

INNOVATING ENERGY



Celebrating India's
Transition to Electric
Mobility

FOR EDITORIAL DETAILS AND ADVERTISEMENT ENQUIRIES

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EDITOR'S NOTE

Mr. Animesh Mishra

Chief General Manager, Head (Sales & CCPR),
Energy Efficiency Services Limited (EESL)



Dear readers,

The 'green development pact' in the recently announced G20 Declaration commits to adopting a multi-pronged approach for sustainable lifestyles and sustainable industries. The automotive industry can and must augment these commitments with a strong push for e-mobility in both public and private transportation.

It is true that, so far, private electric vehicles (EVs) in India haven't quite seen the kind of adoption one would have hoped for. However, it is also true that there is increasing awareness amongst citizens about the adverse effects of climate change. More than ever, they appreciate the need to make responsible choices in everyday life and are willing to act along those lines. Many are buying electric scooters and electric cars for personal use. I believe many would also be willing to use public transportation for everyday commute, if it saved time and offered a reasonable degree of comfort. And this is at once a challenge and an opportunity.

Public transportation in India needs both an expansion and a facelift. The Indian Railways are undergoing a truly admirable transformation already; it is time for road transportation to take a leaf out of their book. Deploying electric, energy-efficient buses is one of the ways of doing this, and we, as an organisation, have undertaken the National Electric Bus Programme for deploying thousands of electric buses across the country. This significantly expands our presence in the e-mobility space.

Electrification of public transportation has potential to ensure cleaner air, reduce emissions, strengthen energy security, and yield huge environmental benefits for our country. We are committed to making this transition a reality with the help of our demand aggregation model and financing solutions. We will continue to work closely with state governments, transport authorities, and other stakeholders for it.

In this context, I think that the public private partnership (PPP) model can open the doors for widespread adoption of electric mobility in the transportation sector. The government can provide the policy direction and the regulatory framework, allowing the private sector to do what it does so well – innovate rapidly, bring operational efficiencies, and leverage their investment capabilities to build, strengthen, and expand the e-mobility ecosystem in the country.

Collaboration with international players will help us develop new solutions or adapt existing ones to meet India's e-mobility needs in important areas such as battery swapping, vehicle-to-grid integration, and smart charging infrastructure. Energy efficiency, of course, will be the bedrock of all such initiatives.

The support of the Ministry of Power, the Ministry of New and Renewable Energy, Ministry of Housing & Urban Affairs and the Ministry of Road Transport and Highways, by way of policy framework, strategic guidance, and inter-ministerial coordination, will be crucial for strengthening the e-mobility ecosystem, creating demand, encouraging adoption, building capacity, and enabling financial incentives for EV players. EESL remains, as always, a willing and proven partner for such initiatives.

Together, let us work towards fulfilling what were once India's e-mobility aspirations but are now one of the biggest needs of our times.

Yours Truly,

Electrification of Public Transport in India: In conversation with Mr. Vishal Kapoor, CEO, EESL & CESL



Mr. Vishal Kapoor
CEO, EESL & CESL

1. Can you please elaborate on the need for the electrification of public transport in India and what is CESL doing to fast-track this transition?

The electrification of public transport is not just a transition; it's a transformation that holds the promise of cleaner air, reduced emissions, energy security, and economic benefits. We at CESL are dedicated to making this transition a reality with the help of our innovative financing solutions that support the development of sustainable business models to make electric public transport economically viable for operators. We are also actively engaged in various initiatives to fast-track the adoption of electric buses as well as micro-EMobility. For this, we work closely with state governments, transport authorities, and other stakeholders to provide end-to-end solutions, including procuring electric buses, setting up charging infrastructure, and ensuring operational efficiency.

Currently, we are implementing the National Electric Bus Program (NEBP) in alignment with the government's vision to deploy 50,000 electric buses nationwide. The NEBP primarily focuses on consolidating demand from public bus transport agencies, streamlining the electric bus tendering process, and collaborating with state-owned discoms to establish essential charging infrastructure. This initiative also offers electric mobility as a service, reducing operational costs for transit agencies and state transport corporations. Currently, we are exploring ways to make the electric bus business model more resilient, transitioning from a CAPEX outright purchase model to a sustainable, long-term public-private contractual arrangement.

Furthermore, we are collaborating with international and domestic partners to leverage the latest technology and expertise in the field of electric mobility. This includes electric freight, electric trucks as well as electric tractors to expand India's electric mobility portfolio while supporting the government's ambition to reduce carbon intensity by 50% of GDP by 2030, compared to 2005 levels.

2. Our Honorable Prime Minister Shri. Narendra Modi recently launched the PM Ebus Sewa Scheme. What is the role of the Ministry of Housing and Urban Affairs in the implementation of the scheme? How is this helping with enhancing the adoption of Public EMobility?

The Ministry of Housing and Urban Affairs plays a crucial role in the success of the PM eBus Sewa scheme, which aims to boost the use of electric buses in Indian cities. Launched on August 16, 2023, with a budget of INR 20,000 crore, this initiative demonstrates India's commitment to sustainable transportation and decarbonization.

Under this scheme, 10,000 electric buses will be deployed, accompanied by 10 years of operational support and infrastructure development. It will enhance efficiency and scale with the help of demand aggregation at the national level and fostering public-private partnerships. This scheme will significantly benefit Indian states and cities, including hilly regions, which lack organized public transportation systems.

The Ministry's active role in implementing PM Ebus Sewa is crucial for widespread adoption of public electric mobility in India. Their support, from policy formulation to infrastructure development, is instrumental in realizing the scheme's transformative goals.

3. What are the opportunities that lie for CESL in support of this initiative?

The opportunities for CESL in support of the PM Ebus Sewa scheme are substantial and align with our commitment to advancing sustainable and efficient public transport in India. We can play a pivotal role in scaling up electric bus adoption by leveraging our expertise in demand aggregation and tendering processes, facilitating the procurement of numerous electric buses across cities. Additionally, we can collaborate with government and industry stakeholders to establish charging stations at key locations, support long-term public-private contractual arrangements, and offer financial solutions to encourage investments in electric buses. CESL, renowned for its technological advancements, will continue to monitor battery tech, vehicle design, and smart charging solutions, ensuring we recommend and implement cutting-edge solutions for enhanced electric bus efficiency.

4. Key challenges to the electrification of public transport in India and the way forward

The electrification of public transport in India faces several notable challenges, encompassing high initial costs, range anxiety, limited grid capacity during peak hours, and a general lack of familiarity with electric buses among both the workforce and passengers.

To address these challenges, multiple proactive solutions are being pursued. Notably, efforts are being made to provide innovative financing options, subsidies, and incentives to alleviate the financial burden associated with the substantial upfront costs for business owners. CESL has achieved significant progress in this regard, particularly through its demand aggregation model. For instance, within the Grand Challenge initiative, CESL successfully concluded tenders for 5,450 electric buses across five cities, with subsidies under FAME II. Remarkably, the prices discovered were 31% lower than diesel buses and 18% lower than CNG counterparts. Building on this success, CESL has been tasked with scaling up the electric bus program to encompass 50,000 buses in a phased manner under the National Electric Bus Program (NEBP). In this context, demand for an additional 6,465 e-buses was aggregated without subsidies, with prices proving to be 24% lower than diesel buses and 19% lower than CNG buses.

Recognizing the critical importance of establishing a robust charging infrastructure network, collaborative efforts are underway involving government agencies and private partners. These partnerships aim to efficiently achieve the goal of building such infrastructure. Concurrently, ongoing advancements in battery technology, coupled with effective route optimization and the implementation of intelligent charging solutions, hold the promise of effectively addressing concerns related to vehicle range limitations. Moreover, comprehensive support measures and awareness campaigns are also being actively implemented to ensure a smooth transition to electric buses for both workers and the common public. The successful electrification of public transport in India hinges on the effective resolution of technical, financial, and operational challenges, all while nurturing close collaboration among key stakeholders.

5. What is EESL planning to do in order to accelerate public transport in rural India?

CESL is committed to accelerating sustainable public mobility alternatives in rural India through a comprehensive approach. As part of EESL vision to provide universal access to innovative, affordable, and sustainable energy solutions, CESL is actively engaged in the development of sustainable and affordable mobility, aligning with the Government's carbon reduction targets and the need for affordable transportation options in rural areas. With the transport sector being a major carbon emitter and a large rural population relying heavily on public transport, CESL recognizes the importance of addressing this issue, especially for women who lack personal transportation options.

The Indian government's goal of creating a 5 trillion-dollar economy with a focus on inclusivity and sustainability has led to initiatives like the "Lakshpati Didi Yojana" aimed at increasing income for women in Self-Help Groups. CESL has identified target beneficiaries including Self-Help Group Women, ASHA workers, Anganwadi teachers, and students through field surveys conducted in Chattisgarh, Uttar Pradesh, Bihar, and Kerala. We also understand the financial burden of commuting on individuals covering daily distances of 25-30 kilometers.

Electric bicycles have the advantage of being environmentally friendly and cost-effective, making them well-suited for rural areas. However, the primary challenges hindering their adoption are a lack of awareness and affordability. To address this, CESL is actively developing low-speed electric mobility solutions, particularly electric bicycles, in line with government zero emission goals. It plans for demand aggregation through institutions to enable mass procurement and pass on the price benefits gained through economies of scale to end consumers, thereby promoting wider accessibility to this eco-friendly mobility solution.

6. What support is CESL expecting from stakeholders for the large-scale deployment of electric mobility in the public transport sector?

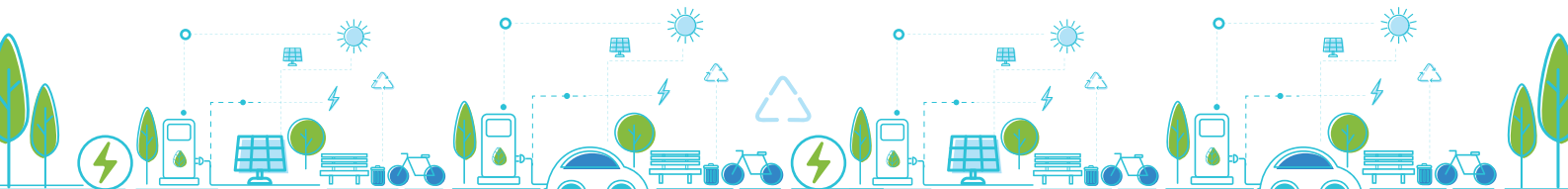
CESL recognizes that the successful large-scale implementation of electric mobility in the public transport sector hinges on a collective effort involving various stakeholders. We are actively seeking collaboration with a spectrum of partners, including government entities, industry leaders, financial institutions, local communities, and advocates for public awareness campaigns.

Our goal is to foster collaborative relationships with vehicle manufacturers, charging infrastructure providers, and technology innovators. These partnerships are integral to promoting innovation, driving down costs, and advancing the growth of electric mobility. Furthermore, we are looking to financial institutions to provide favorable financing options that can enhance the affordability and accessibility of electric vehicles for operators, thus encouraging their widespread adoption.

7. How and what according to you is the way forward under the "Public Private Partnership (PPP)" approach

The "Public Private Partnership (PPP)" approach presents substantial opportunities to drive the widespread adoption of electric mobility in India's public transport sector. This collaborative framework unites the strengths of government agencies and private sector entities, with clear alignment of shared goals and objectives. While the government sets the policy direction and regulatory framework, the private sector contributes innovation, operational efficiency, and investment capabilities, collectively focusing on the accelerated adoption of electric mobility.

This approach also permits risk-sharing, easing the capital costs burden through subsidies or incentives and encouraging private investment in electric buses as well as charging infrastructure. For this, transparent procurement processes are crucial, and CESL's expertise can aid this to a great extent. Through this synergetic relationship, joint awareness campaigns, knowledge sharing, data sharing, and capacity building initiatives can also be streamlined. Consequently, this will help expedite India's transition to sustainable and efficient public electric mobility by leveraging the strengths of both sectors while collaboratively addressing challenges.



Charging Ahead: A look at the India's last mile EV landscape



Ms. Suman Mishra
MD and CEO of Mahindra Last Mile Mobility Limited

India boasts a robust public transportation system from metros to buses, wherein the challenge often lies in seamlessly connecting these major transit points to more localised destinations. This is where last mile mobility come into the picture. Traditional auto-rickshaws, cycle rickshaws, and newer electric alternatives have long been the lifeline for passengers, offering them an affordable and accessible means to navigate the city's nooks and corners.

With the e-commerce boom and the proliferation of online retail in India, last-mile delivery for goods, especially from local retailers to consumers, has garnered significant attention. Vehicles designed for this purpose ensure that goods reach their end-consumers timely, maintaining the rhythm of a rapidly growing economy. To sum it up, last mile mobility in India is not just about transportation; it's about ensuring accessibility, enhancing the urban commute experience, and keeping the wheels of commerce turning efficiently.

Electrification has begun to weave its own narrative within this tale with 2- and 3-wheelers spearheading the electrification for India. Given these categories are uniquely Indian, we need to find our own solutions to accelerate this transition. Much has happened so far. EV adoption in 3-wheelers including rickshaws has reached 51% in FY24, with the L5 category contributing to 10.6%. 2-wheelers, autorickshaws, rickshaws, carts, and bicycles running on electricity are emerging not just as eco-friendly alternatives but as symbols of an India that is contributing towards a global good.

The EV adoption is driven largely by the following factors

Total Cost of Ownership:

Electric 3-wheelers are cost-effective alternatives to traditional ICE vehicles with lower operating and maintenance costs, making them an attractive choice for both drivers and fleet owners. These EVs save more than ₹ 3 Lakh over a period of 5 years against a CNG 3W.

Strong government support:

Game-changing initiatives such as FAME II, Auto-PLI and ACC- PLI have been key drivers of electrification. Multiple forecasts indicate that electrification in the L5 category will be over ~ 50% by 2030. In order to achieve these outcomes, continued policy support will be required for a period of time.

Environmental Impact:

Electric 3-wheelers contribute to a greener environment by producing zero tailpipe emissions, reducing air pollution and its associated health risks. Their eco-friendly and noise-less operation improves the air quality and contributes to peaceful urban environments benefiting both drivers and passengers with cleaner, healthier journeys.

However, while the electrification journey promises a sustainable future, to enable sustainability, it requires India-specific solutions over few areas.

Higher upfront payment:

Despite the long-term savings, the higher upfront costs of EVs acts as a deterrent for many potential users, especially those with limited capital like in the case of last mile transportation vehicle owners. These are solved to a significant degree by the FAME-II Policy which provides an incentive to the customer to reduce downpayment. However, we need better financing models with higher LTV and lower IRR to favour the customer's purchase decision towards EVs.

Scaling up Charging Infrastructure:

While electric 2- and 3-wheelers can be charged easily at home or smaller charging docks, the electrification of small commercial vehicles will be highly dependent on charging infrastructure. These need to be solved at scale.

Skilling:

To evolve solutions for India, we need research in areas such as thermal management of batteries, power electronics, and electric motor design. Additional opportunities for income generation include deploying charging infrastructure, mechanics and service technicians, etc. These open EV-specific curriculum partnership with universities and certification/trainings with ITIs and other technical institutes.

Localising Supply Chain:

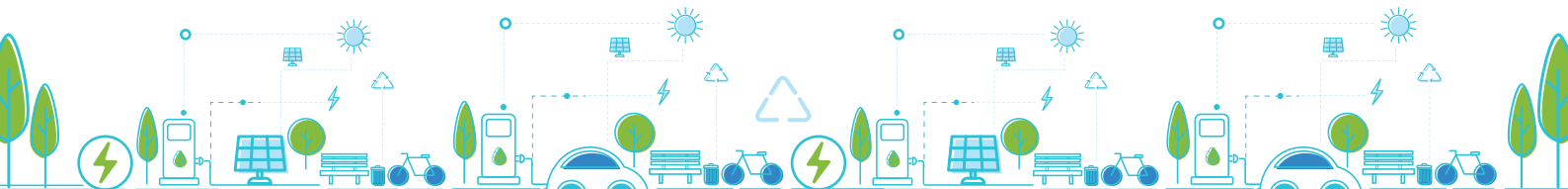
Policy makers are acutely aware of the critical need to localise the supply chain for EVs in India – specifically cells. With the setup of the ACC-PLI Scheme, several players are investing in setting up lithium-ion battery manufacturing facilities in India. These should enable localisation of cell assembly. In early 2023, the Geological Survey of India established 5.9 million tonnes of Lithium-inferred resources in the Salal Haimana area of Reasi district in Jammu and Kashmir. While these are preliminary results and would need more exploration, successful extraction of battery-grade Lithium can reduce import dependency and potentially enable self-sufficiency.

Circularity:

One of the key areas we need to progressively start solving is promoting circularity of the value chain by actively identifying second life and recycling opportunities. This needs active collaboration across battery manufacturers, recyclers, researchers and OEMs to establish efficient processes and sustainable practices that minimise waste and maximise resource utilisation.

Electrification of last mile provides an opportunity for the industry to do well while doing good.

Through a concerted effort between policy makers, OEMs and industry stakeholders we may well be able to establish the global benchmark with India's electrification journey in the last mile.



THE FUTURE OF MOBILITY: TRENDS AND INNOVATIONS IN ELECTRIC TRANSPORTATION

The transition to electric mobility is gaining steam, and the world is at a crucial point in the history of transportation. Electric mobility has come to light as a possible alternative in the wake of environmental worries and the requirement to lower greenhouse gas emissions. In addition to comparing India's mobility scene to that of the rest of the world, it is also important to examine trends and advances in electric transportation.

Rajiv Kumar Vij

Chairman & Managing
Director, Carzonrent India
Private Limited



Electric Mobility- Global Trends:

Rapid Advancements in Electric Vehicle (EV) Technology:

Globally, electric vehicle technology is advancing at a rapid pace. EVs are no longer limited to small cars with limited range; we now have electric trucks, buses, and even two-wheelers with longer battery life and faster charging capabilities. In countries like the United States, Europe, and China, major automakers are investing heavily in EV research and development.

Infrastructure Development:

One of the key challenges for electric mobility is infrastructure. Charging infrastructure is expanding globally, with an increasing number of public charging stations and fast-charging networks. In many countries, governments are incentivizing the installation of charging points, making it easier for people to own and use electric vehicles.

Transitioning to Sustainable Energy Sources:

The global shift to electric transportation is closely tied to the transition to renewable energy sources. Solar and wind power are becoming increasingly prevalent, ensuring that the electricity used to charge EVs is sourced sustainably. This trend aligns with the goal of reducing the carbon footprint of transportation.

Autonomous Electric Vehicles (AEVs):

The development of autonomous vehicles is an exciting frontier in electric mobility. While still in its infancy, the integration of AI and electric powertrains is expected to revolutionize the way we commute. Companies like Tesla and Waymo are at the forefront of this innovation.

Electric Mobility in India: A Growing Landscape

Government Initiatives:

India has recognized the importance of electric mobility in reducing pollution and dependence on fossil fuels. The Indian government has launched several initiatives to promote EV adoption, including the Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) scheme. State Governments have also announced and implemented various schemes to promote transition to electric vehicles. These initiatives provide financial incentives to manufacturers and buyers of electric vehicles.

Emerging Electric Two-Wheeler Market:

India is a global leader in two-wheeler usage, and the electric two-wheeler market is gaining traction. Companies like Hero Electric, Bajaj, Ola and Ather Energy are manufacturing electric scooters that are becoming increasingly popular among urban commuters.

Challenges in Infrastructure:

While India is making strides in electric mobility, challenges remain. The charging infrastructure in the country needs significant expansion and improvement to support the growing number of electric vehicles. This is especially important in a country with diverse transportation needs and infrastructure disparities.

Price Sensitivity:

Price sensitivity is a significant factor in India's mobility landscape. The initial cost of electric vehicles is often higher than their gasoline counterparts. To encourage adoption, it is crucial to make electric vehicles more affordable through subsidies and incentives. As one reviews the global trends and developments taking place in India's electric mobility landscape, following key differences and challenges become evident:

Scale and Diversity:

India's population and transportation needs are vastly different from many Western countries. The scale of implementation required to shift India to electric mobility is huge. Additionally, India's diversity in terrain, climate, and transportation requirements necessitates tailored solutions.

Charging Infrastructure:

While charging infrastructure is expanding in India, it lags behind some developed nations. Addressing this issue will be critical to enable widespread adoption of electric vehicles.

Two-Wheeler Dominance:

India's love for two-wheelers presents a unique opportunity. Electric two-wheelers can be a game-changer in reducing emissions and traffic congestion in Indian cities. However, it also requires specific policy support and investment.

Economic Considerations:

India's economic conditions and income disparities must be factored into the electric mobility equation. Affordability remains a key concern, and addressing it through subsidies and incentives is vital. The future of mobility is undoubtedly electric, and this transition is well underway globally. India is making commendable efforts to keep pace with the world in adopting electric transportation solutions. While challenges persist, the Indian government, industry stakeholders, and innovators are working collaboratively to overcome them. As the electric mobility landscape continues to evolve, India must focus on building a robust charging infrastructure, incentivizing electric vehicle adoption, and promoting innovation in electric two-wheelers. By doing so, India can, not only reduce, its carbon footprint but also lead the way in shaping the future of mobility for its unique needs and challenges. The global shift towards electric transportation is a journey that India is on, and it holds great promise for a cleaner and more sustainable future.





CREATING A HOLISTIC EV INFRASTRUCTURE: A CORNERSTONE OF EV ADOPTION

MR. PUNEET ANAND

AVP & Vertical Head, Corporate Affairs
Unit, Hyundai Motor India Limited

In the bustling landscape of the Indian automobile industry, where evolution is the norm, a remarkable transformation is underway. The 3rd largest automotive industry in the world is not just chasing mobility but leaping towards technology-driven mobility solutions. As the nation pivots towards sustainability, propelled by the government's mission to reduce the fuel import bill, Electric Vehicles (EVs) have taken center stage.

India's automotive realm is at a pivotal juncture. The convergence of factors, including burgeoning urbanization, infrastructure expansion, proactive government policies, and the evolving aspirations of consumers, has ignited the engines of innovation. Within this dynamic landscape, automotive manufacturers are exploring a gamut of technologies, from fuel-efficient petrol and diesel powertrains to zero-emission EVs, CNG, and alternative fuel options, all while bearing a common ambition - slashing carbon emissions.

The Indian government has unfurled an electrifying tapestry of policies and initiatives designed to accelerate EV adoption. Notably, the "Faster Adoption and Manufacturing of Hybrid and Electric Vehicles" (FAME) scheme, with its enticing financial incentives, has kindled the EV spark. Under FAME II, a staggering INR 10,000 crore has been earmarked for electric vehicle adoption and infrastructure development over the next three years.

India's EV market, though still in its infancy, is poised for a meteoric rise. Industry research estimates forecast annual sales surpassing one million by 2030. While numerous trends and factors will steer this transformation, a pivotal driver is a Robust Charging Infrastructure. Experts concur that India needs over 400,000 charging stations to accommodate nearly two million electric vehicles. Meeting this monumental demand necessitates a harmonious partnership between the public and private sectors. Encouragingly, several Public Sector Undertakings (PSUs) have been actively bolstering the charging infrastructure.

Leading the charge in India's electric mobility journey is Hyundai Motor India. Engraving its commitment to sustainable practices and carbon footprint reduction, Hyundai is orchestrating a green mobility

revolution, in harmony with its brand vision, "Progress for Humanity."

In Hyundai's vision, the entire transportation ecosystem undergoes a transformation - a transition from traditional fossil fuels to electric power, aptly encapsulated in the term "pump-to-plug." Recognizing this need, Hyundai Motor India is actively laying the groundwork. Over 110 fast chargers, with varying power capacities of 60 kW and 120 kW, are being deployed at Hyundai dealerships across India. This ensures Hyundai EV owners have seamless access to charging facilities.

But the innovation doesn't stop there. Hyundai has unfurled an expansive network of ultra-fast EV charging stations along national highways, a service open not just to Hyundai owners but to electric vehicle enthusiasts across brands. This strategic initiative aligns seamlessly with the Indian Government's electrification goals and encourages long-distance travel using electric vehicles. By erasing the stigma of inadequate charging infrastructure, Hyundai is demolishing a significant barrier to EV adoption in India.

Hyundai Motor India's relentless efforts mirror the nation's aspirations. As India charts a course to reduce its fuel import bill, minimize its carbon footprint, and confront the looming specter of climate change, the promotion of electric mobility becomes an imperative.

In the grand symphony of India's electrification journey, Hyundai's investments, innovations, and unwavering commitment to sustainability strike a harmonious chord with the nation's vision of a greener, cleaner, and electrifying future.





ENHANCED USER EXPERIENCE IS A CATALYST FOR WIDESPREAD ELECTRIC VEHICLE ADOPTION IN INDIA

SAURABH GUPTA

Partner, KPMG in India

The transition from traditional ICE vehicles to battery-operated EVs is steadily progressing across India. In 2022, over 1 million EVs were sold in India accounting for 5% of total vehicle sales. This growth has been enabled by a facilitative policy and regulatory environment for electric mobility at the national and subnational levels. Going forward, largescale adoption will greatly depend on converting early adopters into advocates for EVs based on their experience as a customer.

Proliferation of public chargers and advancements in battery performance have helped address the range anxiety to a certain extent. Instead, a new apprehension has taken its place, i.e., charge anxiety. This is the feeling of uncertainty whether an EV user will be able to charge at a public charging station. Online review of customer feedback on EV charging applications indicate that they are increasingly facing challenges such as difficulty in locating charging stations, non-functional chargers, inadequate customer support, complex pricing mechanisms and cumbersome payment processes.

Hence, improving the user experience of early adopters is critical. By putting customers at the core of the charging infrastructure expansion strategy, India can take a giant leap towards achieving its e-mobility ambitions. Following principles outline this customer-centric approach :

1.

Availability – It should be easy to locate charging stations

As per CII, India needs 13,00,000+ chargers by 2030 which necessitates ramping up the charger density across the country. These chargers should be set up where public can easily use them. While access to land may become a challenge in the urban context, repurposing of underutilized public assets or lands can help overcome this barrier. Further, multiple applications need to be downloaded today to locate and use charging stations. Adopting open data standards will facilitate aggregation of information and make available necessary information (charger location, availability etc.) to all users

2.

Reliability – Putting in place strong reliability and service standards

Charger reliability and service delivery is critical to overall customer experience and successful network deployment. In order to improve the operational reliability of charging stations, it is necessary to develop reliability standards and troubleshooting standard operating procedures. Further, targeted actions can be implemented for improving customer service and experience. These may include clear and multilingual instructions for independent operation of chargers, amenities for customer convenience and 24/7 helpline support.

3.

Transparency – Ensuring transparent pricing and seamless payments

It is important that the pricing is transparent, easy to comprehend and comparable. With CPOs typically having their own application for EV charging, there is a frequent need for customers to check tariffs across multiple platforms. In this regard, mandating the display of price in ₹ / kWh terms will facilitate comparability and bring in transparency. In addition, providing the option of multiple payment methods, such as contactless debit and credit cards, UPI, etc. would ensure a seamless and hassle-free experience for the user.

4.

Accessibility – Promoting inclusion and accessibility

Charging stations must cater to all users, such as senior citizens, persons with accessibility needs, and others. In this context, designing accessible infrastructure can include following considerations – (i) accessible location for mobility devices (wheelchairs, etc.); (ii) clear, visible, and multilingual signage and instructions; (iii) accessible built environment (parking, ramps, etc.); (iv) adequate lighting for those with visual impairments; (v) optimal height of charging plugs / screens, etc.

5.

Innovation – Constantly innovating for enhanced user experience

Catalysing innovation shall be key to delivering on customer demands. Innovations targeted at addressing customer needs like shorter charging time, smart charging, peer-to-peer charging, etc. will provide added value to users, and consequently enhance EV adoption. An enabling policy and regulatory ecosystem may be created supported by pilot projects on new and emerging charging technologies.

Customers need EV charging to be as easy, if not easier, than current refuelling of petrol and diesel vehicles. As India positions itself at the forefront of global efforts to mitigate climate change, the customer-centric transformation of the public charging landscape emerges as a critical enabler. The above framework will help guide interventions on improving the charging experience, steering the sector in a 'customer-first' direction, and building the customer's confidence and trust in EVs. Concerted action from public and private stakeholders will be essential in transforming the public charging landscape.





NAVIGATING INDIA'S MOBILITY REVOLUTION: THE RISE OF SEAMLESS MOBILITY AND EV LEASING"

MOHAMMED TURRA, QUIKLYZ

Mobility was simple across ages. However, in the current scenario it is not just about moving from point A to B but the various options at hand. Consumers evaluate multiple options and then decide what suits them. This is a major reason that the traditional vehicle manufacturers are not only focused on manufacturing but beyond that. They want to be mobility solutions providers. The standard norm is technology enabled vehicles.

India's population explosion and rapid urbanization have resulted in an explosion in the number of vehicles on the roads.

As an example, Delhi is at par with global megacities like London or New York, with ~ 6.5 lakh motor vehicles registered in 2022 and research indicating that a majority of the predicted 40 megacities will be concentrated in Asia and Africa by 2030, it seems safe to assume that unfortunately, traffic congestion is going to be a routine affair in many Indian cities soon. The signs are already visible. According to the TomTomTraffic Index report published in 2020, Mumbai, Bengaluru and Delhi feature among the top 10 most congested cities globally. A rise in traffic, while indicative of societal prosperity, also severely impacts the environment and the health of commuters.

Seamless mobility seems like an ideal option in this scenario. Touted as affordable, convenient, sustainable, and efficient, seamless mobility has been defined by McKinsey as a model in which the lines between private, shared, and public transportation are blurred. A McKinsey report suggests that seamless mobility can accommodate about 30% of commuters and reduce traffic by 10%. Users can commute to work or home using a combination of autonomous vehicles, e-scooters, and existing transit infrastructure like the subway.

To make this model a reality, there is a need to focus on 4 emerging trends within the automobile industry - autonomous driving, electric vehicles, connected vehicles, and shared mobility.

Leasing is one offering that supports mobility in a very balanced way. The shift from just owning a vehicle to a great mobility experience has its share of apprehensions, such as, right of ownership, associated risks related to overheads & resale of asset. Leasing enables driving a private registered vehicle that may

include life cycle expenses such as insurance and maintenance within a fixed monthly rental with one having the option to own it at the end of lease tenure.

The EV leasing ecosystem aptly supports transition to a safe, scalable environment friendly future. Furthermore, technology needs to play a greater part in seamless mobility. While there is already a great influence of technology in the automobile industry, some tech innovations like ride-sharing vehicles, autonomous vehicles (AV) or self-driving vehicles that include electric vehicles are already playing an active role.

EVs have become a reality and are gaining momentum as a viable alternative to petrol and diesel vehicles. This has been driven by private and public agencies joint promotions and usage across all segments such as public transportation, last-mile delivery and private ownership. With increasing product finesse, spread charging infrastructure, reduced range anxiety EVs are now creating substantial value for customers. Leasing is supporting EVs very well considering some of the asset risks around this industry.

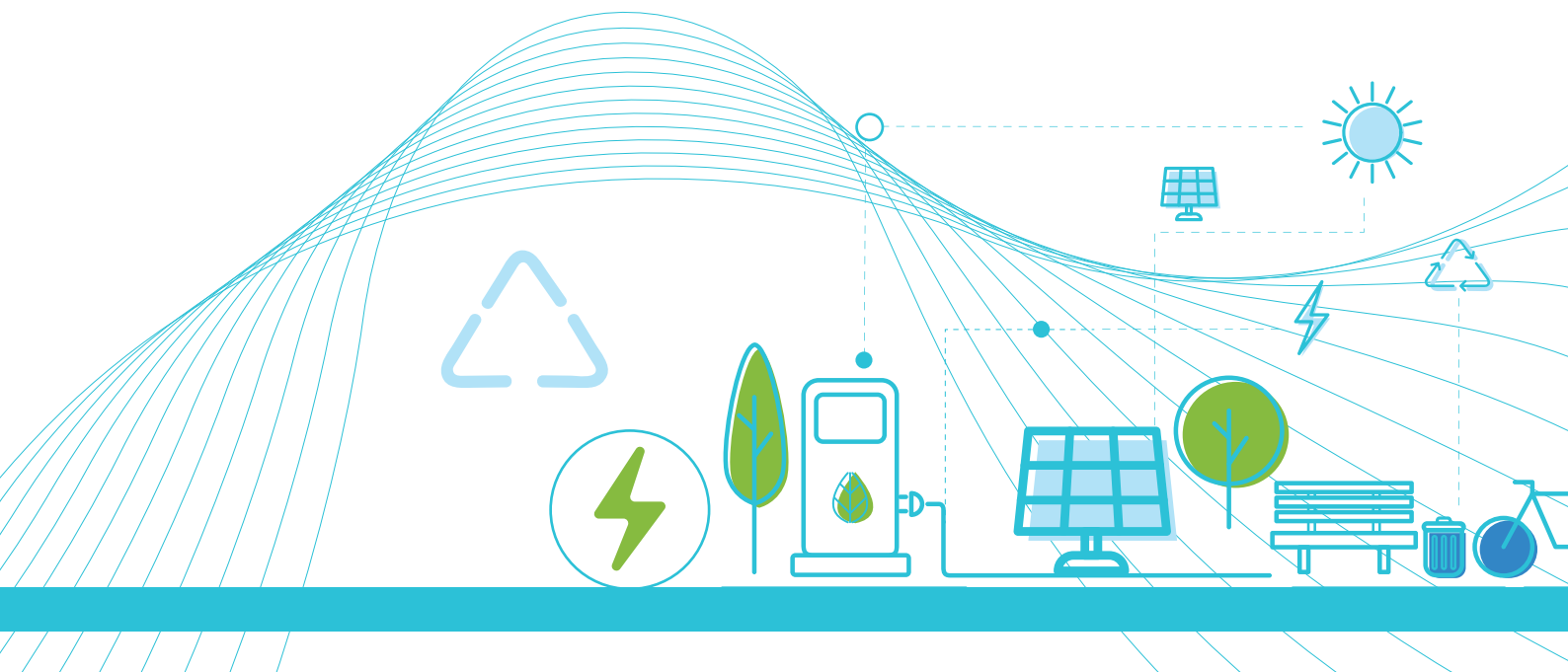
Change, though exciting, can be uncertain too. For people who are skeptical or cautious about EVs, connected vehicles or any new tech, leasing can be the right option to participate in the future of transportation.

EV Leasing has a robust future, and which is being adopted by businesses across the spectrum. Many companies are now focusing on employee car lease programs either as an added benefit or as part of their salary compensation. This not only shows their appreciation towards employees but also allows them to provide their valuable workforce with a safe and hygienic mode of transportation.

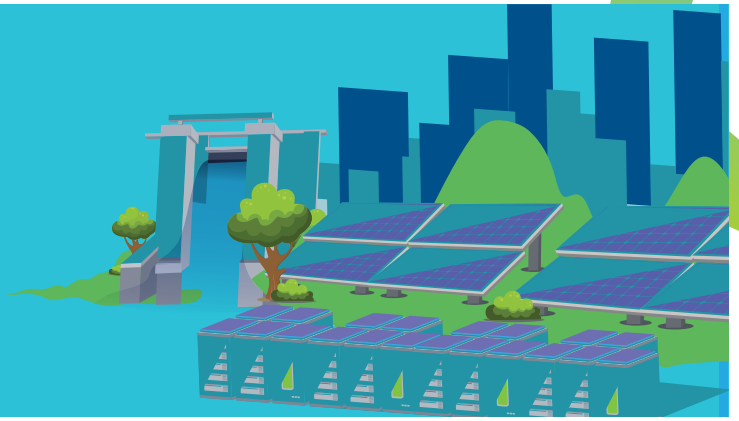
Mobility is at the core of the requirement. This is what businesses, individuals, or corporates actually want. They do not want the hassles of buying and selling, maintenance and insurance, repairs and servicing, and many more things that come with owning a vehicle. Mobility is what EV leasing exactly provides. Serving the basic core requirement, stripping off all the extra troubles from the asset no one asked for. Paying for the usage rather than asset is what makes economic sense as well.

While we are moving in the right direction it is important collectively all stake holders need to work closely be it financier – OEM partnership, varied funding and usage models and above all continued support from the government in supporting all around for a greener environment.

Mohammed Turra is Senior Vice President and Business Head, Quiklyz. Views expressed are those of the author.



NOTEWORTHY ENERGY DEVELOPMENTS



India and Saudi Arabia Ink Energy Cooperation MoU to Drive Climate-Friendly Energy Transition

India and Saudi Arabia formalized an energy-focused Memorandum of Understanding (MoU). The agreement, signed by India's Minister for New & Renewable Energy and Power, Shri R. K. Singh, and Saudi Arabia's Minister of Energy, HRH Abdulaziz bin Salman Al-Saud, aims to bolster collaboration in the energy sector. This MoU reinforces India's commitment to transitioning to cleaner energy sources and contributing to global climate change mitigation efforts.

Union Cabinet Greenlights Viability Gap Funding for 4,000 MWh Battery Energy Storage Projects by 2030-31, Boosting Renewable Energy Integration

Union Cabinet, led by the Prime Minister, sanctioned Viability Gap Funding for 4,000 MWh Battery Energy Storage System projects by 2030-31, offering 40% capital cost support and 85% capacity allocated to DISCOMS, advancing renewable energy integration, and reducing infrastructure upgrades.

G20 Commits to Low-Cost Financing for Global Energy Transition, Aiming for \$4 Trillion Investment

Highlighting the significance of low-cost financing for energy transition, G20 countries agreed to work towards facilitating access to low-cost financing for developing countries, for existing as well as new and emerging clean and sustainable energy technologies, and for supporting the energy transitions in the G20 New Delhi Declaration 2023. The declaration also noted the report on "Low-cost Financing for the Energy Transitions" prepared under the Indian Presidency and its estimation that the world needs an annual investment of over USD 4 trillion, with a high share of renewable energy in the primary energy mix.

IREDA and Bank of Maharashtra Forge Partnership to Boost Renewable Energy Project Financing

Indian Renewable Energy Development Agency (IREDA) has signed an MoU with the Bank of Maharashtra to promote co-lending and loan syndication for Renewable Energy projects. The collaboration aims to facilitate financing for a diverse spectrum of Renewable Energy projects across India. Bank of Maharashtra can invest in the Bonds issued by IREDA as per the specified terms and conditions.

Free parking for Electric Vehicles in Panchkula

The Panchkula city of Haryana has announced free parking for electric vehicles (EVs) as part of its efforts to promote clean transportation and reduce emissions. This initiative aims to incentivize EV adoption and reduce vehicular pollution.



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