Smart Charging Technologies

Smart charging technologies can alleviate barriers to installing and operating EV charging infrastructure at multifamily housing (MFH) properties.

Smart Outlets

Smart Outlets are similar to basic wall outlets, but are networked to enable energy usage tracking, revenue collection, remote monitoring, access controls, and sometimes load management. Residents will have to bring their own cordsets and may need to buy an adapter.

Smart Outlets [1234]

Electric Vehicle Energy Management Systems

Electric Vehicle Energy Management Systems monitor and regulate electrical flow to the property, a branch panel, or a single circuit.

These systems:

- Prevent EV charging from demanding more power than can be delivered to the property, or to the relevant electrical panel.
- Regulate how much power flows to many different chargers depending on available power, utility rates, or EV charging demand.
- Can integrate with other energy management systems on site to coordinate power usage and optimize for cost or other parameters.
- Are usually placed in a circuit between the panel and circuit breakers and a set of chargers or as integrated as part of a smart panel.
- Can be part of a hardware solution that connects chargers directly to a resident's meter (direct to meter wiring), primarily used at condominiums.

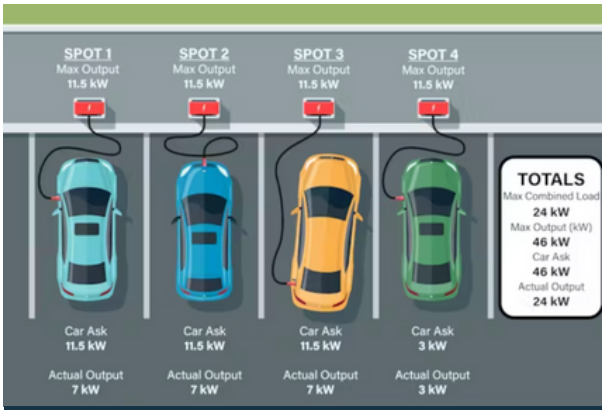
Load Management Software

Automated Load Management Systems, Dynamic Load Management or Load balancing) adjusts charging speeds based on the utility rates, number of cars plugged in, amount of available amperage, and resident preferences.

Load Management Key Takeaways:

- Optimizes charging times and reduces capital expenses for electrical infrastructure by maximizing the use of existing electrical equipment.
- Distributes charging load efficiently, reducing electricity bills by avoiding high-demand periods.
- Provides an essential feature for existing MFH properties or properties that do not have enough panel capacity or want to avoid service upgrades.
- Allows properties to scale charging capacity effectively without compromising reliability or speed.

Power Sharing



Power Sharing [5]

Power Sharing is when two or more chargers utilize the same circuit and divide power between multiple EVs at the same time. It is similar to load management software in that the system optimizes distribution of limited power across multiple chargers. When a single car is plugged into a power-sharing charger, it receives the max level of power the car can accept and as more cars plug into the same system, the power level adjusts for the other vehicle's demand. Some power-sharing charging systems distribute power equally, while others systems may prioritize based on state of charge, or other factors. Power sharing dual-port chargers are the standard chargers to install in shared charging configurations at MFH properties.