

COVER STORY



Powering the Future: How Renewable Energy and Battery Storage Are Transforming India's EV Charging Infrastructure

India's electric mobility journey is gaining momentum, but its long-term success depends on more than just the number of EVs on the road—it hinges on building a sustainable, reliable, and scalable charging infrastructure. As the demand for EV charging grows, integrating renewable energy sources like solar and wind with battery storage systems is emerging as the game-changing solution.

This hybrid model not only reduces carbon emissions but also ensures round-the-clock charging access, even in areas with unreliable grid supply. From lowering operational costs for fleet operators to enabling clean mobility in rural regions, renewable-powered EV charging holds the key to an energy-resilient future.

To gain deeper insights into this evolving ecosystem, **Rashmi** spoke with **Raman Bhatia**, Founder & MD, **Servotech Renewable Power System Ltd.**, and **Krishna K Jasti**, Founder & CEO, **EVRE**, who shared their perspectives on technology, policy, and real-world projects shaping India's next-generation EV charging landscape.

The Critical Role of Renewable Energy in Building a Sustainable EV Charging Infrastructure

Speaking on the topic, **Raman Bhatia**, Founder & MD, **Servotech Renewable Power System Ltd.**, said, "Renewable energy sources have been in development for a really long time now and today, we're using them in almost

every industry out there and the EV charging industry is no exception. As a society, our energy consumption is increasing with each passing day and relying on renewable energy sources will be a major problem in the near future. Moreover, India's dependence on non-renewable energy sources poses a risk to both energy security and environmental sustainability. These resources are finite and increasingly volatile in price. On the other hand, solar and other renewable sources offer a clean, abundant, and decentralized alternative.

By aligning EV charging infrastructure with renewable energy, particularly solar power India can easily reduce the grid load and fossil fuel consumption while lowering the long-term operational costs to significantly cut down on emissions in the mobility sector. For India to build a future-proof and resilient EV charging network, it must be powered by renewables. This integration is what will truly make EV infrastructure sustainable, not just in environmental terms, but in scalability, affordability, and reliability."

On the other hand, **Krishna K Jasti**, Founder & CEO, **EVRE**, said, "As more Indians shift to electric vehicles, we must ensure that the energy powering them is as clean as the vehicles themselves. If EVs are charged using electricity generated from coal or other fossil fuels, we are just moving pollution from the roads to the power plants. This is where renewable energy especially solar and wind can make a real difference. By pairing EV charging with clean energy we reduce the load on the grid, cut carbon emissions and make the entire system more cost-effective in the long run.

India has an incredible advantage here with vast solar potential across the country and strong wind corridors in states like Tamil Nadu and Gujarat. Tapping into both ensures we build an EV charging infrastructure that's not just future ready but truly sustainable from end to end."

How Battery Storage Ensures 24/7 EV Charging and Balances Grid Loads

Raman Bhatia, Founder & MD, **Servotech Renewable Power System Ltd.**, said, "Strategically deployed battery energy storage systems (BESS) are a game changer in improving the performance and usability of EV charging stations specially in regions with frequent power cuts and limited grid

capacity. In these regions, battery storage acts as a buffer storing surplus energy during off-peak hours or when solar energy generation is high, and then discharges it when demand surges or the grid supply weakens. This ensures uninterrupted EV charging access, even in challenging locations.

Moreover, pairing solar power with battery storage further enhances the resilience of the system enabling us to create semi and fully off-grid charging stations, reducing dependence on conventional energy sources and peak-time tariffs. To put it simply, battery storage is becoming the backbone of round-the-clock EV charging ecosystems, which will be a major game changer in scaling clean mobility across every corner of India."

On the other hand, **Krishna K Jasti**, Founder & CEO, **EVRE**, said, "Battery storage acts as a buffer between EV chargers and the grid. It allows energy especially to be stored and used later when demand is high or when the grid is unstable. This is particularly important in areas where power cuts or voltage fluctuations are common. By integrating battery storage with EV charging stations, we can ensure uninterrupted charging access, reduce peak load stress on the grid and even enable off-grid or hybrid charging setups. For fleet operators or public charging points in remote locations this ensures that EVs are always ready to go regardless of grid reliability. Importantly, this stored energy doesn't always have to come from the grid, battery systems can also be paired with renewable sources like solar power enabling a cleaner more resilient and self-sustaining EV charging ecosystem."

Real-World Examples of Solar and Wind-Powered EV Charging Projects in India

Raman Bhatia, Founder & MD, **Servotech Renewable Power System Ltd.**, said, "While hybrid EV charging stations are still in the early stages of adoption, India has already taken significant strides in this direction. Cities like Gujarat, Delhi, and Bengaluru have pioneered the deployment of solar-powered EV charging stations integrated with Battery Energy Storage Systems (BESS), demonstrating the feasibility of clean, reliable, and grid-independent charging.

One notable example is a pilot project done by our company Servotech Renewable Power System Ltd., which established India's first grid-connected solar-powered EV charging



Raman Bhatia
Founder & MD, **Servotech**
Renewable Power System Ltd.

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