

Multi-Unit Dwelling Charging worksheet

The following worksheet and related tools are designed to help plug-in vehicle (PEV) owners and multi-unit dwelling property management calculate, decide and plan for PEV charging infrastructure. This worksheet does not cover all options or variations, but is designed to be a practical tool for some of the most important considerations.

Charging level decision

Use the *Power and Energy Calculator tool* to calculate the average power and energy needs and energy costs.

Based on the power and energy calculations, the resident would like to install a

- Level 1 (120V 20A, standard household outlet)
- Level 2 (208/240v, 40A EVSE unit with a J1772 plug)
- Other charging station/system: _____

Metering and payment system for electricity usage

For Level 1 charging

If the resident would like to do Level 1 charging with his/her own cord from a standard outlet, the usage is easier to estimate since the charging power is lower (less than 1.5kW.) The simplest method is to use the estimated energy cost numbers from the *Power and Energy Calculator tool* and set up a fixed monthly/quarterly/annual payment schedule based on that. Once a year the resident and management should talk to see if the resident's vehicle usage patterns have changed and adjust the numbers accordingly. If either or both parties feel uncomfortable with estimate-based payment setup, they should look into metering solutions. More information about that can be found in the Level 2 charging section below.

For Level 2 charging

Since Level 2 charging supplies more power and faster charging speeds, it provides more flexibility for the resident and a therefore potentially higher level of variability in daily energy usage. If the resident's daily usage routine is fairly fixed, the parties could still use the estimated energy cost numbers from the *Power and Energy Calculator tool* and set up a fixed monthly/quarterly/annual payment schedule based on that.

If either or both parties feel uncomfortable with the estimate-based payment setup, they should look into some kind of metering solution. Use the *Metering and Payment Systems table* to assist you in exploring your options. To do this, you need to involve an electrician who is knowledgeable in electric vehicle supply equipment (EVSE) and metering installations. The electrician can do a site survey and tell you which of the options would be possible on your property and what the installation costs would be for different options. Parking space decisions need to be explored at the same time.

The parties should also contact the electric utility to let them know you are planning to install an EVSE and ask if the utility company has some support or resources available to assist in the process. The parties should also explore the time-of-day rate options, if available, and agree on how the resident will set up the car charging timer to take advantage of the lower off-peak rates.

Parking space

The resident will need a dedicated parking spot in front of charging station. Parking space decisions are closely tied to metering system and installation planning, because one of the most important factors in installation costs is the proximity of the charging station location to the electrical service. So at this point, the resident and management need to talk about the parking situation and determine if there is a way to provide a dedicated parking spot close enough to the electrical service that the installation costs remain reasonable.

Does the resident have a dedicated parking spot that is close to the electrical service? _____

Is there a way to provide such parking spot for the resident? _____

Will the dedicated parking spot cost more for the resident _____

Purchase and ownership of the charging outlet or EVSE

Level 1 charging

If the parties decide to use Level 1 charging, the building management will install and own the high quality GFCI protected outlet that will be used for charging the car. The resident will use his/her own portable charging cord for charging.

Level 2 charging

If the parties decide to install level 2 charging equipment, also called Electric Vehicle Supply Equipment (EVSE), they have to decide who is going to purchase the EVSE and who will own it after the installation.

If the parties agree that the resident will purchase and own the EVSE, the installation should be done so that the unit is relatively easy to remove if the resident decides to take it with them if they move out.

In order for the building management organization to purchase and own the EVSE, they should have a reasonably easy way to change dedicated parking arrangements so that they can offer the service to someone else if the resident who requested the service moves out.

The owner of the EVSE is responsible for the maintenance, repair, replacement and removal of the unit.

The EVSE will be purchased and owned by

Installation cost sharing

Level 1

The parties will agree on how to share the outlet installation costs. Consider also whether the installation is eligible for any federal or state subsidies by using the links in the next chapter.

Level 2

When the parties have agreed on metering and payment solutions, parking arrangements, EVSE ownership and installation method, they should talk about if and how they would like to share

the installation costs. Before they do this, the parties should explore the available federal and state tax subsidies that could apply to the installation to see who could be eligible and how those would affect the final costs. Some local installation rebates or credit might only be available to EV owners.

Resident will pay _____% of the installation costs.

Management will pay _____% of the installation costs.

Installation tax credit

Find out if there are federal installation tax credits available by visiting

www.afdc.energy.gov/laws/law/US/10513.

Find out if there are any state installation tax credits in your state by visiting

www.afdc.energy.gov/laws/state.

Signage and parking enforcement

The parties should explore and agree on the kind of signage they would like to use to display that the parking spot is reserved for the resident and is used for electric vehicle charging. There are several sources for affordable EV charging station signage available online. The parties should also decide on the right action if someone else parks in the spot and thus prevents the resident from using the charging station.

Insurance needs

The risks in using electric vehicle charging are comparable to using any other electrical household equipment. The parties should examine how well their existing policies cover electric vehicle charging and if needed, the resident can take an extra homeowner/renter liability coverage policy for it.

The resident needs/does not need to maintain an extra homeowner liability coverage policy in the amount of \$ _____ which names the association/management company as an additional insured under the policy with a right to notice of cancellation.

Preparing for future needs

Installation of one EV charging station provides a good opportunity to assess the available capacity for future charging station installations. You can also prepare for more charging infrastructure by installing some extra conduit/outlets in neighboring parking spots at the same time.

Additional resources:

You can find a wide variety of additional resources that provide more detailed information on some of the key areas by visiting https://afdc.energy.gov/fuels/electricity_charging_multi.html.