



Terra Motors' e-rickshaw. Since many users operate their own taxi businesses, the company also focuses on after-sales service, including quick response to breakdowns. TERRA MOTORS

## EV IN INDIA: JAPANESE E-RICKSHAW ECOSYSTEM PAVING THE WAY FOR A BETTER LIFE

*As electric vehicles (EVs) rapidly gain traction in India, the shift to electric three-wheel auto rickshaws—an essential form of everyday public transport—is advancing. A leading Japanese EV manufacturer is aiming to create an e-rickshaw ecosystem to drive decarbonization and promote equal opportunities and improved incomes for locals..*

Around the world, the push for decarbonization is accelerating the adoption of electric vehicles (EVs). In India, this rapid transition is taking place with particular urgency. As the world's third-largest emitter of greenhouse gases, India's road transport currently accounts for nearly 12% of its energy-related carbon-dioxide emissions. The government is implementing a wide range of

support measures, aiming at electrifying 30% of private cars and 80% of its motorbikes and three-wheel auto rickshaws by 2030.

According to some estimates, the spread of EVs in India and the decarbonization in its power sector could reduce carbon-dioxide emissions by some 5 million tons by 2030 and over 110 million tons by 2050. Now, more than 90% of

newly registered EVs in India are motorbikes and auto rickshaws, showing that EV diffusion there is being spurred on by the needs of the common people rather than the wealthier classes.

In India's e-rickshaw market, one of the leading firms is Japan's Terra Motors Corporation. The company, founded in 2010, quickly conquered Japan's electric motorcycle market, and in 2014, expanded their business to India, where government promotion of EVs was more proactive than most Asian countries. Realizing the potential of auto rickshaws—commonly used as shared taxis in India—the firm released its own in-house models the following

year. Terra Motors has since increased sales steadily, mainly in eastern India, and in 2019 captured the top market share for e-rickshaws nationwide.

Besides pursuing its business as a manufacturer, Terra Motors now emphasizes the development of an ecosystem centered on e-rickshaws. Buyers of auto rickshaws are mainly lower income individuals such as taxi drivers, but some struggle to buy new vehicles and those that do face operational challenges due to breakdowns. Seeking to address these realities, the company is working to create a system to overcome common challenges. “We don't just sell vehicles; we go one step further to consider what can be achieved with them and turn that into a business,” said UEDA Akihiro, CEO of Terra



Top: Terra Motors recently introduced an upgraded high-speed e-rickshaw equipped with lithium-ion batteries. These vehicles are faster and can travel further per charge than those using lead-acid batteries, making them a good tool for users to increase their income. TERRA MOTORS

Bottom: The company started its EV-charging business in 2023. Pictured is a charging station in Haryana State. TERRA MOTORS



Left: “India is a vast country with many tough challenges to overcome, but if we can succeed there, we'll have the confidence to succeed anywhere,” said UEDA Akihiro, CEO of Terra Motors. TERRA MOTORS  
Right: A taxi driver who purchased an e-rickshaw using Terra Motors' loan to provide for his family and save for college. The financial services have enabled the company to reach lower income households. TERRA MOTORS



Motors.

A prime example is the financial services the company launched in 2021 that enable lower income individuals to take out loans for e-rickshaws. Terra Motors concurrently runs a system using IoT (Internet of things) to centrally manage vehicles whose loans are outstanding. While the system—through which it is now even possible to remotely monitor vehicle battery and motor condition—enables the firm to remotely shut down the vehicles of those owners who have defaulted on their loans, it also provides total customer support toward fulfilling loan repayment, including repairs and maintenance.

So far, some 5,000 loans have already been issued, with over 1,000 already repaid and a default rate of only about 2%. According to Ueda, “One of our customers was a teenager who started a taxi business to provide for his family and save for college after his father became ill. I hope people will use this system to realize their dreams and shape their futures.”

In order to grasp the needs of customers and reflect them in its

business, Terra Motors places the utmost importance on a common Japanese business principle known as *sangen shugi*, emphasizing the three *gens*: *genba* (on site), *genbutsu* (actual thing), and *genjitsu* (reality). It calls for seeking solutions by going out into the field to understand the real situation, rather than relying on armchair theories. Ueda said, “When we started our financial services, we visited the actual homes of customers taking out loans to see who was having problems and what they were. The firsthand experience from this approach has helped us make swift, apt decisions when issues arise.”

Going forward, Terra Motors plans to enhance its existing infrastructure for charging EVs. The first step will be to install its own chargers at about 350 dealerships nationwide. It also envisions using IoT data to identify routes with high EV traffic and strategically set up charging stations. Such efforts by the company to build new ecosystems will surely be a major force in driving India toward decarbonization. ●