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operation by 2012 and, more importantly, will be legislating that 50% of automotive manufacture will be EVs by 2020.

Governments are also assisting with the deployment of infrastructure to support EVs. Electric charging points are the most common form of infrastructure, including charge points in such places as shopping centre car parks and airports.

Better Place Australia is working on a wall mounted charge spot for domestic use which will use single phase power and take between 3-8 hours to charge. Pole mounted charge spots, which will be located in car parks, use three phase power and will take between 3-4 hours to charge a battery. The other big initiative will be the construction of charge Battery Switch Stations where a driver will simply drive into a facility, much like a service station, and the battery will be exchanged for a charged one enabling drivers to gain much longer range for the vehicles. The whole exchange process takes less than 2 minutes. I encourage you to visit Better Places' website, at <http://australia.betterplace.com>.

The future is very clear and it will be important that the industry here in Australia is ready for the introduction of EVs, which are expected to commence in numbers in 2012. From a training perspective, we need urgent action on a national training package that takes into account the new technologies that are about to reach our shores. The MTA will have a place on the soon to be formed National Automotive Training Body and will be working hard to ensure that we are in the best possible position to guarantee that the industry has the skilled workforce we will need.

I would like to close this edition of Torque Time with a quote from a famous historical figure.

"A customer is the most important visitor on our premises. He is not dependent on us. We are dependent on him. He is not an interruption in our work. He is the purpose of it. He is not an outsider in our business. He is part of it. We are not doing him a favour by serving him. He is doing us a favour by giving us the opportunity to do so."

So are these the words of a famous American sales guru? No, they are the words of another famous guru, Mahatma Gandhi.

Electric vehicles: how do they go in the real world?

In the years to come, more WA motorists will be behind the wheel of an electric vehicle. But what are they like to drive? Is it a brave new world or are the differences barely noticed? Motor enlisted two independent testers to find out.

First, an experienced motoring writer put the first mass-produced EV on the Australian market, the Mitsubishi i-Miev, through its paces on Perth streets.

Then we looked to two wheels and asked a scooter rider who fits the 'typical' demographic – female, lives near the city and uses a scooter for commuting – to swap the fuel-powered version for Vmoto's E-Max electric scooter.

The verdict from both was similar. There were a lot of similarities between electric and petrol-powered. What made the biggest impression was the lack of noise of the electric version and their instant and sustained acceleration.

Electric vehicle test: the i-Miev

Mitsubishi won the race to get a mass-produced small electric vehicle into the Australian market and is already selling its all-electric i-MiEV four-seater small car here.

One of the things that is most striking is that there are more similarities between EVs and conventional cars than you might expect. The Mitsubishi i-MiEV, for example, has air conditioning, two airbags, power windows and can seat four people (albeit at a squeeze).

It has an accelerator and a brake pedal just like a normal automatic car, and all the features you would expect on a typical light car. It is even expected by Mitsubishi to get a four-star safety rating from ANCAP when it is eventually crash tested.

But there are some adjustments that drivers new to electric motoring will have to make.

When stationary, the only way you can tell the i-MiEV is running is by the green "READY" light on the dash. At low speed, the only sound it makes is the occasional small stone moving under its tyres.

The i-MiEV's electric motor produces 47kW of power and 180Nm of torque, with the latter available from zero rpm, such is the way electric motors produce their torque. It accelerates well



and though silent at low speed, at 100kmh it sounds like a front loading washing machine on the spin cycle.

It stops, goes and handles just fine for a light car, and with the torque characteristics of the electric motor, it actually accelerates surprisingly well. Mitsubishi says it can travel up to 160km on a single charge.

Electric scooter test: Vmoto E-Max

It was a similar familiarisation process for our electric scooter correspondent. The main thing that required getting used to was the complete lack of noise the Vmoto E-Max 110S made – it was so quiet that we couldn't tell if it was running or not.

However, once moving this was a positive and the machine was so quiet that it drew comment from pedestrians.

Similarly, our correspondent noticed the extra weight of the electric scooter immediately – a necessarily evil when you're packing extra battery power – but as soon as the two-wheeler got moving, the ride was smooth and the scooter was surprisingly easy to control and manoeuvre.

The E-Max felt stable and comfortable, with its extra height giving a feeling of increased safety because the traffic can see riders better and tends to take more notice. The flipside is that, at average height, it's a stretch to reach the ground.