

The drive for electric vehicles in Singapore

By **Sandra Seah**



With unpredictable oil prices, combined with global-warming concerns and a disdain for pollutive technologies, the stage appears to be finally set for Electric Vehicles (EVs) to end the dominion of internal combustion engines (ICEs). EVs are increasingly being seen as a sustainable mode of transport worldwide as they are more efficient than ICEs, and can help reduce carbon emissions. Singapore is likewise receptive to the prospect of EVs as the Republic can reduce up to 4 percent of its land transport sector's carbon emissions by 2020 if just 2 percent of its vehicles, or 16,000 vehicles, convert to electric power.

EV taskforce

Since May 2009, a multi-agency taskforce chaired by the Energy Market Authority (EMA) and Land Transport Authority (LTA), and comprising members from the Agency for Science, Technology and Research (A*STAR), the Economic Development Board (EDB) and the National Environment Agency (NEA), has been set up to test bed EVs and assess the benefits and applicability of adopting EVs in Singapore. The introduction of EVs in Singapore's transportation landscape presents a number of challenges especially around infrastructure requirements and consumer acceptance. As such, the test bed is meant to address issues of the operation and deployment of charging infrastructure, consumer behaviour around charging and range anxiety associated to battery power availability, and the general performance of the EVs on Singapore roads.

EV initiatives

A multi-faceted approach has been adopted to enhance the deployment of EVs in Singapore. For instance, the EV Taskforce has invited companies to participate in the test bed by purchasing EVs, and the first batch of EVs (Mitsubishi i-Mievs) is expected to arrive in Dec 2010. Other models (Renault and Nissan) may be available from 2011. Additionally, owners of hybrid, compressed natural gas and electric cars currently enjoy a 40 percent cut in their Additional Registration Fee, which is the main car tax.

To complement the efforts of the EDB in attracting and nurturing high value, knowledge-based manufacturing and research activities in Singapore, automotive companies can also register vehicles used for Research and Development (R&D) activities and testing in Singapore under the Transport Technology Innovation And Development Scheme (TIDES) jointly administered by EDB and LTA. Vehicles licensed under TIDES will be issued with "Special Purpose Licences" and the yearly fee to be paid upon approval of application by LTA is only S\$1,600 (approx US\$1,159) per licence. The approved vehicles will also qualify for an exemption of custom duties.

EV charging stations

Spring Singapore and EMA, together with industry partners and government agencies, have co-developed a Technical Reference for EV Charging Systems. The Technical Reference includes electrical installation requirements as well as safety requirements for EV charging stations and is intended for use by engineers, designers, operators and licensed electrical workers. The Technical Reference will apply to EV charging stations in public and private car parks, public places and private residential premises.

The EMA has also called a Request for Proposal (RFP) on 23 April 2010 to select an EV Charging Service Provider (CSP) to roll out a network of EV charging stations in Singapore. The CSP will be required to manage, on behalf of EMA, all aspects of the implementation of the EV charging infrastructure system and ensure that all EV public charging stations comply with the Technical Reference. In particular, the CSP is expected to design, develop, deploy and operate an EV charging infrastructure which fulfils the requirements of major EV manufacturers as well as the back-end settlement mechanisms for payments to electricity suppliers. The CSP is also expected to provide EV test-bed users with a reliable and competitively-priced service for the charging of their EVs and obtain data on usage patterns of EV charging stations and other user feedback. The RFP tender closes on 20 May 2010.

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