

Sustainable Transportation: Potential for e-Mobility in Bangladesh

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Abstract. Globally, e-mobility has gained tremendous traction over the last decade. Technological advancement has made it a more acceptable and reliable mode of transport. While Electric Vehicles (EVs) have been on the scene for a long time, the last five years were transformational in gaining popularity. There was a sharp increase in EV stocks globally over that period. In 2019 the global sale of electric cars was 2.1 million, making the global stock 7.2 million¹. Compared to the conventional Internal Combustion Engine (ICE) car sales, the proportion of electric cars is still relatively low (2.6%). However, the year on growth of electric cars tops 40%, which is a significant increase. In addition to the growth of electric cars, other alternative forms of transport modes such as buses, freight vehicles, three-wheelers, and two-wheelers are also transitioning into the electric powertrain. According to the World EV Outlook 2020, the Global EV stock could potentially increase to more than 140 million if the current governments' policies and the Paris Climate Action pledges are met. It is nearly 19 times higher than the current stock, which is undoubtedly a giant leap just over the next ten years².

The most prominent benefits of EVs come from the reduction of fuel emissions. There is a severe air quality issue across Dhaka city and other major metropolitan cities in Bangladesh. The situation has improved to a certain extent due to the mass conversions to CNG fuel, which emits 5-10% less CO₂ than petrol or diesel-driven vehicles. CNG is, however, not an infinite source, despite the fact that it is currently a cheaper fuel source in the country. Additionally, it is not a zero-emission solution either. Due to the lack of regulatory enforcement, there have been incidents of explosions caused by low-quality CNG tanks fitted in the vehicles. In order to meet the UN SDG (Sustainable Development Goals), which Bangladesh has signed up to, the country will need to go beyond CNG. E-mobility presents a huge opportunity to move towards that goal.

Despite the early ban on electric three-wheelers, due to their structural fault causing fatal accidents, the market has already been penetrated by imported vehicles. These vehicles caused around 10% of fatal accidents across the country³. In addition to the imported electric three-wheelers (Easy Bike), there has been a growing trend of converting traditional rickshaws into battery-driven mode. Those conversions took place on the regular body frame without the necessary modifications needed to cater for increased speed and weight. These conversions have also been banned by the High Court, as they presented higher safety hazards. There is a strict ban on electric three-wheelers in Dhaka city. Due to the low vehicle standard, e-mobility failed to create the right consensus amongst road users and decision-makers.

All the above key issues need a holistic approach that creates an enabling environment for the future sustainable low-carbon transport system in Bangladesh. Given the presence of multiple vehicle modes, it is necessary to bring everything under an overall e-mobility umbrella and create a fit-for-purpose policy and regulatory framework.

This discussion will focus on the following topic areas to give a high-level view on the rational for transport electrifications and what needs to be considered for Bangladesh going forwards,

- Premise of Electric vehicles.
- Global trends.
- E-mobility in Bangladesh.

¹ Source: Global EV Outlook 2020

² Source: Global EV Outlook 2020

³ Source: Report from Passenger Welfare Association of Bangladesh

- Policy and regulatory considerations for Bangladesh (Global best practice), i.e:
 - The right recognition of the need for EVs and the significance of the policy framework for adopting EV;
 - A platform that creates a robust institutional structure that can manage this multi-dimensional transport system.
 - A system that encourages private sector participation in deploying EVs.
 - The right and consistent vehicle standards are maintained.
- Infrastructure requirements.
- Energy sector.
- Finally, need for a sustainable transport solution.