



## HOW LONG WILL AN ELECTRIC VEHICLE BATTERY LAST?

How long will an electric vehicle battery last and what's the price to replace it? Well, the response is often "it depends." Many electric vehicle (EV) models come with an 8 year/100K mile warranty, but some do not.

While there is little agreement in the EV industry as to how long a vehicle battery will last, there is strong agreement and data that proves that the more energy used from the battery between charges, the shorter the battery's life. As a result, there are some in the industry that have adopted the charging phrase of "graze not gorge" to encourage regular short charging sessions as opposed to using the vehicle until the battery is depleted.

There are a few common conditions that may cause high energy usage of the battery and possibly contribute to shorter battery life:

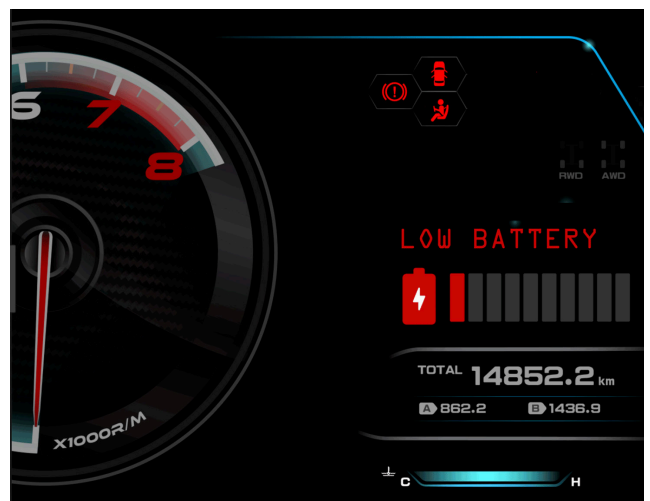
- High temperatures
- Frequent driving with battery less than half full
- Overcharging
- Frequent quick accelerations

As far as the cost to replace a battery when the vehicle is past warranty, prices vary from \$5,500 on up. There is also an option to refurbish battery packs for about half the cost of a full replacement. Additionally, battery prices continue to drop, so the replacement cost may decline in the future.

Lastly, there is a concern about the disposal of old batteries. Thankfully, we are beginning to see the batteries being recycled or used as part of energy storage systems. This will keep the batteries

out of landfills and enable them to be used for years after they are removed from the vehicles. For example, Nissan has launched an initiative that uses old Nissan LEAF batteries as the energy storage for streetlights. The lights have a solar panel that generates energy that is then stored in the battery. At night time, the battery provides the power to run the streetlight.

As battery technology continues to develop, we will see the life of batteries extend and the cost of refurbishments and replacements decrease. It is also encouraging to see that there is a second-life for batteries after they are removed from vehicles.



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