

Chapter 5

Policy Implications

As shown by the results of the analyses in Chapters 2–4, introducing alternative vehicles, particularly EVs, in Indonesia would be an effective tool for various policy purposes. For example, shifting to EVs would enhance energy security in Indonesia by increasing oil savings to 1.2 million barrels per day, comparable to the primary oil demand in 2015 (1.5 million barrels per day). In recognition of such benefits from the introduction of EVs, this chapter presents policy implications to realise these expected benefits.

1. Need for a Clear Vision and Prioritised Approach to Electric Vehicle Deployment

The use of EVs in Indonesia would help meet various policy goals, including energy security enhancement, climate change mitigation, air quality improvement, and manufacturing industry development. However, it is important to make clear the country's long-term vision for the wider utilisation of EVs, and which policy objectives EVs would meet. For example, a prioritised approach could be coupled with economic and financial incentives, which should be dedicated effectively to the targeted sectors.

2. Integration of Demand- and Supply-Side Planning for Carbon Dioxide Emissions Reduction

EVs could serve as an effective tool for reducing CO₂ emissions under conditions where the decarbonisation of the electricity generation mix takes effect. Assuming the continued dependence on fossil fuels for power generation (accounting for 90% of the total generation mix), this analysis found that, by 2040, the massive deployment of EVs would only reduce CO₂ emissions by 2% compared with the reference scenario. By contrast, assuming that renewable sources would account for 26% of the electricity generation mix by 2040, EVs could reduce CO₂ emissions by 17% by 2040.

This finding suggests that it is important to integrate demand-side policy in the deployment of EVs, as well as supply-side policy to plan the decarbonisation of the electricity sector. For example, Indonesia should integrate planning for EVs into its national electricity plan (*Rencana Umum Ketenagalistrikan Nasional*) and consider the necessary infrastructure for EV charging systems.

It is important to note that Indonesia's current feed-in-tariff regulation does not ensure enough incentives for renewable energy sources. In January 2017, The Ministry of Energy and Mineral Resources issued MEMR Regulation No. 12/2017 capping the feed-in-tariff for renewable sources at 85% of the average cost of generation in the respective grid. This provides insufficient incentives for renewables at locations where electricity generation relies on

relatively low-cost options such as coal, placing the potential for CO₂ emissions reduction at stake. It is thus critically important to coordinate the various policy goals in view of the substantial introduction of EVs in the future.

a. Coordination amongst Stakeholders to Realise the Full Benefits of Electric Vehicles

In addition to the benefits of reduced CO₂ emissions, concerted efforts by stakeholders are required to realise the potential benefits of EVs. This includes the coordination of various plans and policies related to EVs. In particular, coordinating planning for transport, electricity, environment, and industry will be critical.

b. Stepwise Approach to Introduce Incentives for Electric Vehicles

The biggest hurdle for the introduction of EVs is currently the upfront cost. Thus, it is important for the Government of Indonesia to provide incentives for EVs to ensure that their potential benefits for drivers and consumers are realised. Mechanisms should be in place to secure necessary funds for the provision of incentives. A good lesson has been provided by the state of Delhi in India, where diesel consumers charged an additional fee that is used as the basis for incentive funds.

Another illustrative case is that of Malaysia, where EEVs (including HEVs and EVs) are considered an effective tool for supporting the development of the manufacturing industry. The country provides incentives to the manufacturing industry, and takes a stepwise approach. These incentives are provided specifically to assembly and manufacturing companies that produce parts, including electric motors, HEV and EV batteries, battery management systems, inverters, air conditioning units, and air compressors.

3. Creation of Conditions for Electric Vehicle-Related Business

As shown by the results of the cost–benefit analysis, substantial funds would be required to develop the necessary infrastructure to meet the increased electricity demand from the diffusion of EVs in Indonesia. To meet the 2040 target of banning sales of ICEVs following the massive introduction of EVs, \$187 billion in additional investment will be needed through 2040. Securing funding will be critically important to realise these requirements.

It is also necessary to create a policy environment conducive to private investment for infrastructure development. For example, promoting distributed energy systems (not necessarily grid-connected) would enhance the integration of EVs with renewable electricity generation. In other words, incentives could promote renewable generators with charging systems to support EV owners (passenger vehicles or motorcycles) and operators (buses and motorcycles).