## How does smart charging work



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[Webinar] The Build vs Buy Dilemma in EV Charging Management Software: Mastering the Hybrid Approach[Webinar] The Build vs Buy Dilemma in EV Charging Management Software: Mastering the Hybrid Approach

Supplier-managed charging and discharging are based on multiple signals such as real-time energy production, local energy consumption, state of charge information etc. V2G, V2B, and V2H are advanced supplier-managed charging approaches.

V2G smart charging can inject electricity back into the grid and help charge point operators/system operators manage energy consumption and increase the use of renewable energy.

V2B/V2H - During this type of charging, vehicles supply power to the home or building. Battery storage capacity makes EVs a flexible solution for the power system.

Smart charging efficiently manages how your electric vehicle charges by connecting it to the grid via three main techniques: load shifting, peak shaving, and dynamic load balancing.

Smart charging technologies are designed to enhance the effectiveness and efficiency of energy consumption. Charging at home and workplaces happens during periods of high demand on the electricity system. A smarter energy system can minimize peak demand and maximize the use of low-carbon renewable electricity.

Smart charging allows network operators to monitor charging remotely, set energy consumption limits, and ensure the energy capacity is not exceeded at a given location.

By regulating the energy flow according to the peaks and lows in energy demand, smart charging creates a resilient energy system that can withstand surges caused by EV charging. Furthermore, by leveraging the power of smart charging, the system avoids congestion and the need to spend billions on reinforcing the grids with power upgrades.

When a driver plugs their car into a smart charger, it won"t necessarily start charging immediately. By using smart scheduling and time-of-use-based tariffs, drivers can rest assured they will save money and energy by automatically charging when electricity is at its cheapest and within the maximum, predetermined energy limits.

Smart charging uses the optimal maximum charging speed available. It achieves this by taking into account the maximum available power, the car's charging capacity (which differs depending on brand and model), other cars that may be charging simultaneously, other energy users, the charging station's power capacity, and



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the connection to the grid.

Our future power systems must include renewable energy sources. EVs present an opportunity to maximize the environmental benefits and introduce much higher shares of renewables into the overall power generation mix.

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