

## Supporting the Transition to a Low-Carbon, Affordable and Inclusive Transport System in Peri-Urban and Rural Districts of Rajasthan

### Background

Rural India, home to over 70 percent of the Indian population, is a key aspect of the energy transition. It is thus essential to understand the barriers to the electric vehicle (EV) market in venturing to the rural areas of India, both from the perspectives of supply and demand and the public and private domain. This would help enable the formulation of strategies and interventions required specifically in peri-urban and rural areas to develop an efficient and electric-driven transport network that is at par with urban areas in terms of infrastructure, accessibility, and service.

Rural mobility in India faces several challenges that inhibit efficient transportation and connectivity. Public transportation services are often inadequate or non-existent. The absence of regular bus or train services makes it challenging for residents to travel to nearby towns or cities for education, healthcare, and employment opportunities. Even people with private vehicles such as motorbikes or cars also face challenges like the low density of fuelling stations and a poor after-sales market.

The state of Rajasthan, with its high rural density and low per capita income, can be considered a suitable geographic area to study and develop case studies to nudge policymakers and industry stakeholders to take actions that lead to an efficient, resilient, carbon-free transport network that expands across urban, peri-urban, and rural areas. This will not only expedite the transition to electric mobility but also contribute to the socio-economic development of all citizens, irrespective of their regions of belonging.

Therefore, it is critical to address the challenges of mobility in rural areas, especially now that the EV market in India is still emerging and offers some degree of flexibility, to have this transition or any other form of reform executed inclusively and

equitably. If delayed, the gap between rural and urban economies would keep on widening to the extent that adoption of EVs and penetration of supporting infrastructure shall be limited to urban areas only leading to rural areas depending on unsustainable fossil fuel for transportation needs.

This project will seek to identify the current gaps in availing mobility services in rural and peri-urban areas and identify the barriers to EV adoption in these areas. This ground-up evidence will be a useful way forward to design targeted interventions to enable an inclusive and affordable mobility system for all.

This project also aims to replace the existing transport networks from fossil-fuel-driven vehicles to electric vehicles and build new networks where these are inadequate or non-existent through electric mobility interventions. A cost-effective and efficient commute option would improve the accessibility to better education, healthcare, employment, and business opportunities, thereby contributing to socio-economic development in rural communities. This progress would also help shed light on the gender disparity when accessing mobility options.

### Objectives

The overarching objective is to inform the development of an affordable and inclusive, low-carbon transport system in rural and peri-urban regions of two districts in Rajasthan. The specific objectives are:

- Conducting a mobility needs assessment for the target districts to identify consumer needs and perspectives on the state of the existing mobility landscape, and the potential of EVs to cater to these needs.
- Carrying out in-depth stakeholder consultations with decision-makers representing the public and

private sectors to identify the gaps and barriers to extending the benefits of electric mobility beyond city centres.

- Identifying specific interventions needed (like skilling) to create a more robust EV ecosystem in target districts by conducting an infrastructure needs assessment.
- Proposing recommendations for decision-makers at the sub-national level such that the communities are better able to derive the benefits from the EV transition.

## Activities

### Secondary Literature Review

To better understand the scope and scale of transport needs in rural areas, and the opportunities and challenges related to EVs as an alternative solution. A review of international and domestic initiatives to address rural mobility issues and promote electric mobility in rural areas will be useful to shape and inform the subsequent actions for this project.

The review of different rural welfare policies like the National Rural Employment Guarantee Act, Rashtriya Sama Vikas Yojana, Sampoorna Gramin Rozgar Yojana, Fair Weather Roads, etc. would also inform on the scope of utilising/converging those policies for developing an efficient transport ecosystem

### Scoping Visits

Scoping visits to identified regions will help build a general idea of the on-ground situation. Informal conversations with sellers and buyers of conventional or EV about their commute requirements – public and personal, public transport support, options available for buying a vehicle, barriers for adopting EVs, general awareness of EV benefits and policy support will be very useful to develop a framework within which the next activity of stakeholder consultation can be executed.

### Formation of Project Advisory Committee

A Project Advisory Committee (PAC) will be formed with two to three subject matter experts (internal and external) to guide and advise the project team on each project activity, assess the findings from each activity, and highlight relevant areas for further interventions.

The PAC's role will also be crucial in connecting with relevant stakeholders in government agencies and

industry and improving the overall quality of the work executed under the project. Consultations with PAC members will be done on a 45-day basis or as and when it seems essential and appropriate.

### Stakeholder Consultations

Learnings from secondary literature and scoping visits would help in having more result-oriented discussions. These will be done to understand the perspectives of stakeholders from government and industry around rural mobility and assess the policy and market structures around EVs and how these can be leveraged to put out effective solutions for improving adoption rates of EVs. The stakeholder consultations would also inform on setting up priorities for action and recommending policy measures.

### Mobility Needs Assessment Survey

A survey of 200 households within the middle- and low-income levels across two districts of Rajasthan (Banswara and Pratapgarh) will be conducted in a phased manner to generate baseline data on travel patterns and commute requirements in peri-urban and rural communities and whether public transport is capable of catering to it. This exercise would provide information on gaps in the demand side of the rural mobility ecosystem. The survey would be both qualitative and quantitative.

### Infrastructure Support Assessment

This exercise will help ascertain gaps in the supply side. Stakeholder mapping of EV players, financial institutions, demand aggregators, and skilling agencies along with the information on the availability of public charging stations, EV dealerships, financial structures, service and skilling centres would be collected and evaluated.

This baseline data would be compared with potential demand estimated through consumer surveys. This would help in addressing the challenges of developing an efficient and carbon-neutral transport ecosystem.

### Report

A comprehensive report on the findings and learnings from both districts along with clear recommendations for state policymakers, stakeholders from industry and financial sector, and consumers will be developed to provide a streamlined direction for all the work executed under the project.

## Workshops

Findings of the report will be disseminated through workshops with participation from state-level policymakers, district administrative and transport authorities, stakeholders from the EV industry (OEMs, dealers, automotive associations, sales representatives), CSC, community members, and civil society organisations. The programme would be designed to ensure interactivity, allowing participants the opportunity to express their opinions.

## Expected Outcomes

- Sensitise policymakers on the subject of electric mobility as a solution for developing efficient transport networks in peri-urban and rural areas
- Renewed interest from the EV industry for venturing into peri-urban and rural areas on account of better market opportunities created through enhanced awareness amongst consumers and policy-level interventions
- Increased level of participation from women and marginalised communities across the transport network value chain
- Improved adoption rates of EVs for private commutes and public transport

