

**“We’re building one of India’s first EV charging hubs with off-grid solar plant and battery energy storage system (BESS) in Gujarat,”
Kartikey Hariyani, Founder & CEO,
ChargeZone**

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Kartikey Hariyani, Founder & CEO, ChargeZone spoke to Amit Panday, Senior Research Analyst, S&P Global Mobility, on a wide range of topics, including the growing EV adoption in India and its impact on capacity utilization of its existing EV charging infrastructure. While the capital-intensive EV charging infrastructure business is facing heat globally amid a slowdown in the adoption of battery electric vehicles (BEVs),



Hariyani, a Stanford alumnus and an electrical engineer at heart, firmly believes that the infrastructure has to come up first to accelerate the EV adoption. Despite ChargeZone's aggressively expanding EV charging network cross the subcontinent, the founder does not think his company is moving too fast, too early. On the contrary, he estimates that India's EV charging space remains enormously underfunded. To his credit, Hariyani has steered ChargeZone into EBIDTA positive territory and is now eyeing PAT profitability as capacity utilization inches towards 20%. Edited excerpts from the interview:

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S&P Global Mobility: Please tell us about ChargeZone and its current footprint of EV chargers across India, the financial backers, the company's evolution so far and your growth plans for the near future.

Kartikey: ChargeZone is currently India's leading, if not the largest player in the EV charging space, with a total of 15,000 charging points. This includes what we call as COCO (ChargeZone-owned and ChargeZone-operated) and DOCO (dealer-owned and ChargeZone-operated).

We are backed by Macquarie Capital and VI Practitioners International. We are the only charge point operator (CPO) in India that is backed by two large private equity funds who are global players, with each of them having more than \$1 trillion as assets under management (AUM).

We started off in 2019 with a very clear focus of investing, building, owning and operating EV charging stations and providing EV charging as a service in India.

We are out-and-out an energy company, currently clocking sales of 10-gigawatt hour units every month. That is the kind of electricity that is being dispensed from our network currently every month.

Apart from the EV charging network and the traction that we have in terms of business, we have strong partnerships with the OEMs (original equipment manufacturers – commonly referred to the carmakers). This is a key differentiator. We took on the difficult path of setting up EV chargers on

highways and in the cities, providing freight charging as well as for intercity electric mobility, both for personal and commercial usage. The charging space has become a much bigger game for us now.

Going forward, we are looking for a 10x growth over our current scale, which is about clocking an annual revenue of 1,350 million Indian rupees (~\$15.33 million). We are growing at the rate of about 70% to 80% per year. And I must say that since the beginning of this year, we have seen an unexpected spurt in the demand for EV chargers. The credit goes to every OEM which has launched an EV in the local market. I think this is good news for the entire energy transition that's shaping up the mobility space in the domestic market.

S&P Global Mobility: That compels me to ask you how do you see an overall EV adoption in India? Usually, we see that EVs have penetrated more in the three-wheeler and two-wheeler segments even as the penetration in the four-wheeler segment remains at approximately 4%.

Kartikey: The automotive industry is a mixed bag of all kinds of vehicles. If we want to cut down on the tailpipe emissions, it is possible only if you address the commercial mobility segment. Now commercial mobility would include three-wheelers, light commercial vehicles, buses and trucks. If you talk about two-wheelers and cars, they belong to the personal mobility segment.

Over the last two consecutive months, which was the monsoon season when demand for new cars and consumer consumption of oil and gas (in automotive) is usually low, we have seen a very different trajectory. The percentage of electric cars to new car sales has reached to almost 5%. And if you just look at the last six months, this growth has been 10% month-on-month.

Even our energy utilization growth has been in the range of 12% to 15% month-on-month, from February onwards. That is good news for us as we have invested almost 5 billion rupees (~\$57 million) into our network, and we are waiting for the inflection point where we will see the required spurt in the growth. And since February, we found that most OEMs have rolled out EVs in the four-wheeler and large-format commercial vehicle segments and that has directly resulted in an increase in the utilization growth for us. This utilization growth is in early double-digits on a month-on-month basis for our EV charging network.

Electrification of the two- and three-wheeler segments has made a huge mark in the market. While these segments will continue to grow, it is the four-wheeler segment that will grow as the per capita income increases. As a result, you will see more semi-premium and premium car sales taking off. In the electric car segment, the price range at which most EV models are being launched is the 1 million rupee (\$11,350) to 3 million rupee (\$34,000). If you look at the recently launched EVs by Mahindra and Tata Motors, they have received a very positive response from the market.

S&P Global Mobility: What is the average capacity utilization for your EV charging stations? Can you share specific example where the capacity utilization is highest versus the lowest?

Kartikey: Yes, sure. Overall, on our charging network, the average capacity utilization has reached roughly 13.5%. This is across fleet charging and highway charging, on a stand-alone basis.

That said, on highways, we have already exceeded 6%, while the fleet charging hubs in the cities are in the range of 18% to 25%. A double-digit growth of our EV charging network has been very important for us.

Having said that, because our focus has been on the four-wheeler segment and the electric commercial vehicles, we have primarily seen this growth coming in the last six months. On the contrary, the last two years were relatively flat, with about 1% to 2% growth every month. Although we witnessed mild growth over the last two years, we continued to expand our network across the subcontinent. We have been setting up one charging station per day, and we would like to maintain that run rate.

S&P Global Mobility: In context of these percentages, what percentage is going to help you achieve the inflection point that you are expecting?

Kartikey: When the new electric car sales will become 10% of the overall passenger car sales, I think that will be the inflection point for us.



Source: ChargeZone

S&P Global Mobility: The business of EV charging infrastructure is very capital-intensive and is under fiscal stress in the US and Europe. A lot of consolidation is seen in this space, especially because the BEV uptake did not happen as it was earlier anticipated by the industry stakeholders. There's a global surge in the demand for hybrid vehicles. What is your perspective on this pattern? Secondly, do you see that there are risks associated with expanding too soon, too early?

Kartikey: It's very clear that there is no chicken and egg story over here. The EV charging infrastructure comes first, followed by the adoption of EVs. Let's zoom out and take a look at the data points over here. So, India sells six million cars a year and around one million trucks a year. The electrification has begun in both the segments.

When we look at the size of this market, we estimate that Indian EV charging infrastructure would be roughly a \$10 billion capex market. I estimate that India would need more than 1 million EV charging stations in best-case scenario. However, if we consider just 30% of that, aligning it with India's target of 30% EV penetration by 2030, we will still need 300,000 EV charging stations. That is our first math. This translates into \$10 billion capex. Companies such as ChargeZone, Jio BP, and all other charge point operators (CPOs) put together have not invested more than a maximum of 15 billion rupees (over \$170 million), out of the expected 900 billion rupees (\$10 billion).

India needs high speed chargers, we also need destination chargers, we need workplace charging and home charging facilities. In this context, I would say no matter how much we do, it is not going to be enough at this stage, at least for the next five years. But having said that CPOs such as ChargeZone, Jio BP, Tata Power and others are trying to expand the EV charging network across the country.

S&P Global Mobility: How do you define profitability in operations in a market like this?

Kartikey: It's not easy. But there is a path to profitability. Our first target was to stay EBITDA positive by any possible means. I am glad that we have been sticking our neck around for the last two years. And this is the reason why we have attracted the investments, and we will continue to attract the investments.

Secondly, PAT (profit after tax) profitability is a function of utilization, which should inch toward 20%-25%. Now, the good news is that we are growing every month. The traction that we got over the last six months has given us tremendous confidence because, personal mobility is one part of it, but it is more about the adoption of EVs in commercial mobility.

If you compare India with the Western markets such as the US and Europe, where it's predominantly cars, we here have a good mix of cars, buses, commercial vehicles and other categories. India is more similar to China in terms of EV adoption.

S&P Global Mobility: When we talk of electric heavy commercial vehicles such as electric trucks and buses, we are witnessing the installation of megawatt chargers in Europe, the US and in China too. Why are we not talking about it here in India? Is it too early?

Kartikey: I think globally also, the megawatt chargers are an early trend. In India, I think there is no need for a megawatt charging station (MCS) at the moment. There are some early pilots going on involving electric heavy-duty trucks.

S&P Global Mobility: Can you provide a split of AC versus DC chargers in your existing EV charging network across India?

Kartikey: About 98% of all our chargers installed are DC fast chargers.

S&P Global Mobility: What are the key factors you basically evaluate before you select a suitable site for installing EV charging stations?

Kartikey: I think it's the quality and public access to the location. Then we evaluate a heat map, which underlines the presence of personal and fleet EVs in a city. For highways, we usually look at the industrial and commercial corridors across India. We look at co-locating our charging facilities with existing restaurants and eating joints.

S&P Global Mobility: Where do you source your fast chargers from?

Kartikey: We source the charging equipment from Exicom, Siemens, Mastek and Star Charge.

S&P Global Mobility: Has ChargeZone set up any EV charging stations where there is no grid support? Do you also look at using renewable energy in your operations?

Kartikey: So, we have started buying renewable energy on the upstream side, mainly buying renewable energy for our charging stations, by virtue of introducing BESS (battery energy storage systems). We have done roughly seven locations on highways where we installed EV charging stations with BESS. It was mainly to solve for grid reliability issues.

Secondly, we have very recently picked up a new site to set up a mega charging hub for truck charging in Gujarat. At this location, we are going to introduce India's first ever off-grid solar plant with BESS. The facility is currently under construction. We are investing 100 million rupees in setting up this facility with roughly 1.8 megawatt solar and 3 megawatt of battery storage, which can cater to at least 50 electric trucks every day.

S&P Global Mobility: Lastly, what is your perspective on the government policy when it comes to EV charging infrastructure? Do you have specific recommendations?

Kartikey: The government should reduce the fixed demand charges from discoms (commonly used term for power distribution companies) because the demand charges were by the virtue of 24/7 factory operations for commercial towers, building, offices and so on. On the contrary, the EV charging stations has much lower utilization right now. Gujarat state has reduced the demand charges. In Delhi also, it has been reduced.

So, if the government can step in and reduce the demand charges for EV charging stations, that will be great. That is the only ask. We are not expecting any subsidies; we do not want any other commercial or financial support from the government. We are only asking for a reduction in the fixed demand charges by discoms.

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