

Chapter 5

Policy Implications

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Chapter 5

Policy Implications

In the Association of Southeast Asian Nations (ASEAN) countries, electric vehicles (EVs) are considered an important option for tackling local air pollution and enhancing energy security – away from oil dependence. Some countries such as Indonesia and Thailand consider EVs as an important option for developing a manufacturing base. Indonesia has laid out its plan for developing battery manufacturing industry with the use of local resources, whilst Thailand aims to become the regional hub for the EV manufacturing industry.

Meanwhile, EVs have not seen a leapfrog yet in the ASEAN countries. Initial high purchase costs, the lack of necessary charging infrastructure, and limited availability of vehicle line-ups are the key factors affecting the relative slow progress in the deployment of EVs in the analysed ASEAN countries.

Well-to-Wheel Analysis

The well-to-wheel (WTW) analysis indicates that unless the pace of decarbonisation of the power sector accelerates, the full benefits of EVs – as a means to CO₂ emissions reduction – would not be realised. The case of Indonesia, for example, indicates that under the business-as-usual scenario, CO₂ emissions of HEVs would be lower than that of EVs by 2050. This is an important implication for policymaking where **concerted efforts amongst the stakeholders are necessary to coordinate the policies and planning related to EVs. In other words, EV policies need to take due consideration towards the progress in decarbonisation of the power sector.** Otherwise, originally intended outcomes – in terms of CO₂ emissions reduction – would not be obtained.

EV Incentives

With the focus on passenger vehicles, the four analysed countries (Indonesia, Malaysia, Thailand, and Viet Nam) have introduced economic incentives in the form of tax waivers or lower tax rates either at the time of purchase or at the time of operation. Meanwhile, faced with the recent rise in energy prices, Indonesia and Malaysia have provided subsidies to control the rise in oil prices, and Thailand and Viet Nam have reduced taxes for oil products. The current rise in energy prices have sent mixed signals to consumers, and a **level playing field for EVs is not ready despite the provision of incentives and lower battery costs.** In other words, the policy should be tailored to make more coherent to resolve short-term impacts from the rise in energy prices, and long-term climate change goal.

Strengths, Weaknesses, Opportunities, and Threats Analysis

The strengths, weaknesses, opportunities, and threats of owning EVs differ by country. This reflects precious resources' endowment, decarbonisation policy of the power sector, economic policy for EVs, the maturity of the automobile industry, and mobility choice. Key implications are:

- **Indonesia and Viet Nam:** For electrification of the transport sector, these countries are better positioned to start from the electrification of motorcycles in view of the current heavy dependence on motorcycles.
- **Brunei Darussalam, Malaysia, and Viet Nam:** At the initial stage of electrifying the transport sector, these countries may need to focus on the electrification of public buses.
- **Indonesia and Thailand:** As these countries aspire to become BEV production hubs, they may need to develop rules for regulations and standards for BEV battery reuse and recycling.

Total Cost of Ownership Analysis

As the total cost of ownership analysis indicates, e-motorcycles have become economically competitive against conventional ones. In view of the popularity of motorcycles in the ASEAN market, and the potential for electrification, **the development of charging infrastructure and battery swap business should make substantial progress** in those countries where the dependence on motorcycles is high (such as Indonesia and Viet Nam). The standardisation of battery packs should also be made to facilitate battery swapping at charging stations.

EV passenger vehicles are not yet economically competitive against internal combustion engine (ICE) vehicles. In the assumption that the cost of lithium-ion batteries would continue to decline at the learning rate of 75%, **the tipping point where EV benefits outweigh those of ICE vehicles would come sometime between 2025 and 2030 depending on oil products prices, electricity prices, travel distance, and fuel economy of ICE vehicles in respective countries.** In other words, continued provision of economic incentives should be kept at this time. **Economic incentives could take the form of tax waivers, lower taxes at registration, or time of use electricity pricing.**