

# FAQ

## **Why do I need a charger?**

Electric vehicles carry rechargeable batteries that supply their energy. When you drive an electric vehicle it consumes electricity from the battery. The charger refills your battery with electricity from, for example, your home, just like filling your current car with gas.

Chargers come in several types including those at the home, on the street and eventually fast charges.

## **How does the charger work?**

The home charger is typically mounted on your garage wall and connected to your home's electrical system. You plug it into your car when you get home, and unplug it when you're ready to drive.

## **How will I know if my car is charged up?**

Lights on the charger will let you know your charging status.

## **Can I stop the charger before it's at 100%?**

Just as you can stop refueling a gas car before the tank's filled, you can also safely stop charging your EV before the battery is fully recharged.

## **Does it stop automatically?**

The charger knows when it's done charging, and will stop automatically.

## **Where will I put it?**

The charger is typically mounted on your garage wall near where you park your car.

## **Who will install it?**

Only a professional, licensed electrician is authorized to install your charger to ensure that it works properly and meets code requirements.

## **Will it work with any electric vehicles?**

Because the home charger's connector (the plug) is universal to most EVs, the charger is compatible with most EVs from large automakers.

## **Will it work with Plug-in Hybrid Vehicles (PHEVs)?**

The home charger is compatible with most PHEVs and can reduce PHEV charge times considerably. The home charger can also make PHEVs more environmentally friendly by making charging easier and faster.

## **How far will a full charge get me?**

Driving distance depends on the vehicle's range. If a vehicle's battery has a stated 100 mile range, a full charge is expected to deliver 100 miles.

## **How much will the charger cost?**

The cost of the charger varies according to accessories and the site conditions for installation. A site assessor can provide a firm quote depending on what model you purchase and what is required for the installation, but the total is a fraction of the cost of the electric vehicle.

**How fast does it charge?**

Depending on the battery size and the design of the vehicle, in many situations the home charger can fully charge an EV in as little as four hours.

**When will the charger be available?**

Home assessments are slated to begin in the Spring of 2010, with the charger and installation in the fall of 2010.

**Is it safe?**

The home charger is designed with safety and reliability in mind, and will be listed by the Underwriter's Laboratory, the same people who certify other electric appliances in your home.

**What if rain gets in the garage?**

The home charger will be rated for outdoor use.

**What is the voltage requirement to run the home charger?**

The home charger plugs into a 240V plug, similar to the one you use for your clothes dryer.

**When it stops charging, does it stop drawing power?**

The charger is energy-conscious and stops drawing all but minimal power to provide energy to the LED lights.

**What's different about AV's charger?**

AV has been on the leading edge of electric vehicles since the 1990s, when we played a key role in developing the prototype of the first mass market EV (EV1). AV also has a line of testing and simulation systems used by automakers and battery manufacturers to test EVs, as well as a broad line of chargers used to charge heavy-duty industrial forklifts across North America and the world. AV's line of passenger EV chargers is based on this heritage and fielded technology – making it a proven solution with a truly reliable track record.

**What if I live in an apartment?**

Various charging configurations for apartment garages and other multi-family housing situations will be available from AV.

**What if I rent my house/don't own my house?**

If your landlord agrees, we can install the charger in your garage, and uninstall it when you are ready to move.

**Who will service my charger?**

Only professional electricians are certified to service your charger. All service calls for AV products are guaranteed within 24 hours.

**Will the charger communicate with the smart grid?**

Some versions of the AV home charger will communicate with the smart grid, optimizing your energy usage and further reducing your carbon footprint. Check with your local utility for availability.

**How do I know if it's charging?**

An LED will let you know when it's charging. It'll turn off when it's done charging.

### How do I get a home charger?

You can sign-up for a charger for the Nissan LEAF at <http://www.nissanusa.com/leaf-electric-car>, or you can contact AV directly at [www.avinc.com/plugin](http://www.avinc.com/plugin).

### What if I run out of energy while I'm on the road?

Your EV will have a gauge just like your gas vehicle so you won't run into any surprises. Some EVs can travel hundreds of miles on one home charge, and American drivers typically commute an average of only 30 miles per day. There are plans for public charging stations located across the country, in cities and major travel corridors. Many cities already have committed to electrification to make EVs more practical for drivers.

### Do I have to install a home charger to charge my car at home?

There are actually two kinds of home charging:

"Trickle Charging" is when you plug your EV into a regular 110V wall socket and "trickle" charge your car – this will most likely take longer than ten hours for most vehicles.

"Opportunity Charging" is accomplished with the AV Home Charger, which requires a 240V plug and is designed to fully charge a vehicle in four hours under many circumstances. We call this "opportunity" charging because you will probably use the Home Charger while sleeping or enjoying dinner, for example. Remember, you won't need a full charge from 0 to 100% every time. You will probably get into the habit of charging opportunistically whether you are at a half "tank," low, or nearly full, just because it's easy.

### What other kinds of charging options are there, besides home charging?

"Opportunity Charging in Public." Versions of the 240V home chargers are planned for installation at certain workplaces, as well as shopping malls, retail stores, and other places where drivers have planned stops for a few hours and can charge while taking care of other business.

"Quick Charging." The last type of charging is planned for installation at public charging locations similar to gas stations for the rare occasion when you need to "fill up" in the middle of a long trip, or find yourself low on energy. These chargers are designed to get energy to your battery quickly – as fast as ten minutes in certain circumstances using an AV charger.

### How will I be able to find public charging stations?

We anticipate both opportunity and quick charging stations for public use will be mapped on standard Global Positioning Systems (GPS). Smart vehicles currently in development may also proactively suggest when you might want to stop for a quick charge, if you are running low and/or are near a public charging station.