

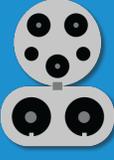
# ELECTRIC VEHICLES (EV)

## Charging Information and Cold Weather Performance

### EV Charging Basics

EV charging is very easy. Where, when and for how long depend on what type of charging equipment you use. The time to charge an EV depends on multiple different factors. The table below describes the different types of chargers.

Learn more about where you can find public EV chargers at [AFDC.Energy.gov/stations](https://www.afdc.energy.gov/stations)

Level 1	Level 2	DC Fast Charger		
				
<b>Range Added</b> 5 miles / hour*	<b>Range Added</b> 25 miles / hour†	<b>Range Added</b> 100-200+ miles / 30 minutes‡		
<b>Voltage</b> 120 Volts	<b>Voltage</b> 240 Volts	<b>Voltage</b> 480 Volts		
<b>Location</b> Home, Workplace	<b>Location</b> Home, Workplace, Public	<b>Location</b> Public, Travel Corridors		
<b>Connector Type</b>	<b>Connector Types</b>	<b>Connector Types</b>		
 J1772	 J1772	 CCS	 CHAdeMO	 J3400 (NACS)

\*Assumes 1.9 kW charging power

† A Level 2 unit can range from 2.9 to 19.2 kW power output.

‡ A DC charging unit can provide up to 500 kW. Charging range varies by vehicle and battery state of charge.



## Cold Weather Info



# EV Benefits and Considerations in Cold Weather

EVs do just fine in cold weather, but cold weather affects how far your EV can drive. With a bit of preparation and planning, your EV will be reliable through the winter. Here are some tips to help keep an EV running smoothly in the winter.

- **How does an EV handle in snow?** EVs drive and handle very well in snow, ice and slush. EVs deliver the power needed very quickly and consistently for the traction control system compared to a gas-powered car which has a delay in response.
- **How do I heat my vehicle in the cold?** Many electric vehicles have a preheat or precondition mode. You can schedule this through the car's mobile app to warm the cabin while it's still plugged in and charging. This helps prevent the battery from draining as it heats the interior. And since there are no emissions, you can safely preheat in your garage.

While you drive, use the heated seats and steering wheel features instead of cabin heating to reduce the decrease of driving range in the winter and cold temperatures. Many EVs will tell you what percent of overall energy used went to heating or cooling.

- **How do I charge my vehicle in the cold?** To increase the charging speed during colder temperatures, the battery needs to be primed before charging. Many EVs have an option to tell the vehicle to precondition the battery and prepare it for charging. Some may automatically do this if the car's navigation destination is a DC fast charger.

Parking in a garage or covered parking can make a big difference in keeping your battery warm during cold weather. Warmer temperatures help your battery charge more quickly and hold the charge longer.

- **How does charging time change?** No matter what type of charger you're using, it will take longer to charge your EV in colder weather. An Idaho National Laboratory study found it may take about an extra 20 minutes per every hour of charging you would normally spend to get to the same level of charge.
- **How often will I need to charge?** Plan for more frequent charges to account for lost range. Charge at home overnight. Find public charging stations through your vehicle's navigation system or mobile apps to find nearby stations and plan stops before and during a trip.

The information is current as of October 2024. Please visit the website for the most current information and speak to your local dealership for details on available savings.

## Sources:

<https://arstechnica.com/cars/2023/12/electric-vehicles-are-better-than-gas-powered-cars-in-winter-heres-why/>

<https://www.caranddriver.com/features/a60344222/does-an-ev-work-as-well-in-cold-weather/>

<https://insideevs.com/features/703378/how-cold-affects-electric-vehicles/>

