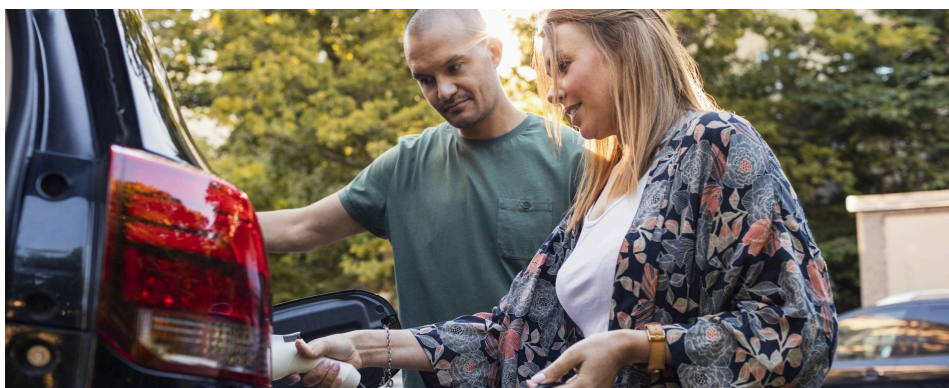


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# How Much Does an Electric Car Battery Cost?

The cost to replace an electric car battery that's out of warranty can range from about \$5,000 to about \$20,000, but the odds of needing to replace one are low.



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 Fact Checked



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The out-of-pocket cost to replace an electric car battery varies significantly based on different factors, like your vehicle make and model, and whether the EV battery is still under warranty. In general, the price to replace an EV battery no longer under warranty can run anywhere from \$5,000 to about \$20,000.

Along with the cost of the battery itself, you'll need to pay for installation. For most people, this isn't a do-it-yourself project, because replacing an EV battery requires special training. Depending on your EV make and model, the cost of labor to remove the old battery and install a new one could increase your total cost of battery replacement by several hundred or even several thousand dollars.

If you're [contemplating whether to buy an EV](#) but hesitate due to stories about the high cost of replacement batteries, here's some

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information that may help.

## The chances of needing to buy an EV battery are low

Decades of performance data is available for gas-powered vehicles, but that isn't the case for electric vehicles. But, with more than 3 million new and used EVs now registered in the U.S., information is becoming clearer and indicating that few original owners have to replace their EV battery.

According to Recurrent, a company that tracks and reports information about used EV batteries, about 225 (1.5%) of batteries in a study group of around 15,000 plug-in electric vehicles needed to be replaced due to failure. This percentage doesn't include batteries replaced due to recalls.

Of the replacements that do occur, most happen while the battery is still under warranty. EVs commonly come with a battery warranty of 8 years or 100,000 miles, but some automakers offer longer warranties up to 10 years or 175,000 miles. EV batteries do degrade over time, and factors like heat and rapid charging affect how fast that happens, but the current lifespan of EV batteries is now at 10 to 20 years.

Finally, if your EV battery needs to be repaired or replaced for reasons other than mechanical failure — for example a collision or fire — [electric car insurance](#) may help cover the cost depending on your carrier and policy.

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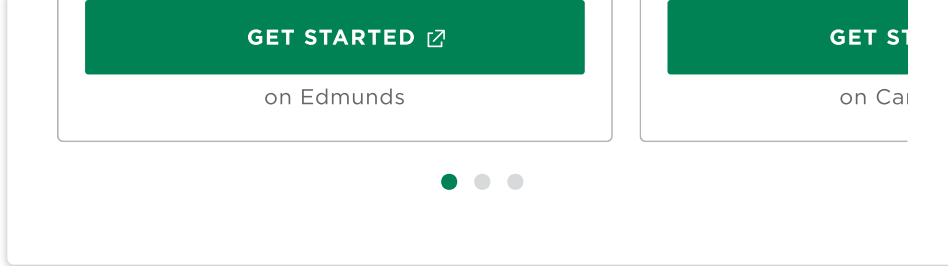
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## Why do EV batteries cost so much?

The construction of EV batteries is complex. Most of today's EVs use lithium-ion batteries, which are made up of rechargeable cells enclosed in modules that are housed within what's called a battery pack. The cells use chemical compounds to store and deliver energy, and these compounds are made from expensive metals like nickel, cobalt, lithium and manganese.

Battery replacement costs are directly related to the make and model of the EV. Less expensive EVs tend to have smaller batteries that cost less to replace, while luxury or long-range EVs have larger batteries that require more metals to produce and cost more to replace.

» **MORE:** [How much do hybrid car batteries cost?](#)

## Are there low-cost options for replacing an EV battery?

You may be able to find cheaper options for replacing an EV battery, but currently alternatives aren't plentiful.

**Refurbished EV batteries:** Remanufactured or refurbished batteries may be a less-expensive option than buying a battery through a dealership or mechanic. There are third-party companies that specialize in EV battery refurbishing, but you won't find a lot of them. Also, most are fairly new and don't have a long track record.

**Used EV batteries:** You can find used EV batteries for sale, but it's difficult to determine a battery's remaining capacity or condition, and diagnostic testing for the general public isn't easy to find. Also, most EV batteries are still being used in the original car, so you may have trouble finding a used battery for your particular make and model. The shortage of secondhand EV batteries is actually driving up their cost.

**Repairing EV batteries:** Some EV batteries can be repaired, for example replacing a bad cell, but it depends on the car. Batteries in some EVs are impossible to repair. If repair is an option, it should be done by a highly trained professional and can come with a hefty price tag of thousands of dollars.

## The future cost of EV batteries

As more EV batteries are produced and technology is fine-tuned, the cost of EV batteries is falling. In fact, the Department of Energy (DOE) says the cost of a lithium-ion EV battery for a light-duty vehicle was 90 percent lower in 2023 than it was in 2008<sup>[1]</sup>, and this downward trend is expected to continue.



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## About the author



### Shannon Bradley

Shannon Bradley covers auto loans and other auto topics for NerdWallet. Before joining NerdWallet in 2021, she spent 30-plus years as a writer, content manager and marketer in the financial services industry. [See full bio.](#)



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