



# 22kw home charger installation

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Completing the purchase of a new car feels like the end of an epic journey of research and negotiations, with lows and highs. The new car smell compliments the first time you pull off the road to explore its features and functions, but the journey doesn't stop there. All new EV owners wind up staring at the dashboard and wondering where and when to recharge.

Charging while you frequent a coffee shop or a supermarket can provide a convenient option if you can find public chargers in the parking lot. How much time you'll spend there depends on whether they have a fast charger or a traditional slow charger, which according to the IEA still represents the majority of chargers globally. With a fast charger depending on the vehicle battery and other factors, it's possible to gain significant charge within 15 to 20 minutes, but slow chargers can take much longer. As Kelley Blue Book notes, don't expect it to be free to recharge either, the typical fee in the US is around \$5 USD to add 100 miles to an EV's range though it could be more depending on the size of the battery and the time spent recharging.

Whether you need a specialized charger for your home depends on the car, how far you drive each day, and how convenient the public charging options are in your area. Although public charging stations may have fast chargers, you may still need to wait in line to use them - making it less dependable than simply charging at home. While electric vehicles are generally designed to be plugged into a standard home wall outlet, known as Level 1 charging, this is slower than powering up with a specialized EV charger.

According to Energy.gov, the standard wall plug will provide about 6 to 8 km (4 to 5 miles) of range per hour of charging. This means that charging with a wall outlet for 8 hours overnight will get you about 60 kilometers of range (approx. 40 miles). This might be enough to get groceries and drop the kids off at school, but with many electric car owners openly admitting they've been close to draining the battery, is it worth taking the chance that you'll run out of charge or forget to plug it in overnight?

In contrast, a specialized home EV charger, known as a Level 2 charger, can get an EV from empty to 80% in about 4 to 10 hours. Of course convenience comes with a price tag. If your home doesn't require any rewiring and you already have a 240V electrical point, J.D. Power notes the price could be as little as \$500 in the US, but if you need rewiring, you'll need to add a minimum of \$1,000 to the installation for help from an electrician.

The cost of charging an EV at home depends on factors like how far you drive and your utility rate structure. Kelley Blue Book posted some examples using the typical distance and average electricity prices for a typical driver in the United States. The traditional gas-powered car unsurprisingly costs almost twice the amount per month as an EV to keep it fueled. Nonetheless, even regular charging for an EV costs about \$60 monthly, but there are ways to mitigate some of that expense.



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Solar energy can potentially reduce the monthly payments significantly. For example, the SolarEdge Home smart energy ecosystem features an optional integrated Level 2 EV Charger. SolarEdge Home's algorithm-based energy management system knows when to use free solar power, stored power or low cost (off peak) grid power for EV charging to maximize homeowner savings.

PG& E, a California utility provider, posted its electricity prices showing the cost of charging during peak hours in the summer months of 2023 as more than double the off-peak price. So having a system that can automatically charge in off-peak hours or use solar power is a true game-changer.

Aside from charging speed, there are a few other things to consider. A pre-connected cable on the charger means that the unit's charging cable generally can't be changed out at a later date if you want to replace the connector for some reason, or you want a longer cable. If the charger is located outside, then you'll want to look at waterproofing. The SolarEdge Home EV Charger can be installed with RFID authentication to enable reimbursement from your employer and also prevent unauthorized usage while you're away.

When people purchase a solar energy system for their home, they can save electricity costs on everything from using their appliances to charging an EV. But if the grid goes down for some reason, you need battery storage and Backup capabilities to ensure uninterrupted power flows through your home. Bi-directional, vehicle-to-home (V2H) EV chargers, like the one SolarEdge will release in 2024, are able to use the EV's battery with compatible vehicles to power the home during an outage - providing a new way to unlock the value of your EV. While the size of the home, consumption habits, and other factors can affect how long a vehicle battery could power a home, a 100 kWh EV battery could likely support a home for about 3 days of typical usage.

When choosing an EV charger to install in your home, also think about how you may want to use it in the future. The installation and fees can very often represent a large percentage of the purchase price. Whether or not you have a car capable of faster charging speeds, it makes sense to avoid future installation and maintenance fees by purchasing something with next level capabilities, especially if your home infrastructure can support it. If you're ready to shift to driving on sunshine, read more here about the SolarEdge Home ecosystem.

To learn more about home EV charging, check out this blog discussing home EV chargers and how trends in the EV charger space are impacting homeowners.

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