

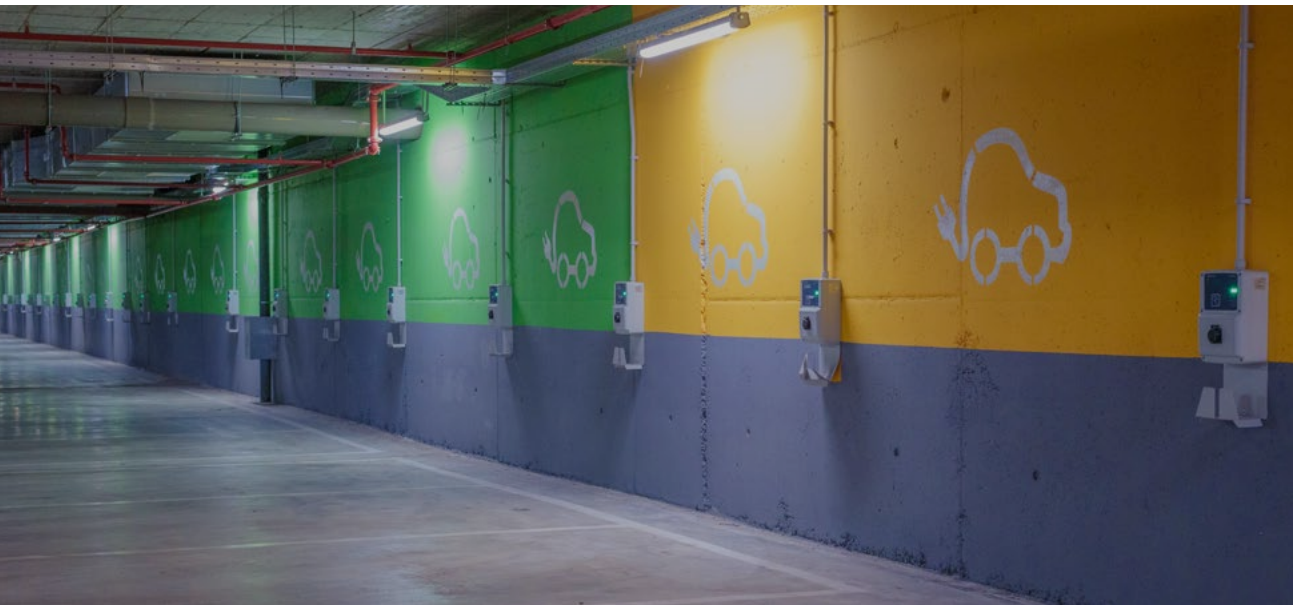


Installing EV Charging at Your **Multifamily or Commercial Property**





How to Add EV Charging to **Attract & Retain Tenants & Employees**



Owners or property managers of multifamily or commercial properties must plan for routine maintenance or property upgrades as tenant expectations change. One upgrade to consider is whether the facility has onsite parking with electric vehicle (EV) charging stations. Offering EV charging solutions will soon be critical for attracting and retaining tenants and employees.

If you are contemplating installing EV charging solutions (also called electric vehicle supply equipment or EVSE units), take time to review the charging equipment options available and how to install them. Additionally, consider how you can recoup your investment in EV charging technology and bring in additional revenue.



Implementing an EV Charging Management Solution for Your Commercial Property

Every multifamily residential complex, shopping center, office building, and factory will attract clientele or tenants with different parking needs.

It is important to ensure the EV charger options you consider will meet these varied customer requirements for many years.

Evaluating options for your property starts with understanding the demand and likely expectations users will have for EV charging stations at the site. Key factors that may impact your infrastructure installation plans and timeline are:

- Are your tenants, employees, and customers starting to park electric cars and trucks on your property?
- Are those still driving gas-fueled cars considering purchasing an EV in the next few years?
- Will people park at your charging stations for several hours or only a short period of time?
- Do you want the charging stations to retain current customers, employees, and tenants, or will you use them to attract new business?

Surveying Potential Users

Start your evaluation by conducting a survey to determine how many EVs visit your property over a set period of time. This will give you the necessary insight to determine how much demand exists now and in the next few years and will help you to decide how many charging stations you will need to install.

Your survey will also help you decide the types of charging stations and whether to offer free EV charging as an attraction for customers or an amenity for employees. Doing a survey can also help you develop a pricing strategy if you plan to pass charging costs onto users (potentially for a profit).

Estimates are that more than [half of U.S. new car sales will be EVs by 2030](#), the year many auto manufacturers plan to [stop selling diesel- and gas-powered cars](#). Recognize that your survey may find your property needs a limited number of charging stations now but will likely need many more in the future.

Check out these charging project sample surveys [for residents](#) (multifamily) and [for employees](#) (workplace).



Choosing the Right Charging Stations

Once you know the demand, you can determine the right charging station solution for your property. There are [two main types of commercial-grade charging stations](#) to consider: Level 2 and Level 3 (aka Direct Current or DC Fast Chargers). Both of these charging station types should always be installed by a certified electrician with electrification knowledge and experience in installing commercial-grade EV charging stations.

LEVEL 2 CHARGING STATIONS

Level 2 EVSE units are best for office buildings, parking lots, attractions, shopping malls, and apartment buildings. These are the least costly type of commercial EV chargers.

They require a 240-volt electrical circuit and a commercial-grade installation designed to withstand consistent, high-voltage energy draw for hours at a time. Their charging speed ([4-10 hours to fully charge a vehicle](#)) can be viewed as a downside for someone eager to get on the road, but this speed is adequate for charging overnight, during hours spent at an attraction or shopping, or while at work.

There are a variety of Level 2 charging stations available that operate at different charging speeds. The cost of purchasing and installing a charging station can range from \$6,000 to \$30,000, depending on the specific charging model and complexity of installation.

LEVEL 3 (DC FAST CHARGER CHARGING STATIONS)

Level 3 Direct Current charging equipment is far more expensive but also much faster than Level 2 charging stations. These EVSEs (EV Supply Equipment) can [fully charge a battery in 20-30 minutes](#) and are ideal in heavily-trafficked areas where people will park for a short time, such as near the interstate.

EV drivers can conduct a quick shopping trip, use restroom facilities, or grab some coffee while charging their vehicle. The chargers' speed (and cost of using them) do not make them ideal for employees to use while working or tenants to charge their EVs overnight.

There are two main reasons most property owners do not install Level 3 chargers for routine use: power and cost.

These [EV charging solutions](#) use direct current (Voltage: 480V in most DC fast chargers, but newer ones use up to 1000V), which travels over higher voltage transmission lines.

That level of power is not accessible in most residential areas, where transformers reduce the power level for distribution in homes. Accordingly, these units are most often found in shopping centers, along interstates, and in industrial areas. It is also





important to note, [not all EVs can use all types of Level 3 chargers](#) and frequent use of these chargers can [increase the risk of battery degradation](#).

The [average cost of installing a new DC Fast Charger](#) varies greatly from about \$100,000 to roughly \$170,000 based on electrical capacity at the site, location of distribution or service lines, whether trenching or boring is required, and even Americans with Disabilities Act (ADA) requirements for accessibility.

Other Costs Associated with EV Supply Equipment

When budgeting to purchase and install EV charger solutions, there are other costs to consider besides the EVSE and installation expenses. Here is a look at some key considerations:

TYPES AND PLACEMENT OF MOUNTING SYSTEMS

EV charging stations are typically mounted on the inside or outside walls of homes. You can also use wall mounts in [EV charging options for commercial properties or multi-family dwellings](#), provided users park against walls.

More common options for EV charging stations in commercial settings are pedestal-mounted units, often either slim poles or kiosks that are shaped like small, thin refrigerators.

Additionally, kiosks that are more sophisticated in design are available with access controls that restrict use to specific users via tools such as radio-frequency identification (RFID) cards or a mobile phone application.

Besides durability, these pedestals- or kiosk-mounted units give you more placement options since they can be situated in the middle of the parking lot or in front of a sidewalk. Another big advantage of these designs is their ability to hold multiple EVSE units. This allows two electric cars or electric trucks to be charged at once from the same charging station.

A single pedestal unit that holds two Level-2 charger ports attached [costs around \\$6,500](#), not including installation expenses.

SIGNAGE AND LIGHTING

You should plan for signs directing people to the charging stations and how to use them, particularly if usage is restricted to tenants or employees. You also need to plan for adequate lighting around the charging station for safety and visibility to attract customers for charging.

Needs will vary based on location and usage rules. However, lighting is important, particularly for liability purposes and if the EVSE will be used 24/7 in an empty lot.

A MANAGEMENT SYSTEM

EV Charging Management Systems are fundamental for ensuring an efficient and reliable operation. The systems use software or the internet to monitor charger availability, integrate with payment systems, and manage your EV charging stations in real-time remotely. The systems include diagnostics to identify any issues or malfunctions with the EVSE and monitor energy consumption.

Some management systems also let you optimize the load during lower utility rate periods and minimize charging during periods with higher electricity rates. For example, [smart management systems](#) allow users to schedule charging for off-peak hours. This capability is important in places where drivers are likely to charge vehicles overnight.

You can use the networked equipment and manage the systems on your own, however, if you opt to



contract with charging networks, you may lose some control over station access and pricing.

Conversely, non-networked EV charging stations are generally incapable of connecting to the Internet. While these charging stations do provide basic charging functionality, which may be all you need, they often lack more sophisticated communications or monitoring capabilities for off-site management. As a result of this reduction in capabilities and off-site control, these units are generally less expensive.

If you opt for non-networked EVSEs, you can purchase secondary systems to allow you to add access control, payment systems, and data collection elements.

MAINTENANCE AND REPAIRS

The EV charging station market is still relatively new, so the lifespan of EVSEs is not well known. The Energy Department quoted industry experts that [property owners should assume a 10-year life](#) for EV charging stations, absent vandalism, accidents, and natural disasters.

Realistically, charger cords could break, or there could be other issues. Accordingly, you need to assume the equipment will require occasional mainte-

nance and repairs.

Reducing Your Out-of-Pocket Purchase and Installation Expenses

There is currently a plethora of financial incentives for EV station installation to help you reduce your out-of-pocket costs. The federal government has made a huge monetary commitment to encourage people to purchase EVs. The legislation also made financial commitments to businesses, property owners, and others to encourage the rapid implementation of a national infrastructure of charging stations.

Once you have determined what types of EV charging solutions your site needs and a near-term quantity, consider the current state and federal [alternative fuel programs](#) that help with costs. There are incentives available from the federal government, most states, some local jurisdictions, and even some utilities.

These programs help defray the purchase and [installation costs of charging stations](#). In some areas, you can recoup about half the cost from available tax credits and rebates. Be sure to take advantage of the available incentives, which can be combined





SWOT Analysis

Commercial property owners weighing the value of adding EV charging solutions onsite need to balance the cost versus benefit scales in making a final financial commitment. A SWOT analysis helps put the options and issues for your business in perspective. Here is an example analysis:

STRENGTHS

- Will help you attract more shoppers, tenants, and employees.
- Your clientele expects convenience and amenities.
- Level 2 chargers will encourage people to stay longer, choose your theater or restaurant, etc.
- Level 3 chargers may encourage people to go out of their way to visit your property.
- Weak Competition (if your area does not have a lot of charging stations).

WEAKNESSES:

- Costs are daunting, even with incentives.
- Low demand right now.
- No straightforward way to install an EVSE on your property without extensive renovations.
- Older buildings may need major electrical upgrades.
- If you install Level 2, people might want Level 3, and vice versa.
- Lower-income areas or apartment complexes are not likely to need EVSE anytime soon.
- Strong competition (if your area already contains a lot of charging stations).

OPPORTUNITIES

- Current government and utility incentives exist now but might not be as plentiful in the future.
- Inflated cost of gasoline and diesel.
- Post-pandemic increase in daily driving and travel.
- The new automobile market will soon be comprised only of EVs.
- Potential for a new revenue source.
- This may increase the value of the property.

THREATS

- The economy and inflation fears.
- If charging stations are abundant near your facility.
- Cost of electricity in your area.
- Cities require new buildings to be EV-ready, and these buildings will compete for tenants.
- Incentives and other financial support could diminish or be eliminated.



Generating Revenue

As a driver, you are used to stopping and paying for gas or diesel, and the total stop at the gas station might take less than ten minutes.

Conversely, many EV drivers seek out places to **“refuel” their EVs for free**. There are sound business reasons you may want to offer free charging to attract visitors.

Some restaurants, shopping centers, and casinos offer free Level 2 charging to get people to pull in and stay a while. Hotels may offer free charging to guests who valet their vehicles overnight. Businesses also may offer free charging to attract and retain employees.

Depending on your facility and set-up, you may want to simply pass the electricity cost on to the EVSE users via management tools or dedicated meters. This type of setup is more common when the equipment will only be used by tenants, employees, or certain people, versus the general public. This can be done on a subscription basis that limits who can use the charging stations and how frequently. For example, you may want to allow free charging to a certain point and then charge once that threshold has been reached.

For commercial property owners, it often makes sense to add a margin above your electricity costs onto what you charge if your EVSE is available for public use. That pricing strategy helps you recoup the costs for the EV charging solution and its on-going maintenance. How much you can or want to add as a margin makes the difference from merely recouping costs or generating additional revenue.

Revenue Potential

The level of charger you use determines how much it will cost to charge your vehicle, but are people willing to pay more for a speedy charge regularly?

EV drivers may be willing to pay for the speed of Level 3 fast chargers along traffic corridors, on interstates, or during rush hour. This indicates you can charge more for Level 3 charging stations, **generating more revenue** than Level 2 charging stations.





AVERAGE COST ESTIMATES

The [average costs of using public charger stations](#) are driven by your local electricity rates and Level 2 chargers will often cost between \$0.20 and \$0.25 per kWh, and Level 3 chargers frequently put the price at \$0.40 and \$0.60 per kWh. Keep in mind that these are the prices charged to the user and have a profit margin included. The prices will differ based on the company providing the charging services, the type of EVSE, and the location. You can [check the average rate for your area](#) with the U.S. Energy Information Administration list and keep in mind that your local utility may offer special pricing for EV charging.

As a property and charger owner, what does that translate to in revenue for your business? An [EV battery can range in size](#) from 28.9 kWh to approximately 200 kWh, so your profit margin and use of chargers will have a significant impact on the revenue these chargers can generate. One study on [vehicle electrification potential in Colorado](#) looked at recouping capital costs and, eventually, generating net revenue on Level 3 chargers. The researchers looked at low, medium, and high use case scenarios.

Medium and high-use EVSEs will recoup costs and generate revenue, but the frequency of use makes a dramatic difference on how quickly these costs are realized.

The researchers determined it took six years for a station that was used approximately 1.4 times per day to begin generating revenue. That usage amount was based on the average use of urban Level 3 chargers in Colorado. If used 4.5 times each day, the revenue generated will exceed costs by the second year. Note that as the number of EVs on the road

increases, station use should increase, but so should the number of chargers.

A Level 2 charger could recoup its considerably lower costs faster, but you cannot demand that much of a profit margin when you set the per kilowatt-hour pricing, and there will also be far more competition. However, in multi-family dwellings and workplaces, the convenience of charging while sleeping or working will significantly help drive usage.

ADDITIONAL REVENUE POTENTIAL

You might also be able to generate additional revenue from [promotional displays or advertising](#) on ad space with a larger charging station pedestal or kiosk. Beyond having the appropriate type of set-up for these ad displays, contracting for advertising will also depend on how visible the chargers are and how often they are frequented.

While EVs are becoming plentiful, your location is still an important factor when considering charging stations as a revenue source. Some cities and states have large numbers of electric cars and trucks on boulevards and highways, while other parts of the country lag far behind.

For example, very [few EVs are registered in North Dakota's counties](#), and 83% of the EVs in Minnesota are in the Minneapolis-St. Paul metropolitan area. So, deriving revenue from a charging station in those parts of North Dakota or elsewhere in Minnesota may be difficult.

Electrical Capacity

Several conversations about electrical needs for EV charging stations focus on 240-volt outlets or direct current at 480 volts. The focus on this topic means assessing your property's electrical capacity for installing charging stations is complex.

You should consult an electrical contractor trained in EV charger installations to assess the electrical panel location on the property. They will calculate the panel's current loads and output capabilities and



determine if there is adequate excess capacity. If the capacity is insufficient for the EV charging infrastructure loads, it is important to upgrade the electrical service or establish a new connection point.

Public charging stations might be located far from the electrical service and could potentially require electrical upgrades and a complicated permitting process.

If you are installing public charging equipment on your property, you may opt to install two or more charging stations at a time, lowering the overall unit costs.

An electrical contractor experienced with EV charging solutions can help you determine the best placement of EV chargers. You want to minimize the distance between the charging ports and the power connection and possibly avoid trenching and other potential hurdles that can drive up installation costs. Where possi-

ble, your planning should incorporate future-proofing variables to prevent additional costs later.

Installing the Charging Station

Installing Level 2 chargers is relatively quick and inexpensive compared to DCFC (Direct Current Fast Charging) chargers and your licensed electrician can install one pedestal or two ports with adequate electrical capacity. Remember, multi-unit dwellings and larger commercial properties may require more EVSE units, electrical upgrades, or other steps.

An Electric Power Research Institute (EPRI) study on EV charging station factors broke down the [cost associated with installing commercial-grade charging stations](#):

- Materials 30-35%
- Labor 55-60%
- Permits 5%
- Tax 5%

EPRI notes that running electrical supply conduit from the panel to the charging location or from the transformer to the electrical panel over long distances inflates the installation budget by up to 25%. Trenching through concrete, placing the electrical conduit, and then refilling the concrete costs an estimated \$5,000 to trench 50 feet and \$10,000 to trench 100 feet. This rate varies by local norms, labor costs, and the complexity of the area involved.

EVSE installation expenses in some parts of the country are considerably above or below the average. The [EV Project conducted a study](#) of the deployment and use of public Level 2 EVSEs installed in 13 markets around the country.

Regional labor costs and local interpretations of [ADA requirements for EV charging stations](#) were primary factors for the differences. Labor costs in California made many of those markets among the costliest. Conversely, the Washington D.C. area installations, most of which were wall mounted, were the least expensive.





Getting Help

Weighing Your Options


Installing more public, workplace, and multi-unit residential EV charging solutions is critical for the coming wave of EVs and driver expectations. The energy transition presents a business opportunity for you to capitalize on as a commercial property or apartment complex owner. The available tax credits and rebates are spurring property owners in many cities to install EV charging stations now.

Multifamily EV charging stations are a fantastic opportunity to increase revenues and the marketability of your properties. Commercial-grade EVSEs attract tenants, residents, and customers to a property. This can help you attract and retain residents or tenants.

Planning the right approach for your property and potential charger users is complicated. You need to ensure you have a careful, thorough planning process by partnering with a company that has an extensive track record for success with EV charging implementation. As the leading installer of EV

charging stations in homes, businesses, and multifamily properties across the United States, [Qmerit is that partner.](#)

With more than 269,000 EV charging stations installations to date, and as the most trusted EV charging station and electrification technology installer in North America, Qmerit-certified electricians have a deep understanding of all aspects of EV charging and can work with you to find a custom commercial and multifamily charging solution that meets your needs and your budget.

 **With a long legacy of quality and safety, and the largest, most experienced network of electrification-certified electrical contractors across the United States and Canada, [contact Qmerit](#) to navigate your multifamily or commercial property's EV charging station installation project to success.**

