INTERVIEWS

Turno's Battery Repurposing Tech to Drive Sustainable Growth in India's Commercial EV Industry

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CXOToday has engaged in an exclusive interview with **Hemanth Aluru, Co-founder & CEO, Turno.**

1. **At what stage is the EV industry in India? What should the industry do to meet India's net-zero goals?**

According to information gathered from the Vahan Portal and the Federation of Automobile Dealers Association (FADA) of India, 23,321 electric three-wheelers were sold in one month of the previous financial year as opposed to 18,187 internal combustion engine (ICE) three-wheelers. The projected 49 per cent CAGR and the anticipated 10 million annual sales of electric vehicles by 2030 in India indicate a transformative shift towards sustainable transportation. Such growth would not only contribute to reducing greenhouse gas emissions and air pollution but also stimulate technological advancements in the automotive sector. To achieve these targets, continued government support, investment in charging infrastructure, incentives for manufacturers and consumers, and collaborative efforts between various stakeholders will be crucial. According to us, the positive trajectory of the electric vehicle industry in India suggests a promising future for clean and efficient mobility in the country.

To meet India's net-zero goals, the electric vehicle (EV) industry can play a significant role by taking the following actions:

- **Accelerate EV Adoption:** The industry should focus on increasing the production and availability of electric vehicles at various price points and across vehicle segments with easy financing options. This can be achieved through addressing buyer's risk, partnerships, infrastructure, investments in research and development, and scaling up manufacturing capabilities.
- **Develop Sustainable Battery Solutions:** Battery technology advancements are critical for improving EV performance, reducing costs, and minimizing environmental impact. Repurposing and recycling the battery used in EVs can ensure a circular and green battery economy. This is also very critical for creating more compelling pricing options for consumers on a total cost of ownership (TCO) basis.
- **Promote Renewable Energy Integration:** With the increase in global demand for energy and to achieve net-zero goals and transition to green mobility, EV charging infrastructure should be powered by renewable energy sources both for commercial and passenger vehicles.
- **Research and Development:** Research and development (R&D) can indeed play a significant role in helping India meet its net-zero goals, particularly in the electric vehicle (EV) industry. R&D efforts can focus on improving the energy density, lifespan, and cost-effectiveness of EV batteries. Alongside this, there should also be committed R&D investments into creating

better repurposing use cases for EV batteries which Turno is very focused on.

2. **Tell us about your venture. What is the problem that you are trying to solve?**

Turno is an EV distribution and financing company that aims to improve the adoption (through affordability and accessibility) of commercial vehicles in India. We offer a wide array of vehicles from the top OEM brands at the best prices through our unique EV sales platform (with both online and physical stores). Using our proprietary battery tech platform, we also offer customers guaranteed buyback value on used batteries. Our offering provides the lowest total cost of ownership and a guaranteed buyback in three years Turno is a one-stop shop for anyone wanting to make the switch to commercial EVs. Our customer base includes SMEs, distributors, logistics and e-commerce operators, and more. We have partnerships with leading OEMs such as Mahindra & Mahindra, Piaggio, Omega Seiki Mobility, Euler, and Etrio, among others.

Our offerings address the most pressing challenges in the commercial EV segment of (a) clarity on the choice of vehicle best suited for individual buyers (b) affordable financing and (c) clarity on the end-of-life value of used batteries – all problems currently unaddressed by traditional channels through which customers purchase vehicles.

Turno's aim is to accelerate the transition from traditional gasoline-powered vehicles to electric miles, promoting sustainable and environmentally friendly logistics and mobility options in the coming years.

3. **Where does technology come in for your financing and distribution platform?**

The EVs' battery constitutes 40-50% of the cost and is the sole energy source for the vehicle's functionality. Typically lenders finance commercial vehicles based on well-established resale market values of used vehicles. In EVs there is no resale market and especially in batteries the end of life is completely unknown. This has led large financial institutions to sit out of the commercial EV market.

With Turno's proprietary battery technology platform, which assures an end-of-life value of used batteries to customers, lenders now have a clear life cycle value of EVs. Using this, Turno has been working with leading financial institutions to create customized loan products for CEVs and make EVs more affordable to the masses. Our platform also allows lenders to monitor in real-time the value of the asset. Turno also incentivizes user behaviour on vehicles to encourage better usage patterns thereby helping preserve asset values and making lending to EVs less risky.

4. **Can you comment on the battery infrastructure and technology of different OEMs?**

As of today, the battery technology across most OEMs is pretty similar. Everyone has adopted global standards in slow-charge batteries and customized battery designs to better suit Indian terrain and weather conditions. While fast-charge batteries are still a rarity in India, we believe that a lot of product differentiation can emerge in products once this is introduced. The challenge with fast charge is it significantly reduces battery life and thereby adversely impacts the total cost of ownership of EVs. With Turno's proprietary battery monitoring and repurposing technology these adverse impacts can be addressed with sustainable market-led solutions.

5. **Tuno has developed a new battery repurposing technology. Please elaborate.**

Unlike ICE engines, electric vehicle batteries, especially based on current popular Li-ion chemistries, will not last long. While none of us ever questioned with ICE engines will last 15 years, no one can make Li-ion batteries last the same time. On average, EV batteries will last 5 years based on comparable usage patterns. Given that ICE engines and EV batteries cost almost similar amounts, there is an enormous economic value loss that happens during EV battery replacements. This is inevitable.

Turno has identified a massive untapped opportunity to create a proprietary battery technology platform to repurpose used EV batteries into large-scale second-life energy storage systems. This significantly enhances the life-cycle value of batteries by prolonging their usable life and also avoiding impending environmental disasters such as dumping used batteries in landfills and creating more toxic e-waste.

The repurposed batteries can be used in industrial-scale energy storage systems for both grid and off-grid applications. With the help of this new technology, Turno is lowering the ownership costs by offering guaranteed buyback values on used batteries and lower financing costs. Ultimately, repurposing batteries is critical in making EVs more affordable and accessible to the masses.

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6. **How is commercial EV expected to transform the automobile sector in India?**

Businesses and individuals are becoming more conscious about their carbon footprint and opting for sustainable transportation alternatives especially given the potential for massive cost savings in terms of lower fuel spending and lower maintenance expenses of electric vehicles. We know that commercial vehicles consume 85% of fuel expenditure in India. Currently, numerous established OEMs have products in the small truck market which serve intra-city logistics use cases. These small trucks today have north of 30% EV penetration. As consumer awareness increases, OEMs are also rapidly evolving their product pipelines to introduce larger trucks, buses and other commercial vehicles in electric variants.

There are also ongoing efforts among OEMs to develop new-age batteries which can carry more energy and can last longer, though there are more R&D investments needed here. Today, India is fully dependent on foreign imports for cells which form automotive batteries. New investments in cell manufacturing domestically are also coming up to support the ever-growing demand for batteries. All in all, we believe the next decade is going to be an extremely exciting phase in the Indian automotive industry where the country will be tested on indigenising cutting-edge technologies to fulfill our clean transportation ambitions as opposed to traditionally being dependent upon foreign technology partnerships.

7. **What is your future plan to scale your existing business?**

One of the most notable trends we have seen is the increasing adoption of commercial EVs, especially in the last-mile delivery segment, as businesses look to reduce their carbon footprint and operational costs. In 2023, we expect the EV industry in India to continue its growth trajectory with increasing demand for EVs. Currently, the commercial vehicle segment has options for customers in the small truck segment. We are actively working with OEMs in introducing larger form factors and expect that in the next 6-9 months Turno will help supply chains of companies to start moving to EV even in the large truck segment. Currently, we primarily operate in the 5 key markets and expect to expand our footprint across the country in the next 12 months. This expansion will be led through our unique multi-brand store format which is supported by Turno's digital-first approach in customer acquisition and EV education.