

EV 101

# A glossary of EV charging terms

Power up your EV knowledge



EV**BOLT**

# EV (Electric vehicle)

An electric vehicle uses an electric motor and controllers to power vehicles. EVs store electricity in a battery that powers the vehicle's wheels through an electric motor. Different types of EVs include the battery electric vehicle (BEV), the plug-in hybrid electric vehicle (PHEV), the hybrid electric vehicle (HEV) and the fuel cell electric vehicle (FCEV).

# BEV (Battery electric vehicle)

A battery electric vehicle (BEV) is a type of electric vehicle. BEVs store energy within the batteries inside the vehicle. A BEV does not have an internal combustion engine but relies solely on an electric battery system for energy. It must be plugged into a charging source to replenish its battery.

# PHEV (Plug-in hybrid electric vehicle)

A PHEV is a type of hybrid electric vehicle that combines an internal combustion engine with an electric motor and a large battery that can be recharged by plugging into an electrical outlet or EV charger.

# ZEV (Zero-emission vehicle)

A vehicle that emits no pollutants from its operation.

# AC charger

Alternating current (AC) chargers use electric power from the grid to deliver up to 22 kW to vehicles. Charging time can take 6-24 hours depending on the charging level and vehicle type. Level 1 (120 volts or normal household current) charging involves simply plugging into a wall outlet and adds about 4 miles of Range Per Hour, while Level 2 (240 volts or the equivalent power of an electric dryer) charging requires a dedicated outlet or conduit that is easy to install at most households or businesses and can add 25-50 miles of Range Per Hour. Level 2 is a great solution for homes, businesses and other places where people park for several hours, like hotels and parking garages.

# DC charger

Direct current (DC) charger, also called fast charger, delivers DC power directly to the battery to charge vehicles faster. DC charging typically provides 50 to 500 kW of power. Fast charging could take 30 minutes to 1.5 hours depending on the charger speed, battery voltage and other factors.

# J1772

One of the most common EV charging connectors is the Society of Automotive Engineers (SAE) J1772™ standard adopted in North America and Japan. This may be used for Level 1 or Level 2 AC charging.



# Type 2

In Europe, most vehicles use a “Type 2” connector for Level 2 AC charging. European charging stations may be socketed or tethered, meaning that drivers bring their own cables that plug into the vehicle and the station.

# CHAdemo

The fast-charging connector CHAdemo connector is short for “CHARGE de MOve,” a phrase derived from the Japanese phrase “O cha demo ikaga desuka?” This translates to English as “How about a cup of tea?” and refers to the time it would take to fast charge a car. CHAdemo has been used on many vehicles designed in Asia, including the Nissan LEAF, Mitsubishi iMiEV and Kia Soul EV.

# CCS (Combined Charging System)

CCS is a direct current (DC) fast charging protocol certified by the Society of Automotive Engineers (SAE) certified and often found on vehicles produced by European and American companies. The “combined” term in the CCS name designates its capability to incorporate the Level 2 (J1772™ standard) plug and DC fast charging connector into the same larger plug. The CCS plug is often referred to as a “combo plug.”

# Connector compability

Check your car's owner manual or ask the manufacturer whether your vehicle is compatible with a CCS or CHAdeMO plug. Currently, all ChargePoint stations offer both CCS and CHAdeMO connectors.

# Roaming

Roaming agreements enable EV drivers to charge their EV at charging stations from different networks using a single account.

# SOC (State of charge)

SOC is the amount of charge in an EV's battery. The units of SOC are percentage points, with 0% meaning no charge left and 100% meaning fully charged. This allows you to see how much capacity is still available.

# Range

The total distance an electric vehicle can travel on one full charge before the battery needs to be recharged.

# (MPGe) Miles per gallon equivalent

A measurement of how far a vehicle can travel with 33.7 kWh, which is the equivalent energy found in one gallon of gas. This allows drivers to compare the efficiency of EVs and gas vehicles.



# Charging curves

Charging curves for EV charging sessions show how much energy a vehicle added over time. Fast charging speeds can vary over time as a battery warms up and fills up with more charge, with speed typically slowing after the battery is 80% charged. For more info, see our overview of charging curves for different vehicles.

# **kW (Kilowatts = 1,000 Watts)**

The basic measurement of an EV's power that is generated by its batteries.

# kWh (Kilowatt-hour)

A unit of energy equivalent to the energy transferred or expended in one hour by one kilowatt of power. Electric car battery size is measured in kilowatt-hours. Many passenger EVs can travel about 3 to 4 miles per kWh, so knowing the battery size can give you an idea of the range.

# Site host

A site host is the entity that owns or operates the location where charging stations are installed. Often these are retail chains, restaurants, business centers, parking operators or municipalities.