



## Will Your Next Car Be Electric? Frequently Asked Questions



Drive Electric Hudson Valley is a program of education and outreach on electric vehicles. We help drivers figure out whether an EV is the right next car, support dealerships in making EV available, and assist communities in scaling up charging infrastructure. This “acceleration through coordination” is designed to make clean transportation technologies more affordable and available in the Hudson Valley and beyond. Here are some answers to questions that might be on your mind.

1. What are the basic types of electric vehicles?

**Hybrid vehicles** have been mainstream the longest. These have an internal combustion engine (gas or diesel) and an electric motor, which can work together for greater efficiency than a gas-only car. Newer **plug-in** hybrids (PHEV) are designed so that the battery can be plugged into an outlet or charging station to re-charge. **The gas engine takes over if you drive beyond the electric range. By contrast, 100%** electric vehicles (EV) use only an electric motor and battery pack to power the vehicle, with no internal combustion engine.

2. What kind of range is possible now?

It varies depending on make and model of vehicle, of course. Current plug-in hybrids range from 14 to around 53 miles of electric range, after which it shifts to gas powered and you can keep driving as far as you need to. The range for 100% electric vehicles is typically from 80 to over 300 miles.

3. How do you charge an EV?

Either at home with level 1 or 2 stations or at public level 2 charging stations or DC Fast Chargers.

4. How long does it take to fully charge an EV?

It varies depending on the size of the battery and type of charger that's available. Tesla Superchargers and DC Fast chargers can usually fully charge in under an hour. It may take 4-8 hours with a level 1 or 2 charging station.

5. What are the different types of charging stations out there?

Level 1, level 2 and DC fast chargers are the most common ones. Refer to “Charging Stations” handout for full explanation, details and chargers currently available in the market today.

6. Where are charging stations located?

There are over 600 EV charging stations in New York State. Refer to Plugshare.com, Chargepoint.com and other apps for location finders.

7. How much does it cost to charge an EV?

It depends on the electric rate from your utility, and the battery size in the car. For example if the electric rate is \$0.14 per kWh and the battery size is 24kWh then  $\$0.14 \times 24 \text{ kWh} = \$3.36$  cost to fully charge the battery. Some EV dealerships have free charging at their locations. There are also municipalities, workplaces and other businesses that offer free/reduced cost charging options. Some charger-finding apps will tell you how much energy is being put into the vehicle, distance equivalent in miles and cost per charge. For example, fast chargers on the NYS Thruway, provided by the NY Power Authority in the Hudson Valley cost \$8 per charge.

8. So how do I estimate the real cost of owning an EV?

Up-front cost depends on the dealer, down payment, discounts available and structure of monthly payments. Maintenance costs will be reduced since there are no oil changes, tune ups, fuel or air filters to be replaced. Charging cost will depend on electric rates or charging stations rates depending on dealer

and municipality. According to Plugin America, charging costs usually amount to around \$1 per gallon equivalent.

9. How can I get the best range out of my EV?

Become familiar with the different "Eco Modes" that your vehicle may have and with the different braking regeneration or recuperation modes that your vehicle may come equipped with.

10. Can I use a solar electric system (PV) to charge an EV?

Absolutely. In fact, NYSERDA has an online tool to help you figure out if an electric vehicle is right for you and how you can get the best benefit by adding solar: <https://nyserda.wattplan.com/>

11. Are EV for city driving only?

No, EVs can go anywhere as long as the trip is planned properly. That means they can be a good choice for your main car, not just for a backup.

12. What about speed and nimbleness? ?

Not to worry. EV's get up to speed faster than conventional cars due to full torque available from standstill.

13. What happens if you run out of charge?

The vehicle will stop. Same as if you run out of gas. If you're mindful of your range and travel situation this should not be a problem.

14. Does an EV handle different than my gas car?

No. The suspension and handling are as good as any conventional car. In fact, due to the battery's low center of gravity, many drivers feel an EV handles better than a gas powered vehicle.

15. What kind of maintenance is required?

For a 100% EV, you mainly need to add washer fluid and rotate the tires. There's no need to do oil changes or replace fuel or air filters because there aren't any. In a plug-in electric vehicle, the transmission may need to be replaced eventually.

16. When do I have to replace the batteries?

It depends on manufacturer estimates. Ask your dealer about warranties during the first 100,000 and take replacement battery cost into account when pricing the car.

17. Should I buy or lease an EV?

It depends on your financial comfort, incentives available and desire to keep a vehicle for a short or long period. If you prefer not to make the up-front investment or know you only want to keep the vehicle for two or three years, a lease will meet your needs. If you have a company or small business consider taking out a loan and getting the tax credit of \$3,750. Drive Electric Hudson Valley can improve upon those prices by negotiating additional discounts.

18. Are there any incentives or rebates to help with purchase?

In addition to the federal tax credit, New York offers the Drive Clean rebate of up to \$2,000, available for over 40 makes and models.

19. What is the best part of owning an EV?

Low cost of operation, smooth driving, low impact on the environment, ability to use new technology, and the enthusiasm of other EV drivers you will meet.

20. What are the down-sides of owning and driving an EV (if any)?

Besides staying on top of trip planning, the lack of noise sometimes takes getting used to. You need to be more vigilant of pedestrians because they may not hear you coming.