

# The evolution of the EV.



#changematters

## The challenge

At Contact, we're committed to creating a sustainable future. As part of our commitment, we're doing all we can to reduce our emissions and help our customers reduce theirs.

## The solution

Electrifying our fleet and supporting the public to make the switch to EVs. Given New Zealand's electricity generation is mostly renewable, this is a logical step in reducing emissions.

## The results

More than half our fleet is now made up of EVs. And the uptake amongst our customers is growing too.

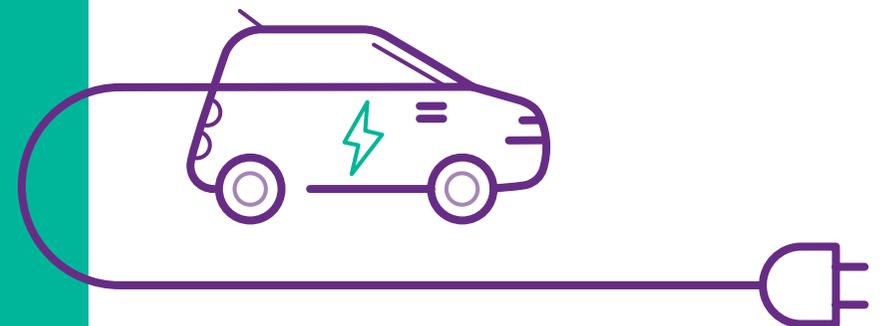
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## Converting our vehicle fleet to EVs is a natural progression for Contact. It makes sense for the smaller vehicles now, and, when the technology allows, our larger vehicles too.

We're proud of the speed we've transitioned to EVs. 52% of our fleet is now powered by electricity and they're predominantly charged on our premises. We also make our chargers available to staff for their own EVs for free.

Contact has also partnered with Optifleet and Thundergrid and has secured EECA funding to support customers with their EV transition. Optifleet helps customers to review which vehicles in their existing fleet can go electric and Thundergrid provides an end-to-end EV charging solution to ensure the fleet is never without charge.

**"We're not just talking about them. We're getting into them."**



## How EV emission control works.

Running an EV is probably one of the best ways to reduce emissions. Compared to a petrol-powered vehicle, the carbon savings are around 80%. This is because of the inherent efficiency of the vehicle itself and the very clean fuel it runs on – electricity, which for the most part is renewable.

The laws of thermo-dynamics mean even the most efficient internal combustion engine will always lag behind in this area. It's worth noting that the emissions from operating a fossil fuel powered vehicle will exceed the embodied emissions from its manufacture.

On a whole-of-life basis an EV easily makes sense, with 60% fewer CO2 emissions across the lifecycle of the vehicle when compared to a petrol vehicle (EECA lifecycle assessment report).

## What about running costs?

As verified by EECA, the fuel running cost of an EV is the equivalent of paying just 30 cents a litre, approximately 15% of the cost of running an equivalent sized petrol vehicle.

Another advantage is there are only around 20 moving parts in an electric engine, compared with nearly 2,000 in an ICE (internal combustion engine). This means an EV engine requires less servicing during its lifetime.

In terms of range, we've found that a single charge on a typical EV is more than enough to cover the average distance travelled by motorists on most days of the year.

## An example from our fleet.

At our geothermal sites, all the pool vehicles have been replaced with full EVs. Electric vans have replaced the utes, though in the future we hope to see EV utes on the market as well.

One vehicle (a 24kWh Nissan Leaf) plays a more unique role. It's stationed at Taupō Airport for our staff to use when they visit the Wairakei power station, about a 40km round trip. Instead of using rentals, this car is saving us around \$42,000 annually. This has helped us reduce our emissions by 82% for these journeys (when compared with using petrol). We've also installed a charger at the airport, which anyone can use for free.

## Leading the charge.

Contact is also getting involved in growing New Zealand's Electric Highway and making charging more accessible.

# #change matters

In August 2018, we partnered with ChargeNet and Wellington City Council to install three 50Kw electric vehicle fast-charging stations in Wellington. For 20c a minute and 25c a kW, just twenty minutes on one of these will get you through to Levin.

The new chargers are being used more and more each month, becoming a regular charging point for a growing number of local taxis and courier vans. Our two best performers at Grey and Barnett Streets are in action over 350 times a month now.

With the Ministry of Transport's goal of reaching approximately 64,000 EVs on our roads by the end of 2021, the demand for charging stations will only grow.

## Where to from here?

There are other innovations that we are exploring that could accelerate this change.

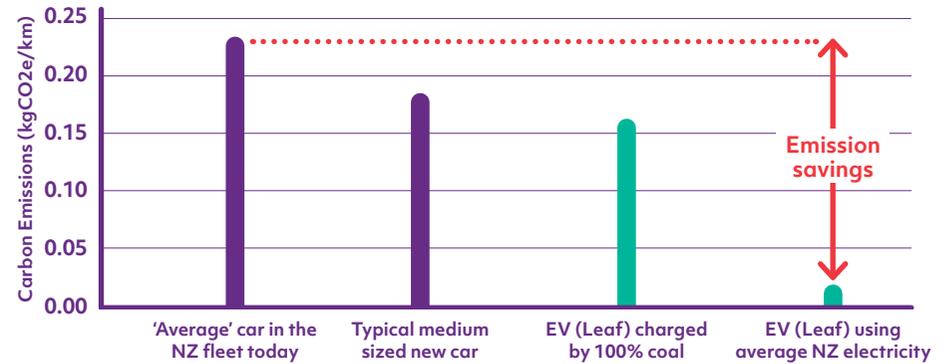
One of the challenges is the potential additional power demands that might be made on a system when so many EVs are on the road. There are some solutions that Contact is exploring.

One option is enabling customers to recharge their EVs when there is lower electricity demand and grid electricity generation is more renewable. Managed by a smart charger, EV charging would take place outside of peak periods – for example, late evening or overnight.

Another option is two-way powering. The technology already exists where the power connection doesn't just recharge the vehicle, but can also, when required, add power back to a facility, helping power part of the building's power needs. That truly would be putting our energy where it matters.

The evolution has already begun.  
**And that's a change that really matters.**

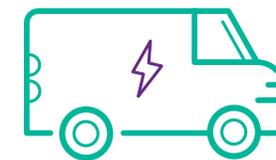
## The next car you choose makes a huge difference to emissions:



Data source : [www.transport.govt.nz](http://www.transport.govt.nz)



**100%**  
of our passenger fleet will be fully electric by 2023



**100%**  
of our vehicle fleet (including all commercial vehicles) will be zero emissions by 2030

**If you're ready to start your #changematters journey get in touch with James Carberry, Head of Sustainable Opportunities: [james.carberry@contactenergy.co.nz](mailto:james.carberry@contactenergy.co.nz) M: +64 27 304 7720**