

A Million-Mile Electric Car Battery? Musk Wasn't Lying

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When earlier this year Tesla's Elon Musk said the company could soon have batteries lasting for over one million miles, many probably took it as yet another grand promise with less substance than realism requires. Now it seems Musk may have not been exaggerating.

Last month, Wired [reported](#) on a paper by researchers from Dalhousie University in Canada, which detailed a battery that “should be able to power an electric vehicle for over 1 million miles.”

The researchers from Dalhousie University have an exclusive agreement with Tesla, and two months ago they [reported](#) that they had designed battery cells with higher energy density without using the solid-state electrolyte that many believe is a necessary condition for enhanced density. What's more, the battery cell that the team designed demonstrated a longer life than some comparable alternatives.

This second paper builds on that, it seems. It details a “moderate-energy-density lithium-ion pouch cell chemistry” that, according to the authors, should serve as a benchmark for other researchers. Those other researchers will probably appreciate it because “cells of this type should be able to power an electric vehicle for over 1.6 million kilometers (1 million miles) and last at least two decades in grid energy storage.”

Two decades of grid energy storage sounds almost better than the 1 million miles in an EV as demand for energy storage—the Holy Grail of renewables—garners growing attention. But back to EVs.

Range and battery durability—and cost—are the biggest obstacles to mass EV adoption. On the one hand, drivers want to know their car won't die midway to their destination because its range is too short. On the other, they also want to know the battery will last.

Realistically speaking, no car needs a battery that can last for a million miles, simply because few people keep their cars for that long. Most cars [have exhausted their useful life](#) at about 200,000 miles, according to the Observer's Harmon Leon. Yet it does sound impressive, and what's even more impressive is that, according to the researchers, the new battery cell only loses a tenth of its energy density over this extended lifetime, which makes it more efficient than existing batteries.

And here's what's even more impressive. The paper is open to anyone interested in reading about how this new and improved battery works. Why? Because, as one former member of the Dalhousie University team told Wired, Tesla patented an even superior battery before

the paper came out. The carmaker announced it had received a patent for a battery very similar to the one described in the paper, with team leader Jeff Dahn listed as one of its inventors.

So, it seems it's true. Tesla has made a battery capable of lasting a million miles even if other components of the car might not be able to survive that long. Now all it needs to do is make this battery [cheap enough](#) to turn it into something that is actually usable in a car. This may take a while given that most carmakers have yet to make current batteries more affordable to bring down the price of an EV enough to motivate more people to buy one.

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