

I Don't Own a Garage. Can an EV Work for Me?

If you rent an apartment, you may not be able to charge up an EV in the garage while you sleep--which is the most convenient arrangement – you may not even have access to a garage. Can you still make EV ownership work? It depends on the car and what charging stations you can use.

WHAT YOU NEED:

The car. The newest EV's have a range from around 100 to 335 miles per charge. The Tesla Model S has a range up to 335 miles and the Chevy Bolt EV, has a 238 mile range. Many of the other cars have a 100+ range. The moderately priced Tesla 3, reportedly due out in second half of 2017, is reputed to have a range of 215 miles per charge. For most people's commute, these cars are more than adequate, since 90% of people travel 30 miles or less to work.

Whether you buy or lease, you should certainly get a model that has 2 charging ports: a 120v/240v AC port and a DC port. The 120 volt uses regular household current, and is called a Level 1 charger, or "trickle charger". The charging cord, pictured, comes with the vehicle, and is plugged in to the vehicle port on one side and into a normal outlet on the other.



The downside of the Level 1, trickle charging is that it takes a long time to charge the vehicle. If a typical 100 mile range car was completely discharged it would take about 26 hours to fully charge it. In practice, one usually charges the car before it gets down to almost zero, so an overnight charge, or a charge during the course of a work day would most likely give you sufficient charge to commute. This is the kind of charging that is most convenient if you have a garage or other secure parking place (at work for example) where you can plug in for a while.

The Level 2 charging station typically does not come with the car and can be bought separately. Cost is around \$400-\$500. However, if you are going to use public charging stations, (rather than a 240 outlet at someone's home) you will not need to buy the charging station since the public charging station will have the cord that you attach to the port on your car. Now you have to find a Level 2 charging station (see below). In 5 to 10 hours you can charge the car from 0 to 100%. Again in practice, one would charge before reaching zero, so that 4 or 5 hours would be enough to sufficiently charge the car. Then charging while at work would be a good option, provided there is a station nearby and you can take time at lunch hour, or on a break to disconnect your car so others can use the charging station. Finally the second port on your car will allow quick charging with a DC power, Level 3 charger. With the Level 3, a car can be 80% charged in about 30 minutes or less. That will be very convenient if you do not have a place to

plug in for hours at a time. In practice, this will probably be your best option, since the charge time is short.

Charging your car. The most convenient place to charge your car is where it is parked while you are sleeping. If you have an assigned parking space at your apartment you may be able to convince your landlord to install a charging station or perhaps the landlord will permit you to install a charging station. Charging stations that plug into a 240 volt outlet are available, so if the landlord will install a 240 volt outlet you can plug in your charging station and take it with you when you move. Most charging stations are weatherproof so they can be installed outdoors. California law forbids condo associations from prohibiting you to install a charging station at your condo, so if you live in a condo and have an assigned parking space you may be able to install a charging station.

Public charging. If you do not have an outlet or charging station where you typically park your car, you can use public charging stations. You can download an app that will show you where the public charging stations are in your vicinity at <https://www.plugshare.com/>. There is a lot of good information, indicating not only location but type of charging (Level 1, 2 or 3), cost of charging, whether it is currently in use, and user comments about condition of the charger (e.g. "it's broken!"). In San Francisco, for example, there is a Level 3 (30 minute DC power) charging station at most or all of the Whole Foods Markets (smart marketing on their part). So you can do your grocery shopping while your car is charging. If you have a station at work, even a Level 1, you should be able to comfortably charge your EV without a garage or home charging access.

On-the-road help. About 5 years ago AAA installed fast chargers on their trucks that can charge about 10 miles in 10 minutes, probably enough to get you to the next charging station. They found that not many people needed the service, since EV drivers seem to be more cognizant of their energy level than gasoline drivers whose out of gas calls account for a large portion of AAA emergency road service calls.

More information. There are many information sources about EV's. The Golden Gate Electric Vehicle Association website www.ggeva.org has information about electric cars and charging. Price and other information can be found at: http://www.greencarreports.com/news/1080871_electric-car-price-guide-every-2015-2016-plug-in-car-with-specs-updated. Cost to lease or own is affordable with the federal and state subsidies. As the federal tax credit may go away, now is a good time to get an EV. Information about charging and practical advice about using an EV at <https://pluginamerica.org/> Talking with people who already own an EV can yield great advice.