

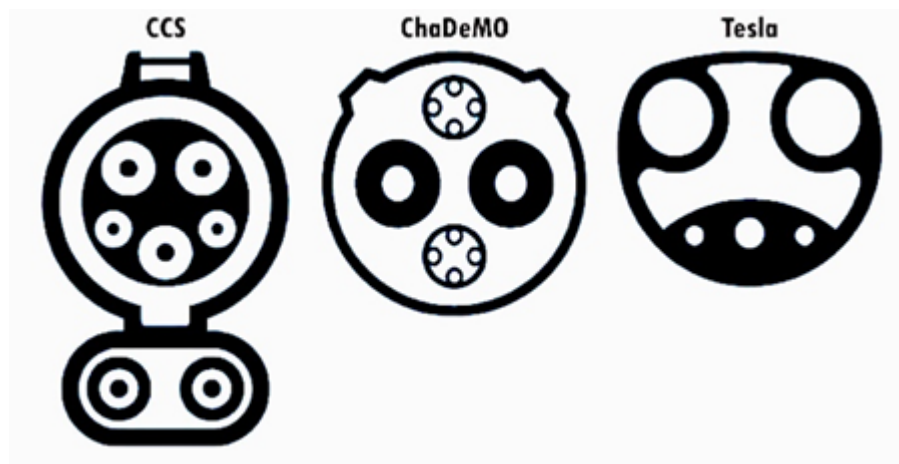
EV Terminology

BEV: Battery Electric Vehicles (BEV) operate exclusively on electricity stored in batteries and only have an electric motor (e.g., Chevy Bolt EUV, Tesla Models, Ford Mustang Mach-e, Volvo XC40 Recharge, etc.).

Direct Current Fast Charging (DCFC): Requires a 480V/3-Phase Alternating Current (AC) electricity connection (with the DCFC equipment converting AC to DC) and is the fastest charging EVSE type which is especially useful for applications such as highway charging. Note that this high-speed charging comes at a high cost for the equipment and the investment in electrical supply.

Electrical Connectors for DCFC: Unlike Level 1 and 2 charging, there are currently three different types of DCFC connectors (plugs) in use in the United States: CHAdeMO, SAE Combined Charging System (CCS), and Tesla (NACS).

- CHAdeMO is used by Japanese automakers Nissan and Mitsubishi. Older Kia, Honda, and Hyundai models also use CHAdeMO.
- All other automakers in the U.S. market, except Tesla, use the CCS connector. Except for Tesla stations, many new DCFC stations come equipped with both CCS and CHAdeMO plugs.
- The Tesla connector could previously only be used by Tesla vehicles, but Tesla announced in 2022 that it will allow its charging network to be used by other EVs. See definition of NACS for more detail.



Electric Vehicle (EV): A vehicle that can be powered by an electric motor that draws electricity from a battery and is capable of being charged from an external source. An EV includes both a vehicle that can only be powered by an electric motor that draws electricity from a battery (all-electric vehicle) and a vehicle that can be powered by an electric motor that draws electricity from a battery and by an internal combustion engine (plug-in hybrid electric vehicle).

Electric Vehicle Energy Management System (EVEMS): A means used to control electric vehicle supply equipment loads through the process of connecting, disconnecting, increasing, or reducing electric power to the loads and consisting of any of the following: a monitor(s), communications equipment, a controller(s), a timer(s), and other applicable device(s).

Electric Vehicle Supply/Service Equipment or (EVSE): The equipment, including the cables, cords, conductors, connectors, couplers, enclosures, attachment plugs, power outlets, power electronics, transformer, switchgear, switches and controls, network interfaces, point of sale equipment, and associated apparatus designed and used to transfer energy from the electric supply system to a plug-in electric vehicle. "EVSE" may deliver either alternating current or, consistent with fast charging equipment standards, direct current electricity. "EVSE" is synonymous with "electric vehicle charging station".

Level 1 (L1): Charging requires 120V with 1-phase AC (equivalent to powering a space heater). While this charging method has a relatively slow charging rate, adding 3 - 5 miles of range per hour of charge, there are still opportunities for L1 use such as workplace or home charging, where vehicles may be parking for many hours. This is somewhat dependent on how far the vehicle is typically driven. Level 1 may be particularly appropriate for plug-in hybrid electric vehicles (PHEVs) and battery electric vehicles (BEVs) with small batteries, workplace charging for employees, as well as long-term parking at airports, transit lots, and shared community parking.

Level 2 (L2): Charging requires 208V or 240V with 1-Phase AC (outlet equivalent to an electric range or electric dryer). Level 2 charging provides charging at a rate of 12-30 miles of range per hour of charge. Many people find L2 charging provides the best solution for at-home or at-work charging. Level 2 charging may also be appropriate for other locations where people park vehicles for several hours at a time (e.g., fleet vehicles, retail establishments, destination locations, etc.).



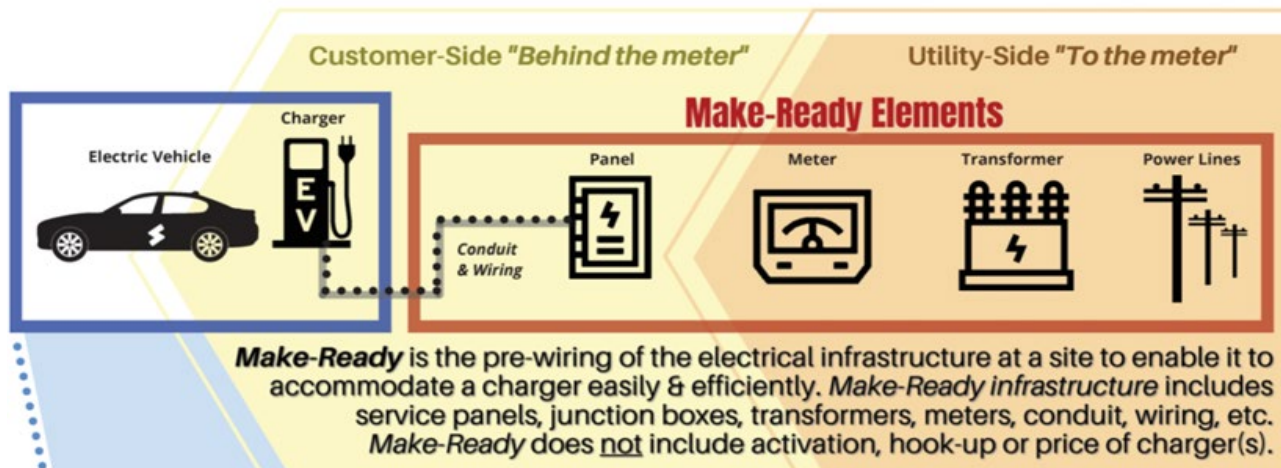
EV Charging Station Comparison



	AC Level 1	AC Level 2	DC Fast Charger
Voltage	120V 1-Phase AC	208V or 240V 1-Phase AC	480V 3-Phase AC
Suitable for Installation	Single-family Multi-family	Single-family, Multi-family, Commercial, Municipal/Private Fleet	Municipal/Private Fleet Public Metro Areas
Amps	12-16 Amps	12-90 Amps (Typical 32 Amps)	<125 Amps (Typical 60 Amps)
Charging Loads	1.4 - 1.9 kW	2.5 - 19.2 kW (Typical 7 kW)	<90 kW (Typical 50 kW)
Charge Duration	3-5 miles of range per hour	10-20 miles of range per hour	80% charge in 20-30 minutes
Best for	6+ hour or overnight charge	2–6-hour dwell times	High turn over
Station Hardware Cost	\$500 - \$1,000 per port	\$600 - \$5,000 per port	\$7,000 - \$50,000 per port



Make-Ready: The pre-wiring of electrical infrastructure at a parking space, or set of parking spaces, to facilitate easy and cost-efficient future installation of Electric Vehicle Supply Equipment or Electric Vehicle Service Equipment, including, but not limited to, Level Two EVSE and direct current fast chargers. Make Ready includes expenses related to service panels, junction boxes, conduit, wiring, and other components necessary to make a particular location able to accommodate Electric Vehicle Supply Equipment or Electric Vehicle Service Equipment on a “plug and play” basis. “Make-Ready” is synonymous with the term “charger ready,” as used in P.L.2019, c.362 (C.48:25-1 et al.).



Multi-unit dwelling (MUD) refers to multi-family residences, including apartments, condominiums, and townhouses. There must be a minimum of 5 units.

The North American Charging Standard (NACS), currently being standardized as **SAE J3400** and known as the **Tesla charging standard**, is an electric vehicle charging connector system developed by Tesla, Inc. It has been used on all North American market Tesla vehicles since 2012 and was opened for use to other manufacturers in November 2022. Between May and October 2023, nearly every other vehicle manufacturer announced that starting from 2025, their electric vehicles in North America will be equipped with the NACS charge port.

PEV: A Plug-in Electric Vehicle (PEV) is a car that runs at least partially on battery power and is recharged by plugging into the electricity grid. There are two different types of PEVs to choose from: pure battery electric and plug-in hybrid electric vehicles.

PHEV: Plug-in Hybrid Electric Vehicles (PHEVs) combine two propulsion systems in one vehicle; an electric motor that is battery-powered and can be plugged in and recharged, and an engine refueled with gasoline. (e.g., Chrysler Pacifica Hybrid, Jeep 4xE, Subaru Crosstrek Hybrid, Toyota Prius Prime Plug-in, etc.). *Note: PHEVs may not be able to utilize DC Fast Chargers because of the smaller battery- check with the vehicle manufacturer.*



Port: One charging station connection to one vehicle, capable of supplying the full rated power of the charging station. In the case of Level 2 charging stations, a port is one SAE J1772 connector. In the case of DCFC stations, one port may include both a CHAdeMO and CCS connector if only one connector can be used at a time. In all cases, if a charging station has multiple connectors but reduces the power to each connector when multiple vehicles are plugged in, then this counts as only one port.

Private EVSE: This refers to EVSE that has restricted access to specific users (e.g., single, and two-family homes, executive parking, fleet parking with no access to the general public).

Publicly accessible EVSE: This refers to EVSE that is publicly available (e.g., park & ride, public parking lots and garages, on-street parking, shopping center parking, non-reserved parking in multi-family parking lots, etc.).

SAE J1772 or J1772 is a North American standard connector for plugging into EVs, established by SAE International. The standard includes physical, electrical, communication, and performance requirements. The J1772 connector is used for both Level 1 and Level 2 charging.

SAE J1772 CCS or “combo connector” is the protocol standard that adds pins to the J1772 connector to allow DC fast charging. This connector is most commonly supported by North American and European EVs equipped for fast charging.

