

Who's making solid-state battery EVs and when can we drive them?

Spoiler: we won't have to wait that long



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Solid-state batteries offer a promising alternative to conventional lithium-ion batteries. To put it simply, they promise lower cost, more power, longer range, faster charging times, and improved safety over their currently in-house cousins.

For this reason, more and more automakers are betting on solid-state, seeing them as the next big breakthrough in [EV battery technology](#).

But we have a question: how close are we to seeing them in the real world? And what are auto companies doing to make it happen?

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Volkswagen: The German brand [has teamed up with QuantumScape](#), which plans to start series production of its solid-state battery cells [in 2024](#).

Toyota: [Working with Panasonic](#), the Japanese automaker expects to sell vehicles with solid-state batteries by [around 2025](#). Surprisingly, the first Toyotas to receive the new batteries will be hybrids — not EVs.

[According to Grill Pratt](#), chief scientist and head of Toyota's Research Institute, that's because hybrids' smaller battery packs will reduce the cost of expensive solid-state batteries. On top of this, they provide a better test bed for the new tech, given that they need to charge and recharge more often.

BMW and Ford: Both brands [have invested heavily in Solid Power](#). This has paid dividends already, as the [company delivered](#) the agreed upon pilot production line this year.

BMW estimates it'll have commercial automobile-compatible solid-state batteries [by the end of the decade](#) and it promises a demonstrator vehicle well before 2025.

Ford [hasn't disclosed a clear timeline](#) yet.



Solid Power's battery cells. Credit: Solid Power

Stellantis: The group has invested in [Factorial Energy](#) and aims to have its first competitive solid-state battery technology [introduced by 2026](#).

Nissan: The company [has unveiled](#) its prototype production facility of solid-state battery cells, aiming to launch an EV with the new batteries by 2028.

A pilot production line is expected four years earlier, in 2024.

Honda: Starting mid-decade, the automaker will focus its research on solid-state batteries. It plans to develop its own demonstration line, hoping to make it [operational by the spring of 2024](#).

Mercedes-Benz: Teaming up with [Prologium](#), the German brand plans to integrate solid-state batteries in passenger vehicles [in the second half of the decade](#).

General Motors: The company is currently [building its Wallace Battery Cell Innovation Center](#) in Michigan, which will focus on the development of its Ultium lithium-ion batteries and the acceleration of new battery tech, including solid-state.

To be fair, solid-state batteries are still at an early stage of development and testing — but the investment is plain to see. The technology has already gained impressive traction and I'm optimistic

that, by 2040, most of our EVs will be solid-state. Bring it on.

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