

SHAPING INDIA'S MOBILITY TRANSITION

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1. Executive Summary

- 1.1. India's mobility transition is often framed through the rapid adoption of electric vehicles (EVs). While electrification will remain an important component of India's pathway towards decarbonisation, the stakeholder dialogue "Shaping India's Mobility Transition: Stakeholder Dialogues on Sustainability, Equity, and Systems Change" underscored a broader proposition: India does not merely need cleaner vehicles; it needs a cleaner, safer, more accessible, affordable and people-centric mobility system.
- 1.2. Organised by CUTS International and Friedrich-Ebert-Stiftung (FES) India, the dialogue brought together policymakers, researchers, financial institutions, industry and civil society to examine the environmental, economic and social dimensions of mobility transition. The discussion moved beyond the technology question to consider how public transport, land-use planning, road infrastructure, energy choices, financing, regulation, institutional capacity, employment and inclusion must work together if the transition is to deliver meaningful outcomes.
- 1.3. The discussion highlighted that India's diversity makes a uniform mobility model neither practical nor desirable. The challenges facing a Tier-2 city are different from those of a major metropolitan area; similarly, the appropriate technology for a particular mobility application may differ depending on geography, infrastructure, affordability and travel patterns. Locally responsive solutions, therefore, need to become a central feature of mobility planning.
- 1.4. A second strong message was that mobility is ultimately about people. Shifting travellers from private vehicles to public transport requires more than infrastructure - it requires reliable services, behavioural change and policies designed around actual travel needs. Road safety, accessibility for vulnerable users, women's mobility and the time lost to congestion must consequently be treated as core components of mobility policy rather than secondary considerations.
- 1.5. The dialogue also brought financing and governance to the centre of the transition. Participants pointed to the need for dedicated transport financing, stronger state and

local government capacity, transparent climate finance, better data sharing and improved coordination across institutions. The transition will also reshape industries and employment, making skills, supply-chain preparedness and worker welfare important dimensions of a Just Transition.

- 1.6. The central message emerging from the dialogue was therefore clear: India's mobility transition should be measured not only by how quickly vehicles become cleaner, but by whether mobility becomes safer, more efficient, more inclusive and more responsive to the people and places it serves.

2. Key Takeaways

- 2.1. **EVs are necessary, but not sufficient:** Electrification must form part of a broader portfolio that includes public transport, alternative fuels, energy efficiency and better mobility planning.
- 2.2. **Mobility needs to become people-centric:** Infrastructure and services should prioritise safety, accessibility and the needs of pedestrians, women, older persons and other vulnerable road users.
- 2.3. **One size cannot fit all:** India's diverse cities and regions require locally tailored mobility strategies, particularly for Tier-2 and smaller cities.
- 2.4. **Public transport must be strengthened:** Behavioural change towards public transport will depend on reliable, flexible and accessible services supported by appropriate policy and institutional reform.
- 2.5. **Finance must match ambition:** Dedicated public funding, market-based instruments, climate finance and commercially viable models will all have roles to play.
- 2.6. **Governance is a critical bottleneck:** Better coordination, data sharing, domain expertise and stronger local implementation capacity are essential.
- 2.7. **Mobility justice is integral to transition:** Gender, affordability, accessibility, road safety, employment and skills must be embedded in transition planning.
- 2.8. **Technology choices should reflect local suitability:** EVs, biofuels, green fuels and other options should complement one another rather than compete within a single-technology framework.

3. Why India's Mobility Transition Requires a Systems Approach

- 3.1. India's mobility sector is at a defining moment. Road transport accounts for nearly 12 per cent of India's energy-related CO₂ emissions, while rapid urbanisation and rising transport demand are expected to place increasing pressure on infrastructure and public

services. India's urban population is projected to exceed 600 million by 2030, while passenger and freight transport demand is expected to increase substantially over the coming decades.

- 3.2. These trends make the mobility transition inseparable from India's wider development ambitions. Transport influences productivity, public health, energy consumption, urban form, employment and access to economic opportunities. Consequently, the policy challenge is not simply how to replace one vehicle technology with another, but how to build an ecosystem capable of meeting growing mobility demand sustainably and equitably.
- 3.3. Opening the dialogue, **Mandvi Kulshreshtha, Senior Programme Adviser, FES India**, emphasised the importance of bringing different perspectives together. She noted that sustainable mobility cannot be addressed in isolation and that dialogue is essential to develop solutions that are both practical and sustainable.
- 3.4. This framing was reinforced by **Sudhendu J Sinha, Former Adviser (Infrastructure Connectivity & Electric Mobility), NITI Aayog**, who highlighted the particular challenges confronting Tier-2 cities. Such cities often face infrastructure gaps and limited institutional capacity while simultaneously experiencing rising mobility demand. As he observed, *"We have a limited amount of public space and a restricted timeframe, within which we must expand and utilise this public space judiciously."*
- 3.5. The implication is significant: mobility planning cannot simply replicate metropolitan models. It must respond to local constraints, capacities and travel patterns.

4. From Vehicle Transition to Mobility Transformation

The discussion challenged the tendency to treat vehicle electrification as synonymous with mobility transition.

- 4.1. **Prodipto Ghosh, Distinguished Fellow, CUTS International**, placed behaviour and public transport at the heart of this question. His observation that *"Shifting people from private to public transport is ultimately a question of behaviour, shaped by policy"* shifted the conversation from vehicle technology to how people actually travel.
- 4.2. Understanding patterned and non-patterned travel can help public transport systems better reflect real mobility needs. This requires agencies to move beyond rigid operating models and consider how, when and why people travel. Greater flexibility in public transport services, therefore, becomes an important part of making public transport a credible alternative to private vehicles.
- 4.3. The discussion also recognised an important policy trade-off. India's transition must pursue net-zero and air-pollution objectives while protecting automotive

competitiveness, technological independence and economic stability. Environmental ambition and economic development should not be treated as competing objectives; rather, policy must seek to align them.

- 4.4. This also makes institutional reform critical. As Ghosh noted, strengthening institutions with relevant domain expertise and enabling greater coordination across disciplines will be an immediate requirement.

5. EVs: An Important Component, Not the Complete Solution

- 5.1. Participants broadly agreed that EVs have an important role in reducing transport emissions. However, the discussion consistently cautioned against treating electrification as a standalone solution.
- 5.2. **Abhilasha Jha, Chief Executive Officer, Bharat Bio Energy Association**, argued for a complementary clean-mobility ecosystem in which EVs, biofuels, green fuels and other resources are deployed according to their suitability. Her intervention highlighted a practical principle: the transition should be technology-neutral but outcome-oriented.
- 5.3. An EV can reduce vehicle emissions, but it cannot by itself resolve poor road infrastructure, congestion, unsafe streets or inadequate public transport. Similarly, the sustainability of a fuel pathway must be assessed across its wider value chain rather than only at the point of use.
- 5.4. **Gaurav Bhatiani, Senior Fellow, Ashoka Centre for a People-centric Energy Transition (ACPET), Ashoka University**, drew attention to another critical dimension: incentives. If fiscal and policy incentives are not aligned with mobility objectives, they can unintentionally reinforce outcomes that policy is seeking to change.
- 5.5. The experience cited from Andhra Pradesh illustrated this point. Policies that deprioritise incentives for car ownership - even where the cars are electric - can create greater space for public transport and encourage a different urban mobility trajectory. Strong public leadership, including measures such as bus electrification and expansion of public transport, can therefore influence the direction of the transition.
- 5.6. For India, the lesson is particularly relevant. The question is not simply which vehicle should be incentivised, but what mobility outcome the incentive is intended to achieve.

6. People-Centric Infrastructure: Putting Mobility Justice into Practice

If mobility transition is ultimately about improving people's ability to move, infrastructure must reflect people's needs.

- 6.1. **Rahul Goel, Associate Professor, Transportation Research and Injury Prevention Centre, IIT Delhi**, argued for a decisive shift from car-centric to people-centric

infrastructure. This means designing streets and transport systems around safety, accessibility and the needs of those who are often least protected by existing infrastructure.

- 6.2. The proposed adoption of a 30 km/h speed limit was highlighted as an important prerequisite for safer and more inclusive roads. The discussion also drew attention to mothers, older persons and other vulnerable road users whose needs can be overlooked when road infrastructure is designed primarily around vehicle movement.
- 6.3. Yet infrastructure alone is insufficient. Effective enforcement remains essential. Shortages of traffic personnel and limited on-ground enforcement capacity can undermine otherwise sound road-safety policies. Investment in people, policing and implementation capacity must therefore accompany regulatory measures.
- 6.4. The dialogue also highlighted the value of community participation. Mobility planning often remains top-down, while people with the greatest stake in local infrastructure may have limited opportunities to influence decisions. Greater participation can improve both accountability and the practical relevance of mobility investments.
- 6.5. This is the essence of mobility justice: ensuring that the benefits of mobility transition are experienced not only by vehicle owners, but by all those who depend on safe, affordable and accessible movement.

7. Financing the Transition: From Ambition to Implementation

A transition of this scale cannot be achieved without credible financing.

- 7.1. **Neha Kumar, Head, South Asia Programme, Climate Bonds Initiative**, brought the economic cost of poor mobility into sharp focus. With traffic congestion estimated to cost India around US\$22 billion annually in lost productivity, the cost of inaction extends well beyond transport. Time lost in traffic is time taken away from family, rest and productive activity.
- 7.2. This makes better mobility an economic and social investment.
- 7.3. Participants highlighted the need for state governments to treat transport as a budgetary priority and explore dedicated financing mechanisms, including market borrowing. Sovereign green bonds and other instruments can support large-scale infrastructure, while commercially financed projects need viable business models and credible pathways for repayment.
- 7.4. The discussion also underlined the expanding role of banks and financial institutions in the transition. Financial institutions are increasingly aligning their portfolios with

net-zero objectives, but low-carbon does not automatically mean low-risk. Credit quality must remain central to financing decisions.

- 7.5. Transparency is equally important. Climate finance needs clear disclosures and accountability to ensure that funds are used for their intended purposes. Taxonomies, international standards and mechanisms for calculating financed emissions can contribute to greater consistency and credibility.
- 7.6. Financing must also extend beyond large infrastructure projects. Transitioning supply chains, including smaller suppliers, will require access to finance, technical support and appropriate incentives. This is particularly important for an automotive sector undergoing structural technological change.

8. Governance: The Missing Link in Systems Change

- 8.1. One of the strongest themes running through the dialogue was that mobility transition is ultimately an institutional challenge as much as a technological one.
- 8.2. Transport, energy, urban development, industry and labour markets are often governed through separate policy and institutional structures. Without coordination, interventions in one sector can undermine progress in another.
- 8.3. **Archit Fursule, Lead, Engagements and Partnerships, Climate and Sustainability Initiative (CSI) Global**, highlighted the importance of state-level collaboration, particularly through data sharing and coordinated policy efforts. Better information flows can enable governments to understand mobility patterns and coordinate interventions more effectively.
- 8.4. At the local level, however, capacity remains a concern. Local governments often lack assured funding, technical expertise and implementation bandwidth. Strengthening local institutions must therefore accompany greater devolution of responsibilities.
- 8.5. This points to a fundamental policy requirement: India needs not only better mobility policies, but institutions capable of implementing them.
- 8.6. Strengthening regulatory agencies, building domain expertise, improving inter-departmental coordination and creating mechanisms for sustained cooperation between Union, state and local governments will be essential.

9. Mobility, Gender and a Just Transition

The transition also has significant social and economic implications.

- 9.1. Women's mobility is directly connected to access to employment and economic opportunity. As **Neha Kumar** highlighted, welfare measures that have enabled women

to travel farther for work have generated wider economic benefits. Future public expenditure can build on these gains by strengthening measures that expand women's access to jobs and opportunities.

- 9.2. At the same time, technological transition will change skills requirements and supply chains. The shift towards cleaner technologies will affect workers, manufacturers and suppliers across the automotive ecosystem. Training, reskilling and sensitisation will therefore need to be incorporated into transition planning rather than addressed after disruption occurs.
- 9.3. A Just Transition approach provides the necessary framework for doing so. Environmental objectives should be pursued alongside employment, skills, accessibility, affordability and inclusion.

10. Industry as a Partner in the Transition

The mobility transition also presents opportunities for India's industrial base.

- 10.1. **Rajeev Mishra, President, Indian Federation of Electronic Vehicles Association**, highlighted India's strong three-wheeler manufacturing ecosystem. The sector demonstrates how India's existing industrial capabilities can contribute to the transition, while also illustrating the pressure that rapidly changing technologies can place on infrastructure and regulation.
- 10.2. Enabling regulations, training and sensitisation will be important to ensure that industry can adapt effectively.
- 10.3. The discussion therefore pointed towards a collaborative model in which government establishes an enabling policy environment, industry invests and innovates, financial institutions support transition, and research and civil society organisations help strengthen evidence and accountability.

11. A Critical Issue Beyond the Mainstream Transition Narrative

The dialogue also brought attention to the role of existing fuels within the transition.

- 11.1. **Pradeep S Mehta, Secretary General, CUTS International**, raised the question of whether India is doing enough to ensure an adequate and reliable supply of CNG, particularly given its continuing relevance within the country's mobility mix.
- 11.2. The intervention added an important dimension to the discussion: transition pathways need to reflect the realities of the existing mobility ecosystem while India builds towards longer-term decarbonisation.

- 11.3. Rather than viewing the transition as an immediate binary shift between fossil-fuelled and electric mobility, policy needs to consider the relative suitability, availability, infrastructure requirements and environmental implications of different energy options across mobility segments.

12. From Dialogue to Action

The discussion points towards a practical policy agenda for the next phase of India's mobility transition:

- 12.1. **Adopt integrated mobility planning** that brings transport, energy, urban development, industry and employment considerations into a common framework.
- 12.2. **Strengthen public transport**, particularly in rapidly growing Tier-2 and smaller cities, with services designed around actual travel patterns and local needs.
- 12.3. **Move towards people-centric infrastructure** by prioritising pedestrians, cyclists, public transport users and vulnerable road users alongside vehicle movement.
- 12.4. **Align incentives with mobility outcomes**, ensuring that fiscal and regulatory support reinforces public transport, accessibility, safety and sustainability rather than simply increasing vehicle ownership.
- 12.5. **Enable technology complementarity**, allowing EVs, biofuels, green fuels, CNG and other options to contribute according to their suitability for different applications and geographies.
- 12.6. **Strengthen local implementation capacity** through assured funding, technical expertise, data and institutional support for urban and local governments.
- 12.7. **Develop innovative and transparent financing mechanisms**, combining public budgets, market borrowing, green finance, commercial capital and transition finance.
- 12.8. **Integrate road safety into mobility planning**, including speed management, enforcement, community participation and stronger local road-safety institutions.
- 12.9. **Mainstream gender and accessibility**, ensuring that mobility investments expand access to employment and economic opportunities for women and underserved groups.
- 12.10. **Prepare workers and supply chains for transition**, with skills development, financing and technical assistance extending to smaller suppliers and affected workers.
- 12.11. **Improve inter-governmental coordination and data sharing** to reduce fragmentation and enable evidence-based mobility planning.

- 12.12. **Measure mobility outcomes beyond vehicle adoption**, including accessibility, affordability, safety, travel time, public transport use, emissions and social inclusion.

13. Conclusion

The dialogue demonstrated that India's mobility transition is too consequential to be reduced to a single technology or sector.

- 13.1. EVs will remain an important part of the country's decarbonisation pathway. But cleaner vehicles alone cannot resolve congestion, unsafe roads, inadequate public transport, fragmented governance or unequal access to mobility. Nor can technology substitute for effective planning, financing, regulation and institutional capacity.
- 13.2. The more fundamental task is to change the system within which mobility choices are made.
- 13.3. That means enabling public transport to become a genuine alternative to private vehicles; designing infrastructure around people rather than cars; tailoring solutions to the realities of different cities; aligning incentives with desired policy outcomes; mobilising appropriate finance; strengthening institutions; and ensuring that women, workers, vulnerable road users and underserved communities are not left behind.
- 13.4. As the dialogue made clear, real systems change happens when mobility, justice and smart planning intersect.
- 13.5. For India, the success of the transition will ultimately be determined not only by the number of electric vehicles on its roads, but by whether people can move safely, affordably, efficiently and with dignity. That is the measure of a mobility transition capable of supporting both India's climate ambitions and its broader development aspirations.

14. Organisational Context

- 14.1. The dialogue was organised by **CUTS International** and **Friedrich-Ebert-Stiftung (FES) India**, bringing together policymakers, researchers, industry, financial institutions and civil society to examine how India can advance a mobility transition that is sustainable, equitable and responsive to diverse local needs.
- 14.2. CUTS International is a public policy research and advocacy organisation working across trade, competition, regulation, investment and sustainable development. FES India works on social, economic and democratic policy issues through research, dialogue and stakeholder engagement.