How to buy and install an EV home charger

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Gas prices? Pah! A few months ago, my family bought an electric car, used. A little 2018 BMW i3s. It looks weird but it drives great. Every time I pass long lines of cars and trucks waiting to fill up on $6-a-gallon gas, I admit, I feel a schadenfreude smile coming on.

But buying the car, it turns out, was a lot easier than buying a home charger and getting it installed, which was a serious hassle. Worth it in the end, but a hassle. And that government rebate I thought I'd been promised? Yeah, right.

You can get by without a home charger but I wouldn't advise it. There are too few public chargers available at present for dependable refueling. And the price you pay is significantly higher than your cost of electricity at home.

A home charger isn't cheap, though. Including installation, depending on what model you buy, the cost can top $1,500.

Hunting for a home charger is a bit of a hassle too. The hassle can be small or large depending on variables that include the age of your home, the state of its electrical system and how easy it is to find an installer in your area.

If stories about $7-a-gallon gasoline have you thinking it's time for an EV, though, here are some hard-won tips that might save you some headaches.

The basics

The first step is deciding whether you want a Level 1 or Level 2 charger.

Level 1 operates at 120 volts. That's the voltage you use to run your toaster and most of your home's electricity. Level 2 is 240 volts, what an electric dryer requires. Level 2 chargers will fill your EV a lot faster from empty than a Level 1: a couple hours or so, depending on the size of your battery, versus overnight.

You'll probably get a portable Level 1 charger included when you get

your car. If most of your trips are local, or you can charge at work, or buy a plug-in hybrid instead of a battery-only electric, a Level 1 might work just fine.

If you want the flexibility of a relatively fast fill-up and more freedom from range anxiety, you're a candidate for a more expensive but more powerful Level 2. That's what we chose.

Level 2 chargers require 240 volts and a socket like an electric dryer might use. If you have a 240-volt outlet near where you'll park your car, good for you. Installation will be a lot easier. (A charger also can be connected directly to your electric panel, obviating the need for an outlet.)

Chargers come with cords of different lengths. You'll want to measure the distance from where you put your charger to where you'll park your car. Shorter cords make for less expensive chargers. I'd rather have too much than not enough and went for a 25-foot cord. If you'll always be parking in a tight garage space, you can get by with something shorter and cheaper.

Portable 240-volt chargers are available, but you'll get only about 10 miles of range per hour. If you want to fill up fairly fast and have your car ready to go when you need it, a stationary charger is the way to go.

Buying

An internet search will turn up loads of sites that rank home chargers. For a comprehensive overview of what's available, Veloz, an EV advocacy site, is a good first step.

Level 2 charger prices range from nearly $300 to well over $1,000. The bigger your car battery, the more expensive your charger is likely to be.

Veloz pegs the typical cost of installation around $500. It can be lower or it can cost several thousand dollars, depending on how your home's electrical system is configured and whether you need a 240v outlet installed.

Unless you are well versed in volts and amps and kilowatts and kilowatt hours, you should ask an electrician or someone with expertise in the area for advice before you choose your charger. The requirements of your car's battery and the configuration of your home electrical system are major factors in charger choice.

You'll also have to ask yourself how important it is to be able to control charging times through a charger's software, allowing you to take advantage of your utility's variable time-of-day electric rates and potentially prolong your battery's life. Many experts suggest you not fill your battery all the way full because that can degrade performance. Charger software can set a limit at, say, 90% full.

You'll also need to know whether you want to install the charger inside a garage or outdoors—many chargers are advertised as weatherproof.

Which brand is best? After spending much time comparing models online, I found a ChargePoint model that topped many best-of lists and tried to buy one. Alas, ChargePoint told me I couldn't expect the charger to arrive for at least several weeks. Popularity has its price.

My neighbor bought a charger from Wallbox and got it in a couple of days. I did too. The reviews were good. It's working fine so far, although the software interface could be much improved. I paid $649 plus tax.

Installing

Wallbox posts an excellent installation guide online that can apply to any

charger make or model. With any luck, you'll be able to hire an electrician at a reasonable price and he or she will take care of everything for you.

I wasn't so lucky. Our Berkeley house was built 60 years ago. No 240v outlet in the garage. Worse, the house is fed by a 100-amp Pacific Gas & Electric power line; the lines to modern houses are rated at 200 amps. Practically speaking, the 100-amp line means that adding an electric car to the house's load could overpower the whole system. The situation would demand some changes to our electric supply panel.

Finding an electrician to help was tough. It's hard to find a tradesman to do anything lately—too few workers with the proper skills, too much home improvement demand. One electrician informed us our electric panel is way out of date, and that building codes would require a new one. We'd also need a 200-amp line to the house. Total cost, he said, would top $2,000.

With the help of a neighbor who's a lighting architect and ace handyman, I was able to get the job done for the price of materials and a nice dinner.

If you have an older home, do some research on home electric load capacities to better communicate with the professional electricians you might hire.

The rebate

Rebates from the government or electric utilities depend on where you live. Put your ZIP Code into the Veloz site and then click on a charger model to find out what's available to you. If your electricity comes from the Los Angeles Department of Water and Power, the utility says you can get up to $1,000 back, even more if you qualify as low-income. But

the actual amount, based on numerous Veloz searches, is likely to be a few hundred dollars. Residents of the South Coast Air Quality Management District can get another several hundred dollars, but the money is available "first come first served," so you can't count on funds being there.

The city of Anaheim says charger buyers can qualify for $400 to $1,000 in rebates, "subject to the availability of funds." The city of Burbank advertises rebates up to $500.

If you bought a charger in 2021, you may be eligible for a federal income tax credit for 30% of the charger's cost. If you waited until 2022, you're out of luck.

Here in Berkeley, I qualified for rebates totaling $0. My utility, the financially troubled Pacific Gas & Electric, offers no home EV charger incentives at all.

But driving an EV can save $800 or more a year for an average driver, and the warm feeling I get driving past those gas station price signs makes up for a zero rebate, and then some.