The e-mobility-as-a-service key to Ashok Leyland's e-bus empire

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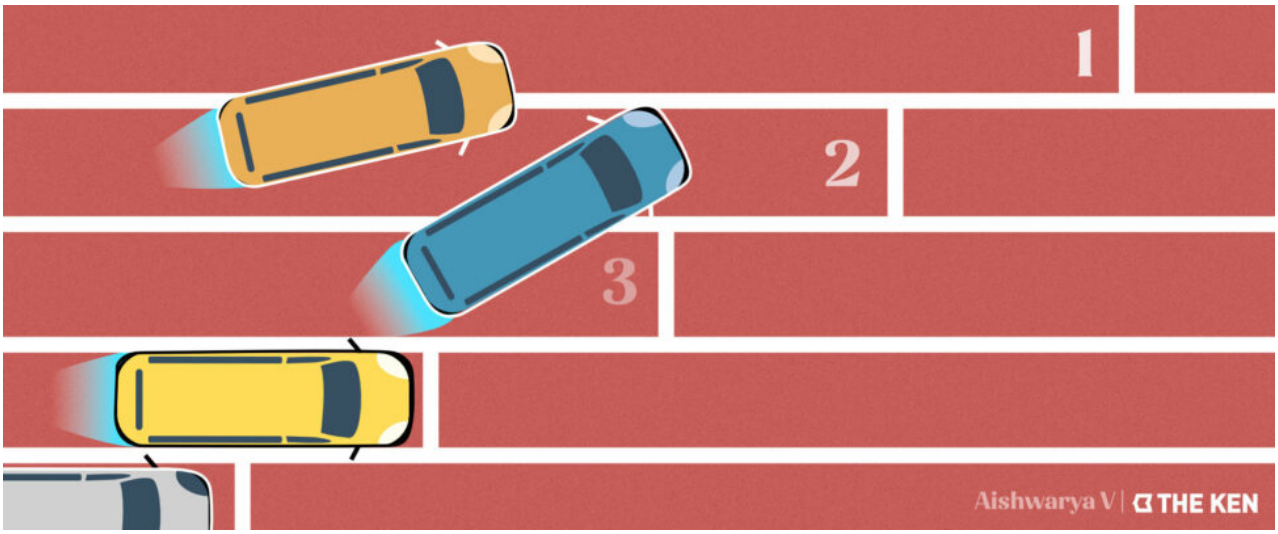

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There's a new electric vehicle (EV) battle emerging quietly in the country on a new front, far removed from the world of Ather and Ola Electric—buses. Strategies are being laid out, funding is being raised and government tenders are coming in left, right, and centre. But unlike the two-wheeler and three-wheeler segment, the battle for electric bus supremacy is mostly between the big guns.

At its centre is bus behemoth Ashok Leyland. The 74-year-old company is the world's third-largest bus maker, with a market capitalisation of Rs 34,551 crore ($4.54 billion) and a dealership network spanning over 50 countries. In February, the Hinduja Group-led company completed the sale of its existing EV business to its EV arm Switch Mobility for Rs 240 crore ($31 million).

Ashok Leyland formed Switch in April 2021, combining its electric commercial vehicle operations with that of British bus manufacturer Optare. Optare is majority-owned by Ashok Leyland.

Switch's raison d'etre is to produce "net-zero" carbon buses and light commercial vehicles (LCVs). The company is in the final stages of raising $200 million at a valuation ranging between $1.4 billion and $1.8 billion to fund its capital expenditure plans. Already, it has bagged state orders to supply 40 buses in Chandigarh and 300 in Bengaluru, and is eyeing many more tenders.

Switch is beginning to walk through the doors of what could very well turn out to be one of the world's largest e-bus markets. According to a report by German development agency GIZ and Indian think tank Niti Aayog, 515,600 EVs were sold in India in 2020.

The share of e-buses in that lineup is pitifully minuscule—only 600. However, the numbers are estimated to touch 1,000 this year and nearly double by next year, estimates Hemal N Thakkar, director of ratings agency CRISIL.

Other pieces are falling into place, as well. Cities have set up electrification targets—Mumbai and Bengaluru, for instance, are targeting 100% electric bus fleets by 2027 and 2030, respectively. The Indian government's Rs 10,000 crore ($1.32 billion) flagship EV policy—Faster Adoption and Manufacture of (Hybrid &) Electric Vehicles (FAME-II)—has set aside subsidies towards supporting e-bus adoption in the country. By 2025, ratings agency ICRA expects e-buses to account for 8-10% of all new bus sales.

Certain things have changed, however. The government is keen on electric mobility as a service (eMaaS), where the companies own and operate the buses for their customers. eMaaS has emerged as one of the key pillars of India's electric mobility transition, as both customers and operators seek maintenance, fleet management, and charging optimisation services for the EVs' life cycles. The asset-heavy model is slowly transitioning into being a thing of the past.

India's e-bus market is heavily dependent on tenders from state governments and state transportation undertakings (STUs). Multiple tenders have been cancelled , with either cash-strapped STUs struggling to pay up or there not being enough bidders. While the tender process has now been tweaked, it's gone from an outright purchase model to a gross cost contract (GCC) model. Instead of selling the buses and forgetting about them, bus makers will now have to maintain the fleet for the government, pushing up operating and maintenance costs for bidders.

Most of the STUs are in the red and don't make money. They'll be averse to owning a fleet in their own name.

Hemal N Thakkar, director, CRISIL

"STUs are now keen that original equipment manufacturers (OEMs) remain in the picture for maintenance and operation as well," says Ashish Kundra, principal secretary with the Delhi government.

Switch is, well, switching things up with its plans to set up a subsidiary called OHM Global Mobility to provide eMaaS to clients on a pay-per-km basis. "Switch will make the buses and invest in technologies to manufacture them. OHM will keep the buses on its books, and have the task for operating and maintaining them," explains Mahesh Babu, chief executive officer (CEO) of Switch Mobility India.

Currently, the company is among five or six frontrunners for a tender worth Rs 5,500 crore ($723.9 million) that will put 5,580 e-buses on the roads of five major Indian cities, thanks to its eMaaS trump card.

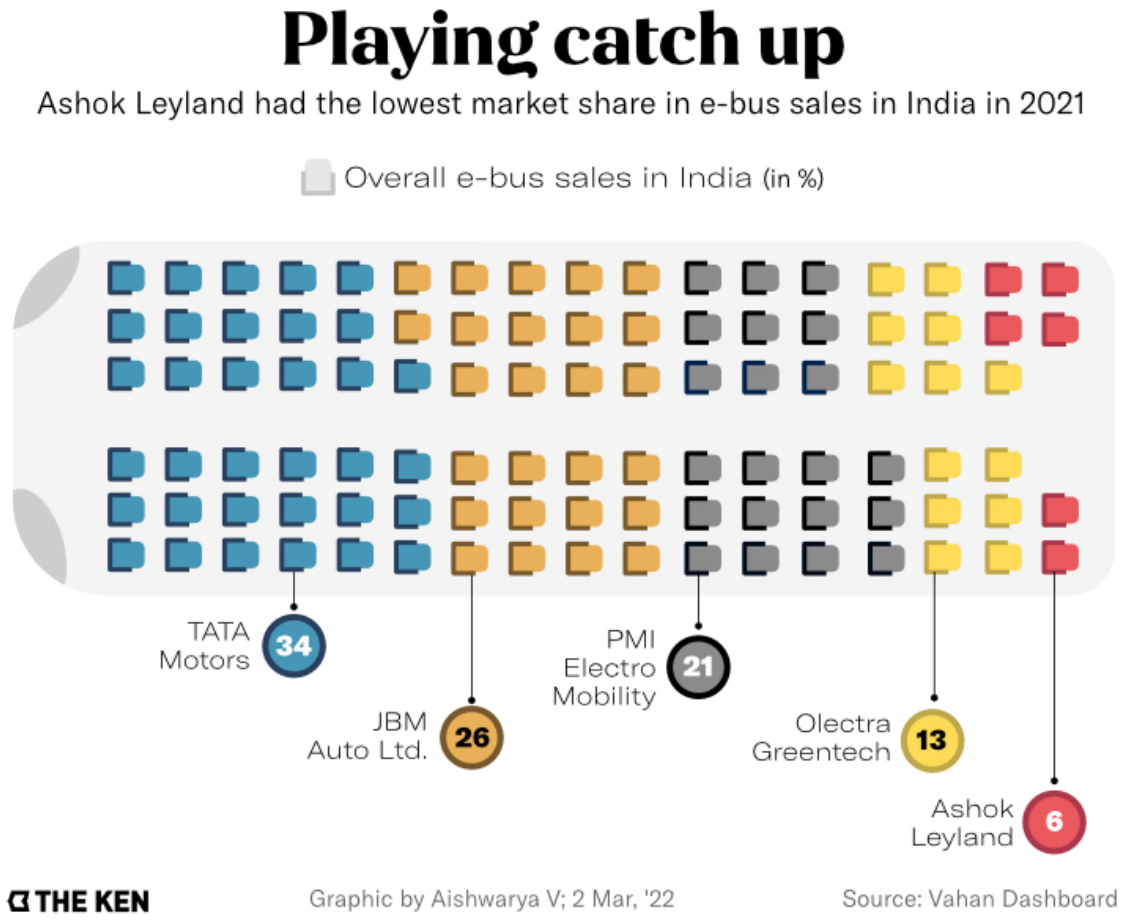
For all the firepower resting in the Hinduja Group stables, however, Switch is still a relatively new entrant into the segment. The company is up against several heavyweights such as Tata Motors, auto parts maker JBM Auto, Olectra Greentech , PMI Electro

Mobility, among others. The latter three companies all have joint ventures or have tie-ups with major manufacturers. Out of these, Leyland had the smallest market share in 2021. And neither is it the only one with eMaaS capabilities—while OHM is yet to be officially registered, Tata Motors set up its Tata Passenger Electric Mobility (TPEML) in December 2021.

Big fish

India's e-bus market in India is a bit of a paradox. In many ways, it's more organised than the two-wheeler and the three-wheeler markets. Bus depots can be easily turned into charging stations. And intra-city travel—with predictable routes and short distances to cover—is well suited to e-bus deployment, says Vishnu Rajeev, who leads a climate and mobility fund at Bengaluru-based seed fund Axilor Ventures.

However, it's also a market with very few players as compared to other segments. Government and STU tenders last as long as a decade or more, making it easy for a handful of players to dominate.



"Leyland has a very strong brand presence in the bus market. Their history and reputation among STUs and private operators have been robust, reliable, and long term," says Babu. Babu is the former managing director and CEO of Mahindra Electric, the EV arm of

Indian automaker Mahindra & Mahindra. Under his leadership, Mahindra Electric launched six new electric vehicles including three- and four-wheeler commercial vehicles.

Switch also has the Hinduja Group in its corner, and not just in the capacity of being Leyland's parent company. Dheeraj Hinduja and Shom Hinduja—third-generation family members—are on the board of Switch. Shom is president of Hinduja Group's Alternative Energy and Sustainability Initiatives and has led the group's venture into the next generation transformative spaces like electric mobility, battery technology, and cyber security amongst others.

"If it was the personal vehicle category, I'd have said Leyland is a bit late to the space. But this is commercial mobility. Any and every person you ask will probably have heard of Leyland, Tata, and Volvo. Very few people have heard of BYD or JBM. That brand also makes a huge difference," says CRISIL's Thakkar.

The company currently has one research and development (R&D) facility each in India and the UK and is also expanding to a third location in Spain. It has roughly 200 people working in the team across these locations. That number is set to grow to 400-500 in the coming years, according to Babu.

Switch is now focusing on reducing the buses' weight, improving battery capacity, training drivers, and improving the buses' energy efficiency, adds Babu. It's also looking for strategic tie-ups. In July, Dana Incorporated, a global leader in drivetrain and e-propulsion systems, picked up a 1% stake in Switch for $18 million. Under the agreement, Dana will also be a preferred supplier of electric drivetrain components for its e-bus and EV commercial vehicle offering.

Switch's most important strategy, however, has to do with money. An electric bus costs, on average, around Rs 1 crore to Rs 1.2 crore ($131,614- $157,937)—starkly higher than the cost of an ICE variant, which ranges between Rs 30-40 lakh. And yet, the total cost of ownership (TCO) of e-buses is roughly 12% lower than that of diesel buses, according to estimates from sustainability-focused research organisation WRI India.

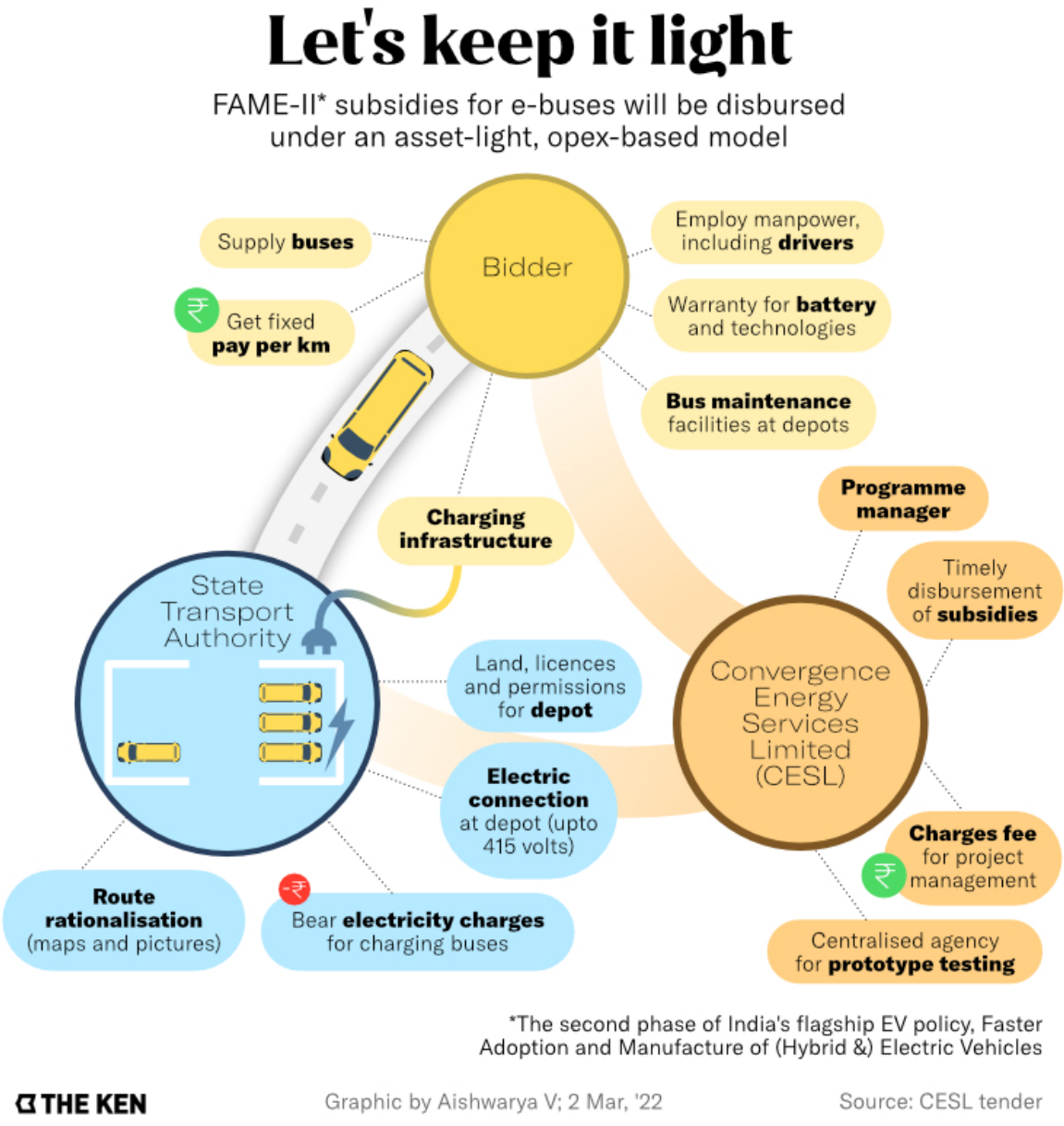
For a 12-metre air-conditioned, low-end variant of e-buses and diesel buses, the TCO comes to Rs 53.77/km and Rs 61.14/km, respectively. "Switch is focusing on bringing that cost even further down," adds Thakkar.

Trump card

Bringing the TCO down is crucial because, under the GCC model, it'll be the company that foots the operating and maintenance costs under the model.

With earlier tenders, India's Department of Heavy Industry provided a 60% subsidy for procurement. The STUs, which footed the rest of the bill, owned the e-bus fleet and were also responsible for its operation and maintenance activities. But it wasn't always easy to pull off—state-owned STUs often didn't have pockets deep enough to buy and maintain an e-bus fleet.

Under the GCC model, the tender will be a tripartite agreement between the OEM, STU, and the bus operator, with each having its task clearly cut out. According to a consultant with Convergence Energy Service (CESL), the model will not only widen the pool of bidders but also make the bids more competitive as they'll bid on a per-km basis. CESL is a state-run entity that the government brought on board as a programme manager and market maker for its FAME-II scheme. The consultant and others in the industry *The Ken* spoke to requested anonymity as they're not authorised to speak to the media.



The bids for 12-metre buses (which are typically 50-60 seaters) are expected to roughly average Rs 54/km, while for nine-metre buses, it's expected to be around Rs 44/km, says the consultant.

"Under such contracts, the operating cost (which forms 70% of total cost) becomes much more important than the capital cost," says principal secretary Kundra. Delhi plans to induct 300 e-buses into its fleet by the end of April. It expects a total of 2,800 e-buses to

be on roads by 2024, aiming to electrify 50% of its total fleet by 2027. “The national capital’s experience in running CNG buses on a similar operating expenditure-heavy, fixed-rate/km model is likely to be a boost,” he adds.

Changing Lanes

To aggregate bids and improve the disbursement of subsidies, the government modified the FAME II scheme and extended it till 2024 in June last year. After multiple rounds of consultations between CESL, government think tank Niti Aayog, state governments, automakers and bus operators, the government tweaked the tender process.

This is where OHM’s eMaaS capabilities come into the picture. The company is looking at four major areas of operation:

- Providing charging infrastructure and vehicle operation and maintenance
- Offering vehicle services and subscriptions
- Providing a battery-as-a-service model to e-bus operators. Here, the vehicle ownership and operations lie with customers, but the battery—which accounts for a significant portion of the EV cost—is given as a service to reduce the total cost of the vehicle
- Value-added services such as end-to-end connected fleet management systems, driver performance and monitoring, among others.

Unlike Tata Power, which is setting up public charging infrastructure , OHM is planning to “look at options to set up depots” for their own use. A big part of its focus is going towards being energy efficient. In April last year, Switch joined hands with global engineering major Siemens to execute e-mobility projects in India. Siemens Financial Services (SFS), the financing arm of Siemens AG, will consider a minority investment in OHM, while also collaborating on new business models, including eMaaS.

The long game

While it is still too early to say how well OHM will be able to provide these services, one thing is clear: OHM’s success will be crucial to Switch’s journey.

“eMaaS has emerged as a new paradigm for EVs,” says Supratim Naskar, chief technology officer at Bengaluru-based e-mobility startup Cell Propulsion.

Led by former Indian Space Research Organisation engineers, Cell Propulsion provides eMaaS solutions for intra-city buses and trucks, including fleet management services, trained drivers, maintenance, data analytics, and insurance support, to name a few. “There is a knowledge gap and lack of confidence in customers, drivers, and bus operators on how to run and operate electric buses,” he adds.

Some of India’s automakers are already in the process of building their own. Tata Motors spent Rs 700 crore ($92 million) establishing TPEML. Six-year-old battery-swapping platform SUN Mobility has announced an integrated service offering. It provides

customers with an all-in bundled solution—EVs with the flexibility of an unlimited swap plan for the duration of the contract.

Rivalry in the air

Switch has an abundance of competition. Auto parts maker JBM Auto formed a joint venture with Polish firm Solaris to manufacture electric buses in the country way back in 2016. Olectra Greentech and PMI Electro have technical tieups with Chinese automakers BYD and Beiqi Foton Motors respectively.

Even investors have recognised the opportunity. Take GreenCell Mobility, for instance. The company is promoted by EverSource Capital, the fund manager of the Mumbai-based Green Growth Equity Fund (GGEF). GreenCell began as a financial aggregator, participating in bids as financiers, but it now provides eMaaS services as well. “Right now, we have to invest in building the ecosystem. We have an R&D team in place and we’re also investing in setting up charging infrastructure,” says a current employee at GreenCell.

In February 2021, GreenCell said it would invest Rs 400 crore ($52.6 million) in a consortium led by Switch rival PMI Electro, buying a 49% stake in it. The consortium aims to deploy 350 e-buses and complementary charging infrastructure across six cities in Uttar Pradesh under a state government tender.

Babu, however, is optimistic about Switch’s chances. Having an in-house unit offering a wide range of services is likely to give Switch a better shot at winning clients than rivals entering into makeshift consortiums. Meanwhile, there has been little clarity on TPEML’s progress since it was set up in December, and SUN Mobility’s scope remains too limited at the moment, compared to the range of services that OHM is planning to provide.

For now, Switch is revving up with an eye on the Rs 5,500 crore-worth tender, but it’s avoiding putting all its eggs in one basket. STUs account for 20-25% of the total market share of electric buses, while the private segment is going to account for roughly 70% of the same, says Babu. “While we play very actively on the tenders, the primary market would be around employee transport, school bus, and many other applications which we are looking at,” he adds. The race to the e-bus finish line still has a long way to go.