

COMPLETION REPORT

Japan's EV Charging Station at Management Setup : How can It be Implemented in Malaysia?

Jabbar Al-Fattah Yahaya(+2)

Lecturer

Faculty of Electrical and Electronic Engineering (FKEE)

Universiti Tun Hussein Onn Malaysia

1. The author was investigating the progress and current situation for adoption of electrical vehicles (EV) in Malaysia for both 3rd party users and government-related authorities. The objective was to provide suggestions to avoid possible obstacles for mass adoption and promote positive growth in the long run. The data obtained for this study involves surveys from individuals all around Malaysia, site surveying the charging stations around the country, and interview with related government officers and companies. This information was then compared with the findings found in Japan to improve any flaws in the direction and implementation approach in Malaysia.
2. Normally, the founding's should be based on the agreement of all three entities such as user readiness (demand), investor's perspectives (supply), and government's intention/direction (regulators). Fortunately, based on the information gathered, all have agreed that EV is a good technology and should be implemented in the country. In terms of technology-wise, the investor's (supply) are ready to give their support. However, the author thinks that full deployment on EV would be challenging because of some issues from the users and government which will be discussed.
3. Results through the research.
(Government / Regulators)
 - The development of EV guidelines, roadmaps, and policies is still delayed.
 - No significant reduction in purchasing tax, i.e. the price of EV and combustion vehicles is almost the same.
 - No significant reduction on road tax, i.e. the price between EV and combustion vehicle is almost the same.
 - The budget allocated for new chargers was hold. Nowadays, new chargers depend on private companies.(User Readiness)
 - The lack of charging stations.
 - Prefer combustion vehicles since the price for purchasing and maintaining is relatively cheaper.
 - Multiple types/connectors prevent EV owners to use the available stations.
4. The author thinks the mass expansion of EV technology in Japan relies mostly on the government and company/investor's support. Malaysia on the other hand, does not have this component. In addition, Japan is already towards the expansion of hydrogen fuel cell vehicles (FCV) which will leave Malaysia even further behind. However, Malaysia's public transport is not as advance as Japan's which leads to Malaysian relies solely on personal vehicles for transportation to work and leisure purposes. If the Malaysian government decides to fully support EV technology in the future, there will always be a huge market in Malaysia. Since 2018, the Malaysian government has undergone a few changes in the management which also led to changes in the practices and policies. Until any significant announcement to be made, the market growth will probably be stagnant.
5. Required action.
(The development of EV guidelines, roadmaps, and policies is still delayed)
 - Determine the electric pricing (kWh) for EV charging stations, currently using commercial electric tariff.
 - Enforce only 1 type or standard charging connector in Malaysia.
 - Allow normal citizens to use fast charger systems.(User Readiness)
 - Promote incentives and tax reduction for users/companies, which will increase adoption in the country.

Publication of the Results of Research Project:

Verbal Presentation (Date, Venue, Name of Conference, Title of Presentation, Presenter, etc.)
Conference : (i) 25 – 26 October 2021, 5th International Conference on Engineering Technology (ICET 2021), Reviews and issues for EV adoption in Malaysia. (ii) 25 – 26 October 2021, 5th International Conference on Engineering Technology (ICET 2021), Coil Design Analysis and Performance Using Series-Parallel Inductive Power Transfer. (iii) 6 – 7 September 2021, 4th International Conference on Electrical and Electronic Engineering 2021 (IC3E 2021), Performance Analysis of Different Shielding Material for a 100W Wireless Power Transfer System.

Journal : (i) Journal of Electrical Systems, Multiphase Converter with Currentless Sensing Technique, Volume 17, Issue 2, 252-266, June 2021, (Accepted). (ii) Energies, Adoption of Electric Vehicle in Malaysia: A review on Japan's EV infrastructure for implementation in Malaysia, (Drafting Stage).

Thesis (Name of Journal and its Date, Title and Author of Thesis, etc.)

Book (Publisher and Date of the Book, Title and Author of the Book, etc.)
UTHM PENERBIT,
Japans EV Charging Station at Management Setup : How can It be Implemented in Malaysia ?
Author : Jabbar Yahaya