

# EV CHARGING 101

*Everything you need to know about charging an electric vehicle in New York*

Just like a gas vehicle won't run without gas in the tank, an electric vehicle (EV) won't run unless its battery is charged. EV owners have many options for replenishing their rides. Electric vehicle supply equipment (EVSE) can be installed **at home, at work, or on the street**. No matter where you are, you can use free resources to find public charging from a growing list of locations.

## WHERE DO I CHARGE?

### Level 1



**HOUSEHOLD  
OUTLET  
(120 VOLTS)**

### Level 2



**240-VOLT  
HOME  
CHARGER**



**240-VOLT  
COMMERCIAL  
CHARGER**

### DC Fast Charge



**HIGH-SPEED  
COMMERCIAL  
CHARGER**

- Most EV drivers charge their vehicles overnight at home using AC Level 1 or AC Level 2 charging equipment.
- Only a standard electrical wall outlet and charging cable that comes with your car is required.
- Provides 5 electric miles an hour. Charging your vehicle with a Level 1 charger can take between **8 to 12 hours** for a full charge, depending on the size of your battery.
- Typically, **Level 2** charging is used at home, workplaces, and in public garages.
- Charges through a 240V AC plug and requires installation of home charging or public charging equipment.
- The units provide 25 electric miles an hour and typically take **4 to 6 hours** to charge a fully depleted battery.
- **DCFC** (Direct Current Fast Chargers) are the fastest chargers for EVs. These are sometimes referred to as Level 3 chargers.
- Three plug types: CHAdeMO (used by most Japanese and Korean plug-in cars); CCS Combo (used by most American and European plug-in cars); and Tesla Supercharger.
- Charge up to **80% of a vehicle's battery in 20 minutes**, or between 60 and 100 miles.
- Found at public charging stations, especially along heavy traffic corridors, airports or near retail and shopping areas.

# EV CHARGING 101

*Everything you need to know about EV connector types*

## Level 1 Charging

Gain 5 miles per hour, takes 8 to 12 hours for a full charge ideal for everyday commute, plug into a standard 120V wall outlet, connector provided with most EVs



J-1772

## Level 2 Charging

Gain 25 miles of range per hour of charging, takes 4-8 hours to full charge, can be used at a 240 Volt Outlet



J-1772

## DC Fast Charging

Full charge from 15-45 minutes, can be found at public locations and retail



Type 1  
CCS Combo



Type 2  
CCS Combo



CHAdeMO



NACS (Tesla)



















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## WHERE DO I CHARGE?

	Level 1	Level 2	DCFC (Level 3)
<b>Range Added</b>	5 miles per hour	25 miles per hour	90 miles in 30 minutes
<b>Power</b>	 <b>120 volts</b> HOUSEHOLD OUTLET (120 VOLTS)	  <b>240 volts</b> 240-VOLT HOME CHARGER 240-VOLT COMMERCIAL CHARGER	 <b>480 volts</b> HIGH-SPEED COMMERCIAL CHARGER
<b>Cost*</b>	\$0.24-0.30 per hour	\$1.32-2.64 per hour	\$6.75-10.00 per 30 minutes
<b>Connector Type</b>	 J-1772	 J-1772	    Type 1 CCS Combo    Type 2 CCS Combo    CHAdeMO    NACS (Tesla)
<b>Location</b>		  	 

**Note:** Range, charging times, and costs may vary based on type of vehicle and charging location.

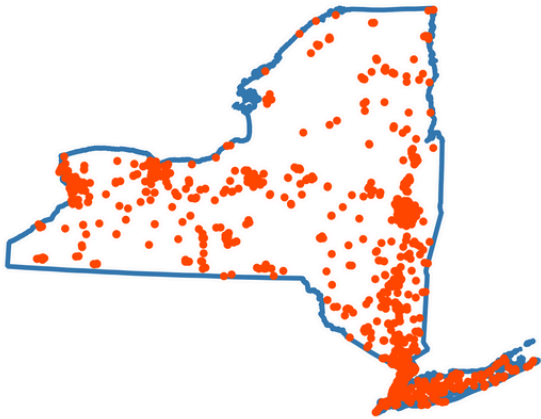
\*Cost assumptions: L1: \$0.20-0.25 per kWh and 1.2 kW max charger capacity; L2: \$0.20-0.40 per kWh and 6.6 kW max charger capacity; DCFC (L3): \$0.27-0.40 per kWh and 50 kW max charger capacity.

\*\*'Power' icons borrowed from AARP Auto, "Electric Cars: Chevy Bolt EV vs. Tesla Model 3." December 5, 2018.



## PUBLIC CHARGING IN NEW YORK

There are dozens of charging network providers in New York and across the nation. Many are either subscriptions and membership based or pay-as-you-go. Most networks have a mobile app you can download to your smartphone device. Rates vary by network and location. Some charge per the amount of electricity used, some by the hour, or are even free! Plus, **finding public charging stations is easier than ever!** Use online and mobile apps like the Alternative Fuels Data Center or PlugShare for real-time status updates on stations. Google Maps and Apple Maps also now show charging station information.



Did you know there are approximately **15,000 charging units** in New York?

## INCENTIVES FOR EV CHARGERS

If you have access to a home garage or parking space, you can use Level 1 charging (a standard outlet) or install Level 2 charging. Federal and state rebates are available to install charging in public parking areas, workplaces, apartment buildings, and single family homes.

Visit [missionelectric.org](https://missionelectric.org) to learn more about savings and EV programs in New York.



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