keep a petrol or diesel vehicle in their household too.

EV education is something **Henry Schmidt** of EV specialists Autolink Cars in Auckland has been advocating for a long time.

He continues to believe the Government could establish EV educators in shopping centres to help improve public knowledge and answer the many EV questions dealers contend with.

Schmidt agrees EV demand remains high but says secondhand EV prices continue to rise to the extent where many people are now considering a new EV like a Tesla Model 3 or MG ZS EV.

EV demand elsewhere means quality secondhand stock is proving harder to get, so Schmidt says he's buying wherever suitable EVs may be available, including plug-in hybrids (PHEVs) where necessary.

Shipping constraints are adding to the problems, he says.



HENRY SCHMIDT



HAYDEN JOHNSTON



ALAN CLARK



ALISTAIR GILMOUR



HADLEY HARGADON



DAVE BOOT



MIKE FARMER



DAVID LEES

Continued on following page...

Schmidt wonders why new left-hand drive EVs aren't allowed in when LHD vehicles that are 20 years old are.

Hamilton Electric Vehicles dealer principal **Nicholas Down** says EV registrations have "skyrocketed" during the past two months. "This in part is a success, however it hasn't had the desired effect and that's now going to be played out in the next six months or so.

"Prices in Japan went through the roof (overnight), shipping costs have had yet another increase, and on it goes and on."

Down says the consumer is paying more for an EV than two months ago.

"We're currently selling the last of our stock at prices that we can't even buy it for in Japan, so the circle of life continues.

"It has been extremely harsh on people trying to sell an EV privately on any of the social media platforms because without the Hamilton EV \$4000 rebate they're in effect losing more money as a result of the rebate/fee (feebate) system."

Down says there are more EVs on the road, whether a Tesla Model 3 or a Nissan Leaf, which is good for the country and good for the end user.

"Now to get the charger roll-out happening, and with three new public chargers going live in Hamilton in September the future is looking amazing."

Tauranga-based Farmer Autovillage dealer principal Mike Farmer says interest in and demand for EVs and hybrids has "most definitely" increased since the Government announced the rebate scheme.

"But across all of our brands, if someone wants an EV, we can only supply a Nissan Leaf, an MG, a Hyundai..."

"Across the whole [Farmer] group it's a pretty small list that we can provide (straight away) that comply with the subsidies."

In general, most brands have only one or two all-electric models.

"I think the Government is going far too early (in offering EV subsidies and penalising ICE cars)," Farmer says, particularly as there are no viable electric alternatives yet for some, like utes.

"I don't think we'll see that until 2023 or 2024," he adds.

"In my opinion, they could delay (the date for the introduction fees on ICE vehicles). They've got \$300 million in EV incentive funding,

so exhaust that, but the penalties should be delayed for up to two years until viable alternatives are available that they can take advantage of."

Farmer doesn't disagree with the Government's campaign (towards EVs) in spirit but says the execution has been a bit haphazard.

"They've gone too quick. They're ahead of where the motor industry is and the vehicle manufacturers are."

Invercargill's Electric Motor Vehicle Company managing director **Alex de Boer** says EV sales have risen since the Clean Car Discount was introduced, especially new EVs, while the rebate has also prompted more interest.

"However, unless you have a big budget even with the feebate it's still a big spend beyond the reach of most buyers. For us EV-only dealers it will eventually increase the supply of secondhand New Zealand configured vehicles.

"We're still having a lot of discussions with clients thinking about an EV purchase as their next vehicle, but they usually get a shock when they see how little their current perfectly OK petrol or diesel vehicle will trade in for," he says.

"Eventually they just decide to wait unless they are real 'green' and are determined their contribution will save the planet."

Dunedin's Gilmour Automotive owner **Alistair Gilmour** says strong interest in EVs is continuing with stock "slowly arriving" but difficult to buy secondhand at auction, particularly with increased prices.

"People who get in early are still getting good buys though," he adds.

More EV models are being launched.

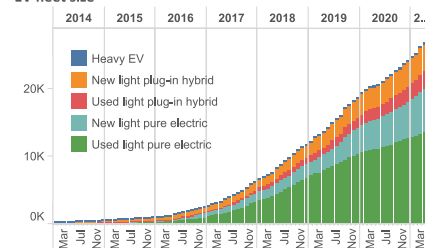
At the IAA Mobility 2021 event in Munich from September 7-12, for instance, Mercedes-Benz is showcasing the full breadth of its current and future electric mobility line-up.

It ranges from compact models to performance luxury saloons to multi-purpose vehicles (MPVs).

Mercedes will use this show of strength across all its sub-brands to underscore its "Lead in Electric" claim.

Mercedes-Benz, Mercedes-EQ, Mercedes-AMG, Mercedes-Maybach and Smart come to the IAA Mobility with a total of eight premieres. Five of those are fully electric models, plus one performance hybrid.

EV fleet size



NEW MAKES & MODELS & USED IMPORTS

NEW EV CAR TYPES - ELECTRIC		
MAKE AND MODEL	JULY 2021	YTD 2021
TESLA MODEL 3	197	892
MG ZS	188	427
HYUNDAI KONA	151	373
KIA NIRO	49	98
MINI HATCH	33	68
MAZDA MX-30	29	33
AUDI E-TRON	27	93
NISSAN LEAF	25	55
HYUNDAI IONIQ	23	118
RENAULT ZOE	14	15
LDV EDLIVER 3	11	28
PORSCHE TAYCAN	5	80
CRRC ET12MAX	4	4
LDV V80	3	4
MERCEDES-BENZ EQC	2	48
FUSO ECANTER 8	2	3
BMW I	1	9
FACTORY BUILT YUTONG	1	5
LDV EV80	1	4
JAGUAR I-PACE	1	27
MERCEDES-BENZ EQA	1	28
YANGTSE MOTOR GROUP UT200RHDF	1	1
FACTORY BUILT CRRC	0	12
RENAULT KANGOO	0	7
VOLKSWAGEN GOLF	0	5
TESLA MODEL S	0	4
XCMG E300	0	4
FACTORY BUILT GLOBAL BUS VENTURES	0	4
TESLA MODEL X	0	3
ALEXANDER DENNIS ENVIRO 200	0	2
FUSO ECANTER	0	1
YANGTSE MOTOR GROUP UT200RHD	0	1
HYUNDAI IONIQ 5	0	1
TOTAL	769	2457
NEW EV CAR TYPES - PLUG-IN HYBRID		
MAKE AND MODEL	JULY 2021	YTD 2021
MITSUBISHI ECLIPSE CROSS	156	165
MITSUBISHI OUTLANDER	99	346
MG HS	63	80
MINI COUNTRYMAN	37	97
SKODA SUPERB	14	14
HYUNDAI IONIQ	13	32
BMW X3	9	58
TOYOTA PRIUS	9	38
PEUGEOT 3008	7	34
BMW X5	4	30
VOLVO XC90	3	10
BMW 3 SERIES	2	23
JAGUAR F-PACE	2	3
KIA NIRO	2	7
MERCEDES-BENZ GLC	2	26
PORSCHE CAYENNE	2	14
VOLVO XC60	2	11
BMW 2 SERIES	1	1
BMW 5 SERIES	1	2
KIA SORENTO	1	20
MERCEDES-BENZ A-CLASS	1	9
VOLVO XC40	1	12
MERCEDES-BENZ C-CLASS	0	4
FERRARI SF90 STRADALE	0	4
FORD ESCAPE	0	3
LAND ROVER RANGE ROVER	0	1
PORSCHE PANAMERA	0	1
LAND ROVER RANGE ROVER VELAR	0	1
FACTORY BUILT GLOBAL BUS VENTURES	0	1
TOTAL	431	1047

USED EV CAR TYPES - ELECTRIC JULY 2021		
MAKE	MODEL	TOTAL VEHICLES
NISSAN	LEAF	488
MG	5	4
TESLA	MODEL S	4
VOLKSWAGEN	E-GOLF	4
VOLKSWAGEN	ID3	4
VOLKSWAGEN	ID4	4
NISSAN	E-NV200	3
TESLA	MODEL 3	3
BMW	I3	2
HONDA	E ADVANCE	2
MITSUBISHI	I-MIEV	2
JAGUAR	I-PACE	1
MERCEDES-BENZ	SMART	1
PORSCHE	TAYCAN	1
TESLA	MODEL X	1
TOTAL		524

USED EV CAR TYPES - PLUG-IN HYBRID JULY 2021		
MAKE	MODEL	TOTAL VEHICLES
MITSUBISHI	OUTLANDER	117
TOYOTA	PRIUS	50
BMW	330E	8
BMW	I3	8
MERCEDES-BENZ	C350	4
VOLKSWAGEN	GOLF	4
BMW	530E	3
BMW	X5	3
AUDI	A3	2
BMW	MINI	2
VOLKSWAGEN	PASSAT	2
BMW	225XE	1
BMW	I8	1
LAND ROVER	RANGE ROVER	1
MERCEDES-BENZ	E350	1
TOTAL		207

EV GLOBAL ADVANCES

We check out what's happening around the world in the EV-related space.

SEMI-CONDUCTOR SHORTAGE EXPECTED TO OUTLAST COVID

The global semi-conductor shortage will have far-reaching and long-lasting effects that are likely to have a greater impact on the automotive industry than the COVID-19 pandemic, says software provider VNC Automotive.

"In conversations with clients and suppliers, it's become clear that the effects of the semi-conductor shortage will long outlast the pandemic and will potentially have a far more serious impact on sales and future development," says VNC Automotive founder and chief executive **Tom Blackie**.

"Some of our suppliers are seeing prices for chips that are more than 30 times higher than before, and at that level, their use is no longer sustainable."



RIVIAN TO TRADEMARK SIX ELECTRIC MODEL NAMES

Rivian aims to have three utes (pick-ups) and three SUVs under newly submitted trademark names.

Rivian submitted trademarks for the R3S, R4S, R5S, R3T, R4T, and R5T to the US Patent and Trademark Office on July 23.

Recent reports such as Rivian's plans for a second factory indicate a move to more products, including its own batteries, and suggest the company is eyeing up Australia and New Zealand.



MERCEDES-BENZ TEASES EQE PRIOR TO IAA UNVEILING

Mercedes-Benz will feature five new EVs at the IAA Mobility conference and show in Munich from September 7-12.

They include the EQE, Mercedes-AMC's first battery-electric luxury saloon, a concept Mercedes-Maybach, the seven-seat EQB's European premiere, and a new model Smart.

The conference covers topics like autonomous driving, design, electrification and zero-emission mobility, the last mile, micromobility and e-bikes, and mobility in country and urban areas.

Also in focus will be mobility as a service and shared mobility, smart cities and urban mobility, fuels of the future and alternative powertrains, digitisation and connectivity, sustainability, artificial intelligence and robotics, post-corona mobility, and urban air mobility.

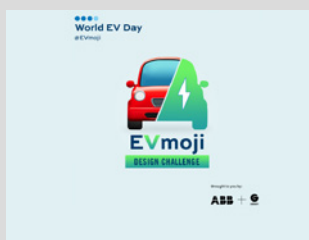


EV EMOJI SOUGHT FOR WORLD EV DAY

World EV Day founders ABB and Green.TV are issuing an "EVmoji" challenge to participants aged six to 16 to create an electric vehicle emoji.

The winning design will be announced on World EV Day September 9.

An official emoji representing EVs doesn't currently exist, so the EVmoji will highlight a sustainable mobility future, with passenger EV sales set to increase sharply in the next few years, rising from 3.1 million in 2020 to 14 million in 2025.



POLESTAR TO DOUBLE GLOBAL PRESENCE BY 2022

EV performance brand Polestar will expand from nine to 18 markets by the end of this year.

Retail locations are set to double, with up to 100 operational Polestar locations, including a new Destination concept, by year-end, with possibly some in Australia where the Polestar 2 is due to launch in November and in New Zealand.



TESLA PROFIT SOARS IN Q2 2021

Tesla says its Q2 this year broke new and notable records, including revenue of US\$11.532 billion, producing and delivering more than 200,000 EVs and exceeding US\$1b of GAAP net income for the first time.

Battery cell availability and supply chain constraints mean the electric Semi-truck programme is delayed until next year, with the focus on Model Y production.

It's Cybertruck is expected to start production later this year.



FORMER NIKOLA BOSS FACING FRAUD CHARGES

Nikola founder and former chief executive **Trevor Milton** is facing fraud charges laid by the US Securities and Exchange Commission (SEC).

The federal agency accuses Milton of "repeatedly disseminating false and misleading information" about Nikola's battery electric and hydrogen truck products and technological accomplishments, typically by speaking to investors through social media.

Milton's legal team denies the accusations, saying: "Trevor Milton is innocent."

He pleaded not guilty to the criminal charges and was freed on a US\$100 million bond.



GLENFIDDICH TRUCKS TANKED UP ON WHISKY WASTE

Scotch whisky maker Glenfiddich has launched a sustainable transport initiative that will make it the first global spirits brand to run its delivery fleet on green biogas made from distilling residues.

Using a unique technology developed by its parent company William Grant & Sons, the Glenfiddich distillery at Dufftown in north-eastern Scotland converts its production wastes and residues into an ultra-low carbon fuel (ULCF) gas that produces minimal carbon dioxide and other harmful emissions.



HIGHLIGHTS OF THE MONTH

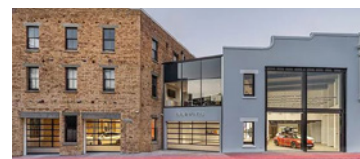
A round-up of key items throughout New Zealand during the past month.

TESLA WELLINGTON SHOWROOM PLANNED

A Wellington site will become Tesla's permanent home for a service centre in the capital and could include a nearby showroom.

Tesla owners tell EVs and Beyond that though a site has been found the location has yet to be revealed.

Speculation is that it's likely to be near key motorways for easy access and will include a customer lounge and two salespeople, also catering for test drives.



ELECTRIC TRANSPORT COULD HELP PROTECT MILFORD SOUND

Great potential exists for a world-class zero carbon transport and tourism experience, supported by an effective and sustainable electric or hydrogen transport model, to help protect Milford Sound, says transport minister Michael Wood.

Commenting on the release of a new plan to address visitor pressures and safety at the UNESCO World Heritage site in Fiordland, Wood says the Milford Opportunities Project masterplan is a test case for "transformational change in tourism".

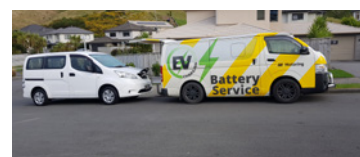


AA EV CHARGING BREAKDOWN VAN SERVICE TO BE EXTENDED

The AA's first electric vehicle charging breakdown van has been on the road in Wellington for more than a year – giving EVs a roadside boost two to three times a month on average.

The AA Battery Service van, launched in July 2020, is fitted with a lightweight EV charger which, in 20-25 minutes, enables enough charge to drive up to 10km so AA members can get home or to a nearby charging station.

The response to the van has been "fantastic", prompting plans to expand the service to other areas soon, says AA Battery Service general manager Mandy Mellar.



POWER DEALS FOR EV USERS

Company	Energy Deals	Where	Cost to charge LEAF*
	Plug-in Vehicle Fuel Package 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
	Electric Car Plan: 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 \$2.80
Contact Energy	Everyday Bonus Fixed: Excellent night rates, no fixed term, check if the matching daytime kWh rate will affect your overall bill.	Auckland Wellington Christchurch	\$5.47 \$4.53 \$3.20
	ecoSAVER: Competitive, off-peak pricing for your EV. no contracts, energy charges are fixed for 3 years.	Auckland Wellington Christchurch	\$5.25 \$2.31 \$5.09
Electric Kiwi	One Plan with Hour of Power: 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 designate Hour of Power.	Auckland Wellington Christchurch	\$6.46 \$6.49 \$6.71
Flick Electric	Wholesale rates plus their Flick Fee: No fixed term, EV rate in Wellington. Calculated using an average spot price of 5.7c per kWh.	Auckland Wellington Christchurch	\$5.79 \$5.00 \$4.36
Genesis	Classic plan: 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 \$6.29 \$6.39
Nova Energy	Home EV Electricity Plan: This plan finishes on 18/4, new rates start in may. No fix term, must have e-billing, 20% PPD, no fixed price.	Auckland Wellington Christchurch	\$6.41 \$6.29 \$6.39
Paua to the People	Cheap As Plan with EV night rates: No fixed term. Calculated using an average spot price of 5.7c per kWh	Wellington	\$4.90

*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.

PLUGGED IN!

Stay connected to the EV community with useful links below.

Better NZ Trust	A community of EV enthusiasts https://www.leadingthecharge.org.nz/
Charge Net	Nationwide EV charging network https://charge.net.nz/
Drive Electric	Advocacy group for the EV industry https://driveelectric.org.nz/
EECA	NZ government's EV information website https://www.electricvehicles.govt.nz/
Electric Heaven	NZ electric car guide http://www.electriceaven.nz/
Flip the Fleet	EV Community data sharing project https://flipthefleet.org/
NZ Electric Bikes Review	Independent electric bike reviews https://electricbikesnz.com/
NZ EV Podcast	Monthly podcast about EVs https://www.podcasts.nz/nz-ev-podcast/

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

Nationwide	
NZ EV Owners	https://www.facebook.com/groups/NZEVOwners
Regional	
Auckland EV Owners	https://www.facebook.com/groups/291373964545996/
Bay of Plenty EV Owners	https://www.facebook.com/groups/BayOfPlentyEVOwners/
Central Otago Lakes EV Owners	https://www.facebook.com/groups/521978908249518/
Christchurch EV Group	https://www.facebook.com/groups/ChristchurchEVGroup/
Dunedin EV Group	https://www.facebook.com/groups/403816650002889/
ELECTRIC ISLAND WAIHEKE	https://www.facebook.com/evisland
INVER-ELECTRIC-CARGILL	https://www.facebook.com/groups/250609535293325/
Manawatu EV Owners	https://www.facebook.com/groups/1847252468838484/
Naki EV Owners Group	https://www.facebook.com/groups/375210949597565/
Nelson Tasman EV Owners	https://www.facebook.com/groups/365895557107117/
Northland EV Group	https://www.facebook.com/groups/northlandEVgroup/
South Canterbury EV Owners	https://www.facebook.com/groups/southcanterburyev/
Waikato EV Owners	https://www.facebook.com/groups/WaikatoEV/
Wellington EV Owners	https://www.facebook.com/groups/WellyEV/

EVs Enhanced Service Centre

Got a problem with your EVs firmware, hardware or electronics?
We're the experts in finding a solution.

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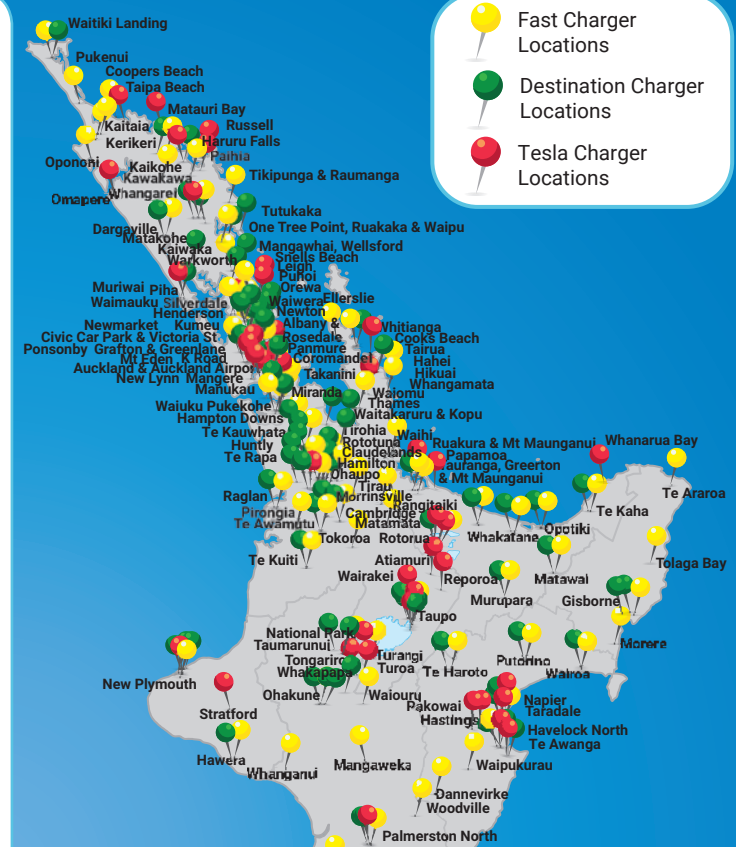
EV CHARGING LOCATIONS

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Fast / Super Charger Locations – North Island

Waitiki Landing Pukenui Coopers Beach Kaitaia Kerikeri Opononi Kaikohe Kawakawa Tikipunga Whangarei Raumanga Dargaville Kaiwaka Warkworth Warkworth Orewa Silverdale Albany Rosedale Kumeu Henderson Akld CBD Beach Rd K Road Newmarket Greenlane Pakuranga Botany Downs Akld Airport Akld Airport Takanini Takanini Coromandel Whitianga Tairua Pukekohe Pukekohe Waiuku Thames Whangamata Hampton Downs Te Kauwhata Waihi Huntly Morrinsville Te Rapa Rotorua Matamata Hamilton Hamilton Claudelands Hamilton Hamilton Ruakura Raglan Tirau Mt Maunganui Mt Maunganui Cambridge Pirongia Te Awamutu Whakatane Opotiki	9049 Far N Rd, Te Hapua 0484 Houhora Fishing Club, 4126 Far Nth Rd Four Square, 9 Coopers Dr Te Ahi, 28 South Rd Pak'nSave, 111 North Rd 1 Butler Rd Four Square, 29 SH12 Library Carpark, 14 Marino Pl 4 State Highway 1 Paramount Plaza, 1 Wanaka St 11 Alexander St McDonalds, 130 Tauroa St Totara St Park, 113 Totara St 1 Kaiwaka-Mangawhai Rd New World, 6 Percy St BP, 67 Auckland Rd (SH1) New World, 11 Moana Ave 17 Hibiscus Coast Hwy The Warehouse, 186 Don McKinnon Dr McDonalds, 14 Constellation Dr New World, 110 Main Rd Pak'nSave, 224 Lincoln Rd Vector, 21 Hobson St Z Station, 150 Beach Rd Tesla, 501 Karangahape Rd 1 Gillies Ave McDonald's, 320 Gt Sth Rd BP, 322 Pakuranga Rd Z Station, 550 Te Irirangi Dr Shopping Ctr, George Bolt Mem. Dr Z Skyway, George Bolt Mem. Dr 30 Walters Rd Pak'nSave, 345 Great South Road 44 Woolams Rd 4 Lee St Carpark, 6 Tokoroa Rd King Street Carpark, 56 King St Counties Power, 14 Glasgow Rd (Bus hrs) Kitchener Rd Carpark 505 Mackay Street 100 Hetherington Road Gate 1, Motorsport Park 16 Wayside Rd New World 35 Kenny St Countdown, 18 Tumate Mahuta Dr New World, 79/89-97 Thames St WEL Networks, 114 Maui St Countdown, 160 Peachgrove Rd New World, 45 Waharoa Rd Tesla, The Base, Te Rapa Rd Countdown, 551 Anglesea St Countdown, 160 Peachgrove Rd Caro St Carpark, 7 Caro St Countdown, 4 Bridge St Waikato Innov. Pk, 9 Melody Ln 43 Bow St 3 Station St Bayfair, 19 Girven Road New World, 1 Tweed St (25 kWh) 73 Queen Street Four Square, 270 Crozier St 10 Scout Lane i-Site, 30 Quay St i-Site, 70 Bridge St	Te Kaha Te Kaha Bch Res, 3 Hotel Rd 22 Rata St (25 kWh) 1134 Haupapa St New World, 72 Bridge St 6522 Matawai Rd 43 Cook St (25kWh charger) New World, 39 Rora St Pine Drive Car Park, Pine Dr Firestation, 1 Kaimanawa St 21 Gladstone Rd Tesla, 1 Kaimanawa St Hot Pools, 3968 SH2 (25 kWh) Lodge Café, 3281 SH5 1 Pihanga Rd 66 Courtenay St Business Centre, 23 Napier St 75 Queen St 5466 State Highway 2 Four Square, 4354 SH4 New World, 30 Ayr St New World, 12 Huia St Mc Vicar Rd, 4237 SH5 Cnr SH1 & Hassett Dr Pak'nSave, 54 Princes St 206 Dickens St 100 Queen St W Papa Cliff Café, 2 Koranui St Pak'nSave, 167 Glasgow St 34 Russell St 24B Gordon St i-SITE, 43 Vogel St i-SITE, 126 The Square Tesla, 365 Ferguson St New World, 21 Bath St New World, 155-163 Main Hwy Kapiti Pak'nSave, 132 Rimu Rd 15 Raumati Rd, Paraparau 70 Wellington Rd Paekakariki Queen Elizabeth Park, 3 Dixon St 2 Serliby Pl SuperValue, 42 Fitzherbert St 24 Queen St Dowse Art Museum, 1 Stevens Gr Grey St Parking Z Station, 60 Hutt Rd Z Station, 174 Vivian St Barnett St Carpark, 11 Barnett St Inglewood Parking, 68 Inglewood Pl
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- Fast Charger Locations
- Destination Charger Locations
- Tesla Charger Locations



Fast / Super Charger Locations – South Island

Takaka Havelock Motueka Karamea Nelson Richmond Spring Creek Blenheim Ward Westport Reefton Greymouth Kaikoura Kaikoura Hokitika Culverden Amberley	16 Willow St Four Square, 68 Main Rd New World, 271 High St Four Square, 103 Bridge St i-SITE, 81 Trafalgar St New World, 73 Vanguard St Library, 11 Mcglashen Ave 2226 SH1, Blenheim 7202 Pak'nSave, Springlands Flaxbourne Café, 7326 SH 1 New World, 244 Palmerston St Four Square (25 kWh) 47 Broadway 13 Tarapuhi Street 51 West End New World, 124 Beach Road New World, 116 Revell St 27A Mountain View Rd Countdown, 123 Carters Rd	Rangiora Pak'nSave, 2 Southbrook Rd, New World, 2 Mounter Ave Raeward Fresh, 800 Harewood Rd Addington Z Station, 40 Moorhouse Ave New World, 9 Nicholls Rd Christchurch Tesla, The George Hotel, 50 Park Tce New World, 90 Rolleston Dr New World, 77 Gerald St Little River 4235A Christchurch Akaroa Rd Rakaia 41 Bridge St Ashburton 109 West St Tekapo Lake Tekapo Tavern, SH8 Opp. 53 Main St Fairlie Cox St Carpark, 14 Geraldine Geraldine-Fairlie Hwy New World, 185 King St Events Ctr, 61 McKenzie Dr Temuka 26A North St Twizel 2 Sutherland Rd Timaru Tesla, Hot Tubs, 29 Omarama Ave Omarama Wynyard St Wanaka 42 Ardmore St Queenstown Tesla, Remarkables Park Town 9 Athol St, Queenstown Athol St Pak'nSave, 302 Hawthorn Dr Frankton i-SITE, 2 The Mall Cromwell 125 Queen Street Waimate Eden St Carpark, 3 Eden St Oamaru 31 Charlemont Street Ranfurly 9 Thompson Street Alexandra 33 Lincoln St Hampden University of Otago, 71 St David St Nth Dunedin Filleul St Carpark, 193 Moray Pl Dunedin New World, 10 Hartstonge Ave Mosgiel Four Square, 207 Union St Milton 22 Jedburgh St Roxborough Four Square, 14 Diana St Lumsden Four Square, 19 Ross Pl Lawrence New World, 293 Great North Rd Winton New World, 8 Irik St Gore 23 Charlotte St Balclutha 116 Esk St Invercargill
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