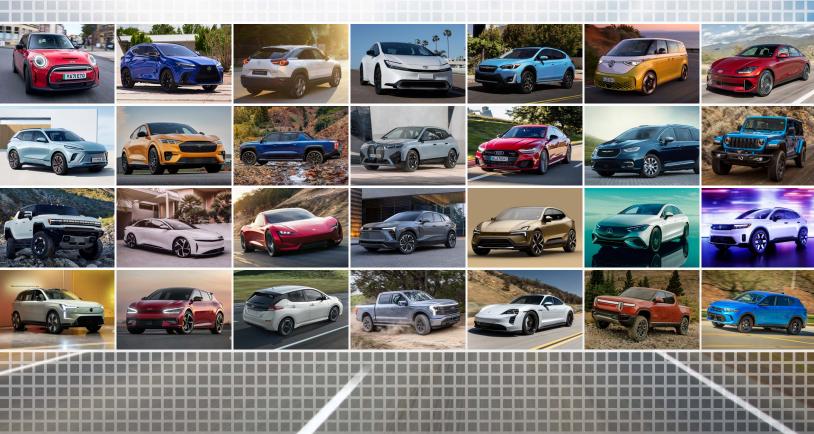


# CONSUMER GUIDE TO ELECTRIC VEHICLES



# WHY BUY AN ELECTRIC CAR?

Electric vehicles (EVs) are fun to drive, safe, comfortable, and convenient to refuel. They also typically cost less than a gas vehicle to operate per mile and produce no tailpipe emissions.

Today's electric cars do everything a gas car can do and more. Most are high-performing vehicles with silent torque and superb handling and can travel ~250 miles on a charge.

Although most EV drivers prefer to charge at home for its convenience and savings, a growing national network of public charging sites enables more consumers—even those who can't plug in at home—to consider purchasing an EV.

From initial vehicle manufacturing to vehicle retirement, EVs emit 64% less in greenhouse gases on average than traditional gas-powered vehicles.¹ Because EVs are powered by electricity instead of gasoline, they shift our energy reliance to domestic sources while also reducing emissions. Cutting vehicle emissions is especially critical in communities adjacent to heavily trafficked roadways. As local power generation grows cleaner, every electric car charged on that grid gets cleaner, which further increases broader public health and climate benefits.

Compared to the traditional internal combustion engine (ICE) vehicle market, the EV market is relatively new and therefore still developing. Over time, the used EV market will grow and a wider variety of households will be able to take advantage of it.

<sup>&</sup>lt;sup>1</sup> Woody, M., Vaishnav, P., Keoleian, G. A., De Kleine, R., Kim, H. C., Anderson, J. E., & Wallington, T. J. (2022). The role of pickup truck electrification in the decarbonization of light-duty vehicles. Environmental Research Letters, 17(3), 034031.



# **EV 101**

This guide highlights the two types of EVs that plug into the grid to recharge their batteries: battery-electric (or all-electric) vehicles and plug-in hybrids.



Battery-electric vehicles (BEVs) are powered solely by an electric motor and battery. They burn no gasoline or diesel fuel and have no tailpipe emissions.



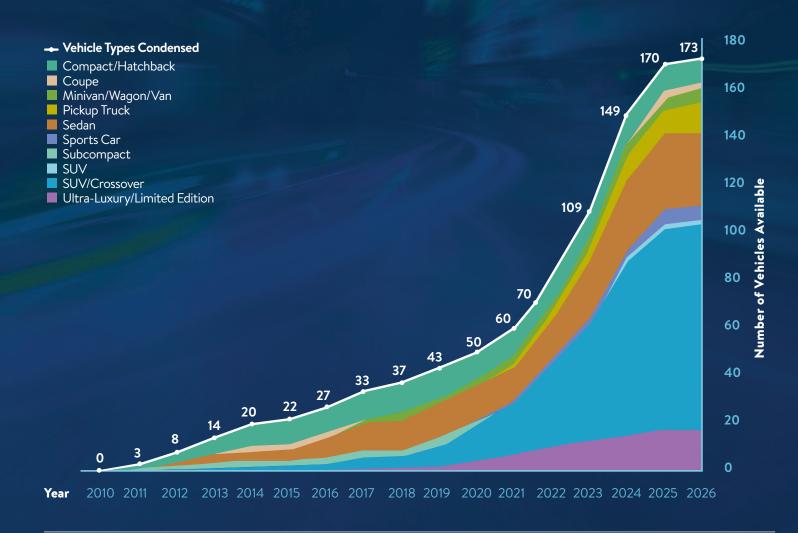
Plug-in hybrids (PHEVs) pair an electric motor and battery with an ICE. A PHEV operates using a blend of both power sources. They can operate on a diverse set of conditions according to the vehicle.

**Conventional hybrids**, sometimes called *electrified vehicles*, refuel only with gasoline. Because they do not plug in, they are not included in this guide.



## **EV 101**

Electric cars are available in almost all body styles, from sedans to SUVs, hatchbacks to wagons. Each year, automakers expand their offerings. Some offer gasoline, BEV, and PHEV options in the same model. Many now say that they aspire to electrify their entire fleet in response to global climate change. EV range is increasing, and costs are falling thanks to better batteries and components and to rising production volumes. An EPRI analysis based on automaker announcements shows that the average range of BEV vehicles will increase from 246 miles in 2021 to 270 miles by 2024. More than 50 EV models are available new today, and more than 130 different models are expected by 2024 (Figure 1). All EVs are available nationwide. Zero-electric vehicle (ZEV) states, however, typically have more inventory in their local dealerships than non-ZEV states. Find out if your state is a <u>ZEV state</u>.



**Figure 1.** Vehicle Availability through 2026. The numbers for vehicles available are estimates based on manufacturer announcements.

<sup>&</sup>lt;sup>2</sup> See the documented trends for the vehicle type availability over the years.

### **M** BATTERY-ELECTRIC VEHICLES AVAILABLE NOW

VEHICLE MODEL ELECTRIC RANGE (mi) PAGE

VEHICLE MODEL	ELECTRIC RANGE (III)	FAGE
SUV/CROSSOVER		
Audi Q8 e-tron	222	9
Audi Q8 e-tron Sportback	218	9
Audi Q4 e-tron quattro	241	10
BMW iX	281	10
Cadillac Lyriq	312	10
Fisker Ocean	250	10
Ford Mustang Mach-E AWD (Long Range)	312	11
Genesis Electrified G80	282	11
Genesis GV60	248	11
GMC Hummer SUV	314	11
Hyundai loniq 5	250	12
Jaguar I-PACE	246	12
Kia EV6 Long Range	310	12
Kia EV9	280	13
Lexus RZ 450e	220	13
Mercedes-Benz EQE SUV	279	13
Mercedes-Benz EQS SUV	333	13
Nissan Ariya	304	14
Polestar 3	300	14
Rivian R1S	321	14
Subaru Solterra	220	14
Tesla Model X - Long Range	348	15
Tesla Model Y - Long Range	330	15
Toyota BZ4X Crossover	252	15
Volkswagen ID.4 AWD Pro	255	15
Volvo C40 Recharge	226	16
Volvo XC40 Recharge	223	16

<sup>&</sup>lt;sup>3</sup> Range for battery-electric vehicles (BEV) is all-electric range. Range for plug-in hybrids (PHEV) is all-electric and combined (electric+gas) range. Sources: <a href="https://www.fueleconomy.gov">www.fueleconomy.gov</a> and manufacturer websites.

Continued next page

### **M** BATTERY-ELECTRIC VEHICLES AVAILABLE NOW

VEHICLE MODEL	ELECTRIC RANGE (mi)	PAGE
SEDAN		
Audi A6 e-tron	400	17
Audi e-tron GT	238	17
Audi RS e-tron GT	232	17
BMW i4	276	17
BMW i7	300	18
Hyundai loniq 6	250	18
Polestar 2	320	18
Tesla Model 3 - Long Range	333	18
Tesla Model S - Long Range	405	19
PICKUP TRUCK		
Chevrolet Silverado	240	19
Ford F-150 Lightning (Extended Range)	320	19
GMC Hummer Pickup	314	19
Rivian R1T	289	20
Tesla Cybertruck	300	20
SPORTS CAR		
Porsche Taycan	208	20
ULTRA-LUXURY/LIMITED EDITION		
Lucid Air Dream P AWD	451	21
Lucid Air Dream R AWD	520	21
Porsche Taycan 4 Cross Turismo	233	21
Porsche Taycan Turbo	245	21
COMPACT/HATCHBACK		
Chevrolet Bolt EUV	247	22
Chevrolet Bolt EV	259	22
Hyundai Kona Electric	258	22
Kia Niro EV	253	22
Mini Cooper SE	114	23
Nissan LEAF Plus	212	23

<sup>&</sup>lt;sup>3</sup> Range for battery-electric vehicles (BEV) is all-electric range. Range for plug-in hybrids (PHEV) is all-electric and combined (electric+gas) range. Sources: <a href="https://www.fueleconomy.gov">www.fueleconomy.gov</a> and manufacturer websites.

Continued next page

### **№ PLUG-IN HYBRID VEHICLES AVAILABLE NOW**

**VEHICLE MODEL** ELECTRIC RANGE (mi) ELECTRIC+GAS (mi) **PAGE** SUV/CROSSOVER Alfa Romeo Tonale Audi Q5 TFSI e BMW X5 xDrive45e Dodge Hornet R/T Hyundai Santa Fe Plug-in Hybrid Hyundai Tucson Plug-in Hybrid Jeep Grand Cherokee 4xe Jeep Wrangler 4xe Kia Sorento Plug-in Hybrid Land Rover Defender PHEV Land Rover Range Rover Evoque EV Land Rover Range Rover PHEV Land Rover Range Rover Sport PHEV Lexus NX 450h+ AWD Plug-in Hybrid Electric Vehicle Lincoln Aviator Grand Touring Plug-in Hybrid Lincoln Corsair Grand Touring Plug-in Hybrid Mini Cooper SE Countryman All4 Mitsubishi Outlander PHEV Porsche Cayenne E-Hybrid Porsche Cayenne E-Hybrid Coupe Subaru Crosstrek Hybrid Toyota RAV4 Prime Volvo XC60 Recharge Plug-in Hybrid Volvo XC90 Recharge Plug-in Hybrid 

Continued next page

<sup>&</sup>lt;sup>3</sup> Range for battery-electric vehicles (BEV) is all-electric range. Range for plug-in hybrids (PHEV) is all-electric and combined (electric+gas) range. Sources: <a href="https://www.fueleconomy.gov">www.fueleconomy.gov</a> and manufacturer websites.

### **PLUG-IN HYBRID VEHICLES AVAILABLE NOW**

EHICLE MODEL	ELECTRIC RANGE (mi)	ELECTRIC+GAS (mi)	PAGE
SEDAN			
Audi A7 TFSI e	26	410	31
BMW 330e	23	320	31
BMW 330e xDrive	20	290	31
BMW 530e	21	340	31
BMW 745e xDrive	16	290	32
Karma GS-6	61	360	32
Porsche Panamera 4 E-Hybrid	19	480	32
Volvo S60 Recharge Plug-in Hybrid	41	530	32
Volvo S90 Recharge Plug-in Hybrid	38	490	33
MINIVAN/WAGON/VAN  Chrysler Pacifica Hybrid	32	520	33
Volvo V60 Recharge Plug-in Hybrid	41	510	33
ULTRA-LUXURY/LIMITED EDITIC	) N		
Ferrari SF90 Stradale Coupe	9	330	34
Porsche Cayenne Turbo S E-Hybrid	15	370	34
Porsche Cayenne Turbo S E-Hybrid Coupe	15	370	34
Porsche Panamera Turbo S E-Hybrid	17	430	34
COMPACT/HATCHBACK			
Ford Escape Plug-in Hybrid	37	520	35
Kia Niro Plug-in Hybrid	33	560	35
Toyota Prius Prime	44	600	35

<sup>&</sup>lt;sup>3</sup> Range for battery-electric vehicles (BEV) is all-electric range. Range for plug-in hybrids (PHEV) is all-electric and combined (electric+gas) range. Sources: <a href="https://www.fueleconomy.gov">www.fueleconomy.gov</a> and manufacturer websites.

**BATTERY-ELECTRIC CARS** 

### BATTERY-ELECTRIC CARS AVAILABLE NOW

#### Research Notes

- Battery-electric cars listed are available as of August 2023; discontinued models or older model years may still be available, and some 2024 model years are already available.
- Range sources: www.fueleconomy.gov and automaker specifications.
- Range can vary and is impacted by driving conditions such as climate, topography, and traffic.
- Range per hour of charging assumes home or workplace Level 2 charging (i.e., 240 V).
- Fast-charging times are provided by automakers or are calculated from automaker statements. These rates vary due to many factors, including battery charge level and ambient temperature.
- Starting manufacturer suggested retail price (MSRP) is retrieved from automaker websites and may vary.
- Models that offer different configurations and battery sizes may show multiple numbers for driving range, charging time, and starting MSRP.
- The Ultra-luxury category is defined by an MSRP greater than \$150,000.
- Despite industry classifications of five-door vehicles as crossovers or compact SUVs, this guide categorizes them as hatchbacks unless they are offered with all-wheel drive.



#### SUV/CROSSOVER

#### 2023 Audi Q8 e-tron

SUV/Crossover

EPA Electric Range: 285 mi

Max Home/Work Charging Power:

11 kW (21 miles/hour of charge)

Fast Charging Info:

Max Power 150 kW (178 miles in 30 minutes)

Starting MSRP: \$65,900



#### 2023 Audi Q8 e-tron Sportback



EPA Electric Range: 300 mi

Max Home/Work Charging Power:

11 kW (22 miles/hour of charge)

Fast Charging Info:

Max Power 150 kW (174 miles in 30 minutes)

**Starting MSRP:** \$65,900





#### 2023 Audi Q4 e-tron quattro

#### SUV/Crossover

EPA Electric Range: 241 mi

Max Home/Work Charging Power: 9.6 kW (27 miles/hour of charge)

Fast Charging Info:

125 kW (193 miles in 25 minutes of charge)

Starting MSRP: \$53,300



#### **2023 BMW iX**

#### SUV/Crossover

EPA Electric Range: 281 mi

Max Home/Work Charging Power: 11 kW (24 miles/hour of charge)

Fast Charging Info:

195 kW (183 miles/hour of charge)

**Starting MSRP: \$108,900** 



#### 2023 Cadillac Lyriq

#### SUV/Crossover

EPA Electric Range: 312 mi

Max Home/Work Charging Power: 19.2 kW (52 miles/hour of charge)

Fast Charging Info:

190 kW (76 miles/10 min of charge)

Starting MSRP: \$62,990



#### 2023 Fisker Ocean (Sport)

#### SUV/Crossover

EPA Electric Range: 250 mi

Max Home/Work Charging Power: 11 kW (30 miles/hour of charge)

Fast Charging Info:

150 kW (80% in 33 minutes of charge)

Starting MSRP: \$37,499





#### 2023 Ford Mustang Mach-E AWD (Long Range)

SUV/Crossover

EPA Electric Range: 312 mi

Max Home/Work Charging Power: 11 kW (28 miles/hour of charge)

Fast Charging Info:

150 kW (80% in 45 minutes of charge)

Starting MSRP: \$42,995



#### 2023 Genesis Electrified G80

SUV/Crossover

EPA Electric Range: 282 mi

Max Home/Work Charging Power:

11 kW (31 miles/hour of charge)

Fast Charging Info:

350 kW (80% in 22 minutes of charge)

**Starting MSRP:** \$79,825



#### 2023 Genesis GV60 ADVANCED

SUV/Crossover

EPA Electric Range: 248 mi

Max Home/Work Charging Power:

11 kW (34 miles/hour of charge)

Fast Charging Info:

350 kW (80% in 18 minutes of charge)

Starting MSRP: \$59,290



#### 2024 GMC Hummer SUV

SUV/Crossover

EPA Electric Range: 314 mi

Max Home/Work Charging Power:

11.5 kW (16 miles/hour of charge)

Fast Charging Info:

300 kW (100 miles/10 minutes of charge)

Starting MSRP: \$79,995





#### 2023 Hyundai Ioniq 5

#### **SUV/Crossover**

EPA Electric Range: 250 mi

Max Home/Work Charging Power: 10.9 (30 miles/hour of charge)

Fast Charging Info:

350 kW (80% in 20 minutes of charge)

Starting MSRP: 43,650



#### 2023 Jaguar I-PACE

#### SUV/Crossover

EPA Electric Range: 246 mi

Max Home/Work Charging Power: 9.6 kW (19 miles/hour of charge)

Fast Charging Info:

50 kW (80% in 40 minutes of charge)

Starting MSRP: \$71,300



#### 2023 Kia EV6 Long Range

#### SUV/Crossover

EPA Electric Range: 310 mi

Max Home/Work Charging Power:

10.9 kW (36 miles/hour of charge)

Fast Charging Info:

350 kW (80% in 18 minutes of charge)

Starting MSRP: \$42,600





#### SUV/CROSSOVER

#### 2023 Kia EV9

#### SUV/Crossover

EPA Electric Range: 280 mi

Max Home/Work Charging Power: 10.9 kW (26 miles/hour of charge)

Fast Charging Info:

250 kW (80% in 24 minutes of charge)

Starting MSRP: TBA



#### 2023 Lexus RZ 450e

#### SUV/Crossover

EPA Electric Range: 220 mi

Max Home/Work Charging Power: 12 kW (25 miles/hour of charge)

Fast Charging Info:

150 kW (80% in 30 minutes of charge)

**Starting MSRP: \$59,650** 



#### 2023 Mercedes-Benz EQE SUV

#### SUV/Crossover

EPA Electric Range: 279 mi

Max Home/Work Charging Power: 11 kW (22 miles/hour of charge)

Fast Charging Info:

170 kW (80% in 32 minutes of charge)

Starting MSRP: \$77,900



#### 2023 Mercedes-Benz EQS SUV

#### SUV/Crossover

EPA Electric Range: 333 mi

Max Home/Work Charging Power: 9.6 kW (27 miles/hour of charge)

Fast Charging Info:

200 kW (80% in 31 minutes of charge)

**Starting MSRP:** \$105,400





#### 2023 Nissan Ariya

SUV/Crossover

EPA Electric Range: 304 mi

Max Home/Work Charging Power: 7.4 kW (22 miles/hour of charge)

Fast Charging Info:

130 kW (175 miles/30 minutes of charge)

Starting MSRP: \$43,190



#### 2023 Polestar 3

SUV/Crossover

EPA Electric Range: 300 mi

Max Home/Work Charging Power:

11 kW (27 miles/hour of charge)

Fast Charging Info:

250 kW (80% in 30 minutes of charge)

**Starting MSRP:** \$83,900



#### 2023 Rivian R1S

SUV/Crossover

EPA Electric Range: 321 mi

Max Home/Work Charging Power:

11.5 kW (16 miles/hour of charge)

Fast Charging Info:

200 kW (140 miles/20 minutes of charge)

Starting MSRP: \$78,000



#### 2023 Subaru Solterra

SUV/Crossover

EPA Electric Range: 220 mi

Max Home/Work Charging Power:

6.6 kW (24 miles/hour of charge)

Fast Charging Info:

100 kW (80% in 56 minutes of charge)

Starting MSRP: \$44,995





#### 2023 Tesla Model X (Long Range)

SUV/Crossover

EPA Electric Range: 348 mi

Max Home/Work Charging Power: 11.5 kW (25 miles/hour of charge)

Fast Charging Info:

250 kW (175 miles/15 minutes of charge)

**Starting MSRP:** \$98,490



#### 2023 Tesla Model Y (Long Range)

SUV/Crossover

EPA Electric Range: 330 mi

Max Home/Work Charging Power: 11 kW (29 miles/hour of charge)

Fast Charging Info:

250 kW (162 miles/15 minutes of charge)

**Starting MSRP:** \$50,490



#### 2023 Toyota BZ4X

**SUV/CUV** 

EPA Electric Range: 252 mi

Max Home/Work Charging Power: 6.6 kW (50 miles/hour of charge)

Fast Charging Info:

150 kW (80% in 30 minutes of charge)

Starting MSRP: \$42,000



#### 2023 Volkswagen ID.4 AWD Pro

SUV/Crossover

EPA Electric Range: 255 mi

Max Home/Work Charging Power: 11 kW (34 miles/hour of charge)

Fast Charging Info:

170 kW (80% in 30 minutes of charge)

Starting MSRP: \$47,795



SUV/Crossover

edan

Pickup Truck

Sports Car

Ultra-luxury/ Limited Edition

Compact/Hatchback



#### 2023 Volvo C40 Recharge

SUV/Crossover

EPA Electric Range: 226 mi

Max Home/Work Charging Power: 11 kW (28 miles/hour of charge)

Fast Charging Info:

150 kW (80% in 37 minutes of charge)

Starting MSRP: \$55,300



#### 2023 Volvo XC40 Recharge

SUV/Crossover

EPA Electric Range: 223 mi

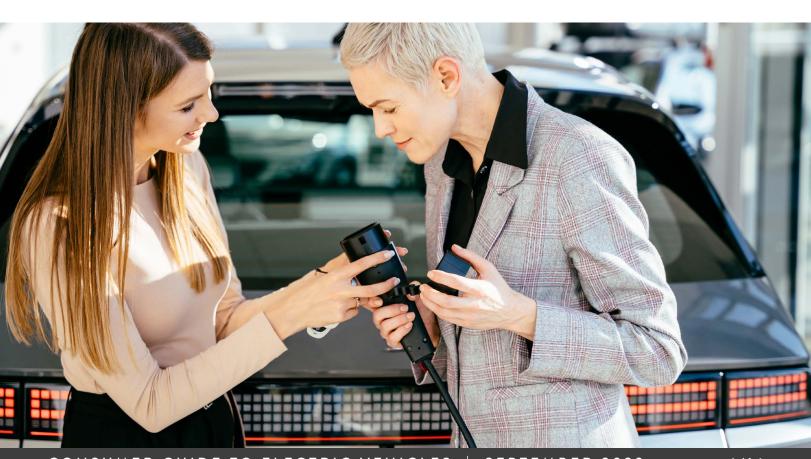
Max Home/Work Charging Power: 11 kW (28 miles/hour of charge)

Fast Charging Info:

150 kW (80% in 37 minutes of charge)

Starting MSRP: \$53,550







#### 2024 Audi A6 e-tron



EPA Electric Range: 400 mi

Max Home/Work Charging Power: 11 kW (50 miles/hour of charge)

Fast Charging Info:

270 kW (186 miles/10 minutes of charge)

**Starting MSRP:** \$80,000



#### 2023 Audi e-Tron GT



EPA Electric Range: 238 mi

Max Home/Work Charging Power: 11 kW (19 miles/hour of charging)

Fast Charging Info:

270 kW (180 miles/22 minutes of charge)

Starting MSRP: \$102,400



#### 2023 Audi RS e-Tron GT



EPA Electric Range: 232 mi

Max Home/Work Charging Power: 11 kW (19 miles/hour of charging)

Fast Charging Info:

270 kW (120 miles/10 minutes of charge)

**Starting MSRP:** \$142,400



#### 2023 BMW i4



EPA Electric Range: 276 mi

Max Home/Work Charging Power: 11 kW (28 miles/hour of charge)

Fast Charging Info:

200 kW (109 miles/10 minutes of charge)

Starting MSRP: \$55,400





#### 2023 BMW i7



EPA Electric Range: 300 mi

Max Home/Work Charging Power: 11 kW (25 miles/hour of charge)

Fast Charging Info:

195 kW (80 miles/10 minutes of charge)

**Starting MSRP: \$119,300** 



#### 2023 Hyundai Ioniq 6



EPA Electric Range: 250 mi

Max Home/Work Charging Power: 10.9 kW (30 miles/hour of charge)

Fast Charging Info:

350 kW (80% in 20 minutes of charge)

**Starting MSRP**: \$43,650



#### 2023 Polestar 2



EPA Electric Range: 320 mi

Max Home/Work Charging Power: 11 kW (40 miles/hour of charge)

Fast Charging Info:

205 kW (80% in 28 minutes of charge)

Starting MSRP: \$49,900



#### 2023 Tesla Model 3 - Long Range



EPA Electric Range: 333 mi

Max Home/Work Charging Power: 11.5 kW (31 miles/hour of charge)

Fast Charging Info:

250 kW (175 miles/15 minutes of charge)

Starting MSRP: \$47,240



**Pickup Truck** 

**BATTERY-ELECTRIC CARS** 



#### 2023 Tesla Model S - Long Range



EPA Electric Range: 405 mi

Max Home/Work Charging Power: 19.2 kW (31 miles/hour of charge)

Fast Charging Info:

250 kW (200 miles/15 minutes of charge)

**Starting MSRP:** \$88,490



#### PICKUP TRUCK

#### 2024 Chevrolet Silverado

#### Pickup Truck

EPA Electric Range: 450 mi

Max Home/Work Charging Power: 19.2 kW (38 miles/hour of charge)

Fast Charging Info:

350 kW (100 miles/10 minutes of charge)

Starting MSRP: \$52,000



#### 2023 Ford F-150 Lightning (Extended Range)

#### Pickup Truck

EPA Electric Range: 320 mi

Max Home/Work Charging Power: 9.6 kW (32 miles/hour of charge)

Fast Charging Info:

155 kW (80% in 41 minutes of charge)

Starting MSRP: \$62,974



#### 2024 GMC Hummer Pickup



EPA Electric Range: 314 mi

Max Home/Work Charging Power: 19.2 kW (20 miles/hour of charge)

Fast Charging Info:

300 kW (147 miles/hour of charge)

Starting MSRP: \$79,995



Sedan

Pickup Truck

Sports Car

Ultra-luxury/ Limited Edition

Compact/Hatchback



#### 2023 Rivian R1T

#### Pickup Truck

EPA Electric Range: 289 mi

Max Home/Work Charging Power: 11.5 kW (22 miles/hour of charge)

Fast Charging Info:

160 kW (140 miles/20 minutes of charge)

Starting MSRP: \$73,000



#### 2024 Tesla Cybertruck

#### Pickup Truck

EPA Electric Range: 300 mi

Max Home/Work Charging Power:

11 kW (23 miles/hour of charge)

Fast Charging Info:

250 kW (100 miles/10 minutes of charge)

Starting MSRP: \$39,900



#### SPORTS CAR

#### 2023 Porsche Taycan



EPA Electric Range: 208 mi

Max Home/Work Charging Power:

19.2 kW (21 miles/hour of charge)

Fast Charging Info:

270 kW (150 miles/hour of charge)

Starting MSRP: \$90,900





Limited Edition



#### **ULTRA-LUXURY/LIMITED EDITION**

**BATTERY-ELECTRIC CARS** 

#### 2023 Lucid Air Dream P AWD

Ultra-luxury/Limited Edition

EPA Electric Range: 451 mi

Max Home/Work Charging Power: 19.2 kW (35 miles/hour of charge)

Fast Charging Info:

300 kW (300 miles/21 minutes of charge)

**Starting MSRP: \$169,000** 



#### 2023 Lucid Air Dream R AWD



Ultra-luxury/Limited Edition

EPA Electric Range: 520 mi

Max Home/Work Charging Power: 19.2 kW (40 miles/hour of charge)

Fast Charging Info:

300 kW (300 miles/20 minutes of charge)

**Starting MSRP:** \$169,000



#### 2023 Porsche Taycan 4 Cross Turismo



Ultra-luxury/Limited Edition

EPA Electric Range: 233 mi

Max Home/Work Charging Power: 11 kW (22 miles/hour of charge)

Fast Charging Info:

225 kW (80% in 23 minutes of charge)

**Starting MSRP:** \$155,900



#### 2023 Porsche Taycan Turbo



Ultra-luxury/Limited Edition

EPA Electric Range: 245 mi

Max Home/Work Charging Power: 22 kW (49 miles/hour of charge)

Fast Charging Info:

270 kW (80% in 23 minutes of charge)

**Starting MSRP: \$153,300** 





#### 2023 Chevrolet Bolt EUV



EPA Electric Range: 247 mi

Max Home/Work Charging Power: 11.5 kW (37 miles/hour of charge)

**Fast Charging Info:** 

55 kW (95 miles/30 minutes of charge)

Starting MSRP: \$27,800



#### 2023 Chevrolet Bolt EV



EPA Electric Range: 259 mi

Max Home/Work Charging Power: 11.5 kW (35 miles/hour of charge)

Fast Charging Info:

55 kW (100 miles/30 minutes of charge)

**Starting MSRP: \$26,500** 



#### 2023 Hyundai Kona Electric



EPA Electric Range: 258 mi

Max Home/Work Charging Power: 7.2 kW (27 miles/hour of charge)

Fast Charging Info:

100 kW (80% in 47 minutes of charge)

Starting MSRP: \$33,550



#### 2023 Kia Niro EV



EPA Electric Range: 253 mi

Max Home/Work Charging Power: 11 kW (34 miles/hour of charge)

Fast Charging Info:

85 kW (80% in 43 minutes of charge)

Starting MSRP: \$39,550



Ultra-luxury/ Limited Edition



#### COMPACT/HATCHBACK

#### 2024 Mini Cooper SE

#### Compact/Hatchback

EPA Electric Range: 114 mi

Max Home/Work Charging Power: 11 kW (29 miles/hour of charge)

Fast Charging Info:

50 kW (80% in 36 minutes of charge)

Starting MSRP: \$30,900



#### 2023 Nissan LEAF Plus



#### Compact/Hatchback

EPA Electric Range: 212 mi

Max Home/Work Charging Power: 6.6 kW (28 miles/hour of charge)

Fast Charging Info:

100 kW (80% in 45 minutes of charge)

**Starting MSRP: \$36,040** 





Sedan

Minivan/Wagon/Van

Ultra-luxury/Limited Edition

Compact/Hatchback

# PLUG-IN HYBRID CARS AVAILABLE NOW

#### Research Notes

- Plug-in hybrid cars listed are available as of August 2023; discontinued models or older model years may still be available.
- Range sources: www.fueleconomy.gov and automaker specifications.
- Range per hour of charging assumes home or workplace Level 2 charging (i.e., 240 V).
- Starting MSRP is retrieved from automaker websites and may vary.
- The Ultra-luxury category is defined by an MSRP greater than \$150,000.
- Despite industry classifications of five-door vehicles as crossovers or compact SUVs, this guide categorizes them as hatchbacks unless they are offered with all-wheel drive.



#### SUV/CROSSOVER

#### 2024 Alfa Romeo Tonale



EPA Electric Range: 30 mi

EPA Total Range (gas + electric): 320 mi

Max Home/Work Charging Power: 7.4 kW (12 miles/hour of charge)

Starting MSRP: \$42,995



#### 2023 Audi Q5 TFSI e



EPA Electric Range: 23 mi

EPA Total Range (gas + electric): 390 mi

Max Home/Work Charging Power: 7.2 kW (8 miles/hour of charge)

Starting MSRP: \$55,400



Sedan

Minivan/Wagon/Van

Ultra-luxury/Limited Edition

Compact/Hatchback



#### 2023 BMW X5 xDrive45e

#### SUV/Crossover

EPA Electric Range: 31 mi

EPA Total Range (gas + electric): 400 mi

Max Home/Work Charging Power: 3.7 kW (6 miles/hour of charge)

Starting MSRP: \$65,700



#### 2024 Dodge Hornet R/T

#### SUV/Crossover

EPA Electric Range: 32 mi

**EPA Total Range (gas + electric)**: 360 mi **Max Home/Work Charging Power**:

7.4 kW (13 miles/hour of charge)

Starting MSRP: \$30,735



#### 2023 Hyundai Santa Fe Plug-in Hybrid

#### **SUV/Crossover**

EPA Electric Range: 30 mi

EPA Total Range (gas + electric): 440 mi

Max Home/Work Charging Power: 3.3 kW (9 miles/hour of charge)

Starting MSRP: \$42,410



#### 2023 Hyundai Tucson Plug-in Hybrid

#### **SUV/Crossover**

EPA Electric Range: 33 mi

EPA Total Range (gas + electric): 420 mi

Max Home/Work Charging Power: 7.2 kW (19 miles/hour of charge)

Starting MSRP: \$37,500



Sedan

Minivan/Wagon/Van

Ultra-luxury/Limited Edition

Compact/Hatchback



#### 2023 Jeep Grand Cherokee 4xe

SUV/Crossover

EPA Electric Range: 25 mi

**EPA Total Range (gas + electric):** 470 mi **Max Home/Work Charging Power:** 7.4 kW (7 miles/hour of charge)

Starting MSRP: \$60,460



#### 2023 Jeep Wrangler 4xe

SUV/Crossover

EPA Electric Range: 21mi

**EPA Total Range (gas + electric)**: 370 mi **Max Home/Work Charging Power**:

7.4 kW (9 miles/hour of charge)

Starting MSRP: \$54,735



#### 2023 Kia Sorento Plug-in Hybrid

**SUV/Crossover** 

EPA Electric Range: 32 mi

EPA Total Range (gas + electric): 460 mi

Max Home/Work Charging Power: 3.3 kW (9 miles/hour of charge)

Starting MSRP: \$49,990



#### 2024 Land Rover Defender PHEV

SUV/Crossover

**EPA Electric Range**: 27 mi

EPA Total Range (gas + electric): 450 mi

Max Home/Work Charging Power:

7 kW (14 miles/hour of charge)

Fast Charging Info:

50 kW (80% in 30 minutes of charge)

**Starting MSRP:** \$90,400



Sedan

Minivan/Wagon/Van

Ultra-luxury/Limited Edition

Compact/Hatchback



#### 2023 Land Rover Range Rover Evoque PHEV

#### SUV/Crossover

EPA Electric Range: 39 mi

EPA Total Range (gas + electric): 343 mi

Max Home/Work Charging Power:

7 kW (18 miles/hour of charge)

Fast Charging Info:

50 kW (80% in 30 minutes of charge)

Starting MSRP: \$104,900



#### 2023 Land Rover Range Rover PHEV

#### SUV/Crossover

EPA Electric Range: 51 mi

EPA Total Range (gas + electric): 480 mi

Max Home/Work Charging Power:

7 kW (10 miles/hour of charge)

Fast Charging Info:

50 kW (80% in 30 minutes of charge)

Starting MSRP: \$104,900



#### 2023 Land Rover Range Rover Sport PHEV

#### SUV/Crossover

EPA Electric Range: 60 mi

EPA Total Range (gas + electric): 480 mi

Max Home/Work Charging Power:

7 kW (12 miles/hour of charge)

Fast Charging Info:

50 kW (80% in 40 minutes of charge)

Starting MSRP: \$104,200



### 2024 Lexus NX 450h+ AWD Plug-in Hybrid Electric Vehicle

#### SUV/Crossover

EPA Electric Range: 37 mi

EPA Total Range (gas + electric): 550 mi

Max Home/Work Charging Power:

6.6 kW (15 miles/hour of charge)

Starting MSRP: \$59,405



Sedan

Minivan/Wagon/Van

Ultra-luxury/Limited Edition

Compact/Hatchback



### 2023 Lincoln Aviator Grand Touring Plug-in Hybrid

**SUV/Crossover** 

EPA Electric Range: 21 mi

**EPA Total Range (gas + electric)**: 460 mi **Max Home/Work Charging Power**: 6.6 kW (6 miles/hour of charge)

Starting MSRP: \$70,190



### 2023 Lincoln Corsair Grand Touring Plug-in Hybrid

**SUV/Crossover** 

EPA Electric Range: 28 mi

EPA Total Range (gas + electric): 430 mi

Max Home/Work Charging Power: 6.6 kW (8 miles/hour of charge)

Fast Charging Info: N/A Starting MSRP: \$53,885



#### 2023 Mini Cooper SE Countryman All4

SUV/Crossover

EPA Electric Range: 17 mi

EPA Total Range (gas + electric): 300 mi

Max Home/Work Charging Power: 3.3 kW (7 miles/hour of charge)

Starting MSRP: \$42,700



#### 2023 Mitsubishi Outlander PHEV

SUV/Crossover

EPA Electric Range: 38 mi

EPA Total Range (gas + electric): 420 mi

Max Home/Work Charging Power:

3.7 kW (6 miles/hour of charge)

Fast Charging Info:

50 kW (80% in 38 minutes of charge)

**Starting MSRP**: \$39,845



Sedan

Minivan/Wagon/Van

Ultra-luxury/Limited Edition

Compact/Hatchback



#### 2023 Porsche Cayenne E-Hybrid

#### **SUV/Crossover**

EPA Electric Range: 17 mi

**EPA Total Range (gas + electric)**: 430 mi

Max Home/Work Charging Power: 3.6 kW (6 miles/hour of charge)

Starting MSRP: \$91,700



#### 2023 Porsche Cayenne E-Hybrid Coupe

#### SUV/Crossover

EPA Electric Range: 13 mi

EPA Total Range (gas + electric): 450 mi

Max Home/Work Charging Power: 3.6 kW (4 miles/hour of charge)

Starting MSRP: \$95,700



#### 2023 Subaru Crosstrek Hybrid

#### **SUV/Crossover**

EPA Electric Range: 17 mi

EPA Total Range (gas + electric): 480 mi

Max Home/Work Charging Power: 3.3 kW pr 9 miles/hour of charge)

**Starting MSRP:** \$36,845



#### 2023 Toyota RAV4 Prime

#### **SUV/Crossover**

EPA Electric Range: 42 mi

EPA Total Range (gas + electric): 600 mi

Max Home/Work Charging Power:

6.6 kW (17 miles/hour of charge)

Starting MSRP: \$43,090



Sedan

Minivan/Wagon/Van

Ultra-luxury/Limited Edition

Compact/Hatchback



#### 2023 Volvo XC60 Recharge Plug-in Hybrid

SUV/Crossover

EPA Electric Range: 35 mi

**EPA Total Range (gas + electric):** 560 mi **Max Home/Work Charging Power:** 3.6 kW (7 miles/hour of charge)

Starting MSRP: \$57,200



### 2023 Volvo XC90 Recharge Plug-in Hybrid

**SUV/Crossover** 

EPA Electric Range: 32 mi

**EPA Total Range (gas + electric):** 530 mi **Max Home/Work Charging Power:** 3.6 kW (7 miles/hour of charge)

Starting MSRP: \$71,900





Sedan

Minivan/Wagon/Van

Ultra-luxury/Limited Edition

Compact/Hatchback



#### 2023 Audi A7 TFSI e



EPA Electric Range: 26 mi

**EPA Total Range (gas + electric)**: 410 mi **Max Home/Work Charging Power**: 7.2 kW (9 miles/hour of charge)

Starting MSRP: \$77,040



#### 2023 BMW 330e



EPA Electric Range: 23 mi

**EPA Total Range (gas + electric):** 320 mi **Max Home/Work Charging Power:** 3.7 kW (8 miles/hour of charge)

Starting MSRP: \$44,900



#### 2023 BMW 330e xDrive



EPA Electric Range: 20 mi

**EPA Total Range (gas + electric)**: 290 mi **Max Home/Work Charging Power**: 3.7 kW (7 miles/hour of charge)

Starting MSRP: \$46,900



#### 2023 BMW 530e



EPA Electric Range: 21 mi

**EPA Total Range (gas + electric)**: 340 mi **Max Home/Work Charging Power**: 3.7 kW (7 miles/hour of charge)

**Starting MSRP: \$56,400** 



Sedan

Minivan/Wagon/Van

Ultra-luxury/Limited Edition

Compact/Hatchback



#### **2023 BMW 745e xDrive**



EPA Electric Range: 16 mi

**EPA Total Range (gas + electric)**: 290 mi **Max Home/Work Charging Power**: 3.7 kW (4 miles/hour of charge)

Starting MSRP: \$95,900



#### 2023 Karma GS-6



EPA Electric Range: 61 mi

**EPA Total Range (gas + electric)**: 360 mi **Max Home/Work Charging Power**: 6.6 kW

Fast Charging Info:

45 kW (288 miles/34 minutes of charge)

Starting MSRP: \$83,900



#### 2023 Porsche Panamera 4 E-Hybrid



EPA Electric Range: 19 mi

 $\textbf{EPA Total Range (gas + electric)}{:}~480~\text{mi}$ 

Max Home/Work Charging Power: 7.2 kW (6 miles/hour of charge)

Starting MSRP: \$109,000



#### 2023 Volvo S60 Recharge Plug-in Hybrid



EPA Electric Range: 41 mi

**EPA Total Range (gas + electric):** 530 mi **Max Home/Work Charging Power:** 3.7 kW (8 miles/hour of charge)

Starting MSRP: \$51,250





#### 2023 Volvo S90 Recharge Plug-in Hybrid



EPA Electric Range: 38 mi

EPA Total Range (gas + electric): 490 mi

Max Home/Work Charging Power: 3.7 kW (13 miles/hour of charge)

Starting MSRP: \$70,500





#### MINIVAN/WAGON/VAN

#### 2023 Chrysler Pacifica Hybrid



EPA Electric Range: 32 mi

EPA total range (gas + electric): 520 mi Max Home/Work Charging Power: 6.6 kW (16 miles/hour of charge)

Starting MSRP: \$50,795



#### 2023 Volvo V60 Recharge Plug-in Hybrid



EPA Electric Range: 41 mi

EPA total range (gas + electric): 510 mi Max Home/Work Charging Power: 3.3 kW (8 miles/hour of charge)

Starting MSRP: \$70,550







#### **ULTRA-LUXURY/LIMITED EDITION**

#### 2024 Ferrari SF90 Stradale Coupe



EPA Electric Range: 9 mi

EPA Total Range (gas + electric): 330 mi

Max Home/Work Charging Power: 3.6 kW (4 miles/hour of charge)

**Starting MSRP: \$530,000** 



#### 2023 Porsche Cayenne Turbo S E-Hybrid



EPA Electric Range: 15 mi

EPA Total Range (gas + electric): 370 mi

Max Home/Work Charging Power: 7.2 kW (5 miles/hour of charge)

**Starting MSRP: \$171,300** 



#### 2023 Porsche Cayenne Turbo S E-Hybrid Coupe



EPA Electric Range: 15 mi

EPA Total Range (gas + electric): 370 mi

Max Home/Work Charging Power: 7.2 kW (5 miles/hour of charge)

**Starting MSRP: \$173,800** 



#### 2023 Porsche Panamera Turbo S E-Hybrid



EPA Electric Range: 17 mi

EPA Total Range (gas + electric): 430 mi

Max Home/Work Charging Power:

7.2 kW (6 miles/hour of charge)

**Starting MSRP:** \$196,400





#### 2023 Ford Escape Plug-in Hybrid

#### Compact/Hatchback

EPA Electric Range: 37 mi

EPA Total Range (gas + electric): 520 mi

Max Home/Work Charging Power: 3.3 kW (11 miles/hour of charge)

**Starting MSRP:** \$40,500



#### 2023 Kia Niro Plug-in Hybrid



Compact/Hatchback

EPA Electric Range: 33 mi

EPA Total Range (gas + electric): 560 mi

Max Home/Work Charging Power: 3.3 kW (12 miles/hour of charge)

Starting MSRP: \$33,840



#### **2023 Toyota Prius Prime**



EPA Electric Range: 44 mi

EPA Total Range (gas + electric): 600 mi

Max Home/Work Charging Power: 3.5 kW (22 miles/hour of charge)

Starting MSRP: \$32,350







# How Do I Charge?

#### WHERE CAN I CHARGE, AND HOW LONG DOES IT TAKE?

With gas cars, you stop at a gas station to refuel while on the road. With an electric car, you charge at home, at work, or on the road. Simply plug it in like your smart phone or computer; your car charges while you sleep, work, or play.

Most drivers with a driveway or garage prefer the convenience of charging at home. They can either plug into a standard 120-volt household outlet using the cord that comes with the car or install a dedicated 240-volt charging station.

The first option, called *Level 1 charging*, is the simplest and most economical home-charging solution because it requires no other equipment or installation if the 120-volt outlet is safe and robust (inspection by a licensed electrician is recommended). Charging at Level 1 (typically 1.4 to 3.3 kW) adds roughly 3 to 5 miles of range per hour.

A dedicated 240-volt charging station, called *Level 2 charging*, requires sufficient electrical capacity and should be installed by a licensed electrician. It is similar to the outlet for a clothes dryer or other 240-volt appliance. Charging at Level 2 (typically 3.3 to 19.2 kW) delivers roughly 8 to 24 miles of range per hour or more, depending on the car, the charging station, and the electrical service.

Public charging stations and some workplaces also offer Level 2—and sometimes Level 1—charging.

All Electric Vehicles can charge at both Levels 1 and 2, and many can also charge at an even faster level of charging, called DC fast charging.

DC fast chargers are not installed at home and are generally placed in locations where there is limited time to charge. A growing number of fast-charging locations are available in strategic locations nationwide such as highway corridors and near shopping centers. The speed at which a car charges at a DCFC station varies, depending on the car and the power availability at the station, typically 50 to 350 kW; see Figure 2.

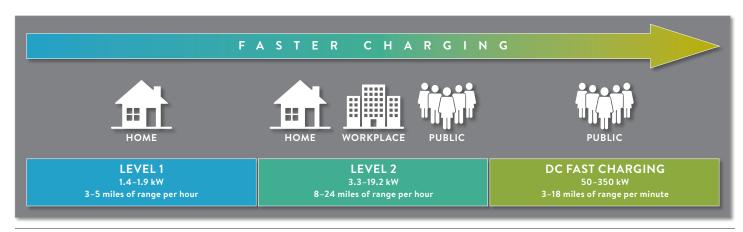


Figure 2. Charging locations, levels, and range replenished<sup>4</sup>

<sup>&</sup>lt;sup>4</sup> The amount of range replenished at all charging levels may vary beyond the numbers shown, depending on the charger type and vehicle. Most current U.S. DC fast chargers offer a maximum power level of 50–150 kW. Tesla Superchargers offer 120–150 kW, and V3 Superchargers offer up to 250 kW. Some stations from Electrify America and other networks offer higher power, roughly 250 kW in some locations, and multiple networks promise to offer 350 kW and higher DC fast chargers for future vehicles that can take advantage of them.

#### WHAT ARE KILOWATTS AND KILOWATT-HOURS?

A kilowatt (kW) is a measure of power. A kilowatt-hour (kWh) is a measure of energy, or how much power is used over time. An EV battery's size, measured in kWh, tells you how much energy it may contain and therefore how far the EV can go. The rate at which you use (and recharge) the battery is expressed in kW. To understand their relationship, think of a hose and a bucket. Power (kW) is comparable to the rate of water flowing through the hose. Energy (kWh) is much like the amount of water that collects in the bucket over time (Figure 3a)



**Figure 3a.** Power (kW) is comparable to the rate of water flowing through the hose. Energy (kWh) is much like the amount of water that collects in the bucket over time.



**Figure 3b.** With high charging power (high kW), the car's battery fills faster than with low charging power (low kW).

#### HOW DO KILOWATT-HOURS COMPARE TO GALLONS OF GASOLINE?

Just as internal combustion cars have different size gas tanks, EVs have different size batteries. The amount of energy stored in a typical EV battery varies. The distance the energy takes you in your EV depends on your battery size, how you drive, and factors such as weather. Driving fast, or uphill, having a "lead foot," or running the heat or air conditioning in your EV increases energy use. Conversely, making frequent stops or driving in stop-and-go traffic and downhill can add energy to your battery. An EV travels roughly 2 to 4 miles on each kWh of energy, so 3 miles per kWh is a good rule for calculating how many miles your EV can go, based on the kWh in your battery.

Answers to further questions regarding EV charging are found in EPRI's <u>Consumer Guide to Electric Vehicle Charging</u>, which provides a more in-depth overview of the various charging options.<sup>5</sup>

<sup>&</sup>lt;sup>5</sup> https://www.epri.com/research/products/00000003002016961



#### **About EPRI**

Founded in 1972, EPRI is the world's preeminent independent, non-profit energy research and development organization, with offices around the world. EPRI's trusted experts collaborate with more than 450 companies in 45 countries, driving innovation to ensure the public has clean, safe, reliable, affordable, and equitable access to electricity across the globe.

Together, we are shaping the future of energy.

#### For more information about EPRI Electric Transportation research activities, contact:

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3002026815 September 2023

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