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The hype surrounding Electric Vehicles (EV) is gaining traction as innovation and technology advancement takes place to address climate change risks. In fact, EV has already existed for the past few decades, pioneered by public transportation such as trains and buses. As most of advanced countries target to ban new sales of fossil-fuel based vehicles in the next decades, EVs are set to be a game changer for the future of transportation.

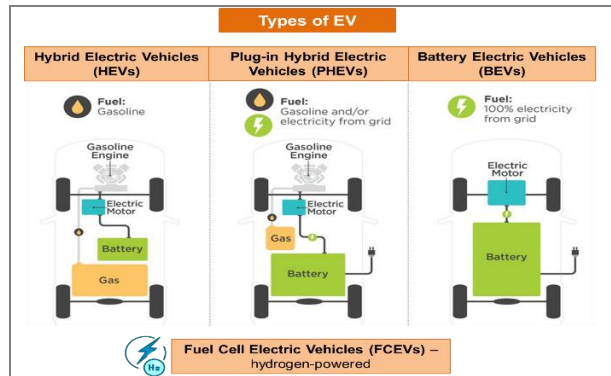
In 2021, total global EV sales soared by 118% YoY to about 6.9 mil units. It is expected to register a **compounded annual growth rate (CAGR) of 24.5% by 2028**, according to Facts & Factors. Moreover, the **world's top automakers are anticipated to spend nearly USD1.2 tri** (3 times bigger than Malaysia's 2021 GDP of USD372.7 bil) through 2030 to develop and produce EVs, batteries, and related raw materials, according to Reuters.

European countries are leading in EVs adoption, followed vigorously by China while ASEAN countries are gradually progressing. Government policies and incentives are pivotal in moving away from fossil-fuel based vehicles. For instance, Norway plans to sell only zero emission cars by 2025 while other European Union countries have set a ban on the sales of new gasoline and diesel vehicles by 2035. Regionally, Thailand and Indonesia target to have 100% new vehicle sales to be EV by 2035 and 2050 respectively. Likewise, Singapore aims to have 100% cleaner energy vehicles by 2040.

However, for **Malaysia, government is targeting EV market share to reach 38% by 2040**. By end-2022, the total industrial volume (TIV) for Plug-in-Hybrid Electric Vehicles (PHEVs) and Battery Electric Vehicles (BEVs) is expected to reach 6,107 units (4,739 units and 1,368 units, respectively), or 0.9% of EV market share to total vehicles in the country (2021: 0.3%), still behind the global's 8.6% in 2021.

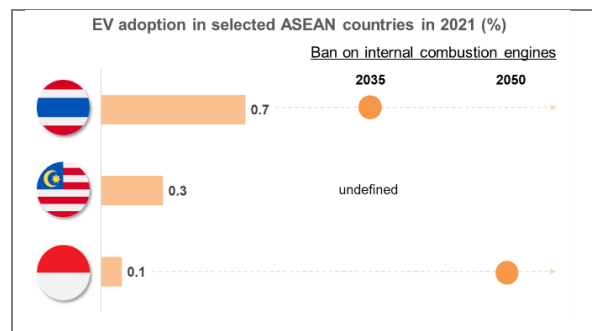
Our **government has launched various initiatives to kickstart growth in the EV segment**. EV journey in Malaysia started since 1995, where KTM Komuter was the 1st pioneer in using electricity. EV buses came later in 2015. Under the Low Carbon Mobility Blueprint 2021 – 2030, the government plans to boost the industry further (*refer table 1*).

**Figure 1: EV is a transition of fuel to electric**



Sources: Facts & Factors, The Harris Poll, SME Bank Economic Research and various

**Figure 2: EV adoption rate behind Thailand but faster than Indonesia**



Sources: CEIC, Mordor Intelligence, McKinsey, SME Bank Economic Research

**Table 1: Selected government actions and incentives for EV**

EV Passenger Vehicles	EV Buses
Procurement of government fleet and GLC	Develop roadmap for EV bus
Incentives & income tax exemptions for purchase of EV taxis	Revolving fund of RM450 mil for e-bus competitive leasing
BEV CBU Excise Duty and Import Tax Exemption (max 10,000 units, 2021 – 2022)	Annual RM100 mil fund
BEV 50% import duty and excise duty exemption (2023 – 2025)	Ministries and state government subscription to e-bus
Tax exemption for qualified CKD PHEV	Provide support for EV bus local manufacturers with R&D
EV charging infrastructure development fund	Introduce a new tax incentive scheme targeted at 'green' industries
Tariff revision for EV car public charger	Conduct specific tariff implementation for bus charging facilities
Investment Technology Assets (GITA) scheme	Green Technology Financing scheme (GTFS)

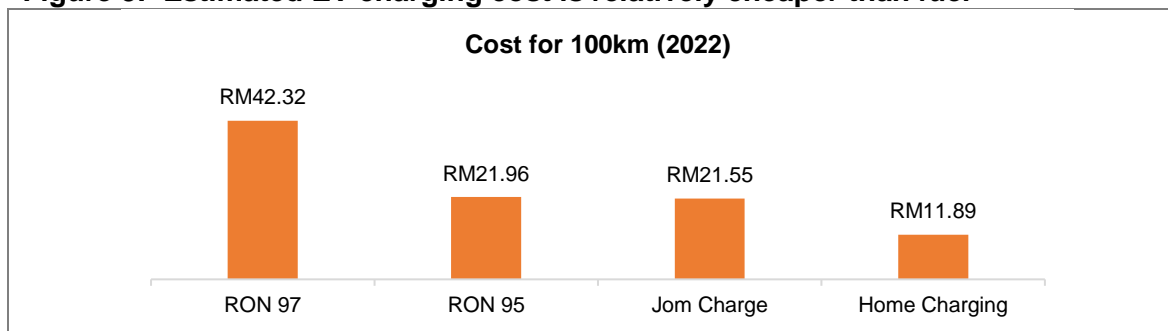
These are comparable to Thailand, where its government has provided subsidies to lower retail prices of EVs, exemption of import duties on EV components, and extend soft loans to SMEs that invest in charging stations.

The **booming EV market could potentially be a business opportunity for Micro, Small, and Medium Enterprises (MSMEs)**. Besides the accelerated plant up of charging stations in public areas, MSMEs also could also tap into private premises such as residential, petrol stations, restaurants, hotels, and convenient stores. Additionally, MSME could seek opportunities in other segments of the EVs ecosystem such as the battery, spare parts, IT/software related and maintenance of EVs.

Distance wise, a fully charged EV can travel up to 400km, deemed to be sufficient for daily use. However, traveling out of town can be a bit of a hassle at this juncture amid the low availability of charging stations. Currently, there are more than 500 charging stations available nationwide and the government is targeting to have 10,000 stations by 2030. Besides, **charging stations in Peninsular Malaysia is concentrated in the central and urban regions** in the West Coast (340 stations) compared to the East Coast (30 stations).

Vis-a-vis fossil-fuel based vehicles, EV is viewed as an attractive option due to its **day-to-day cost-saving factor**, apart from being **more environmentally friendly**. The cost of charging an EV traveling 100km is only RM11.89 - RM21.55 as compared to a RM21.96 subsidised RON95 fuel cost (*refer Figure 3*). Given SME Bank's forecast of Brent crude oil price between USD85 – USD95 per barrel in 2023 (average 2017-2019: USD64 per barrel), cost of traveling for fossil-fuel vehicles would rise when the government starts implementing targeted fuel subsidies. In the US where price of fuel is not subsidised, a liter of fuel costs USD3.277 (RM14.43), significantly more expensive than Malaysia's subsidised RON95 fuel at RM2.05. Thus, when the cost differential between electric charging and fuel becomes wider, the **attractiveness of EV will rise** as an alternative mode of transportation.

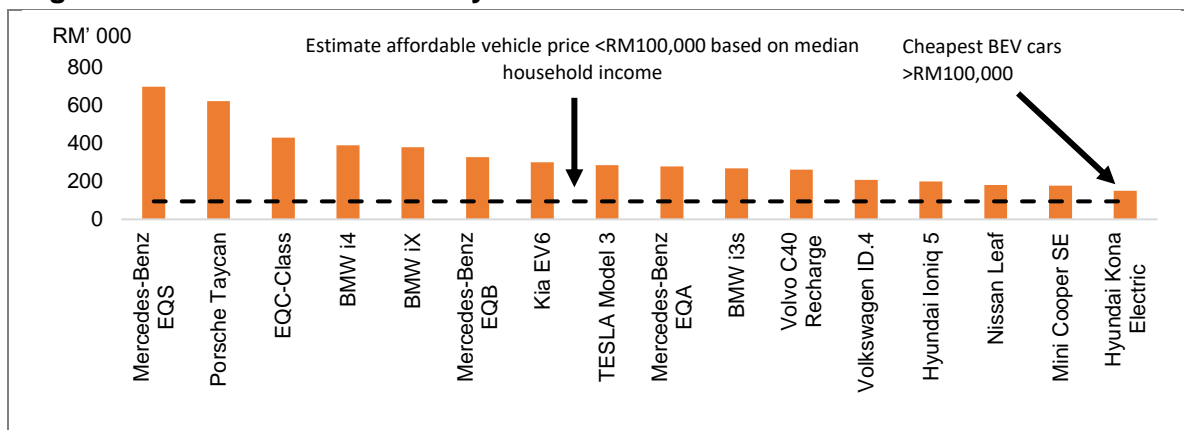
**Figure 3: Estimated EV charging cost is relatively cheaper than fuel**



Note: Computation based on Volvo's C40 model (petrol and BEV version)  
Sources: CEIC, MOF, theEdge, TNB, and SME Bank Economic Research and various

At present, the EV market is targeting the higher income segment. We estimate that an affordable vehicle for the mass market is priced RM100,000 and below, based on Malaysia's median household income. Nonetheless, most BEVs are imported and priced above RM100,000. Similar to the introduction of new technologies such as the likes of smartphones and cordless vacuum cleaners, increasing receptiveness, demand and stiffer competition among EV automakers should provide an impetus for **more affordable EVs in the future**. The government also acknowledges that affordable EVs should cost less than RM100,000 to attract the mass market and is currently exploring avenues to address the gap, according to the Minister of Natural Resources, Environment and Climate Change. Within the affordable passenger vehicle segment, Perodua only has 1 EV model while Proton has none as it only plans to launch it in 2027. Both Proton and Perodua have a strong foothold in Malaysia and makes up almost 60% of total market share.

**Figure 4: More than 50% of Malaysians cannot afford to own BEV cars**



Sources: CEIC, MAA, Carlist, Wapcar, DOSM, and SME Bank Economic Research

Despite a few constraints, it is undeniable that EV is the future going forward, especially with the growing international requirement on Environmental, Social, and Governance (ESG), day-to-day cost saving, government policies and incentives, which spurs demand. The EV market in Malaysia has begun to gain traction and we believe it will have a significant growth ahead. Besides greater availability of charging points, developing the domestically manufactured EV (CKD) segment is important to accelerate EV adoption among the mass market. Access to financing and incentives from the government to assist businesses, especially MSMEs in this infant industry, can have positive spillover effect to the economy.

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