**We Will All Drive Electric Cars**

*By Matthew Stuart, FIMI, Senior Manager for South East Asia, the Institute of the Motor Industry (UK)*

Electric cars have been around for a while but have not really gained traction and popularity until recently, thanks to the efforts of pioneers like Tesla. Although Tesla is not the first company in the market to introduce electric cars, they are definitely a forerunner in their aspirations to make electric vehicles accessible to all mainstream consumers. It has been reported that they are even [willing to give their patents away to competitors](http://www.wired.com/2014/06/tesla-just-gave-all-its-patents-away-to-competitors/), to accelerate the development and adoption of electric cars.

Tesla cars are not available in Malaysia yet, but other carmakers have already been introducing their fully electric vehicles. The first was the Mitsubishi Innovative Electric Vehicle (i-MiEV), followed by the world’s best selling electric car, the Nissan Leaf. Consumer uptake has yet to be significant here but interest in electric cars is certainly growing and there are good reasons for this.

**Why Electric Cars**

For one, electric cars do not run on fuel so motorists can reduce their carbon footprint and need not worry about fuel price hikes. Secondly, vehicle owners can charge their cars at home. The i-Miev model for example, can travel up to 150km on a full charge. Service maintenance for electric vehicles is also minimal as compared to conventional cars [according to some sources](http://paultan.org/2013/03/21/mitsubishi-i-miev-launched-in-malaysia-for-rm136k-the-first-all-electric-vehicle-to-be-sold-in-this-country/), as it only require the occasional tire alignment, replacement of air-conditioner filter and brake fluid and the standard diagnostic checks to determine the integrity of the battery. Although there have been concerns about the cost of the battery replacement in electric vehicles, for some car models, the battery comes with a five year warranty and retains up to 80 percent capacity after that period.

**Support from Industry and Government**

On the industry front, various initiatives and campaigns have been introduced to encourage the use of electric cars in Malaysia. Apart from the tax incentives provided by the government including import and export tax exemptions to spur electric car ownership, [Malaysia’s first electric vehicle (EV) sharing programme](http://www.thestar.com.my/News/Nation/2014/05/08/Electric-vehicles-on-the-road-soon-Sharing-programme-to-start-in-August/) for the public was introduced recently, whereby car users are charged hourly based on a pay-per use concept.

Called Cohesive Mobility Solution (COMOS), the programme is the result of an alliance between Malaysian Automotive Institute (MAI), CMS Consortium and Malaysian Green Technology Corporation (Greentech Malaysia) and the group aims to increase the electric vehicle car fleet to 3,500 units nationwide by 2020. In line with the programme, there will be an increase in vehicle charging stations as well to augment the existing public charging stations available in Klang Valley.

That is not all. In keeping with the 2014 National Automotive Policy’s aim to transform Malaysia into a regional energy-efficient vehicle (EEV) hub, Malaysia has also announced that it will be setting up [ASEAN’s first lithium ion battery plant here](http://www.theedgemalaysia.com/in-the-edge-financial-daily-today/274256-msia-to-set-up-aseans-first-lithium-ion-battery-plant-for-vehicles.html) for electric and hybrid vehicles. This may translate to cheaper batteries for electric vehicles due to economies of scale and help reduce the price of electric vehicles ultimately.

With all these incentives and developments in place, the rise of electric vehicles in Malaysia looks inevitable. The next question is whether the industry has the right expertise to maintain these cars?

**The Maintenance Aspect**

Maintenance of electric cars may appear simple to the laymen but pose a higher risk to car technicians. Technicians need to know how to disconnect the high voltage electrical system safely when working on electric vehicles. Additional safety practices need to be in place such as the use of high voltage resistant gloves and the removal and maintenance of electric vehicle batteries is considered a ‘high risk’ task. Understanding the wiring of the system for electrical cars is similarly important.

If technicians are not adequately trained to handle maintenance of cars driven by high voltage systems, there may even be casualties from electric shock, fire, explosion or chemical skin burns. Those in the breakdown recovery and emergency service sectors face similar risks.

To ensure that technicians are trained to identify hazards when working on electric vehicles as well as how to prepare such vehicles for repair activities, the Institute of Motor Industry (IMI) has developed a range of industry-wide electric vehicle qualifications that cater for the needs of retailers, service and repair outlets, emergency services, and roadside assistance organisations. The qualification is maintained on a rolling three-year basis to ensure standards are maintained as technology develops.

If we are all going to be driving electric cars in the future, it is critical for carmakers to be prepared with people who can handle the new technology.