

ELECTRIFYING THE LAST-MILE



Amid the rise of e-commerce and online shopping in the pandemic times, a segment that has been propelled to newer heights is the Electric Vehicle segment. Driven by the e-commerce boom as well as the growing need for switching to a sustainable future, electrification of the last mile is poised to be the future of logistics, given the challenges en route are addressed in the long term. Our feature explores the road ahead towards electrifying the last mile.

› Basundhara Choudhury

a business is only as good as its last mile impression.

An essential organ of the fulfilment chain, the last mile is truly the most critical part of the supply chain, as it influences a chain of reactions: customer satisfaction, delivery time and costs, and ease of use.

Last-mile delivery accounts for almost two-fifths of the total logistics costs, and this ensures the leading players will have to come up with newer innovative solutions to make it more efficient and cost-effective.

The e-commerce boom during the pandemic coupled with the rising concern about greenhouse gas emissions is now gradually causing a shift from diesel delivery vehicles towards vehicles using alternative power sources. As such, electrification of the last mile is now gaining traction as a viable alternative that is sustainable in the long run.

HOW THE PANDEMIC DROVE THE SURGE IN EV LAST MILE DELIVERY

The Covid-19 pandemic certainly acted as a catalysing factor in encouraging last mile delivery through Electric

Vehicles. However, this will not simply remain a pandemic-driven trend as analysts believe that even after Covid-19, the EV market will recover swiftly.

E-rickshaws, e-autos and e-two wheelers have emerged as the most promising segments for electrification in India and are expected to account for over four million units by 2025.

In the present times, the shift to electric mobility and last-mile delivery through EV has become imperative owing to the growing call for sustainability and digital intervention for reduced environmental impact. Furthermore, the call for going 'contactless' amidst

SEVEN DIFFERENT DELIVERY NETWORKS FOR LAST-MILE DELIVERY

	Segment	Use cases
Parcel size	Deferred delivery – arrives some day	Normal/express e-commerce shopping and returns
	Time-definite delivery – arrival next/specific day/time	(Largely international) B2B reliability shipping
	Same-day delivery – arrival on same day	E-grocery shopping and returns
	Instant delivery – delivered right away (less than ~2 hours)	Urgent document and item delivery
Larger than parcel size	B2B store delivery	Small-scale B2B shipping
	B2B FTL/LTL carrier	Express e-commerce shopping
	B2C LTL/two-person handling carrier	Same-day e-commerce shopping
		Prepared food delivery
		Instant e-commerce shopping
		Store delivery and replenishment
		Remaining full-truckload (FTL)/less-than-truckload (LTL) carrier (items >32 kg)
		B2C LTL/two-person handling (esp. furniture)

Store replenishment and freight delivery out of scope for now, estimate in later stage



At MLL, our aim is to not only deploy a large fleet of EVs but also to create a conducive environment for EV deployment and operations across the country. This includes building supporting infrastructure and technology such as charging stations and parking lots, training manpower, route planning and even battery swapping stations in the near future."

ANKUR SINGHAI

Vice President,
E-commerce

MAHINDRA LOGISTICS LTD



the pandemic worked as a positive reinforcement in the switch towards electric vehicles, thereby giving it a necessary impetus.

MOVING TO AN ALL-ELECTRIC FUTURE

The burgeoning demand for electric vehicles has led to many auto manufacturers competing shoulder-to-shoulder with start-ups to produce the most efficient and "smart" electric delivery vehicles.

On the global front, Volvo, Freightliner, Tesla, and China's BYD are among the leading companies producing heavy-duty semi-trucks for regional shipments.

In India, several companies have made considerable strides towards ensuring an electric future.

Amazon India's commitment to include 10,000 EVs as part of its delivery fleet by 2025 is also an example of what lies ahead.

3PL logistics leader FM Logistic India recently deployed our first batch of Electric Vehicles (EVs) in Bengaluru. The EVs will be used to carry out intra-city deliveries for one of their customers in the agri-commerce sector to help them to carry out hyper local deliveries to local kirana stores, supermarkets as well as end consumers.

Building on this experience, the company is all set this year to cover other areas under their green distribution network. Compact electric vehicles will be used to carry out hyperlocal deliveries in urban areas, which is poised to establish a much-needed coordinated urban distribution network.

EDEL, which is MLL's (Mahindra Logistics Ltd.) last-mile delivery cargo service on Electric Vehicles has announced multiple offerings, including package & trip-based services. These offerings provide customers with a scalable, sustainable, and cost-efficient solution. With a load capacity and enhanced range that compares well with existing ICE options, EDEL gives customers in the E-commerce, FMCG, Pharmaceutical, Consumer Durables and Electronics industries a significant edge in efficient and responsible distribution and last-mile delivery solutions.

EDEL's initiatives are aligned with Mahindra Logistics commitment to sustainability.



The EV based last mile delivery service EDEL is aligned to this and provides customers with a sustainable, cost competitive and technology enabled last-mile delivery solution. Their focus is on expanding their network based on their deep partnership with large enterprise customers.

As pioneers in the EV Cargo delivery space, the company intends on developing the entire ecosystem from parking to charging to battery analytics while supporting both last mile fulfilment and B2C logistics.

Bangalore-based startup Altigreen offers solutions for Last Mile Transportation (LMT) through 2, 3 and 4 wheeled vehicles for commercial use. Its first initiative NEEV L5 electric 3-wheeled delivery van, has been specifically designed to carry out last-mile logistics operations in a country like India, and has been engineered ruggedly to perform in our harsh environmental conditions. It comes in multiple variants



- Flatbed, Low Deck, and closed-container High Deck. This will be followed by more products in 2022, all in last mile transport segment.

GOVERNMENT SUPPORT AND INITIATIVES

The Government of India has undertaken several initiatives to promote manufacturing as well as the adoption of EVs that has led to increased penetration of EVs in the Indian market. The significant requirements for accelerated adoption of EVs call for the need for adequate infrastructure, regulations, and policies. This can be encouraged further by proposing and enabling framework. The regulations and policies under this framework should enable faster adoption of EVs in India by ensuring an affordable, reliable, safe and accessible eco-system as well as infrastructure.

Solving these challenges will require a stronger government push and policies that further encourage the electrification of distribution services in India.

As a part of a sustainable approach, the government's 'Green tax' charge has also helped in the increased use of EV throughout the country. The EVs will eventually generate better revenue in the long run



The biggest challenge is for manufacturers to design EVs that can cater to India's specific needs. Any EV that is not robust enough to perform in India's conditions only damages the overall perception of EVs in the mind of Indian last-mile fleet operators."

DR. AMITABH SARAN

CEO

**ALTIGREEN PROPULSION
LABS**





Various regulations and policies can be introduced that can further encourage the use of EVs in the transportation and logistics sector. To start with, it is important to have a comprehensive policy to create a conducive environment for the transition from Internal Combustion Engines to EVs.”

**ALEXANDRE AMINE
SOUFIANI**

MD and CEO
FM LOGISTIC INDIA



as they will build a reliable source. Further, the government has also reduced GST on EVs from 12% to 5%, deducted income tax of 1.5 lakhs on the interest paid on loans to buy EVs and brought down GST rate on Charger/ Charging Station of EVs from 18% to 5%.

CHALLENGES IN ELECTRIFYING THE LAST MILE

Bringing stakeholders together

The vastness of the country comes with its own challenges in establishing uniformity and infrastructural problems.

In the quest towards electrifying the last mile, aligning all the stakeholders in the geography is one of the biggest challenges that currently stands.

Over-reliance on diesel trucks

Diesel trucks continue to be the choice of transportation for the logistics sector, especially in the last mile. However, the growing use of smaller vans to cater to the hyperlocal customer base has seemingly disrupted the reliance on trucks alone, which again leads to more pollution, owing to more vehicles on the road.

Lack of charging infrastructure

India requires a widespread charging infrastructure to meet

the growing adoption of EVs, shares Mr Soufiani. In addition to more charging stations, the lack of space is also a challenge since people need a place to charge their EVs. Also, the lack of affordable renewable energy is putting pressure on the coal-powered electricity grid.

Range anxiety

Potential EV customers are apprehensive when it comes to the range that an EV offers. They want to ensure that the vehicle would get them to their destination before the battery runs out. This is closely linked to the lack of charging stations in the country. Therefore, there needs to be a stronger push for charging infrastructure and other solutions like battery swapping stations.

Financing challenges

EV customers currently face various financing challenges such as limited financing options, high interest rates, high insurance cost, and limited loan opportunities. As EVs gain widespread adoption, these financing challenges can hinder EVs' widespread adoption in the country.

Catering to India's specific needs

One of the biggest challenges that manufacturers face while designing EVs is to come up with a solution that can cater to India's specific needs. Unsafe driving practices, irregular

service & maintenance of vehicles will not be a favourable ground for promoting use of EVs and building a vehicle that can adapt to the waterlogged streets of India or high temperatures will be a test. Any EV that is not robust enough to perform in these conditions only damages the overall perception of EVs in the mind of Indian last-mile fleet operators, shares Dr Saran.

While talking about the importance of 3PL companies leading the way to creating a new, pollution-free ecosystem, **Alexandre Amine Soufiani, MD and CEO, FM Logistic India** shares his insights on how to tackle problems that come with pollution.

“To tackle the problems of rising pollution levels in congested cities, a new ecosystem needs to be developed. It will need three interconnected components: out of town storage, smaller advanced stock locations nearer the city centre and intracity last mile delivery. This may involve smaller players at some levels. However, large 3PLs such as FM Logistic will have to develop their own end-to-end, seamless solution for the flow of goods. 3PLs need to lead the way and spearhead this change integrating into the system a more sustainable long-term approach. It is only the logistics specialists who can bring together all the

elements required to develop a coordinated system.”

With the growing numbers of logistics service providers getting into sustainability, an additional challenge remains on how to get stock into warehouses swiftly, how to reach the remote areas as there are no charging points; how to get products to customers in good condition while reducing packaging; and how to stop delivery vehicles clogging up roads and cities as online sales continue to soar.

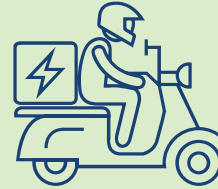
ENSURING SWIFTER ADOPTION OF EVs

What are the measures that can be taken to increase the adoption of electric vehicles in the transportation and logistics industry?

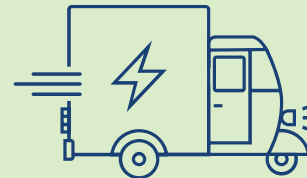
Transitioning to higher-powered batteries

While offering his solutions on better adoption of EVs, **Dr. Amitabh Saran, CEO, Altigreen Propulsion Labs** shares, “Presently, a majority of last-mile transport EVs on Indian roads are e-rickshaws/e-Carts from the unorganised market. They face several issues like average build quality, low-powered lead-acid batteries, frequent breakdowns, and lack of stability, to name a few. These e-Carts are poorly suited for heavy cargo delivery applications in multiple shifts. Hence a transition to higher

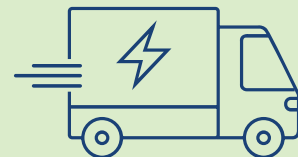
EVs BEST SITED FOR LAST-MILE DELIVERIES



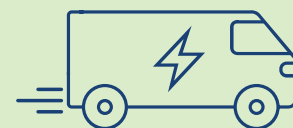
ELECTRIC SCOOTERS AND MOTORCYCLES



ELECTRIC RICKSHAWS



ELECTRIC LIGHT TRUCKS



ELECTRIC DELIVERY VANS

powered Li-ion battery run, L5 EVs would definitely help clear myths & misconceptions around EVs”.

Also, the financing options for EVs should be encouraged at par with those for regular vehicles. ICE cargo 3Ws are financed by traditional financiers considering their presence for many decades. While down payment and interest rates on loans are similar, there are fewer companies financing EVs due to a lack of understanding of the product, and perceived uncertainties around battery life (as high as 40% of the price of a vehicle)”, he says.

Charging infrastructure

Lack of public charging infrastructure is a roadblock as a perception for a driver (compared to petrol pumps all over the town), which if we're able to resolve will help deepen customer confidence. That said, a vast majority of last-mile transportation in cities begins & ends at a logistics warehouse - and these places usually have the vehicle charging facilities, adds Dr Saran.

On a similar note, Mr Soufiani while talking about charging infrastructure feels that appropriate policies and regulations need to be framed for charging infrastructure

in public and private places, through subsidised investment.

“This is one of the most important factors for the success of EVs & will help to keep EVs running on the road for more time. It is observed that petrol and diesel-powered vehicles pay an ‘increased pollution cess’ on fuel which is obviously exempted for EVs”, he says.

Special incubation centre

Business models focused on EVs can be developed and encouraged by starting an incubation centre for EVs. Initiatives for collecting a venture capital fund for research in the EV sector need to be promoted. Policies can be framed for exemption of tax payments of electric vehicles, shares Mr Soufiani.

Government support
Ankur Singhai, Vice President, E-commerce, Mahindra Logistics Ltd shares how a strong, well-planned effort on the part of the government and the industry can go a long way in raising the bar of quality, variety and overall adoption of EVs.

“There needs to be a strong push from government and industry to push the boundaries on battery

technology, battery manufacturing, new product development, standardisation and other allied activities like charging infrastructures across cities.”, he writes.

Furthermore, both central and states governments will have to offer cost effective solutions, such as reduced taxes, income tax benefits and import duty exemptions for certain EV parts, for electric vehicles to be adopted in the mass market and eventually, facilitate logistics players to embrace it in their fleet. Thus, the Logistics industry can be a catalyst in driving e-Mobility across the country in relation to 2-wheelers, 3-wheelers and 4-wheelers, states Mr Singhai.

CONCLUSION

The future is electric. To foster smooth adoption of EVs in the last-mile delivery scene, India must adopt new technologies and infrastructural development together with sustained government support and initiatives, to ensure a smooth ground for the deployment of Electric Vehicles. By unlocking the growth potential through sustained and coordinated efforts between the industry and the government, Electric Vehicles (EVs) are all set to become an integral part of India's last-mile delivery space. 📍