

Road ahead for electric transition of commercial vehicles

Rengarajan Srinivasan, Director, Stellar SP (P) Ltd., focuses on the pain points that need to be addressed in the commercial vehicle industry for its smooth transition to electromobility

In a massive push globally to meet the Paris Agreement, there has been a quickening of pace in decarbonisation efforts across sectors. India is following suit with a series of measures covering energy, carbon footprint, oil import, mobility and manufacturing to meet its global commitments. The Government of India is thus focusing on a multilateral agenda for a cleaner environment, including strong encouragement to switch to electric vehicles (EVs). The intentions of the government are laudable in steering the implementation of public mobility policy initiatives. However, a variety of challenges need to be addressed in securing the energy demands of the country while meeting the commitments for environment protection and carbon footprint reduction.

It is necessary to have control measures for clean energy and provide impetus to non-fossil energy usage for public and personal mobility. This will help reduce dependence on crude oil, which majorly impacts foreign exchange and the imports bill. Additionally, it is critical to give a fillip to the manufacturing sectors of the country to achieve GDP growth objectives set forth. The transition to a new, clean and intelligent mobility cannot take place without the development of competitive, low-carbon energy inputs for the transportation sector. EV battery production, for example, is very power-consuming, and therefore carbon-intensive.

This throws up complexities in setting a policy framework to support public mobility and transportation of goods and people powered by non-fossil fuels, and potentially EVs. The government's new reform measures are laudable with stringent CAFE 2 norms by 2022 and accelerated electric mobility. For the commercial vehicle transportation segment, these developments seem to be interesting for the research fraternity to draw their theories and debates. Easily said, but the challenges are many with our complex, multi-modal, conventional, commercial transportation vehicles using diesel engine technology.

Manufacturing perspective

There is optimism in the government that all commercial vehicles and public buses in India can switch to alternate fuel options and electric mobility in the next couple of years. But good intentions are not enough. This futuristic vehicle technology implementation needs sensible



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direction among the stakeholders. OEMs find the investment necessary for the new policy framework on electric mobility transition to be huge strain to cover innovations, technology, manufacturing set-up, distribution, and operational support services to the consumers.

Alternative propulsion such as electric powertrain system is crucial for commercial vehicles to meet the emission control objectives. This needs proper policy directions and supportive regulations to give the industry enough time to plan the switch to an emerging technology for the wider spectrum of population

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and diverse stakeholders. However, Indian local industries are not yet engaged in impactful innovative solutions for EV systems, components design and development, manufacturing capacity and efficiency for competitive business objectives. EV charging points, service support, local manufacturing of parts, systems and components, and capacity creation for manufacturing, and distribution set-up are still primitive.

The industry needs funding to support EV production lines, conversion of systems, and downside channels of service and maintenance support. Against this background, 'Make in India' must play a critical role. For example, there is an urgent need to attract battery manufacturers to set up shop in India, given that a greenfield plant takes about five years for establishment and scaling up even in developed countries. Without local production and scale, EV cost parity will not be achieved. In concert, efforts are necessary upstream on procuring critical materials like lithium, nickel and cobalt. For this, it is important to work with countries like Indonesia, Malaysia and Australia to secure material supply, while developing local processing to make components like cathodes, anodes and separators.

This will help reduce costs by moving materials, instead of the much more expensive logistics for shipping battery cells and packs, thereby ensuring a lower cost base. Domestic development and manufacturing of associated components, such as e-motors, e-axles, battery management systems, connectors and wiring are also necessary. In all these sectors, it is essential to mitigate imports and dependence on countries like China, Korea, and Japan for electric mobility solutions. This is especially critical given the already widening trade imbalance in China's favour, and avoiding the local market being flooded with cheap commoditized imports. Also, an ecosystem approach to charging is necessary.

On one hand, this includes local production of chargers, wall boxes, and high-power charging stations. On the other hand, it is critical to develop business models around the charging infrastructure to ensure economic viability. For example, parked and plugged-in EVs can help grid load balancing, while charging peaks (e.g., after office hours at home) need to be balanced to prevent blackouts. Building on these aspects, there is a need to deploy chargers at residences, on streets, in shopping malls, and offices. This warrants huge investments and efforts to al-



leviate the charging concerns of potential EV buyers.

Encouraging uptake

Further, the higher acquisition costs of EVs will be a huge barrier in the mid-term, be it for individual customers or for State transport corporations. However, electrification of commercial public buses with defined routes in cities, urban delivery vehicles, and gated community applications could be easier to implement in a specific manner given the surmountable barriers. Even a switch to hybrid or CNG buses or catenary-driven vehicles within cities is feasible and a much more realistic low-carbon solution. The CV industry is currently facing challenges in transition from BS IV to BS VI technology. The higher acquisition costs for BS VI vehicles meanwhile pose barriers for the consumers for switching to lower emission vehicles. With uncertainty over the demand and affordability of BS VI, the industry is already perplexed about meeting the vehicle roll-out by April 2020.

To improve affordability, sales volumes will offset the cost impact and ease implementation. The government should expedite the policy to scrap the ageing fleet of BS I to BS III commercial vehicles and take the lead in switching to BS VI, focusing on the vehicles held with government departments, public sector undertakings, airports and seaports, infusing the funding necessity with budgetary support. Taking such initiatives will accelerate the mass production of BS VI technology vehicles and give the Indian industry the much-needed sales volumes at this juncture, enabling key investments in the new roll-out. The government should focus efforts in this direction to select metropolitan cities as pilots for implementation. These measures will propel the automobile industry with demands for commercial buses, over the next few years, thus creating an enabling atmosphere of investments and infrastructure developments. As things stand, the transition could take a few years in metros, while suburban, intercity, rural areas are still farther off.