## Electric car battery price 2022



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The Department of Energy"s (DOE"s) Vehicle Technologies Office estimates the cost of an electric vehicle lithium-ion battery pack declined 89% between 2008 and 2022 (using 2022 constant dollars). The 2022 estimate is \$153/kWh on a usable-energy basis for production at scale of at least 100,000 units per year. That compares to \$1,355/kWh in 2008. The decline in cost is due to improvements in battery technologies and chemistries, and an increase in manufacturing volume.

2017 - Steven Boyd, DOE, Vehicle Technologies Office, 2017 Annual Merit Review, Batteries and Electrification R&D Overview, June 18, 2018, PowerPoint presentation, p. 7.

2016 - David Howell, DOE, Vehicle Technologies Office, 2017 Annual Merit Review, Electrochemical Energy Storage R&D Overview, June 20, 2017, PowerPoint presentation, p. 6.

2008-2015 - National Academies of Sciences, Engineering, and Medicine 2017.Review of the Research Program of the U.S. DRIVE Partnership: Fifth Report. Washington, DC: The National Academies Press, p. 173.

Truly affordable electric cars may be even farther away than we all thought. After dropping for years, the price of lithium-ion batteries -- a costly and crucial component in electric vehicles -- rose in 2022, according to a study from BloombergNEF released Tuesday.

The going price for the battery packs used in EVs and energy storage projects jumped to \$151 per kilowatt-hour in 2022, a 7% increase over 2021. It's the first year-over-year cost increase BloombergNEF has seen since it started tracking the market for lithium-ion batteries in 2010.

As electric cars have graduated from niche to mainstream, battery costs have plummeted. (\$1,306/kWh in 2010, according to BloombergNEF.) And those steadily declining prices held the promise that someday EVs would cost roughly the same as combustion-engine cars and trucks.

"We"ve seen cost inflation for all input costs for batteries," Yayoi Sekine, head of energy storage research at BloombergNEF, told Insider. "It"ll definitely translate to higher costs of EVs. We"ve already seen EV prices go up."

Lithium, she said, is 5-6 times costlier than it was last year, partially due to booming demand. (Global demand for battery capacity has roughly doubled annually in recent years.) Nickel got 2-3 times pricier amid the war in Ukraine before easing somewhat, she added, since Russia is a key supplier.

Americans paid an average of \$64,249 for a new EV in October, according to Kelley Blue Book. The average

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transaction price for all new cars was just over \$48,000. According to a recent Ipsos poll, 59% of Americans won't consider an EV in the next two years due to the high upfront cost.

Automakers promise that cheaper EVs are coming. Chevrolet plans to launch the Equinox SUV in 2023 with a starting price around \$30,000, and a model near that price point has long been a goal of Tesla CEO Elon Musk.

BloombergNEF expects battery prices to rise slightly in 2023 before continuing their downward trend in 2024 as lithium mining and processing ramps up. Average pack prices should drop below \$100/kWh -- the group"s rough threshold for price parity between electric and gas-powered cars -- by 2026, two years later than it previously projected.

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