

Exploring the Potential of Last Mile Transportation as an Enabler for Green Jobs

Background & Rationale

Rising environmental concerns have compelled many metropolitan cities in India to adopt mass rapid transit systems such as metro rail and Bus Rapid Transit System (BRTS). For accelerating people's acceptance of mass transport modes, integrated 'last mile connectivity of public transportation at the beginning or end of an individual trip is an essential factor.

Historically, last-mile connectivity through conventional ICE vehicles has been a part of the mobility ecosystem of several Indian cities. However, with increased environmental concerns and rising awareness, there is a visible shift to cleaner and greener alternatives. Sensing the significance of last-mile connectivity, both government and private players have also been taking several initiatives to green these fleets. This has resulted in E-2Ws and E-3Ws capturing a significant share of the electric vehicle market in India.¹

In recent times, pandemic induced social distancing norms and periodic lockdowns have introduced people to options for reduced travel or short-distance travel. At the same time, it has resulted in reducing the per-vehicle capacity of shared and public modes of transport, which has created a demand for a higher number of vehicles in last-mile transport fleets.

Additionally, the pandemic has prompted a surge in e-commerce orders, fostering demand for appropriate last-mile transport options for deliveries. International, national and local e-commerce companies (Amazon, Flipkart, BigBasket, Zomato etc.) are setting ambitious targets for the electrification of their fleets.² Enterprises that - in the past - have relied on inbound foot traffic are also restructuring their focus to 'last mile' deliveries so they can compete.

Given that the transition to electricity is imminent in this segment, it becomes necessary to explore the new livelihood opportunities that this will bring about and understand the implications for the stakeholders associated with it.

Objective

Last-mile connectivity and mobility as a Service and e-commerce consist of four key stakeholders: consumers/passengers, vendors/vehicle drivers, transit agencies/aggregators, and government. Applying the hierarchy of Avoid-Shift-Improve³ strategies of sustainable urban transport with integrated, multi-modal and balanced mobility approaches is necessary for getting the full benefits of transport decarbonisation in terms of emissions reduction and equitable access to mobility. Due to the COVID-19 pandemic, the whole approach toward sustainable transportation has been disturbed. The increasing focus on 'avoid' and 'improve' verticals has created a demand for low-carbon last-mile vehicles.

With the greening of fleets, the total cost of operations is declining, allowing more savings for each of the stakeholders. Further, this has also led to technological advancement, leading to ease of driving and maintenance, providing livelihood opportunities across the skill spectrum. This shift has been instrumental in providing women with an opportunity to enter this economic sphere and drive and create a new scope of livelihood.

Thus, the objective of this study is to explore the potential of decarbonisation of last-mile connectivity on the local economy and livelihood opportunities, including gender and skill inclusivity, reduced environmental pollution and standard of living from a 'just transition' point of view. The overarching aim will be to explore the connectivity practices in India's Tier 1 and Tier 2 cities and construct a comparative map regarding the preferable modes and strategies for electrification for passengers' last mile delivery and last mile connectivity.

Methodology

An evidence-based mixed-methods approach will be adopted for the study. The objective will be to qualitatively and quantitatively map the role of electric last-mile mobility options in the city mobility plan, livelihood opportunities associated with that, local economic growth, and the standard of living of the stakeholders due to the greening of the last mile transportation modes.

Every city has a difference in preference for transport mode depending on the size, population, climate, and

economy. For a comprehensive and comparative picture, different cities and towns with different degrees of green transition in last-mile connectivity will be taken as data points to get a comprehensive perspective. For this purpose, four different categories of cities and/or towns from across the country have been selected for the study with best practices and challenges in public transport, last mile connectivity and greening of fleets. Based on the share of E-2W and E-3W sales at a city level and local initiatives for greening last mile fleets, Bangalore and Delhi have been selected in Tier 1 cities, while Lucknow & Jaipur have been selected in Tier 2 cities. Based on learnings from these cities, a roadmap for the greening of 'last mile transport' will be prepared.

- **Literature Review**

As a precursor to scoping exercise, literature linked with decarbonisation and its impacts (Social, economic and environmental) will be analysed. This will be followed by an evaluation of existing EV policies of various states of India and how it is enabling the last mile connectivity in those states. Consultations with stakeholders will be conducted to understand better the ecosystem needed for enabling last-mile connectivity and identifying the best parameters for measuring its impacts.

- **Scoping Visits**

To understand the city mobility ecosystem, preferred modes of transport and challenges in greening the last mile connectivity, scoping visits will be undertaken in 2 of the selected cities, i.e. one Tier 1 city and one Tier 2 city.

- **Primary Data Collection**

Key Informant Interviews (KIIs)/Surveys and Focus Group Discussions (FGDs) will be conducted with the key stakeholders, namely the consumers/passengers, the vendors/vehicle drivers, the transit agencies/aggregators and the government for data collection. The aim will be to understand the impact of greening the last mile connectivity on

the local economy and on the social and environmental grounds strengthening the case for decarbonisation. Further, existing challenges and gaps according to various stakeholders will be identified, which is slowing or curtailing the greening of last-mile connectivity.

- **Data Analysis**

Using an ecosystem approach, qualitative analysis of factors enabling last-mile connectivity using gap analysis, case study and narrative building methods will be undertaken. Simultaneously, quantitative analysis of social, economic and environmental impacts using appropriate indicators will be undertaken using the relevant statistical methods.

- **Drafting of the Report**

Findings from the quantitative and qualitative data analysis will be consolidated. Based on these findings, actionable recommendations will be suggested, which will act as a roadmap for greening the last mile connectivity. An infographic report will be prepared to consolidate the findings.

Envisaged Outputs

An infographic report on the potential of last-mile connectivity as an enabler for green jobs, focusing on four cities, will be the primary output. As secondary outputs, a policy brief/digital story based on key insights from the research for informing and assisting the national and state-level initiatives promoting last mile connectivity will be prepared. Along with this, select op-eds and articles on key themes and findings of the research will also be published.

Expected Outcomes

The research will assist the just transition of last-mile transport in various states of India based on the evidence gathered from the ground in terms of socio-economic and environmental impacts. As a larger objective, this will assist in achieving the decarbonisation targets as envisaged in COP26 by providing a roadmap to the policymakers and other key stakeholders.

Endnotes

- 1 <https://www.smev.in/ev-sales>
- 2 https://www.google.com/search?q=big+basket+electrification+targets&rlz=1C1CHBF_enIN856IN856&oq=big+basket+electrification+targets&aqs=chrome..69i57j46i199i291i433i512j0i433i512j46i433i512j0i512j0i131i433i512j0i433i512j46i199i291i433i512j46i433i512.11231j0j15&sourceid=chrome&ie=UTF-8
- 3 'Avoid' refers to reducing the need for motorised travel and reducing the trip length through transit-oriented and compact development of cities. The 'shift' instruments refer to a modal shift from the most energy consuming and polluting urban transport mode towards more environmentally friendly modes. The 'improve' pillar focuses on enhancing the fuel efficiency of a vehicle

