



Electrical Vehicle Charging Systems **A Property Manager's Guide**



Electric or hybrid vehicles are rapidly gaining in popularity. As more people drive EVs, they are increasingly seeking charging stations or Electric Vehicle Supply Equipment (EVSE) in their buildings and communities.

Providing a charging station for your residents is something you need to plan for.

Take control with a smart charging system

The simple reality is that for many property managers, there is not enough electrical power or appropriate infrastructure in their buildings to accommodate charging stations. Many factors affect the cost of upgrading the electrical service, such as the overall power usage in the building, the type and size of the main panel, location of parking space, proximity to the electrical panel etc. Upgrading is not only complex but also expensive and time-consuming.

Another option is an Electrical Vehicle Energy Management Systems (EVEMSs). With EVEMSs, you can take control of any building's charging-station loads.

With an EVEM System, you can monitor usage (including the time of day), as well as automatically manage the demand of all the chargers fed through that system to charge all the EVs in each of the charging stations, without exceeding the ampacity (allowable capacity) of the main breaker.

An EVEM system is also usually a less-expensive and less-complex option compared to the cost of upgrading and upsizing the main switchboard panel. For many property managers, it's the best solution to meet the growing demand for EV charging stations.

How Does It Work?

With an Electrical Vehicle Energy Management Systems (EVEMSs), you can optimize how energy is distributed for EV charging without exceeding the limits of the existing service, feeders, and branch circuits.

As vehicles are plugged in, the [i-Meter System](#) monitors total power consumption and each individual circuit feeding the EV chargers. When more vehicles plug-in than the electrical system can safely handle, one or more EV chargers are taken offline.

As the power demand at the EV chargers diminishes, the disconnected chargers are energized to start charging again later. Electrical loads are alternated to ensure that each vehicle, when charging, can access 100 percent of the available charging power. In case the demand does not diminish, each charger is rotated every few hours, ensuring that everybody gets enough charge.

10x increase

Today there are 3 million electrical vehicles on the road. In 10 years that number is expected to reach 27 million.

Balancing Costs & Revenue

It's important to have a clear understanding of the real costs (fixed and variable) as well as the revenue drivers of an Electrical Vehicle Energy Management Systems (EVEMSs).

Fixed costs include hardware, capital installation and capacity charges.

Variable costs include energy and operational costs like billing, invoicing, and maintenance.

Revenue can come from:

- Price per charge
- Per minute of charging
- Per minute of parking
- Frequency of charge point use
- Marketing on charger unit

Charging Up

The highest performing EVs can travel 240 miles per charge, can be fully charged in four to six hours from a Level 2 charger rated 240 V, 30A outlet delivering 7.2KW, and can gain 80% of the charge in about 150 minutes.



Did you know...

[i-meter](#) EVCMC from Intellimeter allows you to:

- Meter and bill for the electricity used in each charger, including time of use
- Monitor main-service demand to ensure contracted demand is never exceeded
- Alternate loads to ensure maximum capacity of the feeder is never exceeded, avoiding overload on the main breaker
- Ensure all vehicles receive adequate charge overnight
- Reduce infrastructure and operational costs
- Monitor stations remotely and maximize station utilization
- Control who can access your station



EV Chargers unlock benefits for Property Managers

- Tenant attraction and retention
- Revenue generation
- EV charging stations are considered a high-value amenity
- EV drivers make great tenants, with above-average income and education levels
- Help you meet sustainability needs
- Improve your green standing

Green All Around—Environmental and Financial Benefits

As EVs become more widely adopted, providing residents with a charging station to plug in their vehicles will become a valuable selling point. Compared to upgrading main electric service panels, ECV systems are a more cost-effective way to meet this growing demand, attract residents, and work toward a clean, green future.

Farewell to fossil fuel

North America gas prices are not going to fall. Demand is expected to grow at 2% per year for the next 5 years and the price has been above \$2 per gallon since 2000.

Go smart

When choosing infrastructure; smart, networked chargers with IT capabilities to allow charger status and usage monitoring, user invoicing, and permit reservations.



INTELLIMETER provides you with the information you need to track and manage your energy consumption.

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