

Multifamily Electric Vehicle Charging Guide



Value of Electric Vehicle (EV) Charging Stations for Multifamily Communities:

- Brings a new, unique amenity for residents
- Shows an example of meeting residents' requests and future needs
- Recruits EV owners searching for a community that has charging stations
- Promotes sustainability efforts and gains LEED certification points
- Supports emerging technologies and showcases your community as innovative

Multifamily EV Charging Steps:

Step 1

Find a location for the stations:

- Parking is the first item to evaluate when considering vehicle charging at a multifamily community. Parking scenarios include on-street, garage, parking deck, parking lot, driveway and carport. Each scenario has unique issues to be addressed when considering vehicle charging.
- For example, outdoor parking will require weather-resistant equipment, and spaces accessible to the public may require additional rules to ensure safety.

Step 2

Assess your electrical access:

- Access to a secure and safe source of electric power is necessary for vehicle charging.
- Options for metering your charging stations include dedicated metering, common area metering, group metering and mixed use metering.

Dedicated Metering: Each resident's electricity is metered by a dedicated electrical meter. Often, the meters are grouped together in one location to make meter-reading easier for your electric utility.

Considerations:

- Option A: Property owner/manager installs charging stations and meters, and resident pays for electricity
- Option B: Property owner/manager pays for wiring and conduit. Resident installs and owns charging station and takes it with them when they leave

Common Area Metering: A meter that measures the electricity usage in common areas, such as parking lots, laundry rooms, pool areas, etc.

Considerations:

- It may be more cost-effective to connect a charging station to a common area meter
- Difficult to determine electrical consumption for a single resident's charging station
- Property owner/manager owns the charging station and receives bill for electricity
- Does not require assigned parking; however, it is recommended that only EVs park in spaces with charging stations

Group Metering: A single meter that measures electricity usage for an entire building or area without distinguishing among the included areas/units.

Considerations:

- Property owner/manager receives bill for electricity
- Difficult to determine the electrical consumption for a single resident’s charging station
- Does not require assigned parking; however, it is recommended that only EVs park in spaces with charging stations
- Group metering is only permitted in certain circumstances per NC General Statute 143-151.42

Mixed Use Metering: A meter that measures the electricity usage in multifamily areas and nearby public areas such as shopping centers, parks, office buildings, etc.

Considerations:

- Charging stations are connected to common area meter
- Property owner/manager or the shopping center owns and receives bill for electricity
- Does not require assigned parking; however, it is recommended that only EVs park in spaces with charging stations
- There may be challenges with shared charging stations as EV adoption grows

Step 3

Select charging equipment:

- Charging stations are the source of power for EVs and range in style, charging speed (known as charging level), cost and installation complexity.
- For residential charging, the two widely accepted EV charging levels are Level 1 and Level 2.

| Level 1 | Level 2 Ready | Level 2 Station Installed |
|---|---|--|
| 120V/20A outlet with dedicated circuit | 240V/40A outlet with dedicated circuit | 240V/40A service with dedicated circuit |
| Use existing outlets (cord and connectors provided with vehicles) | Resident buys and installs station and takes it with them when they leave | Hardwired charging station installed by property owner/manager |
| Slowest charge time (5 miles/hour of charging) | Faster charge time (10-20 miles/hour of charging) | Faster charge time (10-20 miles/hour of charging) |
| \$ | \$ \$ | \$ \$ \$ |

Considerations:

- Do you have a need to track and report usage? If yes, consider a Level 2 station installed with network capabilities.
- For outdoor locations, make sure there is adequate lighting and weatherization.
- Ensure safe storage of the charging cord to minimize obstruction of walking paths.
- Level 2 charging stations are available from a number of retail and online stores. If your electrician or electrical contractor is installing the charging station, they can often select a station and quote options to best suit your needs.

Multifamily Charging Station Process Overview

1 ASSESS YOUR CHARGING OPTIONS

1

Customer interested in purchasing charging station

Can parking be reserved for charging station

No

Evaluate alternative options

Yes

Access to electrical outlet?

No

Can you run dedicated circuits? (contact electrician)

No

Yes

Yes

2

2 SELECT CHARGING EQUIPMENT

Select charging level

Level 1

Level 2

Is there a dedicated circuit that can handle the load?

No

Yes

Do you have a need to track and report charging?

Yes

No

Can you run dedicated circuits? (contact electrician)

Yes

Contact local permitting office and utility for requirements

Use 120 Volt cord set per manufactures recommendations or install level 1 station

Contact local permitting office and utility for requirements

Purchase and Install a non-networked station

Purchase and install networked level 2 station

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3 PREPARE FOR INSTALLATION

Step 4

Prepare for installation:

| <i>Using an existing outlet (Level 1)</i> | <i>Installing a station or outlet (Level 1 or 2)</i> |
|---|--|
| 1. Confirm electrical capacity and safety | 1. Contact electrician or contractor |
| 2. Contact your electric utility | 2. Develop installation plan (includes developing site plan and contacting electric utility) |
| 3. Purchase outlet-compatible equipment (if needed) | 3. Obtain necessary permits (ensure compliance with applicable codes, such as ADA, zoning and encroachment agreements) |
| 4. Install equipment | 4. Install equipment |

Step 5

Develop policies and etiquette guidelines:

- Rules are needed to ensure the charging stations are properly used by residents and guests. These can include guidelines for time limits, enforcement of non-EV drivers blocking the stations, unplugging someone else's vehicle, etc.
- Consider creating a multifamily charging policy for your stations.

Considerations:

- Are the charging stations available for resident use only or can visitors use them?
- Are there enforcement mechanisms in place for non-EV drivers who park in the charging station spaces?
- Will there be time limits in place to encourage people to move their vehicle once charging is complete?
- Are drivers allowed to unplug other vehicles?
- Will there be notifications sent to EV drivers if the stations are down?

Step 6

Promote the stations and educate residents:

- Once the charging stations are installed, it's important to educate residents so they know the stations are available. Note the amenity on your website and on apartment search sites. In addition, add your charging stations to sites such as PlugShare (www.plugshare.com). EV drivers looking for apartments with charging are likely to check these resources.