

Blog

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Electric mobility disrupting the logistics and last mile delivery industry

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[Electric Mobility - Logistics Industry](#)

The logistics industry has gone through multiple shifts and innovations in the last few decades. The emergence of online commerce has now brought a paradigm shift in logistics and transportation models with newer requirements such as on-demand delivery, last mile delivery, location tracking and hyperlocal delivery.

All of these changes have created a demand for a wide variety of logistics range that varies as per vehicle category (2-wheeler, 3-wheeler, heavy vehicles, etc.) and load of goods (grocery, boxes, fragile items, perishable items, food items, etc.). In order to meet such requirements, logistics and transportation industry has been working towards adopting sustainable and environmental friendly technologies based on electric mobility.

While electric vehicles have the potential to disrupt the entire logistics and transportation industry, the scope and pace of disruption can be even stronger in online and on-demand delivery platforms. This is because in online delivery, the entire operation is technology enabled and properly planned – right from pick-up from central hub to customer's doorsteps.

Since the operations are well-planned, it is possible to install charging infrastructure at central hubs to help overcome range anxiety and increase operational efficiency.

[Factors that make electric vehicles perfect for the logistics industry:](#)

1) Reduction in the cost of ownership

With the introduction of government policies and adoption of new technologies in electric vehicle industry, the overall cost of the electric vehicles has come down significantly. In the battery swapping technique, the batteries can be considered as a separate entity and can be owned by energy operators. This makes the upfront cost come down drastically. This reduction in the cost of ownership promotes the sales of electric vehicles in India.

2) Eco-friendly

Logistics industry is one of the biggest contributors to air pollution. The road transport emits toxic gases which pollute



the environment. Additionally, the conventional vehicles are also a source of noise pollution. [Electric mobility in logistics sector](#) is playing a significant role in effectively dealing with these environmental issues created by ICE (Internal Combustion Engines) vehicles.

3) No fuel costs

Electricity, instead of fuel for vehicles, not only reduces the greenhouse gas emissions, but this also helps bringing the running costs lower. There is a continuous surge in the petrol prices which increases the running cost of conventional vehicles. Electric vehicle in last mile delivery is an excellent instance in which the vehicle covers the same distance as a conventional vehicle but at a lower cost.

4) Lesser maintenance requirements

Electric vehicles require lesser maintenance and service support such as maintenance costs related to oil change, spark plugs, wires, fuel tank and pump etc. The easy integration of new technologies in electric vehicles enhances the adoption of electric vehicles in the logistics sector.

5) Reduced cost for last mile logistics

The supply chain enterprises are finding electric vehicles more economical for last mile logistics. Their simple vehicle structure allows easy integration of modern technologies for fleet tracking and optimization.

6) Tracking and analysis of electric vehicle logistics

For fleet operations, it is easy to track the valuable information about the electric vehicle and its battery such as status related to battery health, lifecycle, charging and discharging. This can be done with the help of software and sensors incorporated into electric vehicle logistics. The battery analysis is effective in increasing the life span of batteries used in electric mobility in logistics.

Parameters	Internal Combustion Engine Vehicle (ICE)	Electric Vehicle (EV)
Cost of Ownership	Low	High
Eco friendly	Air and noise pollution	No pollution
Fuel cost	Hike in petrol prices	Battery replacement cost
Maintenance cost	High	Low
Last mile logistics	Expensive	Cost effective
Technology advancements	Difficult	Effectively implemented

Government initiatives to support EVs in logistics sector

Given that logistics sector is one of the leading sources of greenhouse gas emissions in our country; there is a need of transition from conventional ICE vehicles to EVs. In addition, electric mobility in logistics sector saves the cost of importing the fuel from other countries and thus helps in reducing our import bills. Therefore, both the centre and the state governments are introducing new initiatives and policies to promote the sales of electric vehicles for the logistics sector.

1) Green Tax

The implementation of the 'Green Tax' by the government will have a big impact on the logistics sector. [Mr. Nitin Gadkari, Union Minister of Road Transports and Highways](#), announced the imposition of Green Tax on older vehicles which are polluting the environment. The scheme expects vehicle owners to pay 50% of the road tax and will be applicable for petrol and diesel vehicles. This scheme helps in motivating consumers to switch to less polluting vehicles which helps in achieving a sustainable environment.

2) [State level policies for adopting EVs](#) (click to read more)

To improve the efficiency of logistics system and making the environment free from greenhouse gas emissions, more and more states in India are working hard to adopt electric vehicles at a faster pace. These initiatives help in making electric

vehicles logistics more affordable and encourage the move to reduce toxic emissions to minimal level from logistics.



3) FAME (Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles)

This policy mainly promotes the manufacturing of electric and hybrid vehicle technology and ensure sustainable growth of the electric vehicle industry. Government is pushing deployment of EV charging stations by providing capital subsidy through Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles in India, (FAME) India Scheme Phase II and state level initiatives.

Further, government has de licenced the activity of setting up EV charging stations to increase private sector investments and facilitate market adoption. Thus, in the coming years there will be sufficient availability of Public Charging Stations (PCS) for EV owners.

4) NEMMP (National Electric Mobility Mission Plan)

National Mission document provide the vision and the roadmap for the faster adoption of electric vehicles and their manufacturing in the country. This plan aims to achieve national fuel security by promoting hybrid and electric vehicles in the country. It provide affordable and environmentally friendly transportation.

The motive behind all the policies is to encourage the faster evolution of electric automobile industry in India to reduce pollution levels. These initiatives and policies will be helpful in building confidence about the electric vehicles in the consumer minds and educating them about the benefits of attaining a sustainable environment through electric vehicles. In addition, it also creates employment opportunities in EV automotive industry and assists in improving the economy of the country.

Key announcements in electric mobility made by leading logistics and online delivery platforms

Globally, leading logistics and online delivery platforms are pushing the adoption of electric vehicles, given the benefits this offers in terms of both better economics and higher sustainability. For instance, FedEx, a logistics leader, plans to purchase only EVs by the year 2030 and recently signed up an agreement to add 120 electric vans in the US. Another logistics leader DHL has announced plans to build the world's first all-electric air cargo network.

As part of EV100, a global initiative by the Climate Group, over 100 of the world's leading companies are making commitments across over 80 markets to transition their fleets to EV and install EV charging for staff and customers by 2030.

In India as well, the logistics industry has taken rapid steps in the adoption of electric mobility. Following are a few instances that highlight how electric mobility is central to future of logistics and online delivery industry.

Swiggy, a leading on-demand delivery platform, has committed to cover deliveries spanning 8 lakh kilometers per day through EVs by 2025. The Company has also signed partnerships to build an EV ecosystem for its nationwide delivery partners.

This initiative is expected to lower the running cost for its delivery partners thus resulting into higher earnings. The company has also announced the commencement of trials for deployment of EVs for its delivery fleet from August 2021.

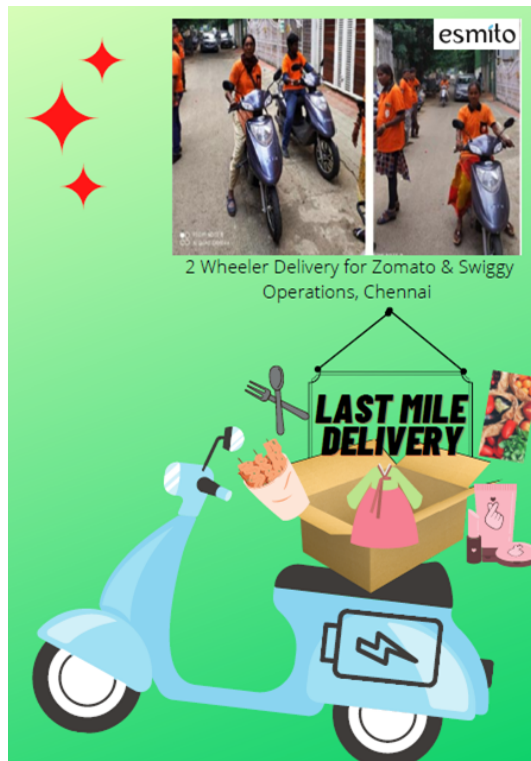
Flipkart, a leading online commerce platform and part of Walmart, has announced adding 25,000 electric vehicles in its delivery fleet by 2030. The fleet will comprise 2-wheeler, 3-wheeler and 4-wheeler vehicles and will be using the charging infrastructure set up by the company with its partners.

BigBasket, a leading online grocery company, is aiming to add 4,000 electric vehicles in the next two years. BigBasket has

pledged to have 90% vehicles in its fleet running on batteries in next 3 years.

Zomato, a leading online food tech platform, in June 2021, joined the Climate Group’s global electric mobility initiative, EV100 and committed to 100% adoption of electric vehicles by 2030. The company aims to actively aid the transition to EVs by enabling the ecosystem - EV players, battery manufacturers, and the government.

Amazon Inc. has announced plans to adding 100,000 electric vehicles for delivery by 2030 to reduce its carbon emissions, as part of the Climate Pledge signed by the company. Incrementally, in India, the company has plans to add 10,000 electric vehicles in its delivery fleet.



Summary of announcements

Company	EV Investments
Swiggy	8 lakh kilometres per day covered through EVs by 2025
Flipkart	25,000+ EVs to be added by 2030
BigBasket	90% electric fleet in the next 3 years
Zomato	100% adoption of EVs by 2030
Amazon	10,000+ EVs to be added in India

Challenges to adoption of electric vehicles

While deployment of electric vehicles in last mile logistics is an effective alternative, consumers are not fully comfortable with electric vehicle technology yet. Indian transport mix is still dominated by convention vehicles. Following challenges are resisting faster adoption of electric mobility in India

1. Higher cost of EVs with about half the cost of these compounding to batteries. Many supply chain enterprises are aiming to replace their conventional vehicles with electric vehicles for last mile logistics. Since the procurement cost of these vehicles are high, making it an economically unviable solution to replace the entire traditional vehicle fleet.
2. Limited charging infrastructure is another major constraint in the adoption of electric vehicles for the logistics sector. With the increasing demand of electric vehicles, more charging infrastructure is required. In addition, it will result into higher capacity needs. Because of the lack of charging infrastructure, the acceptability of electric mobility

logistics is restricted.

3. Range anxiety is also a limiting factor in the electric mobility logistics. The limited driving range depends on the limited amount of energy stored in their batteries, resulting into insufficient mileage for a trip. In addition, the recharging of batteries needs longer charging time.

In order to promote the large-scale adoption of electric vehicles in India, these concerns need to be addressed. In this direction, battery swapping offers an excellent alternative in making the electric vehicle more affordable.

With this technique, battery could be treated like fuel in a conventional vehicle and could be charged at swapping stations. This will also ensure that it does not take more time than fuelling the conventional vehicles. The government has been working rigorously for developing new and innovative charging infrastructure for revolutionizing the electric vehicle market.

The logistics industry needs constant innovation and technology enhancements to fully adopt electric vehicles for various transportation needs. Many new startups have emerged to assist in this innovation and shift.

Esmito is a vertical integrated company for providing energy as a service solution. The main focus of our solution is around the [Battery swapping](#), providing the SaaS solutions, swap stations, batteries, BMS, etc. We have been on our foot to make a remarkable difference in the electric mobility logistics and piloted two last mile logistics projects for Zomato and Swiggy at Chennai. In this project, we provided swappable batteries to both of these food delivery companies and become their energy partners. As we have designed intelligent batteries and swap stations, so, these last mile food delivery companies can easily focus on their logistics without worrying about the fuel intake and asset utilization costs. We take complete care of the concerns related to health, charging, discharging and safety of batteries. We continue to bring innovative solutions in the industry to make electric vehicles more adaptable to needs of the logistics sector.

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