EverCharge

Overcoming 3 Major Fleet Electrification Challenges with EverCharge Technology

Background

While passenger vehicles often receive significant attention when discussing the transition to electric mobility, electrifying the nation's fleet sector will ultimately play an outsized role in a clean energy future. This shift towards fleet electrification presents three primary challenges:

- **Reliability:** Uptime is key to any fleet, and the consequences of charging downtime are highly detrimental to business operations.

- **Lack of Power:** Most facilities have finite electrical capacity and struggle to draw the power needed to charge a fleet of EVs.

- **High Cost of Infrastructure:** To power large-scale commercial fleets, the scale and scope of necessary charging infrastructure is significant – typically requiring hundreds, or thousands, of charging stations at each location.

EverCharge Technology

THE EVERCHARGE SOLUTION

SmartPower, EverCharge's dynamic load management technology, combined with the company's wireless mesh network connectivity and energy management, brings:

- **Reliability-first architecture;**
- **Dynamic load management, and;**
- **Cost-optimized infrastructure to EV charging.**

1. RELIABILITY-FIRST ARCHITECTURE

Reliability for fleet EV charging is measured for the total system – not just the hardware. Therefore, any dependencies on offsite software resources reduce reliability. This can lead to the over-buying of both hardware and vehicles in an attempt to mitigate reliability issues, which negates the cost savings associated with transitioning to electric. SmartPower technology is integrated directly into EverCharge's charging stations and operates on a wireless mesh network, enabling seamless, instantaneous communication between each station.

The mesh network ensures each EverCharge station can act as a cellular gateway, without requiring every device to have its own cellular connection. By utilizing onsite control and command for all stations – and not relying on technology offsite for full functionality – SmartPower eliminates unnecessary cloud dependencies and removes points of failure. If cellular service is lost, functionality is preserved: all data is stored onsite and then uploaded when service returns. Configured once, SmartPower is resilient to internet outages, cloud outages, and other third-party interruptions.
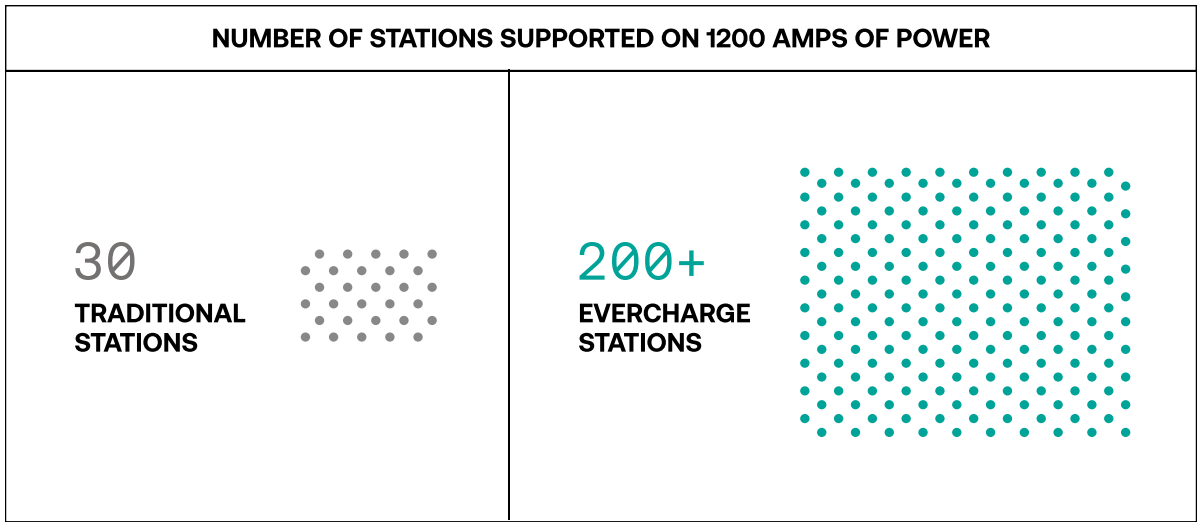
2. DYNAMIC LOAD MANAGEMENT

Most fleet environments have specific, well-known vehicle energy requirements and departure times, which can be maximized with an effective load management system.

Unlike other charging solutions on the market, EverCharge's SmartPower-enabled stations dynamically allocate power throughout the entire charging ecosystem based on real-time usage. When any vehicle completes charging or decreases its charging rate, power allocated to that vehicle is released and the system automatically re-allocates power to other charging stations.

SmartPower works to get the most vehicles charged when they are needed, freeing up capacity for the next vehicle that arrives – accounting for constraints such as building infrastructure, energy cost management, and known departure times.

NUMBER OF STATIONS SUPPORTED ON 1200 AMPS OF POWER	
30 **TRADITIONAL STATIONS**	**200+** **EVERCHARGE STATIONS**

3. COST-OPTIMIZED INFRASTRUCTURE

EverCharge's dynamic load management, wireless mesh network connectivity and energy management are designed to maximize the charging infrastructure without the need for costly electrical upgrades.

SmartPower's ability to efficiently manage power means electrical capacity requirements can be reduced. This directly lowers EV infrastructure costs, while dramatically increasing the number of charging stations that can be supported.

An integrated, localized wireless mesh network impacts deployment costs by reducing networking costs. Data connectivity is managed per site rather than per device, lowering data fees while eliminating the need to install cellular repeaters. The integrated mesh network also removes the need for costly control systems, access kiosks, ethernet cables, and other third-party networking systems.

Additionally, integrating SmartPower throughout the entire site translates into additional cost-savings. SmartPower gives the site's electrical equipment more intelligence, allowing it to sense when and where power is needed and supply it.

For example, if a garage door isn't in use, those 100 amps can be supplied to other equipment that is in use, like charging stations. When someone then needs the garage door to open, SmartPower will free up some of the power flowing to the charging stations and reallocate it to the garage door. With the ability to respond to demand changes and peak loads, SmartPower can tap into even more significant reservoirs of unused power to optimize for cost while installing significantly more stations compared to other charging systems.