

# Electric Vehicle Charging Speed Basics

## Understanding how battery capacity, power, and time determine electric vehicle charging speed

To prepare yourself and site as an electric vehicle charging site, it is important to understand the basics of electric vehicle charging. TurnOnGreen has a variety of offers for the hospitality industry, and the information below will help you make an informed decision.

### Charging Terminology

Gas powered engine drivers focus on their vehicle’s mpg rating and gas prices. Electric vehicle drivers are more concerned with kilowatts, kilowatt hours, and miles/kWh as these determine charging output, charging speeds, and range added over time. Understanding this relationship is essential for both EV owners and charging station operators to manage charging times, estimate energy costs, and optimize charging infrastructure for efficient and cost-effective use.

#### Kilowatts (kW)

The number of kilowatts is the rate of power the charging station provides. The greater the number of kilowatts, the faster the charger.\*

*This number is listed by EV charging providers.*

#### Kilowatt Hours (kWh)

Kilowatt-hours is an electric vehicle rating that tells you the maximum battery capacity, as well as the distance an EV battery can take you at a given time.

*kW x number of hours = kWh*

#### Miles / kWh

Miles per kWh is a rate that tells drivers how many miles they gain per kWh of charging.

*This number is provided by the manufacturer of the EV.*

\*power efficiency relies on various factors including infrastructure at site and vehicle’s capacity

If a 7.6 **kilowatt (kW)** charging station is plugged into an EV for 1 hour it can deliver up to 7.6 **kilowatt hours (kWh)** of capacity to the EV’s battery. A Tesla Model 3 has a battery capacity of 82 **kWh**, and a range of 350 miles. 1 **kWh** on this particular model is equal to 4.3 miles of range, or 4.3 **miles/kWh**.

A TurnOnGreen charger offering 7.6 **kW** per hour of charging can therefore add up to 7.6 **kWh** to a Tesla Model 3. 7.6 **kWh** equals roughly **32.68 miles gained per hour of charging** on a property offering a TurnOnGreen Level 2 charger.\*

### Estimated range added with TurnOnGreen EVP700 (7.6kW)

Model	Battery Size	Range at 100%	miles/kWh	Range added @ 1 hour*	Range added @ 4 hour*
Audi e-Tron GT (2022)	93.4	238	2.5 miles	19 miles	76 miles
BMW i4 eDrive40 (2022)	83.9	301	3.6 miles	27 miles	109 miles
Ford F-150 Lightning XLT SR (2022)	110	230	2.1 miles	16 miles	64 miles
Ford Mach-E Select SR (2022)	75.7	247	3.3 miles	25 miles	100 miles
Porsche Taycan (2022)	79	200	2.5 miles	19 miles	76 miles
Tesla Model 3 RWD (2022)	60	272	4.5 miles	34 miles	136 miles

Table- Inside EV- Compare Electric Cars: EV Range, Specs, Pricing & More