

Infrastructure to address range anxiety and scepticism

Range anxiety, the concern that a vehicle will run out of battery before reaching a destination, is a major consumer hurdle and remains one of the top reasons people are hesitant to drive electric vehicles (EVs). This is also why many may flock to hybrid electric vehicles (HEVs), says Patrick Tay, deals partner, economics and policy at PwC Malaysia.

It is closely linked to the lack of infrastructure such as public charging stations, he adds, especially since Malaysia has a “balik kampung” season where they prefer to drive to their hometowns instead of taking public transport.

“Three or four occasions a year, our cities empty out because people drive back to their hometowns and it’s anywhere between 150km and 350km. On the highways, there are charging stations, but the limitation is that each charge takes 20 to 30 minutes, and that is bound to create congestion,” Tay explains.

For Malaysians to be comfortable driving EVs, more charging stations are needed, says Azrul Reza Aziz, CEO of Malaysia Automotive, Robotics & IoT Institute (MARII).

In 2021, the global average was 10 EVs per charger. The China market is pulling the global average downwards with seven EVs per charger, with 40% of those being fast charging. Malaysia’s EV-to-charging station ratio currently stands at 22, he adds.

Malaysian Investment Development Authority (MIDA) CEO Datuk Wira Arham Abdul Rahman notes that charging infrastructure, regulatory policies, vehicle service points and road infrastructure are important factors that influence the car-purchasing behaviour of Malaysians, particularly in the context of shifting from vehicles with internal combustion

As the government’s goal is to have 10,000 charging points by 2025 from 978 currently, he notes that the number of charging points will need to increase in tandem with the sustained adoption of EVs. He adds that a balance must be struck to ensure access to adequate charging infrastructure for EV users, as well as good utilisation of the infrastructure.

Over just nine months, Gentari has deployed more than 160 charging points in Malaysia and has become the largest fast-charging direct current (DC) network in the country. Its goal for 2025 is to have 9,000 alternating current (AC) and 1,000 DC chargers.

However, the deployment of charging infrastructure requires substantial investment. Almost 75% of the investment cost is for charging equipment and upgrades to the power infrastructure. Therefore, Shah Yang says it is important for costs to be kept as low as possible.

“Support from the government in the form of infrastructure funds to shore up the capital needed for the power facilities upgrade will definitely help with the growth of the charging infrastructure network,” he adds.

“Efforts to streamline and shorten the approval process will ensure that our deployment timelines are efficient, as well as keep project costs at an optimum. The approval process efficacy and timelines can be further improved. There are initiatives currently undertaken by the National EV Task Force driven by Miti and Malaysia Productivity Corporation (MPC) that we hope will improve the efficiency of the process further.”

MIDA’s Arham says the task force is actively working to streamline EV agendas, propose comprehensive policies and attract investment to position Malaysia as a preferred regional hub for automated EV manufacturing.

engines (ICE) to EVs.

Arham says, however, that efforts are being made to address these challenges. "Ongoing R&D is focused on improving battery technologies, exploring alternative materials and streamlining manufacturing processes to reduce the cost of EV manufacturing."

Shah Yang Razalli, deputy CEO and chief green mobility officer at clean energy company Gentari, says access to home charging at non-landed residential properties, such as condominiums and apartments, as well as to charging facilities along interstate routes also need scrutiny.

In the past year, progress has been made in the development of the charging infrastructure network along a few interstate routes, particularly to the north, south and east of Peninsular Malaysia. However, more needs to be done in the East Coast and in Sabah and Sarawak in the short term, Shah Yang adds.

"As a country, we will need to do more to address issues regarding the rights of residents in non-landed properties to access charging infrastructure right on their doorstep. Based on our analysis, 80% of charging needs can be met at home.

"We are actively collaborating with government agencies to help secure residents' rights to access charging facilities at their premises. We are also engaging with relevant authorities to establish a balanced approach that enables charging access at multilevel parking spaces,"

Shah Yang says.

Its key performance indicators include targeting RM20 billion of investments in EVs by 2025 and RM40 billion by 2030. To date, Malaysia has already achieved the 2025 target with RM22 billion in approved investments between 2018 and 2022.

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Tay, PwC Malaysia

