EV Terms Explained

Electric Vehicle (EV): A vehicle propelled by an electric motor. EV is a wide umbrella term that can encompass many different subtypes.

Battery Electric Vehicle (BEV): A vehicle that runs exclusively on battery power.

Hybrid (HEV): A vehicle that uses both an electric motor and an internal combustion engine to achieve better efficiency.

Plug-in Hybrid Vehicle (PHEV): A hybrid vehicle that includes a plug for charging its internal batteries, allowing it to run on electricity for longer than a conventional hybrid.

Horsepower vs. **Kilowatts**: Car engines in the U.S. are rated in horsepower, more or less the work one horse can do. Electric motors in EVs, as are rated in kilowatts, or thousands of watts. One kilowatt is one third more powerful than one horsepower. A 100-kilowatt motor is about the same as a 134-horsepower gasoline engine. More exactly, multiply horsepower by 1.3410 to get kilowatts. Multiply kilowatts by 0.7355 to get mechanical horsepower.

Kilowatt-hours: Batteries are rated in kilowatt-hours, or kWh, that is power over a period of time. A kilowatt is roughly how much a running hair dryer or toaster oven uses. Run either for an hour and you've used one kilowatt-hour of electricity, worth about 16 cents at August 2022 rates in the U.S., making a fill-up of a large EV battery about $11 (done at home) versus $40-$60 to fill up a gas tank. EV batteries today are typically 40 to 100 kilowatt-hours capacity.

MPG vs. **MPGe**: Driving efficiency of gasoline engines is rated in miles per gallon in the U.S. Driving range for gas engine cars and electric cars is measured the same way: miles (or kilometers). The EV efficiency part is measured in MPGe, or miles per gallon equivalent. Burning one gallon of gasoline produces 115,000 BTUs. To generate that much heat from electricity, it would take 33.7 kWh of electricity. If an EV used 33.7 kWh to drive 100 miles–$5.39 at current home charging costs–it would be rated at 100 MPGe. And that is an attainable figure. The Tesla Model 3 is rated at 142 MPGe overall. Note that MPGe does not tell you about the cost to drive, just efficiency.

Mileage Range Rating: This lists how far the vehicle is rated to drive on electric power alone – and for hybrid vehicles how far it can continue on gasoline power – given a fully charged battery. Keep in mind that the EPA bases its calculations on the premise that because of various charging options, the typical EV will have only 90 percent of a full charge. It's best to use this number as a guide, rather than an absolute value.

It's also important to note that much like the MPG of a gasoline vehicle, EV range can vary widely depending on how you drive. Cargo load, terrain, climate, and how much of a lead foot you have each play a role in determining your exact MPGe.