

FAQ: Charging Your New EV at Home

The Basics

What is a home electric vehicle charging station?

A home electric vehicle (EV) charging station or electric vehicle service equipment (EVSE) is a device which supplies electric power from your home to the battery of your EV through a standardized plug.

Why do I need a home charging station for my new electric vehicle?

All electric and plug-in hybrid electric vehicles (PHEVs) require energy to operate. The home charging station provides this power to the vehicle allowing it to replenish the energy reserves in the battery. While PHEV's can either plug-in or run their internal combustion engines to recharge their battery, fully electric vehicles like the Nissan Leaf have no on-board ability to replenish their own energy reserves and require an external source – a charging station – to recharge their batteries.

How is a home charging station or EVSE different than a battery charger?

It is a common mistake to confuse an EVSE with a battery charger. Most modern EVs carry their battery chargers on-board. A home charging station – or any charging station – merely provides the power that the on-board battery charger requires to recharge the EV's battery.

How does a home charging station work?

A home charging station helps to get AC power safely from the utility to the on-board charger of the EV. The EV's on-board charger then converts the AC power to DC energy and charges up the battery with the assistance of the charging station.

Are there different types of EVSE?

There are three primary types of EVSE and there are many manufacturers that produce one or more of these types of chargers.

The first type of EVSE is termed a 'Level 1' EVSE and the charging process is often referred to as 'Low Power (or sometime Trickle) Charging.' Under this method, the EV unit is plugged directly into a 110V standard wall socket via an adapter plug. While this method is fine for emergency charging, the recharge rate is very slow taking up to 15 hours or more to charge the average EV battery.

The second type of charging station is called a 'Level 2' device and is a much faster recharge solution – twice as fast or more when compared to a Level 1 unit. This type of device uses a dedicated 240V circuit (similar to that used by a standard electric clothes dryers) to fully charge an EV in as little as 5 hours.

The third type of charging station – a 'Level 3' charging station or 'Fast Charging' station – is not currently available to residential customers. This type of device requires a dedicated 480V circuit which is highly uncommon in residential applications. In the future, however, it is highly likely that this type of charging device will be available in public applications like EV filling stations where a very rapid charge is desirable.

EV Charging

How long will it take to charge my EV?

Most EV manufacturers advertise that their on-board chargers can charge their battery from a Level II EVSE in as little as 5 hours. Actual charge times may vary based on a number of external conditions, but it can be expected that a full charge using a Level II device should take between five and eight hours – perfect for the average consumer who parks their car in the garage overnight.

How do I know if the EV is charging?

All home charging stations have easy to understand indicator lights to provide charging and system status. These indicators may be either on the body of the charging station or on the plug-in cable itself.

The indicator light definitions are usually provided in the user manual for the charging station.

How will I know if my EV is fully charged?

All home charging stations indicate a fully charged battery through the device's indicator lights. However each device is different, so you will need to refer to the user manual for your device for specific indications. The on board vehicle diagnostics of your EV also provide this information.

Will the charging station stop automatically when the battery is fully charged?

Yes, all home charging stations will automatically stop drawing and transmitting electricity when the EV is fully charged.

Can I stop charging the EV before it is 100% charged?

Yes, you may stop charging your EV at any time. Refer to the user manual for your charging station for any special procedures.

How much electricity is required to charge my EV?

The amount of electricity drawn by your EV will vary depending on your driving and charging habits. If you drive only a short distance each day or if you charge at locations other than your home charging station, you will need less energy to recharge your EV and thus will use less electricity when you charge at home.

When the EV is fully charged, does the charging station continue to draw electricity?

Home charging stations are designed to be energy efficient, but when charging is complete they will continue to draw an extremely low amount of standby power – only enough to power the LED lights and other internal monitoring systems of the charging station itself.

Driving

How far can I drive my electric vehicle before I need to recharge?

Driving range varies by your car manufacturer and model and whether the car is a fully electric vehicle or a hybrid electric vehicle. Refer the specifications of the car you plan to purchase.

What happens if I run out of power when I am away from home? Where can I recharge my battery?

Your EV will come equipped with a battery gauge similar to a traditional gas gauge which will provide the status of your battery. Most of these systems now also indicate the number of miles that can be safely traveled given the current charging level.

In addition, most major cities and many public and private corporations are investing in the development of electrical charging infrastructure.

Finally, in case of an emergency, the convenience charge adapter can provide power from any standard wall outlet. You should always keep this adapter in your trunk in case of any emergency. It should be kept in your trunk and will provide a charge from any standard outlet, although the charge time will be long.

Installation

How will I get my home charging station installed?

EV Connect is an end-to-end solution provider which means that we not only sell the EVSE but also provide installation services through our nationwide network of certified EVSE installation providers. Our services include site assessments, permitting, site installation and inspection management.

Where will my home charging station be located?

This will depend on your specific needs, but usually a home charging station is mounted on a wall in your garage in a location that is convenient for the charging of your EV.

Can the charging station be located outside or does it have to be in an enclosed space, protected from the elements?

Most, if not all, home charging stations are also certified for outdoor installations in car ports or uncovered parking areas. If you believe you have a situation where outdoor installation will be required, you should review the specification of the home charging station you plan to purchase or call EV Connect for more information.

Who will install my home charging station?

EV Connect uses only licensed and bonded electricians who are trained and certified in EVSE installations to ensure that your installation is done right the first time.

How much will the installation of my home charging station cost?

Installation costs will vary based on a number of factors including mounting location, existing electrical service and routing required from the service panel to the device location. Additional costs may be incurred if the routing requires trenching, cement work or specialized drilling to reach the mounting location.

Are there any special requirements for the installation of a home charging station?

Level II home charging stations require a dedicated 240V AC circuit. In addition, depending on your existing electrical service, service panel upgrades may be required. All special requirements will be identified by your EV Connect installation provider during your site assessment so you will not be surprised with any new requirements or hidden costs.

Will I be required to install a new electric service panel or a new sub-meter for my home charging station?

It is possible that your existing service will be insufficient for the installation of a home charging station. Your EV Connect installation provider will identify any special electrical service or metering requirements during your site assessment.

Service

Who will service my home charging station?

EV Connect's nationwide network of certified EVSE installers can both install and service all brands of home charging stations that we sell. If we installed your charging station and it is under warranty, we can fix it for you for free and save you the hassle of dealing with the manufacturer.

What is covered under my home charging station warranty?

Most EVSE manufacturers provide a one year warranty on parts and labor for their home

charging stations. This usually includes everything inside the chassis of the charging station as well as the charging cable. Damage to the cable may not be covered if it is the result of abuse by the user.

EV Connect warranties the work of its installers for a period of one year.

Other Topics

Should I talk to my electric utility before I purchase a home charging station installation?

Yes! A discussion with your utility will provide helpful information on different rate plans available for EV drivers and possible incentives and discounts. Certain rate plans may also affect the nature of your installation (example: a second meter for a dedicated circuit) which is information you should have on hand when your home assessment is done.

Will a home charging station work for any electric vehicle or do I need to purchase a different home charging station for every electric vehicle that I own?

With the exception of some Tesla models, all new home charging stations and all plug-in EVs and PHEVs from established automotive manufacturers utilize a J1772 plug which has been defined as a standard by the Society of Automotive Engineers. Any vehicle that utilizes this standard plug can utilize the same home charging station.