Event Report

Stakeholder Consultation

on

Deployment of E-HDV & MDV in the Freight Sector

Challenges & Way Forward

Introduction

CUTS International organised a virtual stakeholder consultation to discuss the perspectives and strategies for cooperation and collaboration in the electrification of medium and heavy duty vehicles on January 5, 2023.

The key objective was to understand the views of stakeholders (OEMs, charging station manufacturers, charging service providers, logistics companies, and government agencies) on the challenges of electrifying medium and heavy duty vehicles in the freight sector and ways to overcome them, as well as strategies for executing a pilot project to showcase the cost and environmental benefits of adopting electric vehicles in the freight sector.

Session 1: Presentation on the findings from Corridor Analysis

The CUTS team presented findings from corridor analysis (Delhi-Jaipur, Delhi-Agra, and Eastern Peripheral Expressway (EPE)), emphasising highways' readiness to meet the demand for electric medium and heavy duty vehicles.

Based on the analysis, following assessments were made for each highways:

Delhi-Jaipur Highway:

- Delhi-Jaipur highway is an important link between the national capital and state capital of Rajasthan for socio-economic development. Additionally, it is a lifeline and livelihood opportunity for many of the people from 423 villages with an estimated population of 2 million, which are along the highway or in close proximity.

- Although the highway has a comparatively strong network of charging infrastructure, it still has scope for further strengthening considering the daily volume of traffic. With Delhi NCR region being the hub of EV manufacturing and Delhi having the highest penetration of EVs among all other states, number EVs on this highway are going to increase rapidly, suggesting an underlying need for rapid deployment of charging stations.

- Delhi Jaipur highway is well connected to many industrial towns which makes it a hotbed of economic opportunities. Setting charging infrastructure here would not just support help in decarbonizing transport, but will also boost tourism from the green tourism perspective.

Yamuna Expressway:

- The success of Yamuna expressway can be attributed to its robust infrastructure and presence of modern facilities. But in terms of providing support for electric vehicles, many other national and state highways have done far better.

- The upside is that of infrastructure support and land availability not being a concern which is essential for transitioning into an e-highway. There are several infrastructure projects which are in planning state including Noida International airport in Jewar which will escalate transportation across all categories.

- The Uttar Pradesh government issued state EV policy in October 2022 and can further assist the development of charging infrastructure on Yamuna expressway. At the present stage, it can be assumed that the expressway is not yet ready for electric vehicles especially in commercial vehicle segment.

Eastern Peripheral Expressway:

- EPE has great potential in term of development of charging infrastructure but presently lags far behind the other highway corridors surveyed. Several limitations as highlighted in the SWOT analysis make EPE the least prefer choice for deploying electric medium and heavy duty vehicles.

- Probably, with EV ecosystem expansion through policy level interventions, the expressway can become investors' top most choice for establishing manufacturing units, installing charging stations and service centres but that scenario is still few more years ahead.

The overall assessment of three expressways clearly identifies Delhi-Jaipur Expressway as the most preferable option for executing pilot projects on electrification of medium and heavy duty electric vehicles.

Session 2: Stakeholder discussion

The second session started with questions from participants. One of the participants asked about private charging infrastructure, as residential societies are not giving permission to install private charging to electric vehicle owners. One of the main reasons for this is that installing private charging would amount to changing the whole electricity infrastructure of the residential society, and that would be a costly affair for society owners. That's why many

society owners prefer to charge privately. Participants discussed other issues related to the electrification of the freight sector. Some of the key highlights include:

- The main challenges of electrifying medium and heavy duty vehicles in the freight sector, according to participants, are (i) insufficient charging infrastructure, and (ii) operational challenges. There's a need to expand the charging infrastructure as long-distance HDVs and MDV would require fast public charging stations to maintain efficient operation. While some corridors, like the Delhi-Jaipur expressway, have, to some extent, the necessary charging infrastructure, other highways are lagging behind considerably in providing adequate charging infrastructure.

- Mr. Mukherji from Omega Seiki Mobility put forward his concerns regarding investment in manufacturing of heavy duty electric vehicles in the absence of demand. In addition, acquiring the necessary skills to handle EV manufacturing processes, charging infrastructure and vehicle maintenance is cost intensive.

- Mr. Rachit Yadav from Zypp Electric said that with immense growth in e-commerce sector, the demand for intra-city delivery vehicles has grown significantly. It also sits well with delivery service providers and consumers that the processes involved are environment friendly. Given that these vehicles frequently make short daily trips and regular stops at key ports, charging is not a big constraint in this sector. However, it is not the case for long hauling vehicles. Also, in contrast to individuals, businesses are more likely to take into account lower fuel and maintenance costs rather than high upfront cost of electric vehicles

- The main issues for long-distance electric trucks would be range and payload. Because batteries weigh comparatively more than liquid fuel, adding more batteries to a truck reduces the amount of load it can carry. With an 800 km battery, the vehicle's weight would increase by 5,000 kg, significantly reducing its hauling capability. The solution could be to not have a comparative outlook in trucks segment in regards to electric and conventional

- Mr. Nikhil Kinagi from Porter emphasised on additional charging difficulties with heavy-duty electric trucks. Because of the additional carrying capacity, trucks require heavy battery packs and more power to charge. Depending on the battery size and charging rate, fast chargers for electric cars produce 50 to 150 kW of electricity which charges a vehicle to 100 percent in between 2 to 3 hours. For trucks, the scale is drastically altered. Very high-power flows are necessary for fast charging batteries up to 1,000 kW. Such a huge battery would require up to 20 hours to fully charge with a fast charger for light vehicles. For many local uses, overnight charge periods might be acceptable, but they present a significant problem for long distance transportation.

- Additionally, fragmented structure of the fleet owners makes decarbonization efforts more challenging. Most of the truck operators are less likely to invest in emerging technologies as they lack access to finance to pay for the higher upfront costs of vehicles despite low operating cost.

Way Forward

In the next phase of the project, electric medium- and heavy-duty vehicles are to be deployed on the Delhi-Jaipur Expressway to assess actual operational challenges. A consortium of OEMs, charging service providers, and logistics companies can be facilitated by CUTS for providing resources and carrying out the pilot and a strong case can be made for the adoption of electric vehicles in the freight sector through evidence on cost and environmental benefits. CUST will follow up with the participants and other stakeholders for the purpose of providing execution-level support for the pilot project.

List of Participants

SI.No	Name	Designation & Organisation
1	Dr. Deb Mukherji	Managing Director, Omega Seiki Mobility
2	Vijay Gupta	Director, JT Mobility Pvt. Ltd.
3	Vaibhav Singh	EVCD Manager, Radius
4	Moksh Garg	Head of Business, Valerio Electric
5	Nikhil Kinagi	Senior Manager, Porter
6	Dinesh Jangam	Partner, DS Urja Solutions
7	Rachit Yadav	Assistant General Manager, Zypp Electric
8	Akshay Kumar	Marketing Manager, E-Fill Electric
9	Amit Arora	Chief Executive Officer, LoadExx
10	Davinder Ahuja	Business & Strategy head, ARGO EV Smart
11	Hemang Parikh	Executive Director, Vraj EV Mobility

12	Akash Sharma	Assistant Policy Analyst, CUTS International
13	Animesh Tiwary	Research Associate, CUTS International
14	Baishali Lodh Choudhary	Research Asscoiate, CUTS International