



Green Cabs goes electric

Taxi company Green Cabs is moving into the world of pure electric vehicles by offering free rides in the Wellington CBD.

Green Cabs purchased its pilot vehicle with help from an Energy Efficiency and Conservation Authority (EECA) grant that aims to get more EVs on the road.

"We want to be the vehicle that introduces EVs to the public," Green Cabs general manager **Toni Hogg** says.

"We can reach so many parts of the community."

The grant will contribute to the eventual purchase of five EV taxis, which the company is encouraging its Wellington-based drivers to consider, she says.

Once established in Wellington, Hogg says the company hopes to expand its

use of EVs throughout the country.

Currently its drivers use hybrid vehicles, with the Toyota Prius the most popular model.

"For us EVs are the obvious next step since we started in hybrids.

"The real tipping point for us was the EECA funding."

However, she says it is a case of convincing the drivers it is a good move to make.

"The drivers own their cars. You can't force them into certain cars. The guys that have driven EVs are the converted ones.

"The main focus is being able to present a business case to taxi drivers. There are cost efficiencies and lower emissions."

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Innovation needed to bring in Ioniq

Bringing a brand new electric car into the New Zealand market isn't as simple as it sounds.

Just ask Hyundai Motors New Zealand general manager **Andy Sinclair**. He was recently involved in introducing the brand's new Ioniq to the country.

One of the major challenges the local Hyundai team has faced since introducing the car to New Zealand this year is getting the specifications right.

With little interest from the Australian market, Sinclair and his team had to innovate.

"We wanted it but being a small market we had to be quite innovative in what we could do to get it.

"We had to go searching the globe for specifications that could help us."

Initially, the company tried Ioniqs with UK specifications but the speedometer was in miles.

To fix the problem, Hyundai New Zealand moved to the Irish model, which is in kilometres.

"It was about finding ways we can take an Ioniq EV and make it work," he says.

Another challenge for the Hyundai team is working with its dealership network to make sure the infrastructure is in place to support the technology.

"We've clearly had to make some fairly significant investment in training

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Andy Sinclair

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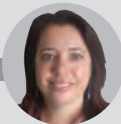
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**DRIVE
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EVangelists head to Auckland

A dedicated electric vehicle event will bring together the EV curious, EV owners and EVangelists for a combined industry and public showcase.

To kick off Drive Electric Week, **ev-worldNZ** will take place on September 8 and 9 at the Vodafone Events Centre in Manukau, complete with priority parking for EV owners, rapid charging, and a scooter and bike track for a full ride-drive experience.

The show is being organised by New Zealand's largest conference organiser Conferenz, with the support of foundation partner ChargeNet.

Conferenz sponsorship manager **Dominic Duncan** says he's excited about the show.

"It's the future of mobility and we're the first to create something for this exploding market.

"This is how we will raise awareness with corporates and the public to reduce emissions in the transport sector."

The Energy Efficiency and Conservation Authority is principal partner for the event, reflecting the Government's focus on achieving climate change goals for a cleaner, greener New Zealand.

The Government aims to double EV registrations each year to reach

64,000 by 2021.

The EV Champion Awards Gala will open the event on September 7. The awards aim to recognise the efforts of those EV heroes and towns working to promote and support the uptake of EVs across the country.

The event caters to the entire EV ecosystem with a trade day including conference, exhibition and seminars on September 8.

An open day for the public follows on September 9, with free seminars and an exhibition.

Go to **evworld.nz** for more information. ■

Innovation needed to bring in Ioniq

Continued from page 1

for dealers in terms of the sales side.

"For the back-end of the business, it's been getting techs up to speed to know that they understand it. If we don't have technicians trained, we can't sell it."

Hyundai is also rolling out charging infrastructure to its dealerships.

Interest in the vehicle has been huge, Sinclair says.

"We've had more organic interest in this model than any other model ever launched. That's exciting for the sales staff and my team."

"Our inbox from the website is full

of questions [from people] wanting to know more and wanting to understand.

"When you have people coming to



you excited, it excites everyone. It's been fantastic really."

But that popularity has also created its own problems.

"Stock is a challenge, there's no two ways around it," Sinclair says.

"We are selling 100% of everything we've got, which is 20 a month."

He expects supply restrictions, which have been an issue globally, can be resolved relatively quickly.

"Where there is a demand, it doesn't take them long to ramp up production.

"Within a few months, it won't take them long to catch up."

Sinclair supports the Government's promotion of EVs - it aims to have 64,000 of the vehicles on the road by 2021.

"It's interesting in New Zealand, given we haven't got any huge incentives to go electric, that we've had that amount of interest here."

"Our Government is doing what it can, without sinking money into it like other governments have." ■

Obsession the road to design career

The Rinspeed Oasis EV which Alain Brideson designed.

Kiwis can create electric vehicles for the world stage while living at home - New Zealand-based automotive and industrial designer **Alain Brideson** has proved that to himself and the industry.

Now a specialist in EV design, Brideson initially studied to become a product designer in Auckland and followed that with two years of studying car and transport design in Pforzheim, Germany.

"Working in Germany, Switzerland and Italy for seven years has significantly expanded my portfolio, allowing me to set up in New Zealand as a multi-purpose product and industrial designer," he says.

He's now working on his sixth concept car for Swiss-based automotive think tank and mobility laboratory Rinspeed.

It collaborates with well-known automotive suppliers such as ZF, Siemens, Sika, Harman, Borbet, Osram, NXP, GF Automotive and others to create concept vehicles showcasing the latest in-vehicle technologies to global car manufacturers.

Founded by Swiss national Frank Rinderknecht in 1977, Rinspeed has been involved in many different parts of the industry.

It started as an aftermarket supplier

of sunroofs and mobility vehicles then morphed into creating one-off sports cars, being the Swiss distributor of AMG and AC Schnitzer aftermarket parts, collaborating with OEMs and producing concept cars in the 1990s.

Brideson created two of five concept vehicles for Rinspeed, the 2017 Rinspeed Oasis EV, and the 2016 Rinspeed Etos, while living in New Zealand.

The Rinspeed Oasis EV, which the company refers to as a "garden plot on wheels", was a ground-up design, using a ZF intelligent rolling chassis, with all onboard screens and multimedia supplied by Harman. The enclosed front-steering wheels pivot 90 degrees for ease of manoeuvrability.

The BMW i8 derived self-driving Rinspeed Etos concept car, complete with onboard drone, is notable for once being steered by

Angela Merkel and Barack Obama.

During his time in Europe, Brideson was also responsible for the design of the 2014 Rinspeed xChangE, the 2013 Rinspeed microMax and the 2012 Rinspeed Dock+Go.

Ironically, the 2015 Rinspeed Budii, which was presented at the recent MTA100 in Wellington, was created by his former Swiss employer DesignWerk after Brideson had moved to Amster-

dam to "have a break and reset".

He has been obsessed with cars since he was eight years old. Knowing that German would be a useful language, he took it as a subject while studying at Mt Albert Grammar School in Auckland.

Then at Unitec, Brideson had the good fortune of meeting a Swiss exchange student called Toby who would later become a colleague and business partner at DesignWerk.

Unitec was followed by a student exchange programme which saw him enjoy one semester at the industrial design school Fachhochschule Aargau in Switzerland.

At the time, he had a design project on the go with German auto manufacturer Opel, which made him realise his dream of a career in automotive design might be more of a reality than he initially thought.

Brideson completed his degree in design at Unitec in 2004. For the next two years he freelanced in Auckland doing marine design before heading back to Europe with a two-year scholarship to the Master of Transportation Design course at the University of Applied Sciences in Pforzheim.

Still at Pforzheim in 2008, he completed an internship at Audi AG Ingolstadt, working on an exterior design and design strategy for the Audi's A, Q and R families.

But the global financial crisis saw a hiring freeze on design talent by automobile manufacturers so in 2009

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Alain Brideson

Road tax conundrum raised

Private road provider Transurban has called into question the way Australian roads will be funded in the future.

As more vehicles powered by alternative fuel sources hit the road, less excise tax is expected to be collected on petrol and diesel sales, Transurban's general manager strategic initiatives Stephen McDonald says.

About 40 cents in every litre of fuel purchased is excise tax.

The impact of alterna-

tively fuelled vehicles on the environment is fantastic but they pose a funding problem, he told the Australasian Fleet Management Association's annual conference in Melbourne.

"How do we maintain these roads going forward? Revenue is falling and demands on that money is growing."

The current system also penalises those who can least afford it, McDonald says.

"It's not really fair when someone who can afford a

Tesla pays zero for driving on the roads and the person in the 2005 Commodore is paying infinitely more."

That can be up to \$548 a year over 12,500 kilometres of driving for the Commodore owner, according to Transurban's calculations.

"How do you work out a system that is fair but raises the right amount of money?"

Vehicle registration, which is fixed by state, also provides problems.

It costs someone who drives very little much more

than someone who drives a lot, he says.

Transurban, which owns private roads in Melbourne, Sydney and Brisbane, is proposing a user-pays system as one solution.

As part of a Transurban study, 1600 people from Melbourne let the company put devices in their vehicles to monitor how much they travelled.

They were then sent a statement illustrating how much they would have been charged if a user pays system had been in place. ■

Nissan Leaf English instrument panel conversion available

A full English dash cluster/instrument panel conversion on nearly all Japanese imported Nissan Leaf models is offered by GVI Electric.

The company says this service will be available to all Leaf owners.

It's not to be confused with the full English X/G stereo replacement option, which is in the works and will be available in the near future, GVI Electric EV specialist Andrew Dudley says.

GVI says there's no loss of functionality or options with

everything available as per the original Japanese menus.

With enough numbers GVI will try to send a technician to all the major centres.

And interest has been overwhelming, the company says.

GVI is asking people to

contact it with details so technicians can compile lists and plan for dates in Auckland, Wellington and Christchurch.

Pricing can be confirmed once the numbers involved are known.

Search for GVI Electric on Facebook. ■

VINZ halves EV entry certification costs

The cost of entry certification for full electric vehicles (EVs) has been halved by Vehicle Inspection NZ (VINZ).

It's cut the fee from \$165 to \$82.50 to help increase the adoption rate of EVs here.

"EVs offer environmental and health benefits to New Zealand and New Zealanders," VINZ chief executive

Gordon Shaw says. "By introducing this initiative, VINZ is looking to encourage more EV imports by making them more affordable."

VINZ inspects more than 60,000 used imported vehicles annually for importers, car dealers, repair workshops and compliance centres. A very small proportion of these are EVs, although

numbers in the New Zealand fleet are growing with the total today around 3500.

VINZ is already supporting the increased adoption of EVs by offering hybrid and electric vehicle safety checks and sponsoring EV communications initiatives.

The trial will run from June 6 to January 31. It will then be evaluated and VINZ may

consider extending the offer.

Half price entry certification applies to pure electric vehicles only (100% battery EVs) and does not include hybrids.

The offer is available at any of the compliance centres where VINZ provides entry certification. Terms and conditions apply.

Contact a VINZ representative for details. ■





Ludicrous fun in a Tesla

We have driven many cars over the years and few have left us with a sore neck.

That was until our brief test of the Tesla Model S - or more specifically a Tesla Model S P100D, the top model, with Ludicrous mode and all the bells and whistles.

With a base price of \$227,000, the P100D comes with two electric engines for all-wheel drive, its biggest battery for 613km range, and that infamous Ludicrous mode for 2.7-second runs to 100kmh. It's the fastest production car off the line in the world.

It is not hard to spend a lot more on your Model S and ours had an on-road price of \$261,000. That was thanks to options like a black interior, glass roof, 12-inch turbine wheels, carbon fibre spoiler, high-power charging, smart air suspension, ultra-high fidelity audio system and a sub-zero weather package.

What it didn't have, however, was autopilot. Tesla felt the system, while available to the public, was at that stage in too much of a 'beta' form and not yet ready for journalists to critique. We have been promised it will be activated the next time we take a drive.

The headline act of the P100D has to be its powertrain. The two motors

tucked away at either end of the car can produce a total of 581kW and 1250Nm of power.

The numbers are irrelevant; it is more about how it delivers the power that counts. Hit the accelerator, even on damp pavement, and the Tesla launches itself forward at a rapid rate.

Clever software maintains traction and there is no apparent mitigation of engine power or traction manipulation. The car is just gone - as is your head which is thrust back into the headrests. Enough Ludicrous mode take-offs and you and your passengers just about go into shock.

pension, which will lower and raise the car based on speed for the best aerodynamic drag.

It also learns where you want the car at a higher level to avoid obstacles. We raised the car for a safety margin when entering our driveway and every time we returned, it automatically did the same.

The Tesla's ride is hard but not unexpectedly so for a sports sedan.

The steering is well weighted but lacks the feel and finesse of the Tesla's European competitors. The handling is surprisingly crisp; there is an enormous amount of grip, and it is superb at fol-

lowing whatever line you choose.

Around town the experience is only marred by working out how close the huge 21-inch wheels are to the kerb - we did not want the bill for damaging them.

The brakes, like most electric cars, feel a little 'wooden' and unusual. That's a by-product of the pedal using both engine braking to regenerate energy

and traditional pads to effect the stop. The brakes are, however, very effective.

When you jump into the front of the Model S, the car feels huge. It has acres of space in the front but the hardback front seats and sloped roofline make

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And yet when you're not acting like a drag racer, the drivetrain is relaxed and tractable. You can trundle through city streets silently without worrying a slight nudge of the throttle will cast you off into a wall. It is lovely.

Our P100D featured active air sus-



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Charging into the infrastructure debate

New research from Drive Electric shows the development of electric vehicle (EV) charging infrastructure has reached a pivotal point in New Zealand.

The not-for-profit organisation's white paper Charging Ahead: New Zealand's EV Charging Infrastructure outlines current successes, challenges ahead and where New Zealand sits on the international stage.

Drive Electric board member **Eric Pellicer** says the research reveals different groups are getting involved in building charging infrastructure.

"Many councils are

developing charging stations in their areas for the benefit of the community," says Pellicer, who is also the commercial manager at Powerco.



Eric Pellicer

"For example Wellington City Council has announced plans to convert up to 100 car parking spaces for the exclusive use of car-sharing and electric vehicles."

The research shows companies like ChargeNet are working with lines companies, traditional retailers, car companies and district councils to develop more charging stations.

"Though we still have lots

of work to do, New Zealand can be proud that we're already achieving a world-class charging network," ChargeNet NZ chief executive Steve West says.

ABB national sales manager Kumail Rashid, who contributed to the white paper, says it's important to tackle some of the challenges on the horizon.

New Zealand can meet those challenges head on by learning from overseas countries and adapting their situations to suit our own conditions, he says.

"We've learnt from different countries' experiences that it's not just about getting more chargers and more sites but also more chargers per site.

"It is about future proofing because you don't want to have to be waiting 15 minutes for someone else to charge."

Making sure different types of EVs can use the same charger is another important issue that has to be addressed, he says.

Pellicer hopes the white paper will have an influence in several different areas.

"We hope it will get some discussion going amongst those interested in the topic, but it will also be used to influence those who make policy decisions."

The white paper was sponsored by ChargeNet and ABB and includes research put together from round table discussions held by Drive Electric's board and input from members.

The organisation will release more research about issues involving EVs in the coming months, Pellicer says.

Go to driveelectric.org.nz for more information. ■

Green Cabs goes electric

Continued from page 1

Initially Green Cabs will own the EVs as a way of starting the change, with incentives for the drivers to move.

Green Cabs buying the cars is not something the company will keep doing, but it has "kick-started a snowball effect", Hogg says.

A plan to put a charging station for its taxis in at Wellington Airport will help increase the uptake of EVs in the Green Cabs fleet, Hogg says.

It is a step towards easing drivers' worry about losing jobs because of time off the road charging.

"The hope with the charger going in is it will be the push the drivers' need to realise the EV revolution is real."

Green Cabs also has a



Toni Hogg

charger at its Wellington head office and drivers could also use some of car sharing company Mevo's chargers, Hogg says.

Hogg says it is the right time to introduce EVs into the fleet, with the price of the Nissan Leaf dropping.

"The Leaf will become the new Prius. It has the right amount of space and is the right price.

"Other cars have been tried but the space is too small."

She says the company is also looking at the Hyundai Ioniq, which would be a 'gold standard' car.

The company has recognisable branding with its green hybrids driving the streets, but it has chosen to go in a different direction with its EVs, which will be white with a green trim.

"We want cars to be different and people to make a conscious choice to pick an EV over a petrol car."

While Green Cabs continues to build its EV fleet, it will keep offering free Wellington CBD rides for the next four or five months to keep the EV message going.

The company has 79 cabs in Wellington and 160 in total around the country. ■

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	Model X	BEV	From \$140,650
Renault	Zoe	BEV	\$74,990
	Kangoo	BEV	\$74,990
Hyundai	Ioniq	BEV	\$59,990
	Ioniq Elite	BEV	\$65,990
	Ioniq Hybrid	PHEV	\$46,990
	Ioniq Elite Hybrid	PHEV	\$52,990
BMW	i3 Full Electric	BEV	\$75,700
	i3 with Range Extender	PHEV	\$86,900
	i8	PHEV	\$281,200
	225xe	PHEV	\$69,800
	330e	PHEV	\$89,900
	740e	PHEV	\$202,700
Mitsubishi	X5 xDrive40e	PHEV	\$152,700
	Outlander	PHEV	\$60,990
Audi	A3 Sportback e-tron	PHEV	\$69,900
Mercedes Benz	C350 e Sedan	PHEV	\$96,290
	C350 e Estate	PHEV	\$99,790
	E350 e Sedan	PHEV	\$143,890
	GLE500 e	PHEV	\$150,290
	S500 e	PHEV	\$255,000
Porsche	Cayenne S e-hybrid	PHEV	\$170,900
Volvo	XC90 T8	PHEV	\$134,900

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

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Obsession the road to design career

Continued from page 4

Brideson headed to Switzerland to collaborate with his former school pal Toby on an electric go-kart project.

It was the beginning of Brideson's passion for creating unique electric vehicles.

From 2009 to 2012 while at Designwerk GmbH, he became a specialist in electric vehicle design, along with various projects in product design.

The most successful was the DXP three-wheeled electric scooter developed for the Swiss Post.

Its narrow dimensions and three-wheeled base means it's highly manoeuvrable. Compared to the conventional scooter, the stop-go nature of the DXP can save a postal worker an average of 30 minutes per day.

The scooters are now being used for postal services around the world, with more than 5000 in operation in Switzerland alone.

DesignWerk grew from a team of three in 2009 to a group of more than 20 in 2017 and is an industry specialist in the design of electric propulsion and fast-charging systems.

"Alternative transportation has always fired me up and while at DesignWerk, I was absolutely thrilled when I had the opportunity to get started working on the Rinspeed concept cars in 2011," Brideson says.

After leaving DesignWerk, Brideson took a year out in Amsterdam where he met his fiancée Sophie. The couple moved to Bolzano, Italy, where Brideson started his own business and returned to product design.

"I love the diverse challenges that come with

designing products. Variety is the spice of life," he says.

"Car design was my dream but it's a very specialised field. However, I can apply techniques learnt from it into product design.

"Automotive design is like fashion - the trends are cyclical but new technology in composites and high-strength steels in combination with metal pressing technology allows designers to push the boundaries.

"New tooling allows more freedom with body panels, such as achieving very tight, defined edges within sheet metal."

Car design will evolve with the freedom that an electric drivetrain brings to the package, he says.

"Manufacturers will use this to strengthen their brand and we will see an ever-increasing breadth of exciting concepts on the market.

"We will also see boundaries pushed with what can be made with lightweight metals. We will also see a rise in 3D printing for manufacture and most likely development of new composite materials.

"As we see now, LED lighting has revolutionised the world and we're seeing some pretty cool applications in the automotive industry."

"Who knows how far it will evolve and what will be next?"

Vehicle interiors will also be revolutionised, he says.

"With things such as wireless technology and an electric vehicle package, designers will have much more freedom to dream up unique and spacious interiors.

"Self-driving technology will provide a huge shift in how we use vehicles and the interiors of the future will reflect that." ■

Find your Quality

USED EV CAR TYPES			
MAKE	MODEL	TYPE	PRICING RRP est.
Nissan	LEAF Generation 1	BEV	\$10k - \$22k
	LEAF Generation 2	BEV	\$16k - \$40k
	e-NV200	BEV	\$25k - \$37k
BMW	i3 Full Electric	BEV	\$40k - \$50k
Mitsubishi	i-Miev	BEV	\$13k - \$14k
	B-Miev Van	BEV	\$15k - \$17k
Renault	Zoe	BEV	\$33k - \$40k
Hyundai	Ioniq	BEV	\$48k
	Ioniq Elite	BEV	\$64k
Kia	Soul EV	BEV	\$33k - \$38k
Volkswagon	e-Golf	BEV	\$42k
Tesla	S P85	BEV	\$150k
	X 90D	BEV	\$188k
Mercedes Benz	C350 e Sedan	PHEV	\$83k
	GLE500	PHEV	\$142k - \$150k
Toyota	Plug-in Prius	PHEV	\$20k - \$40k
Audi	A3 Sportback E-Tron	PHEV	\$53k
BMW	i3 REX	PHEV	\$46k - \$80k
	225xe	PHEV	\$60k
	330e	PHEV	\$60k - \$80k
	X5 xDrive40e	PHEV	\$140k
	i8	PHEV	\$150k - \$170k
Mitsubishi	Outlander	PHEV	\$31k - \$57k
Volvo	XC90 T8	PHEV	\$130k

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The Car Company Nelson	03 546 6550	Nelson
Harwood Cards	027 492 2218	Auckland
Cash Back Cars	0800 100 645	Whangarei
Metro Christchurch	03 348 5855	Christchurch
PlugN Drive NZ	021 535 5270	Auckland
Farmer Auto Village	07 578 6017	Tauranga
Gilmour Automotive	03 474 1670	Dunedin
Gullivers	0800 221 616	Auckland
Wholesale Autos	0800 405 065	Auckland
AMC Motors	09 837 8088	Auckland
EV Direct Imports	021 100 7900	Blenheim

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Electric vehicles the way of the future

BY MARK GILBERT

A friend recently recounted the story of his family who lived on a remote farm in Northland in the early part of the last century.

Back then the children took turns flicking on the light switch each evening, such was the wonder of this newfangled thing called electricity.

Surely none of them could have dreamt how much it would transform the world – and continues to do so.

While the uptake of electric vehicles is gathering momentum, I'm excited about some larger scale initiatives, driven by public bodies such as Auckland Transport, in the electric vehicle space.

Auckland Transport is a council controlled organisation focused on delivering sustainable transport outcomes for the city. Electric vehicles play a key part in that.

Auckland Council and Auckland Transport, through its sustainability and low-carbon transport programmes, see electrification of the transport system as a key ingredient in reducing emissions and becoming a more sustainable city.

The electrification of 95% of Auckland's rail network from diesel trains over the past two years is a real success story. The result is more and more people using public transport.

Auckland Transport also recently tried to find a partner for a progressive car-share programme using electric vehicles. Few EV models were on the market at that time and none was priced for the mainstream.

That's starting to change with competitive new car pricing from VW and Hyundai, which might deliver a better outcome.



Mark Gilbert is an independent director of Auckland Transport and chairman of Drive Electric Inc. He has championed electric vehicles in New Zealand since retiring from the BMW Group in 2012 and is a member of the Minister of Transport's Electric Vehicle Programme Leadership Group. He owns and drives a New Zealand-new BMW i3 REX. mark@driveelectric.org.nz

We will monitor the success of City Hop, Auckland's incumbent car-share company, and that of Wellington start-up Mevo which will launch its car-share programme using the Audi A3 e-tron PHEV.

We'll also be watching Christchurch City Council's mooted "shared drive" programme which represents fleet agglomeration of both public and private entities.

Auckland Transport is aiming to electrify its own fleet not only to reduce its emissions but also to support the Minister of Transport's vision of having more than 64,000 EVs by 2021.

To support Auckland Transport's goal, the Energy Efficiency and Conservation Authority has awarded it more than \$800,000 to install 60 electric charging points and two EV smart poles in off-street car parks and trial two electric buses on selected routes in the suburbs.

EVs will play a significant role in the future of transport for a number of reasons.

There are the obvious

environmental benefits but more EVs with one person in them whizzing around Auckland's already choked roads won't solve our con-

gestion problem – an EV or autonomous vehicle on the road is still just another vehicle on the road.

Buses carrying upwards of 80 people are the ultimate shared vehicle of the future and if they're not belching dirty diesel, then all the better.

Waste Management Ltd is another company making a difference. It's in the process of converting its fleet of waste trucks from diesel to electric and will "refuel" them from waste that's converted to electricity - a complete 360 degree operation.

A number of New Zealand's larger fleets have committed to converting 30% of their vehicles to electric by 2020. That shows businesses understand the benefits of EVs to NZ Inc and, with more mainstream pricing and more models coming to market, a consumer shift is inevitable.

Heliox, a Dutch company that converts trucks and buses from diesel to electric and provides both destination and in-journey charging, visited New Zealand recently.

Company representatives were surprised at the interest shown by Kiwi businesses looking at converting to electric-powered fleets, given advances in the technology overseas.

Heliox is also interested in the port handling equipment market, which might be another opportunity for electric conversions, given the shorter distances travelled and its stop-start nature.

Transport Minister **Simon Bridges** believes a key to delivering good EV outcomes for New Zealand is strong leadership and partnerships.

A good example of strong partnerships is shown by the Auckland Transport-led public-private EV working group which I chair.

Through initiatives like this, we can better leverage our renewable energy assets.

That will save us money (electricity is the equivalent of \$0.30c per litre), ensure the roll-out of safe public and private charging infrastructure, and make sure our roads and roadsides are ready for the technology upgrades that will help facilitate connected autonomous and electric vehicles in the future.

So it's hats off to those who are picking up on the economic, social and environmental benefits of electric vehicle technology. I could write at least another 500 words on how much I love my BMW i3.

In the meantime if you haven't already test-driven an electric vehicle - it will make you smile, especially with the fuel being delivered to your door! ■

Long term: living with a BMW plug-in hybrid

Since May 1, an *Auto Media Group* staff member has been living with a new BMW 225xe Active Tourer as part of a three-month trial to get a real feel for the operation of a plug-in hybrid in daily life.



What is it?

BMW created the 2-series Active Tourer on the same UKL platform as the Mini Countryman, making it the first ever front-wheel drive model to wear the blue and white propeller badge.

It's a direct mini-MPV

competitor to the Mercedes-Benz B-Class and is available in New Zealand with non-hybrid turbocharged petrol or diesel engines.

The all-wheel drive 225xe Active Tourer is the junior member of the BMW i-Performance range of electric vehicles, which includes plug-in hybrid models from the 3-series, 5-series, 7-series and the X5 xDrive 40e SUV.

The 225xe has two powertrains that act individually and in unison as required. Driving the two front wheels is a turbocharged 1.5-litre 100kW/220Nm three-cylinder petrol engine, while an 63kW/386Nm electric synchronous motor is responsible for driving the two rear wheels.

Therefore, the petrol engine drives only the front

wheels and the electric motor drives only the rears in silent EV mode. BMW quotes combined power and torque figures of 165kW and 385Nm with a zero to 100kmh figure of 6.7 seconds.

Three driving modes are available through the e-drive button discretely positioned on the lower centre console dashboard – they are Auto, Max e-Drive and Save.

The auto mode will combine petrol and electric drive to best effect, maximising EV usage up to 80kmh.

Max e-drive is exactly that and will give a fully electric drive up to 125kmh. But it will quickly deplete the battery.

Save mode allows the driver to save stored electricity for later or lets the petrol engine recharge the battery.

The 225xe also has regenerative brakes that pump energy back into the battery.

BMW quotes combined fuel consumption of 2.1L/100km and CO₂ emission of 49g/km. But that would depend on using the car for short urban hops, not using copious amounts of electricity-sapping air-conditioning and plugging it into a charging stations at any and every opportunity.

Because he has a 22km return commute every day from Mt Roskill to the CBD, *Auto Media Group* staff member **Robert Barry** was the most suitable person to put the 225xe through its paces.

BMW says fully charged, the 225xe battery has a pure EV range of 41km although

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Ludicrous fun in a Tesla

Continued from page 6

rear space a little tight. The glass roof option makes it feel roomier and creates extra headspace.

Dominating the interior is the massive touchscreen. At 17 inches in size, it controls anything you can think of - suspension, steering, charging, drive modes, climate control, security, the lot.

It also features a Google Maps-based navigation system, using a live data connection that facilitates live updates. Music from Spotify, Pandora and other services can be searched and played using the screen, the steering wheel or your voice - the car has one of the best voice control systems we have experienced.

Ahead of the driver, traditional instruments are replaced by another screen which features speed, power, autopilot information, range and consumption details. Systems from the 17-inch screen can be overlaid here as well.

If you have driven a Mercedes-Benz recently, some of the switchgear will feel familiar; it provides this as part of its deal with Tesla.

If there was one, slight, disappointment with the Model S, it was the interior quality. It does not feel as high end as you would expect in a \$200k plus car. The leather is of reasonable quality, the suede dash top nice, but the plastics look and feel a little 'normal' for such a unique car.

The rear boot is massive, the 'trunk' under the bonnet is tiny. The space available in early Teslas is taken up by the bio-defence air filtration system and front motor in the P100D.

We gave the Tesla a brief charge at a ChargeNet station. The Tesla uses a type 2-like connector and we were provided with a Chademo converter for our test. On a Supercharger, the Model S can gain up to 270km per hour while at home, using Tesla's supplied charger, it will collect up to 81km per hour. Maximum range is 613km, something we did not get a chance to test.

So, were we impressed? Most definitely. The P100D is a fantastic car and at this level it teaches supercars a thing or two. ■



Living with a BMW plug-in hybrid

Continued from page 13

we found it's generally around 30km in daily use, depending on driver behaviour and air-conditioning use. Basically, the harder it's driven, the less the battery recharges and vice versa.

So far in general use around the city and with the odd long run thrown in, we are averaging fuel consumption of between 4.5L and 5.5L/100km.

Although designed as a city commuter, the 225xe is more than capable of long-distance travel. Using petrol only power it will give 550km at an average consumption rate of 7L/100km from its 36-litre fuel tank.

What's it got?

Our press vehicle KHJ535 is painted in mineral white metallic paint and its standard specification includes chrome line exterior, run-flat tyres, LED headlamps, front and rear fog lamps, rear-view camera, front and rear parking sensors, parking assistant, electric folding mirrors, dual zone climate control air-conditioning, multifunction leather steering wheel, front seat heaters and navigation.

It also features BMW ConnectedDrive with intelligent emergency call, teleservices, ConnectedDrive services and apps, eDrive services, concierge service and real-time traffic information.

In addition, this 225xe was

fitted with optional equipment that included comfort access and automatic tail gate operation, 18-inch Y-spoke alloy wheels, gloss black roof rails, rear picnic tables, and finely brushed aluminium as well as pearl chrome trim finishes in the cabin.

The recommended retail price is \$69,800 plus on-road costs and the optional equipment fitted cost \$2000, taking the total price to \$71,800.

What's it like?

Inside, the 225xe looks just like any other BMW hatchback, with well laid-out controls and good ergonomics, as well as comfortable leather seats in the front and rear.

Because the electric

powertrain is rear-mounted, boot space is restricted to 400 litres. The rear seats are mounted 30mm higher than the non-hybrid models and do not fold down completely flat, but it still offers enough space for moving large objects such as flat screen televisions and the like.

When creeping along in traffic or completing a parking manoeuvre, the car will automatically use EV mode and will then seamlessly move into petrol-electric hybrid mode as its speed increases.

So far, we've found the 225xe is fun and nippy to drive. Although it's an economy focused car, it still retains some of the "ultimate driving machine" character of the BMW brand. ■

POWER DEALS FOR EV USERS

Company	EV Deal	Where	Cost to charge LEAF*
Contact Energy	Variety of Plans available – we have used Contacts Freedom plan.	Auckland Wellington Christchurch	\$6.78 \$5.84 \$4.29
Ecotricity	Ecosaver – designed with lower night rates and can buy back solar energy	Auckland Wellington Christchurch	\$5.73 \$4.75 \$4.95
Electric Kiwi	Bonus Hour of Power 1 Free Hour of Off-Peak power (9am-5pm and 9pm-7am) daily	Auckland Wellington Christchurch	\$6.69 \$6.69 \$6.36
Flick Electric #	Variety of Plans available – it uses wholesale prices direct from the spot market, plus they're fee	Auckland Wellington Christchurch	\$4.64 \$3.86 \$3.86
Genesis Energy	Variety of Plans available – we have used the Genesis flexible Classic plan with uncontrolled rates.	Auckland Wellington Christchurch	\$6.81 \$4.35 \$3.89
Mercury	EV Discount – includes 20% off your electricity costs between 11pm and 7am daily for first year	Auckland Wellington Christchurch	\$6.23 \$6.08 \$6.03
Meridian	Rest Easy EV plan - lower night rate from 9pm to 7am for a 3 year term.	Auckland Wellington Christchurch	\$5.50 \$4.65 \$3.39
Paua to the People	Using its Simple As Plan - Fixed rate, set quarterly	Wellington	\$3.35

*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, Kelburn in Wellington and Linwood in Christchurch. It will also depend on your meter type, the company you use and will also vary at the different times of the day and year eg Christchurch has significantly higher Winter rates. The rates we have used above were calculated in April 2017 using a low user cost, overnight rates, includes the daily charge and GST. It does not include extra discounts that companies have available eg Electric Kiwi's hour of power, prompt payment or online discounts, etc.

Flick Electric's prices have been calculated using an average overnight spot price of 5.5c per kWh. The Auckland plan used is their Smart Plan with Time of Use Tariffs. For Wellington, we have used their new EV tariff which will be available before the end of May.

UniQuad takes farm safety to new heights

Simon Hartley's electric and hydrogen-powered four-wheel vehicle promises to be a huge aid to farming and farm safety.

It's called the UniQuad, after the Unitec Institute of Technology in Mt Albert, Auckland, where the engineer has been developing it.

The 36-year-old has been working on the project for the past few years.

He wanted a safer more user-friendly farm vehicle to help stop the deaths associated with quads. On average, five people are killed and 850 are injured on farms each year.

Hartley's farm workhorse will be included in a static display at the National Fieldays at Mystery Creek from June 14-17.

"I developed it to be safe," he says.

"It also has zero emissions, which is good for the environment."

While those were his two key principles, Hartley also determined what farmers needed in such a vehicle.

The electric-hydrogen vehicle concept started as a quad bike but he believes quad bikes are not designed for New Zealand's farming environment.

The design evolved into a two side-by-side seat, quad-like vehicle which runs on 24 batteries. Hydrogen provides range extension.

The batteries take about four hours to charge and have a range of up to 100km.

Eleven computers share data and run the vehicle. The UniQuad also has satellite and cellphone communications, is designed to eventually have

a self-drive option and has numerous safety features.

They include a roll cage and bars to motorsport standards, great stability and a low centre of gravity.

Independent active suspension with air springs means each wheel can operate independently, climbing near vertical slopes.



Simon Hartley with his UniQuad ready for the nearly completed fibreglass bonnet to go on. The hydrogen cell is the vertical piece at the "engine" centre which resembles an upright computer hard drive.

That's ideal for New Zealand's steep country - two-thirds of its agricultural terrain is at more than 20 degrees.

The UniQuad can "step" over boulders and other objects with the height adjusted to give up to 450mm clearance.

A rear tray fits farm items, whether haybales or a dog cage, and spaces for toolkits are included throughout.

And the whole vehicle fits on the back of a ute.

A 28-litre hydrogen tank under the tray supplies the front vertical hydrogen cell. Water is the only emission – which Hartley collects to wash the windscreen.

The hydrogen tank provides enough power for three days of operation at eight hours a day.

An electric motor is in each wheel which has motorsport standard calipers and adjustable brake bias to compensate for heavy loads.



An artist's impression of the completed UniQuad.

Hartley says he's still developing some features.

One will mean the vehicle will not exceed 10kmh without the driver clicking in their seatbelt. That will allow farmers to get in and out of the UniQuad easily to open and close gates.

The UniQuad weighs 700kg and produces a grunty 1300 Newton metres (Nm) of torque.

"That's better than my twin turbo Subaru which produces about 300Nm," Hartley laughs.

"It's capable of 200kmh but will be limited to 60kmh which is the highest speed farmers are likely to need. Anything more than that and they will require a helmet."

The vehicle can also withstand a heavy collision.

It has one forward and one reverse gear, a dashboard mounted screen, brake and accelerator pedals, a steering wheel and a few buttons.

Hartley is working on a roof turret and nozzle operated from steering wheel buttons which can be used to spray weeds or to fire medicated "paint balls" at stock rather than the farmer having to use drenching guns or dips.

Once the project is completed, the intellectual property rights for the UniQuad's parts could be sold.

"It was built as a research vehicle really and it's gone a little over its \$100,000 budget," Hartley says.

But he reckons it's worth it if even only one life is saved.

The UniQuad project received funding from HydrogenNZ and support from Callaghan Innovation, Astara and Landcorp.

Unitec will officially open a vast new multi-million dollar trades, engineering and construction facility on August 23, which includes automotive training. ■



Simon Hartley takes his UniQuad for a spin around the Unitec campus roads. It has a warrant of fitness for road use without the hydrogen tank installed. Hartley is seeking approval to have the tank included for on-road regulations.



May 2

First Kiwi 3D-printed electric car being built in South Auckland

New Zealand's first 3D-printed electric car will come from South Auckland.

Ira Munn is working on **The Drop** – a three-wheeled electric car expected to be on the market by March 2018 at a cost of about \$10,000, *Stuff* reports.

He's based at Otara's Accelerating Aotearoa, a charity supporting technology education and development.

EV tour continues north

It's been a hectic time for those on the Leading The Charge tour over the last few days.

The team joined the throngs of people at the MTA100 event in Wellington for two days of promoting electric vehicles, with 860 people getting test drives in a variety of EVs.

Hyundai, Mitsubishi, VW, Audi, BMW, Tesla, Kia, Nissan and Renault Electric are some of the manufacturers along for the ride.

May 3

Electric rubbish truck hits the road

The first electric vehicle to be used exclusively for refuse collection by a New Zealand waste management company has begun operating as part of a partnership with Countdown supermarkets.

Waste Management flagged its move to EVs in September last year. The com-

pany runs a fleet of more than 200 cars and 800 trucks.

Waste Management managing director **Tom Nickels**, says it is trialling the new trucks as part of the plan to progressively shift to EVs over the next five years.

May 4

Electric vehicle Auckland special lanes trial hailed a success

A controversial trial allowing electric vehicles to access five Auckland special vehicle lanes has been hailed as a success overall by its proponent, the NZ Transport Agency.

The 14-day trial in March provided a "greater understanding of operational requirements" as well as "qualitative information relating to the value of the incentive to electric vehicle drivers", the agency says.

Trial feedback indicates most respondents (94%) would use additional special vehicle lanes long-term.

May 5

Wrightspeed delay reprieves Wellington trolley bus fleet

A delay in testing the NZ Bus Wrightspeed prototype bus means that the Go Wellington trolley bus fleet will soldier on to October rather than finish up in June as initially expected.

Greater Wellington Regional Council chairperson **Chris Laidlaw** confirmed to *Fairfax NZ* that the trolley bus fleet would continue until later this year as testing scheduled for late 2016 is

now just beginning on the **Wrightspeed powered bus**.

Wrightspeed founder **Ian Wright** was in Wellington as a guest speaker for the MTA100 on April 29, confirming to the audience that the company was yet to deliver its first bus.

May 8

Electric cars for disabled kids

Christchurch BMW played host to the latest Gobabygo handover event, which sees disabled children become mobile after they're given small electric cars.

Garden City and Riccarton Rotary branches paid for the cost of the cars, and supplied volunteers for the handover at the dealership in Manchester Street.

Gobabygo board member **Bruce Jackson** says three cars were handed over on the day, including one for six-year-old Laszlo Walker.

May 9

Tesla posts bigger than expected loss

Tesla is reporting a US\$330 million (NZ\$478 million) loss for the first three months of the year ahead of the Model 3 sedan launch.

That contrasts with predictions of a US\$282 million (NZ\$408 million) loss a year earlier, *CNN* reports.

The company posted revenue of US\$2.7 billion (NZ\$3.9 billion), more than double from a year earlier, fuelled by shipping a record 25,051 cars.

Meridian Energy boosts EVs in fleet

Half of Meridian Energy's vehicle fleet will be electric by June 2018.

At the moment 20% of its fleet are EVs and this will increase in the future, as more models that suit the company's diverse needs become available.

Neal Barclay, general manager for retail at Meridian says if organisations build EVs into

their fleets, over time these corporate initiatives will help increase vehicle availability and affordability for everyone.

May 11

Businesses can book an electric car at New Zealand's three main airports

Regular business flyers going to Auckland, Wellington and Christchurch for day trips can now book a Volkswagen e-Golf for their day's travel.

The initiative is aimed at "normalising" electric vehicle (EV) technology and testing the public's desire to go electric, *The New Zealand Herald* reports.

Europcar and Volkswagen New Zealand have teamed up with the airports at the three main cities for the Electric Day Pass (EDP) programme.

Run your electric car off your solar roof

Tesla's taking orders for its "solar roof" – tiles which generate energy from the sun without the need for traditional roof-top panels.

It's part of **Elon Musk's** company's aim to accelerate the world's transition to a sustainable energy future under its electric car brand.

The solar roof tiles, which will be available in most countries, were revealed in October. From the ground, the energy generating ones are almost indistinguishable from non-energy tiles in the same package.

Electric added to vehicle register

The national Motor Vehicle Register has been updated to reflect the range of new drivetrains now in vehicles being sold in New Zealand.

The addition of electric and a range of hybrid options take the list of engines that a car can be registered under from six to 16.

The new definitions will become active on July 1.

Continued on page 18

Continued from page 17

May 15

Rise in mileage rates

Employers will be shelling out slightly more in mileage payments to their staff in the 2017 financial year.

Mileage rates for both petrol and diesel fuel vehicles have been increased by Inland Revenue (IRD) to 73 cents per kilometre, up from 72 cents.

This year IRD has also set mileage rates for hybrid and electric cars.

May 17

Increased BMW i coverage

BMW Group New Zealand is extending its i network across the country.

Wellington's Winger BMW and Christchurch BMW will join Auckland City BMW as official i sales dealers from July 1.

The remaining dealer networks' capabilities are being extended to include full BMW i service, enabling the company's entire network to support both private and corporate customers in New Zealand.

May 23

Dealer leads EV discussion

Enthusiastic owners of Mitsubishi Outlander PHEVs – and prospective buyers – got together last week at an Auckland dealership function.

Simon Lucas Mitsubishi hosted the event, celebrating the launch of the updated 2017 version of New Zealand's most popular new plug-in car.

A panel discussion, led by dealer principal **Simon Lucas**, discussed the electric vehicle market, their usage and the Outlander.

Subaru going electric

Subaru is considering electric versions of its existing models for the carmaker's first foray into the technology.

It aims to bring a plug-in hybrid model to market next year and an all-electric vehi-

cle by 2021.

Subaru is joining other car makers in pouring money into battery-powered vehicles amid tightening emissions rules, *Bloomberg* reports.

May 24

Australian lobby group for electric cars established

The Electric Vehicle Council has been launched in Canberra this week to drive electric car uptake in Australia.

A \$390,000 grant from the Australian Renewable Energy Agency will bolster the council, the grant announced by federal environment minister Josh Frydenberg as the government aims to increase electric vehicle uptake, reducing emissions, the *Sydney Morning Herald* reports.

"Here in Australia, we could be going better than we are," Frydenberg says.

China's JAC says EV tie-up with VW approved

China's JAC Motors says it has received government approval for a US\$734 million joint venture with Volkswagen to produce 100,000 electric cars per year.

Volkswagen, the world's largest automaker, is also the market leader in China. It sold four million cars in the country last year but only a few hundred of them were "green" despite rapid growth in electric vehicle sales in China, reports *business times.com*

China has for years been the world's largest automotive market but also more recently became the top market for electric vehicles, helped by government purchase incentives.

Electric car makes sense for around town: AA

It makes economic sense to buy an electric car for driving around town, and to hire a big petrol-driven car for annual holidays with the family, the New Zealand Automobile Association (AA) says.

The organisation says it would also make sense to use an electric car for a few extra-long trips besides summer holidays, *Radio NZ* reports

AA principal adviser **Mark Stockdale** bases his logic on the fact that people use their cars for short trips around town most of the time, which is ideal for electric vehicles.

Auckland car sharing now electric

An electric car has been added to an Auckland car sharing service.

Mercury provided the EV – a Nissan Leaf, and Cityhop the 'by-the-hour' car sharing platform.

Together they're offering a transport alternative that can ultimately help address Auckland's transport challenges.

May 25

Germany must invest heavily to keep up in EVs: Merkel

Germany and its auto industry must invest heavily to ensure it is not left behind by the shift to electric cars, chancellor **Angela Merkel** says.

Her plea came this week as she laid a foundation stone for a new battery factory for Daimler unit Accumotive.

"We need long-term horizons and companies that invest in the future," Merkel says. "It is important that electric mobility is ready for the market as quickly as possible."

While Germany's automakers are ramping up production of electric cars, most batteries they use are made in Asia, prompting fears Germany could lose its leadership in the core EV technology of the future, reports *Reuters*.

May 26

EV fleet hits 3500

New Zealand's electric vehicle fleet hit a new milestone today, hitting 3500 vehicles.

The Ministry of Transport reported the number in a tweet this afternoon, pointing

out the target for 2017 is to hit 4000 by the end of the year.

With over 100 Nissan Leafs alone hitting the road each month, that target is likely to be significantly exceeded. Tesla entering the market and, Hyundai launching the Ioniq and Mitsubishi updating the Outlander PHEV are also boosting sales.

Germany makes progress with China on EV quotas

Germany has made good progress with China on how to introduce quotas aimed at producing more electric vehicles, says foreign minister **Sigmar Gabriel**, adding that more details needed to be worked out, reports *Channel News Asia*.

Beijing is considering easing its proposed quotas after the automotive industry pushed back over the scale and pace of the plans.

Germany says it supports China's plan to put more EVs on its roads as long as the drive is not discriminatory against foreign carmakers.

May 29

BMW unveils new electric scooter concept

BMW has unveiled yet another electric vehicle concept as part of its Vision Next 100 series, but this time for BMW Motorrad.

The scooter-like concept is called 'The BMW Motorrad Concept Link' and it is supposed to represent BMW's vision for the future of electric transport on two wheels, reports *Electrek*.

Alexander Buckan, head of vehicle design at BMW Motorrad, explains: "The BMW Motorrad Concept Link is not based on today's concepts, but rather meets the basic functionality needs, the technical architecture and the digital reality of today's users. The technical realities of electric drive – such as the flat energy packs in the underfloor and the compact drive on the rear wheel – allowed us to create a highly distinctive design which shapes a new segment. ■"

EV fleet hits 3500

New Zealand's electric vehicle fleet reached a new milestone last month, hitting 3500 vehicles.

The month ended well over the line, at 3576 units. To stay on government targets the fleet needs to get to 4000 by the end of the year on its way to 64,000 by the end of 2021.

The fleet is now made up of 840 new battery electric vehicles, including the NZ Post Paxters, 1611 used import battery electric vehicles, 918 new plug-in hybrids, 137 used import plug in hybrids and 70 heavy electric vehicles.

The Ministry of Transport says in May there were 174 used import plug-in vehicle registrations, and 105 new, for a total of 279.

That is a huge 220%

USED IMPORTS MAY 2017		
Vehicle Make	Vehicle Model	Total Vehicles
NISSAN	LEAF	131
BMW	I3	5
MITSUBISHI	I-MIEV	3
KIA	SOUL	2
NISSAN	E-NV200	2
TESLA	MODEL S	2
VOLKSWAGEN	E-UP	1

increase on the 87 vehicles added to the fleet a year ago.

The used import Nissan Leaf was again the biggest selling plug-in, on 131 units.

The second most popular used EV was the BMW i3 on five, followed by the Mitsubishi I-Miev on three.

There were two each of the Kia Soul, Nissan E-NV200 and Tesla Model S, and a sin-

gle Volkswagen E-Up.

The Tesla Model X was the most popular

new electric vehicle on 15 units, just one ahead of the Hyundai Ioniq on 13.

The Tesla Model S was third on 12, followed by the BMW i3 on 5.

The Mitsubishi Outlander

was the most popular new plug-in hybrid on 21 registrations. A new model was second, the Audi Q7 on four units, followed by the A3 E-tron and Porsche Cayenne on three. ■

NEW MAKES AND MODELS MAY 2017

Make and Model	May 2017
ELECTRIC	
Tesla Model X	15
Hyundai IONIQ	13
Tesla Model S	12
BMW I	5
PLUG-IN HYBRID	
MITSUBISHI OUTLANDER	21
AUDI Q7	4
AUDI A3	3
PORSCHE CAYENNE	3
MERCEDES-BENZ C-CLASS	2
VOLVO XC90	2
BMW I	1
BMW X5	1



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or rachel@automediagroup.co.nz
or phone Rachel Hadfield
on 021 778 745

NZs EV Charging Infrastructure

Fast Charger Locations – North Island

Kawakawa - 4 State Highway 1, Kawakawa 0210
Dargaville - 111 Totara St, Dargaville 0310
Tikipunga - Paramount Plaza, 1 Wanaka St, Whangarei 0112
Whangarei - Northpower Substation, 11 Alexander St, Whangarei, 0110
Raumanga - McDonalds, 130 Tauroa St, Raumanga, Whangarei 0110
Kaiwaka - 1 Kaiwaka-Mangawhai Rd, Kaiwaka 0975
Warkworth - New World, 6 Percy St, Warkworth 0910
Silverdale - Kings Plant Barn, 17 Hibiscus Coast Highway, Silverdale 1025
Albany - 186 Don McKinnon Drive, Albany, Auckland 0632
Hobson St - 21 Hobson St, Auckland, 1010
Z Beach Rd - 150 Beach Rd, Auckland 1010
Newmarket - 1 Gillies Ave Newmarket, Auckland 1023
Greenlane McDonald's - 356/320 Great South Rd, Greenlane, Auckland 1051
BP Pakuranga - 322 Pakuranga Rd, Pakuranga Heights, Auckland 2010
Z Botany Downs - 550 Te Irirangi Dr, Botany Downs, Auckland 2013
Airport Shopping Centre - 400 George Bolt Memorial Dr, Auckland Airport 2022
Z Skyway - George Bolt Memorial Dr, Auckland Airport 2022
Takanini Village - 30 Walters Rd, Takanini, Auckland 2112
Thames - 505 Mackay Street, Thames 3500
Tairua - Tokoroa Rd Carpark, 6 Tokoroa Rd, Tairua 3508
Te Kauwhata - 16 Wayside Rd, Te Kauwhata 3782
WEL Networks - 114 Maui St, Waikato 3200
Hamilton - Tesla Supercharger (x4), Te Rapa Rd & Warere Dr, Hamilton 3200
Ruakura - Waikato Innovation Park, 9 Melody Ln, Ruakura, Hamilton 3216
Raglan - 43 Bow St, Raglan 3225
Tauranga - The Strand, Tauranga, 3110. (BYO cable)
Mt Maunganui - Bayfair, 19 Girven Road, Mt Maunganui Rd 3116
Cambridge - 73 Queen Street, Cambridge 3434
Te Awamutu - 10 Scout Lane, Te Awamutu 3800
Whakatane - i-SITE, 30 Quay St, Whakatane 3120
Rotorua - 1134 Haupapa St, Rotorua 3010
Taupo - 1 Kaimanawa St, Taupo
Turangi - 1 Pihanga Rd, Turangi 3334
New Plymouth - 66 Courtenay St, New Plymouth 4310
Waiouru - State Highway One & Hassett Dr, Waiouru 4861
Napier - 206 Dickens St, Napier 4110
Hastings - 100 Queen St W, Hastings, 4122
Mangaweka - 2 Koraenui St, Mangaweka 4797
Waipukurau - 34 Russell St, Waipukurau 4200
Palmerston North - i-SITE, The Square, Palmerston North, 4410
Otaki - 155-163 Main Hwy, Otaki 5512
Masterton - 3 Dixon St, Masterton 5810
Porirua - 2 Serlby Pl, Porirua 5022
Featherston - SuperValue, 42 Fitzherbert St, Rimutaka Hill, Featherston 5710
Upper Hutt - 24 Queen St, Upper Hutt 5018
Lower Hutt - Dowse Art Museum & Dowse Square, 1 Stevens Grove, Lower Hutt 5010
Z Petone - 60 Hutt Rd, Petone, Lower Hutt 5012
Z Vivian Street - 174 Vivian St, Te Aro, Wellington 6011



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

Fast Charger Locations – South Island

Takaka - 16 Willow St, Takaka 7110
Nelson - Millers Acre Carpark, 37-39 Halifax St E, Nelson, 7010
Richmond - Tasman District Library, 11 Mcglashen Ave, Richmond 7020
Greymouth - 13 Tarapuhi Street, Greymouth 7805
Kaikoura - 51 West End, Kaikoura 7300
Northwood - New World, 2 Mounter Ave, Northwood, Christchurch 8051
Addington - Z Moorhouse Ave, 40 Moorhouse Ave, Addington, Christchurch 8011
Little River - 4235A Christchurch Akaroa Rd, Little River 7591
Rakaia - Rolleston St, Rakaia 7710
Timaru - 26A North St, Timaru 7910
Waimate - 125 Queen Street, Waimate 7924
Oamaru - Eden St Carpark, 3 Eden St, Oamaru 9400
Hampden - 33 Lincoln St, Hampden
Dunedin - Filleul St Carpark, 193 Moray Pl, Dunedin 9016
Balclutha - 23 Charlotte St, Balclutha 9230
Invercargill - 116 Esk St, Invercargill, 9810