

GM Ultium Drives to power new generation of e-vehicles

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General Motors' next-generation EVs are expected to be powered by a family of five interchangeable drive units and three motors, known collectively as "Ultium Drive.". Credit: GM

General Motors on Wednesday announced plans for the production of a family of electric motors and drive units for its next generation of electric cars and trucks.

It will design and manufacture five interchangeable electric powertrains and three [electric motors](#) under the name Ultium Drive. The electric

drive systems will be used across a spectrum of vehicles, from passenger cars to pickup trucks to high performance autos.

As it transitions to a complete electric lineup, GM vehicles will have better integration between the engine and electrical system and the car's other components and achieve greater efficiencies with Ultium Drive.

Adam Kwiatkowski, executive chief engineer for GM's global electrical propulsion, said "more of the battery energy now goes to the road" with Ultium Drive. "There is very very little, totally imperceptible [motor](#) lag, so as soon as you touch the accelerator pedal the [vehicle](#) responds in a very smooth fashion."

Kwiatkowski explained the new electric drive systems, also referred to as e-drives, combine gear, motor and power electronics into a single system that will more efficiently convert energy to drive the vehicle. By building the [power electronics](#) into the drive assemblies, greater power is attained in roughly half the space. And the system is lighter.

That means GM vehicles can achieve greater driving ranges, or carry fewer or smaller batteries and allow for even more passenger space. It also means cars that are priced lower.

GM "designed these drive units simultaneously with a full gambit of electric vehicles that fill out our portfolio," said Kwiatkowski. "They become synergistic and make them a really efficient package that's good for the performance of the vehicle, good for driving customer enthusiasm, and most importantly it's good for cost efficiency."

Earlier this year, GM unveiled its Ultium battery technology that will produce 200 kilowatt hours worth of energy and will ride up to 400 miles on a single charge.

The move comes at a critical time for GM as a formidable EV competitor, Tesla, sees its share prices soaring by more than 400 percent in recent months. Two factors driving Tesla's success are its powerful engine systems and energy efficiencies. Tesla's permanent magnet reluctance motors achieve a 97 percent level of efficiency.

GM will not totally abandon its relationships with other manufacturers. It is currently partnering with Nikola in the production of the Badger pickup truck. That deal may be shaky, however, as Nikola recently became engulfed in controversy over claims it made misleading statements about the capabilities of its first truck, Nikola One.

But GM officials said they want to push forward with the design and development of the new e-drive technology on their own, even though other established manufacturers could offer greater scale and lower costs for some parts.

The powertrain systems are expected to be seen in the new Lyriq luxury SUV, the Hummer EV due in October, the new generation Bolt EV (whose production has been delayed until 2021) and the crossover Bolt EUV slated for arrival next summer.

More information: [plants.gm.com/media/us/en/gm/e ... 16-ultium-drive.html](https://plants.gm.com/media/us/en/gm/e...16-ultium-drive.html)

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