Indonesia: Racing to Net-Zero

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In 2019, Indonesia pledged to reduce its greenhouse gas (GHG) emissions by a minimum of 29%, with a goal of reaching a reduction of 41% by 2030 as part of the Paris Agreement. With 28% of energy-related GHG emissions coming from the transport sector, the adoption of electric vehicles, e-bikes, e-scooters, and electric buses, is fundamental to reaching this goal. Following in the footsteps of many countries that have started to electrify their transport systems, Indonesia is moving towards electric vehicle deployment across infrastructures. In its National General Energy Plan, the Indonesian government has targeted 2,200 electric passenger cars, 2.1 million electric motorcycles, and 10% electrification of public transport by 2025. In 2019, a presidential regulation was issued to accelerate electric vehicle deployment, specifically to provide a legal framework for the development of various types of battery electric vehicles (BEV). The regulation encompasses several aspects of BEV adoption.

OPPORTUNITIES AND CHALLENGES ABOUND

Despite the government’s commitment to BEVs, a myriad of challenges await. At the strategic level, electric vehicle implementation has not been tied to the national GHG reduction plan and national environmental goals, so a clear strategy that includes electric vehicles is not yet available. Many policies at the national level are not yet released or are
still being developed. This lack of clear policy impedes the ability of local governments to take action.

The current policies do not address the elephant in the room: the high price of electric vehicles (EVs). As of now, EVs are foreign to the general public. The existing tax incentives are not enough to make EV prices competitive with conventional vehicles and, to make matters worse, few financial institutions are interested in offering credits or insurance for EVs.

There are also challenges with the availability of charging infrastructure, which is critical to mass EV adoption. Although the National Utility Company (Perusahaan Listrik Negara) was mandated to provide the initial charging facilities, investments from other private stakeholders will be necessary to create a charging infrastructure network extensive enough to meet demand. Between high capital costs and long payback periods, investors are wary of taking on too much risk without a standard charging interface.

Although electrification targets may be daunting, a window of opportunity does exist. The electrification of motorcycles and public transport may be key for Indonesia to break through the initial market for BEVs. Motorcycles are one of the most popular transport modes in Indonesia, with a mode share of over 84%. They also have the highest growth rate by mode, a dizzying 6.2% annually. The colossal number of motorcycles makes these vehicles a major contributor to air pollution and carbon emissions, as well as a major opportunity for electrification.

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The motorcycle growth rate is also fueled by the popularity of motorcycle-based ride-hailing and delivery services. The Ministry of Transportation estimates that there are around 2.5 million ride-hailing motorcycle drivers in Indonesia. One important tool to help Indonesia reach its lowered GHG target is to begin to electrify ride-hailing service fleets. Not only would this be more easily scaled than electrifying private motorcycles, but it would also create a demand for EVs that would incentivize a stronger charging infrastructure network. Additionally, these fleets would familiarize the public with EV vehicles, which could shift perceptions and build awareness about them.

However, there are challenges ahead for ride-hailing motorcycle electrification. Vehicles used for passenger transport are owned by drivers, often from lower-income groups, who rely on financing institutions to acquire their vehicles. Between the high upfront costs of EVs and a lack of financing options, ride-hailing drivers are discouraged from purchasing electric motorcycles.

Public transportation is a very promising vehicle segment for electrification in Indonesia. In Jakarta, Transjakarta’s Bus Rapid Transit (BRT) services can run around 237 kilometers per day, with a fleet of approximately 4,000 buses. This makes the electrification of urban bus services a potential boon for EV implementation. Public transport fleet electrification can meet the enormous demand of the domestic bus manufacturing industry and achieve economies of scale while also reducing GHG emissions. For instance, the commitment from
Transjakarta to operate only e-buses by 2030 will reduce their CO2 emissions by 925,757 metric tonnes.

Despite the potential benefits, the electrification of urban bus services also faces financial issues and an uncertain future for technology development. The high upfront cost of electric buses is a barrier for bus operators. Even though the operators will receive a subsidy to cover the total cost of running bus services, an effort to incentivize the capital cost of procuring electric buses is still essential to enter the ecosystem and partake in the public tendering process. Choosing the right technology is also important as it will affect the financial and operational aspects of the deployment process. The goal is for electric fleets to be more financially sustainable than conventional fleets, but this payoff occurs over time and with high up-front costs.

Still, the need to electrify is clear and urgent. With climate change an ever-present reality, especially with sea levels rising and impacting Indonesia, cutting back on GHG emissions must be prioritized now. For this reason, ITDP Indonesia is working with national and local Indonesian governments to enact policy that will support increased adoption of EVs.

**TRANSITIONING TO E-MOBILITY**

Together with the UN Environment Programme, ITDP Indonesia proposes these recommendations to lower the barriers of electric vehicle adoption in Indonesia:

1. Create national and city-level BEV roadmaps and targets tied to GHG reduction goals.
2. Develop national and city-level charging infrastructure roadmaps, followed by supportive infrastructure policies.
3. Establish a national task force, followed by city-level task forces to enable pilot projects that can be replicated on a larger scale.
4. Institute demand creation policies.
5. Create subsidies to promote equitable BEV adoption by reducing the cost difference between BEV and non-electric vehicles.
6. Formulate policies targeting and supporting the BEV industry.
7. Establish fleet-specific targets that dictate mandatory electrification milestones.
8. Offer nonfinancial government incentives like special lane access or low-emission zones.

To achieve its electrification goals by 2025, national and local governments must address policy gaps. Although the acceleration of BEV adoption is a national goal, Indonesia will only achieve its target with bold commitments and actions on municipal and local levels. Through several ongoing projects with the World Bank, UK Partnering for Accelerated Climate Transitions, and the UN Environment Programme, ITDP Indonesia is providing technical assistance for electric mobility stakeholders from public and private sectors to support the acceleration of BEV adoption in Indonesia.