

# Electric Cars Frequently Asked Questions

Here are some of the PSE customer's most popular questions about electric cars and ownership. If you don't see yours below, please email us at [electricvehicle@pse.com](mailto:electricvehicle@pse.com).

## PSE Up & Go Electric FAQs

### How much does it cost to own an electric car compared to a conventional car?

There are two things to consider here—the costs to both maintain and fuel the electric car.

For maintenance, electric cars cost less because there are fewer fluids to change and far fewer moving parts. That makes maintenance savings one of the best reasons to buy an electric car.

While it isn't accurate to say that electric cars need zero maintenance, it's true that electric cars need far less maintenance.

Take for instance, the Chevy Bolt. The owner's manual, which is available online, states that other than rotating the tires and checking vehicle coolant level and windshield washer fluid level every 7,500 miles, the only other required maintenance is changing the cabin air filter every 22,500 miles, replacing brake fluid every five years, and flushing vehicle coolant every 150,000 miles. And this isn't unique to the Bolt, the same goes for other all-electric vehicles.

Electric cars do require minimal scheduled maintenance to their electrical systems, which can include the battery, electrical motor and associated electronics.

Also, because of regenerative braking, brake systems on electric cars typically last longer than on conventional vehicles.

When it comes to the cost of powering an electric car, the exact price difference depends on gas and electric rates where you live, plus the type of car you drive. Depending on your vehicle's fuel efficiency rating, the money you spend to fill up your gas tank will translate to varying travel ranges. "Fuel-efficient" conventional cars are designed to maximize their miles per gallon (mpg) rating, thus costing the least amount of money per mile travelled. A car rated at 30 mpg will cost less money in fuel over time than a car rated at 20 mpg.

The cost to run an electric vehicle comes down to your daily drive distance and the type of charging you use. Although you don't pay a gas pump-type fee every time you charge your electric car battery, the electricity being used to charge your battery counts towards your personal electric bill (if you charge at home). Some employers offer charging stations, so you could charge at work for free (in some cases).

A [2018 study](#) from the University of Michigan's Transportation Research Institute found that electric cars cost less than half as much to operate as gas-powered cars. The average cost to operate an electric car in the United States is \$485 per year, while the average for a gasoline-powered vehicle is \$1,117.

### What's the difference between the types of charging options?

Check out the '[Owning an electric car page](#)' on our website.

Learn more about charging an electric car on our '[Charging an electric car](#)' information page.

Here you'll be able to learn about Level 1, Level 2 and DC fast charging options, including the voltage used by each charging option and approximate amount of time needed to complete a full charge via each charging option.

### How and where can I find public charging stations?

There are many free websites and mobile phone apps that can anyone can use to learn more about charging stations available for use while on the go. Some popular options include [PlugShare](#), [ChargePoint](#) and [ChargeHub](#).

You can learn more about these various websites and apps on our '[Charging an electric car](#)' page.

### What does it cost to install a charging station in my home?

We get this question a lot, and it's hard to answer because the costs vary depending on where you're installing a charging station and the service provider you choose. Every home is different. And unfortunately, there are not standard prices for installation fees.

You may be able to get more information on pricing for installation an electric charging station at your home from an electrician. For an electrician recommendation PSE recommends that you talk with your local big box home improvement store. They often have referral networks. Also, community review sites often provide insights and referrals from neighbors who have installed L2 chargers.

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### How do I get started with a home charger?

Most electric car charging still takes place overnight, so making your home ready is an important step. All you need is a sufficiently sized outlet and some service equipment. You don't even need a garage!

**Step 1:** Decide how you want to charge your vehicle at home. Remember that your car will need to be parked near the charger and the charger will need access to an electricity source.

Level 1 charging is through a 120-volt outlet, the standard household size. Most electric cars come equipped with this capability, so you're ready to go if you choose this option.

**Pro tip:** try Level 1 charging for the first few weeks to see if it meets your needs before taking it to the next level.

Level 2 charging takes 240-volt service and is the most commonly used system at home. This option offers faster charging and some additional smart benefits. Similar to adding a dryer plug, a licensed electrician should add a dedicated 240-volt, 40-amp circuit.

Some older homes may need additional preparation to charge an electric car at any level, so ask a certified electrician to assess your options.

For an electrician recommendation, PSE recommends that you talk with your local big box home improvement store. They often have referral networks. Also, community review sites often provide insights and referrals from neighbors who have installed L2 chargers.

**Step 2:** If you decide to add Level 2 charging and determined your home can handle the additional power requirements, the next step is to find the right Level 2 home charger for you. Be aware though that not all electric cars are compatible with all Level 2 electric car chargers on the market today.

Chargers on the market today cover a wide range of services and price points, from \$300 to \$600.

The most common connector for a home charger is the SAE J1772. It is the connector used to charge the most popular electric cars such as the Kia Soul EV, Nissan LEAF, Ford Focus EV, and many more. It is also the charger used by most Level 2 public charging stations. Teslas have their own unique charging connector which is different from the SAE J1772.

Chargers on the lower end of the price spectrum simply charge your car when it's plugged in. Other choices offer smart Wi-Fi options like mobile app support, scheduled charging and integration with other smart home products, like the Amazon Echo.

Regardless of which option you choose, you'll also need to consider if you want a charger that is permanently wired to your electric outlet or plugged into a wall socket. A plugged-in option is easier to take with you if you move.

**Step 3:** Working with your electrician, determine where you want to install your home charger. Consider where your car charging port is located and select a location that allows for the shortest distance from the wall charger to your vehicle.

For more information on choosing the right home charging setup for you, check out this article on [pluginincars.com](https://www.pluginincars.com).

### Is there a standard "checklist" of what I can expect for a Level 2 (L2) charger installation?

Here are the things you need to do to get your home ready for an L2 charging station and ensure that your electrical service is able to support the added load of charging your car.

**Check your wiring:** Have an electrician inspect the wiring in your home or business before installing your charging station. For an electrician recommendation, PSE recommends that you talk with your local big box home improvement store. They often have referral networks. Also, community review sites often provide insights and referrals from neighbors who have installed L2 chargers. This can help prevent problems with your electrical system when adding and charging an electric car.

**Check for the correct size electrical panel:** Your electrician will need to inspect your panel to ensure that it is of adequate size to safely power a charging station without affecting your electrical system.

**Check to see if you need an electrical permit:** Some installations will require a permit to be obtained from local authorities. Your electrician can help with this process. PSE also has help available on our [Permits and Inspections](#) page.

**Schedule the work, then install and test your charging station:** If you need to modify your home's electrical panel, you may need to plan ahead to be without power for a few hours. PSE can help schedule any needed disconnection and reconnection of service.

**Learn to use your new charging station:** Charging station providers should provide training on how to use their equipment. Make sure you understand how to safely operate the charging station and that full electrical service has been restored to your home or business.

## PSE Up & Go Electric FAQs

### Can you recommend an electrician to install a Level 2 charger?

For an electrician, we recommend that you talk with your local big box home improvement store. They often have referral networks. Also, community review sites often provide insights and referrals from neighbors who have installed L2 chargers.

### Are there different codes or regulations for installing a charger inside vs. outside (e.g. garage vs. car port)?

That will depend on your local jurisdiction of the National Electric Code. [Read more about that here.](#) You can also ask your electrician.

### Will I have to replace the car battery?

The simple answer is that you'll probably never have to replace the battery. But that will depend on how and where you drive your vehicle, and the dealer warranty. Currently, most manufacturers are offering eight-year/100,000-mile warranties for their batteries. If you are ever faced with replacing your electric car's battery, please consult with your local car manufacturer for specific battery replacement costs as these costs can vary depending on vehicle model.

### What is the environmental impact of the production and disposal of electric car batteries?

While running electric cars on batteries seems to be a cleaner solution than burning gasoline for their operation, there is still an environmental impact associated with the production of these batteries. Responsible sourcing of materials and beneficially reusing industrial wastes is perhaps currently the best solution available to the battery industry for reducing their environmental footprint.

One of the primary components of electric car battery anodes is graphite. Graphite mining often generates toxic dust and requires corrosive chemicals like hydrochloric acid to process it into a usable form. Currently, graphite is mainly sourced from China, while synthetic graphite is produced in the United States as a byproduct of oil refining.

The environmental impacts of these activities are typically addressed through regulation in both countries, such as regarding air pollution and wastewater quality standards, but the resulting impacts differ due to the stringency of these standards.

Since most electric car manufacturers do not own or control the mining or processing facilities, they must seek to address the sourcing of raw materials, particularly for the batteries, in order to reduce their overall environmental footprints. Tesla has made a commitment to reduce the life-cycle environmental impacts of their batteries.

### What chargers are recommended by PSE?

PSE recommends chargers that meet appropriate codes such as Underwriters Laboratories (UL) and National Electric Code (NEC), and the SAE J1772 standard for electrical connectors for electric vehicles. A good list of [recommended chargers](#) is available on UL's site under Supply Equipment, Manufacturers.

### How many years do electric car batteries last?

The standard manufacturer's warranty for an electric car battery is 5 to 8 years or up to 100,000 miles. Each electric vehicle manufacturer may be different. Please consult with your local car manufacturer for specific battery life.

Now with an ever-increasing number of electric car batteries slated to soon hit retirement, finding ways to reuse battery technology and components is becoming increasingly important.<sup>1</sup>

As the first batches of batteries from electric and hybrid cars are seeing the end of their journey powering electric cars, they won't be heading to landfills (even though battery packs in today's electric cars use a lithium-ion chemistry that doesn't contain toxic materials and they're considered landfill safe). Instead they'll find second lives powering coolers in convenience stores, playing new roles in powering electric car charging stations and storing energy for homes. These batteries will now act as a "stationary energy storage device."<sup>2</sup>

This new life is due in part to the fact that lithium-ion car batteries can collect and discharge electricity for another seven to 10 years after being taken off the roads and stripped from the car's chassis—a shelf life with significant ramifications for car manufacturers electricity providers and raw-materials suppliers.<sup>1</sup>

Once the battery is on its last legs, the cell will be recycled and raw materials like cobalt will be recovered and reused.

<sup>1</sup> <https://www.bloomberg.com/news/features/2018-06-27/where-3-million-electric-vehicle-batteries-will-go-when-they-retire>

<sup>2</sup> <https://www.engadget.com/2018/10/15/bmw-ev-battery-recycling-program/>

## PSE Up & Go Electric FAQs

### Will my electricity bill increase?

When you charge an electric car at home, you may see an increase in your monthly electricity bill. Some customers notice that home charging pushes them past our Tier 1 600 kilowatt (kW) limit into the higher priced Tier 2. Our current [rate schedule](#) charges about 10 cents per kilowatt hour (kWh) for the first 600 kWh consumed by your household. Once you exceed that limit, the kWh rate increases to about 12 cents in Tier 2 for any additional kWh used.

It's worth a mention that PSE's residential rates are among the lowest in the United States.

### Do you offer discounts for charging an electric car during off-peak hours?

No, PSE does not offer discounts for charging an electric car during off-peak hours.

PSE is currently developing an electric car residential charging pilot program that is scheduled to start in 2019.

We can capture your customer information and contact you when the pilot program has launched. Please email [electricvehicle@pse.com](mailto:electricvehicle@pse.com) with the contact person's name and best method of contact (phone or email). Once we have more information, we will reach out for follow up.

Meanwhile, please visit [PSE's electric cars webpage](#) to learn more about our electric car program.

### What are the current tax incentives for electric cars?

Tax incentives for electric cars are subject to being phased out at a certain date or once a certain milestone is reached. This being said, there is a federal Internal Revenue Service (IRS) tax credit, which offers \$2,500 to \$7,500 per purchase for use in the U.S. The size of the tax credit depends on the size of the vehicle and its battery capacity. To find out specific tax credit amounts for individual vehicles, check out [Tax Credits for Electric Vehicles](#) and [Tax Credits for Plug-in Hybrids](#) pages.

Please note, if you lease an electric car from your dealer, they will likely apply the tax credit to your purchase or monthly payment.

### Does PSE offer incentives or cost reduction to install a charging station?

PSE is currently developing new pilot programs focused on electric car charging that are scheduled to start in 2019.

We can capture your customer information and contact you when the pilot programs have launched. Please email [electricvehicle@pse.com](mailto:electricvehicle@pse.com) with the contact person's name and best method of contact (phone or email). Once we have more information, we will reach out for follow up.

Meanwhile, please visit [PSE's electric cars webpage](#) to learn more about our electric car program.

### When is the best time of day to charge?

In general, it is better for the environment, and Puget Sound Energy, when you charge an electric car at "off peak" hours, approximately 10 p.m. to 5 a.m. The reason why is that overall electric consumption drops during these hours, demanding less of the electrical grid.

As a PSE customer you can further reduce your carbon footprint by purchasing 100% renewable energy from our renewable energy programs. Learn more about them on our [website](#).

### If I live in an apartment building or a condo, how will I charge my electric car?

If you live in an apartment, condo or townhome, it's more complicated to charge an electric car if you don't have a dedicated parking space with an outlet. Before you purchase an electric car, be sure to talk with your building manager or homeowner's association to discuss your charging options. More and more buildings are beginning to offer charging stations as a convenience for residents.

We've heard from customers who live in multi-unit dwellings that charging at work can be convenient if your employer provides charging stations. More public charging stations are opening in stadiums, churches, malls and other large parking lots in urban and suburban areas. Check out [PlugShare](#) for locations and types of charging options in your area.

PSE is currently in the process of developing multi-family, workplace and public pilot programs focused on electric car charging which are scheduled to start in 2019. We can capture your customer information and contact you when the pilot programs have launched. Please email [electricvehicle@pse.com](mailto:electricvehicle@pse.com) with the contact person's name and best method of contact (phone, email, other). Once we have more information, we will reach out for follow up.