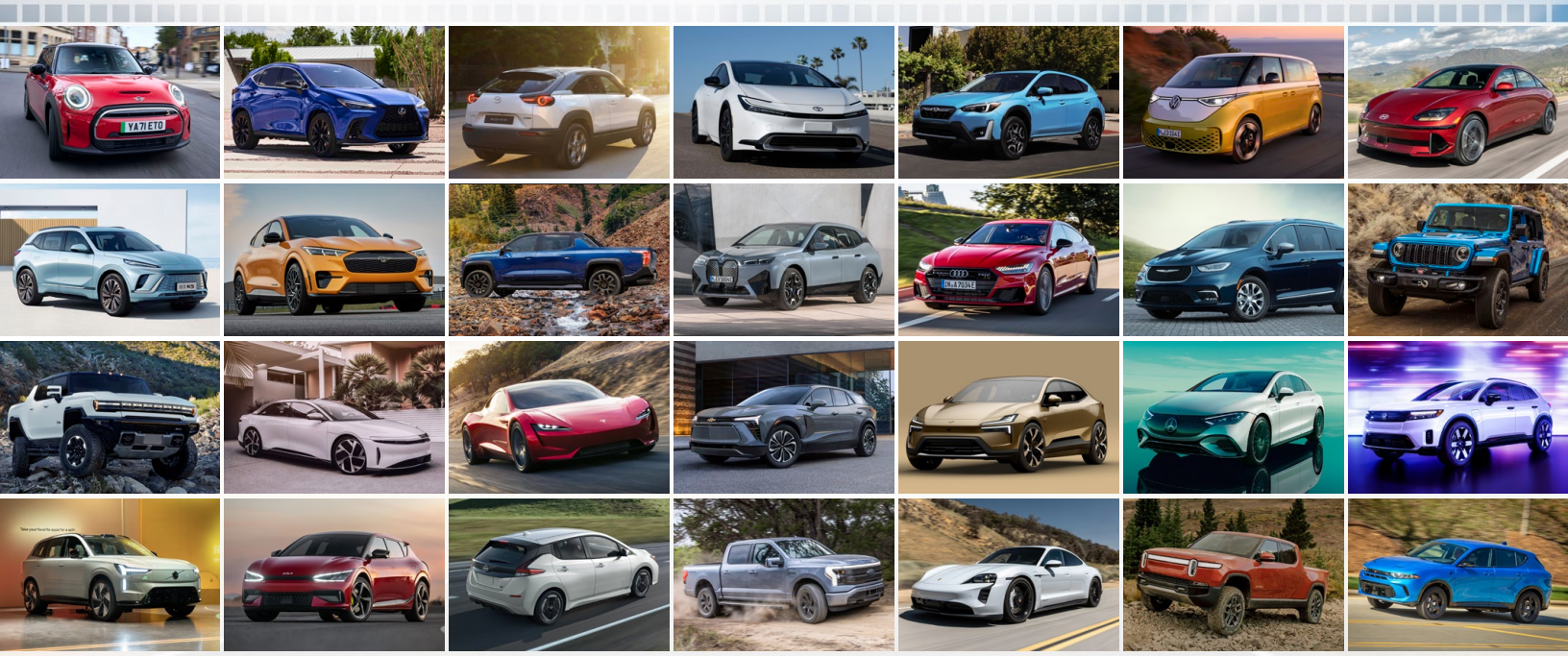
EPRI

# 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.

[1] *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 ZEV state.

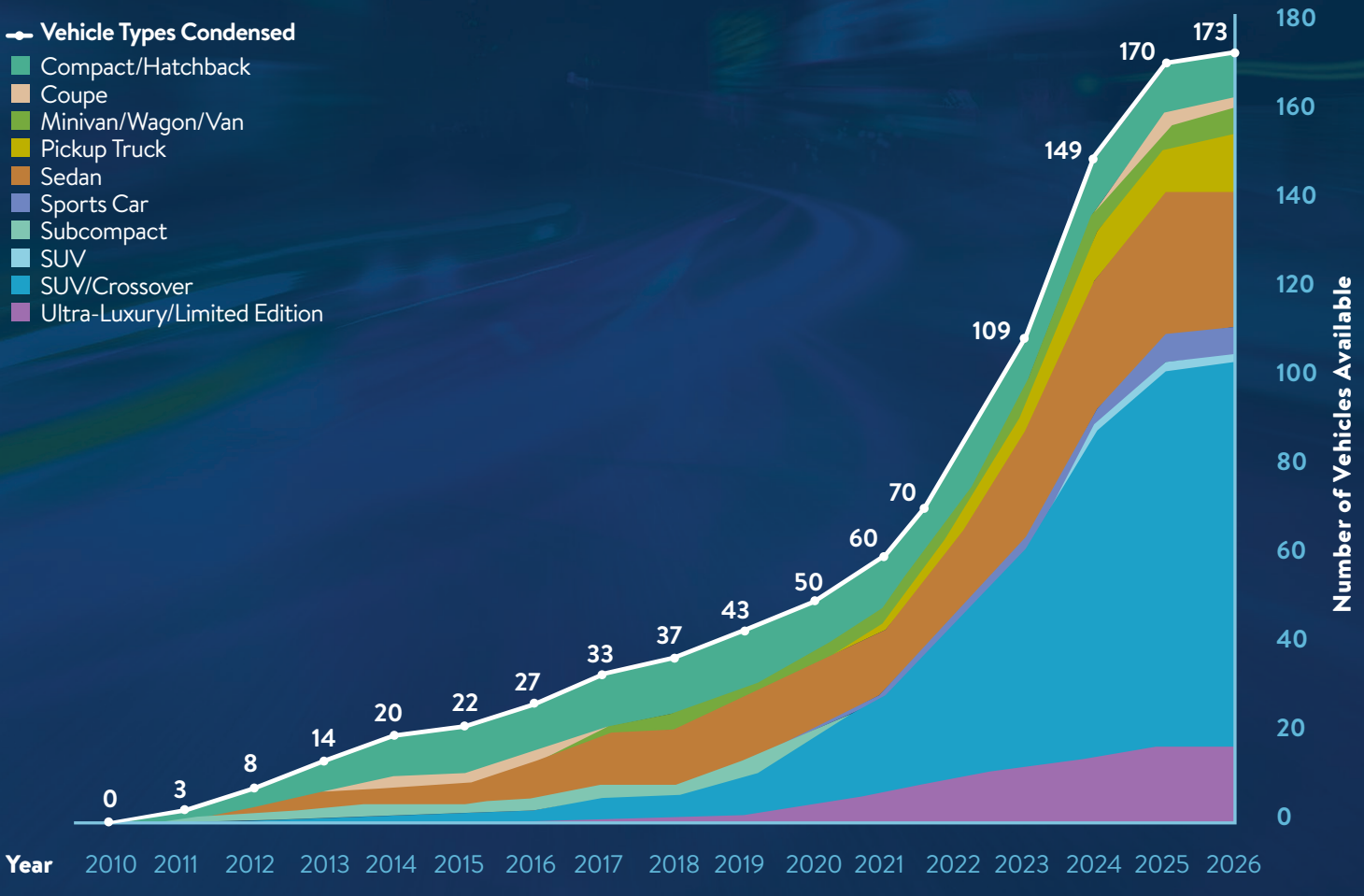



**Figure 1.** Vehicle Availability through 2026. The numbers for vehicles available are estimates based on manufacturer announcements.

[2] *See the documented trends for the vehicle type availability over the years.*

# BATTERY-ELECTRIC VEHICLES AVAILABLE NOW

| VEHICLE MODEL | ELECTRIC RANGE (mi) | PAGE |
|---|---|---|
| **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 |
| Jaguar I-PACE | 246 | 12 |
| Kia EV6 Long Range | 310 | 12 |
| Kia EV9 | 280 | 12 |
| Lexus RZ 450e | 220 | 12 |
| Mercedes-Benz EQE SUV | 279 | 13 |
| Mercedes-Benz EQS SUV | 333 | 13 |
| Nissan Ariya | 304 | 13 |
| Polestar 3 | 300 | 13 |
| Rivian R1S | 321 | 14 |
| Subaru Solterra | 220 | 14 |
| Tesla Model X - Long Range | 348 | 14 |
| Tesla Model Y - Long Range | 330 | 14 |
| Toyota BZ4X Crossover | 252 | 15 |
| Volkswagen ID.4 AWD Pro | 255 | 15 |
| Volvo C40 Recharge | 226 | 15 |
| Volvo XC40 Recharge | 223 | 15 |

[3] *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:*** *www.fueleconomy.gov and manufacturer websites.*

*Continued next page*

# BATTERY-ELECTRIC VEHICLES AVAILABLE NOW

| VEHICLE MODEL | ELECTRIC RANGE (mi) | PAGE |
|---|---|---|
| **SEDAN** | | |
| Audi A6 e-tron | 400 | 16 |
| Audi e-tron GT | 238 | 16 |
| Audi RS e-tron GT | 232 | 16 |
| BMW i4 | 276 | 16 |
| BMW i7 | 300 | 17 |
| Polestar 2 | 320 | 17 |
| Tesla Model 3 - Long Range | 333 | 17 |
| Tesla Model S - Long Range | 405 | 17 |
| **PICKUP TRUCK** | | |
| Chevrolet Silverado | 240 | 18 |
| Ford F-150 Lightning (Extended Range) | 320 | 18 |
| GMC Hummer Pickup | 314 | 18 |
| Rivian R1T | 289 | 18 |
| Tesla Cybertruck | 300 | 19 |
| **SPORTS CAR** | | |
| Porsche Taycan | 208 | 19 |
| **ULTRA-LUXURY/LIMITED EDITION** | | |
| Lucid Air Dream P AWD | 451 | 20 |
| Lucid Air Dream R AWD | 520 | 20 |
| Porsche Taycan 4 Cross Turismo | 233 | 20 |
| Porsche Taycan Turbo | 245 | 20 |
| **COMPACT/HATCHBACK** | | |
| Chevrolet Bolt EUV | 247 | 21 |
| Chevrolet Bolt EV | 259 | 21 |
| Hyundai Kona Electric | 258 | 21 |
| Kia Niro EV | 253 | 21 |
| Mini Cooper SE | 114 | 22 |
| Nissan LEAF Plus | 212 | 22 |

[3] *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:*** *www.fueleconomy.gov 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 | 30 | 320 | 23 |
| Audi Q5 TFSI e | 23 | 390 | 23 |
| BMW X5 xDrive45e | 31 | 400 | 24 |
| Dodge Hornet R/T | 32 | 360 | 24 |
| Hyundai Santa Fe Plug-in Hybrid | 30 | 440 | 24 |
| Hyundai Tucson Plug-in Hybrid | 33 | 420 | 24 |
| Jeep Grand Cherokee 4xe | 25 | 470 | 25 |
| Jeep Wrangler 4xe | 21 | 370 | 25 |
| Kia Sorento Plug-in Hybrid | 32 | 460 | 25 |
| Land Rover Defender PHEV | 27 | 450 | 25 |
| Land Rover Range Rover Evoque EV | 39 | 343 | 26 |
| Land Rover Range Rover PHEV | 51 | 480 | 26 |
| Land Rover Range Rover Sport PHEV | 60 | 480 | 26 |
| Lexus NX 450h+ AWD Plug-in Hybrid Electric Vehicle | 37 | 550 | 26 |
| Lincoln Aviator Grand Touring Plug-in Hybrid | 21 | 460 | 27 |
| Lincoln Corsair Grand Touring Plug-in Hybrid | 28 | 430 | 27 |
| Mini Cooper SE Countryman All4 | 17 | 300 | 27 |
| Mitsubishi Outlander PHEV | 38 | 420 | 27 |
| Porsche Cayenne E-Hybrid | 17 | 430 | 28 |
| Porsche Cayenne E-Hybrid Coupe | 13 | 450 | 28 |
| Subaru Crosstrek Hybrid | 17 | 480 | 28 |
| Toyota RAV4 Prime | 42 | 600 | 28 |
| Volvo XC60 Recharge Plug-in Hybrid | 35 | 560 | 29 |
| Volvo XC90 Recharge Plug-in Hybrid | 32 | 530 | 29 |

[3] *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:*** *www.fueleconomy.gov and manufacturer websites.*

*Continued next page*

# PLUG-IN HYBRID VEHICLES AVAILABLE NOW

| VEHICLE MODEL | ELECTRIC RANGE (mi) | ELECTRIC+GAS (mi) | PAGE |
|---|---|---|---|
| **SEDAN** | | | |
| Audi A7 TFSI e | 26 | 410 | 30 |
| BMW 330e | 23 | 320 | 30 |
| BMW 330e xDrive | 20 | 290 | 30 |
| BMW 530e | 21 | 340 | 30 |
| BMW 745e xDrive | 16 | 290 | 31 |
| Karma GS-6 | 61 | 360 | 31 |
| Porsche Panamera 4 E-Hybrid | 19 | 480 | 31 |
| Volvo S60 Recharge Plug-in Hybrid | 41 | 530 | 31 |
| Volvo S90 Recharge Plug-in Hybrid | 38 | 490 | 32 |
| **MINIVAN/WAGON/VAN** | | | |
| Chrysler Pacifica Hybrid | 32 | 520 | 32 |
| Volvo V60 Recharge Plug-in Hybrid | 41 | 510 | 32 |
| **ULTRA-LUXURY/LIMITED EDITION** | | | |
| Ferrari SF90 Stradale Coupe | 9 | 330 | 33 |
| Porsche Cayenne Turbo S E-Hybrid | 15 | 370 | 33 |
| Porsche Cayenne Turbo S E-Hybrid Coupe | 15 | 370 | 33 |
| Porsche Panamera Turbo S E-Hybrid | 17 | 430 | 33 |
| **COMPACT/HATCHBACK** | | | |
| Ford Escape Plug-in Hybrid | 37 | 520 | 34 |
| Kia Niro Plug-in Hybrid | 33 | 560 | 34 |
| Toyota Prius Prime | 44 | 600 | 34 |

[3] *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:*** *www.fueleconomy.gov and manufacturer websites.*

# 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

Photo courtesy Audi

### 2023 Audi Q8 e-tron Sportback

SUV/Crossover

**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

Photo courtesy Audi

## SUV/CROSSOVER

### 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

Photo courtesy Audi

### 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


Photo courtesy BMW

### 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


Photo courtesy Cadillac

### 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

Photo courtesy Fisker

## SUV/CROSSOVER

### 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

Photo courtesy Ford

### 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

Photo courtesy Genesis

### 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

Photo courtesy Genesis

### 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

Photo courtesy GMC

## SUV/CROSSOVER

### 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

Photo courtesy Jaguar

### 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

Photo courtesy Kia

### 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

Photo courtesy Kia

### 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

Photo courtesy Lexus

## SUV/CROSSOVER

### 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

Photo courtesy Mercedes-Benz

### 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


Photo courtesy Mercedes-Benz

### 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


Photo courtesy Nissan

### 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


Photo courtesy Polestar

## SUV/CROSSOVER

### 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

Photo courtesy Rivian

### 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


Photo courtesy Subaru

### 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


Photo courtesy Tesla

### 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


Photo courtesy Tesla

## SUV/CROSSOVER

### 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

Photo courtesy Toyota

### 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

Photo courtesy Volkswagen

### 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

Photo courtesy Volvo

### 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

Photo courtesy Volvo

## SEDAN

### 2024 Audi A6 e-tron

Sedan

**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


Photo courtesy Audi

### 2023 Audi e-Tron GT

Sedan

**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


Photo courtesy Audi

### 2023 Audi RS e-Tron GT

Sedan

**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


Photo courtesy Audi

### 2023 BMW i4

Sedan

**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


Photo courtesy BMW

## SEDAN

### 2023 BMW i7

**Sedan**

**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

Photo courtesy BMW

### 2023 Polestar 2

**Sedan**

**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


Photo courtesy Polestar

### 2023 Tesla Model 3 - Long Range

**Sedan**

**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


Photo courtesy Tesla

### 2023 Tesla Model S - Long Range

**Sedan**

**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


Photo courtesy Tesla

# 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


Photo courtesy Chevrolet

## 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


Photo courtesy Ford

## 2024 GMC Hummer Pickup

Pickup Truck

**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


Photo courtesy GMC

## 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


Photo courtesy Rivian

## PICKUP TRUCK

### 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

Photo courtesy Tesla

## SPORTS CAR

### 2023 Porsche Taycan

**Sports Car**

**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

Photo courtesy Porsche

## ULTRA-LUXURY/LIMITED EDITION

### 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


Photo courtesy Lucid

### 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


Photo courtesy Lucid

### 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

Photo courtesy Porsche

### 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

Photo courtesy Porsche

## COMPACT/HATCHBACK

### 2023 Chevrolet Bolt EUV

Compact/Hatchback

**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


Photo courtesy Chevrolet

### 2023 Chevrolet Bolt EV

Compact/Hatchback

**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


Photo courtesy Chevrolet

### 2023 Hyundai Kona Electric

Compact/Hatchback

**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


Photo courtesy Hyundai

### 2023 Kia Niro EV

Compact/Hatchback

**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


Photo courtesy Kia

## 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

Photo courtesy Mini Cooper

### 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


Photo courtesy Nissan

# 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

SUV/Crossover

**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

Photo courtesy Alfa Romeo

### 2023 Audi Q5 TFSI e

SUV/Crossover

**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

Photo courtesy Audi

## SUV/CROSSOVER

### 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


Photo courtesy BMW

### 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


Photo courtesy Dodge

### 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


Photo courtesy Hyundai

### 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


Photo courtesy Hyundai

## SUV/CROSSOVER

### 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


Photo courtesy Jeep

### 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


Photo courtesy Jeep

### 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


Photo courtesy Kia

### 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


Photo courtesy Land Rover

## SUV/CROSSOVER

### 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

Photo courtesy Land Rover

### 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


Photo courtesy Land Rover

### 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

Photo courtesy Land Rover

### 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


Photo courtesy Lexus

## SUV/CROSSOVER

### 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


Photo courtesy Lincoln

### 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


Photo courtesy Lincoln

### 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


Photo courtesy Mini Cooper

### 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


Photo courtesy Mitsubishi

## SUV/CROSSOVER

### 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


Photo courtesy Porsche

### 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


Photo courtesy Porsche

### 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


Photo courtesy Subaru

### 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


Photo courtesy Toyota

## SUV/CROSSOVER

### 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


Photo courtesy Volvo

### 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

Photo courtesy Volvo

## SEDAN

### 2023 Audi A7 TFSI e

Sedan

**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

Photo courtesy Audi

### 2023 BMW 330e

Sedan

**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

Photo courtesy BMW

### 2023 BMW 330e xDrive

Sedan

**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


Photo courtesy BMW

### 2023 BMW 530e

Sedan

**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

Photo courtesy BMW

## SEDAN

### 2023 BMW 745e xDrive

Sedan

**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

Photo courtesy BMW

### 2023 Karma GS-6

Sedan

**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


Photo courtesy Karma

### 2023 Porsche Panamera 4 E-Hybrid

Sedan

**EPA Electric Range:** 19 mi

**EPA Total Range (gas + electric):** 480 mi

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

**Starting MSRP:** $109,000

Photo courtesy Porsche

### 2023 Volvo S60 Recharge Plug-in Hybrid

Sedan

**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

Photo courtesy Volvo

## SEDAN

### 2023 Volvo S90 Recharge Plug-in Hybrid

Sedan

**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


Photo courtesy Volvo

## MINIVAN/WAGON/VAN

### 2023 Chrysler Pacifica Hybrid

Minivan/Wagon/Van

**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


Photo courtesy Chrysler

### 2023 Volvo V60 Recharge Plug-in Hybrid

Minivan/Wagon/Van

**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


Photo courtesy Volvo

## ULTRA-LUXURY/LIMITED EDITION

### 2024 Ferrari SF90 Stradale Coupe

Ultra-luxury/Limited Edition

**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

Photo courtesy Ferrari

### 2023 Porsche Cayenne Turbo S E-Hybrid

Ultra-luxury/Limited Edition

**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

Photo courtesy Porsche

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

Ultra-luxury/Limited Edition

**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

Photo courtesy Porsche

### 2023 Porsche Panamera Turbo S E-Hybrid

Ultra-luxury/Limited Edition

**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

Photo courtesy Porsche

## COMPACT/HATCHBACK

### 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


Photo courtesy Ford

### 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


Photo courtesy Kia

### 2023 Toyota Prius Prime

Compact/Hatchback

**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


Photo courtesy Toyota

# 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.

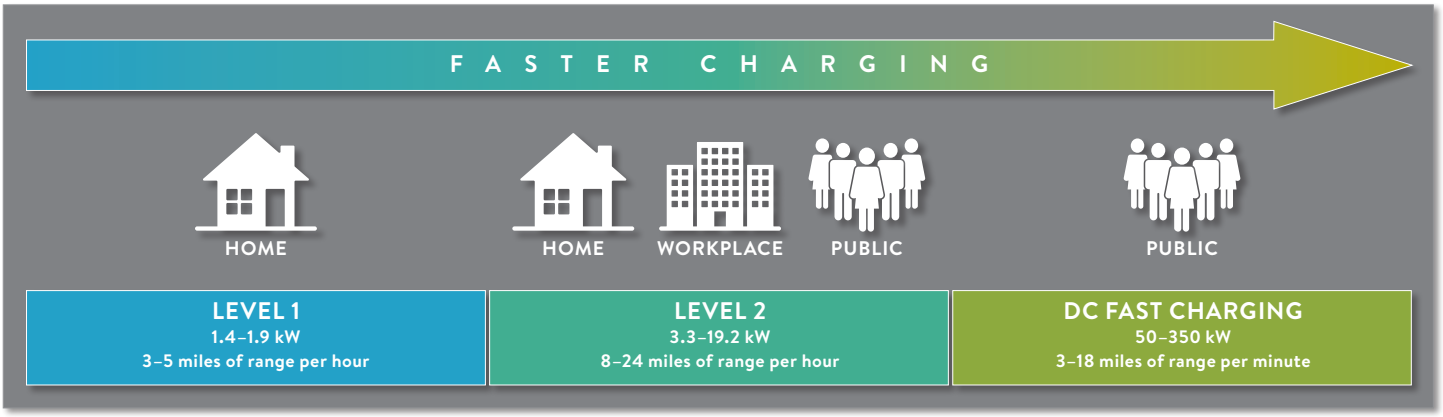



**Figure 2.** Charging locations, levels, and range replenished[4]

[4] *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 *Consumer Guide to Electric Vehicle Charging*, which provides a more in-depth overview of the various charging options.[5]

[5] *https://www.epri.com/research/products/000000003002016961*

## 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:**

Dan Bowermaster, Sr. Program Manager, Electric Transportation

dbowermaster@epri.com

3002026815 September 2023

**EPRI**
3420 Hillview Avenue, Palo Alto, California 94304-1338 USA
800.313.3774 • 650.855.2121 • askepri@epri.com • www.epri.com