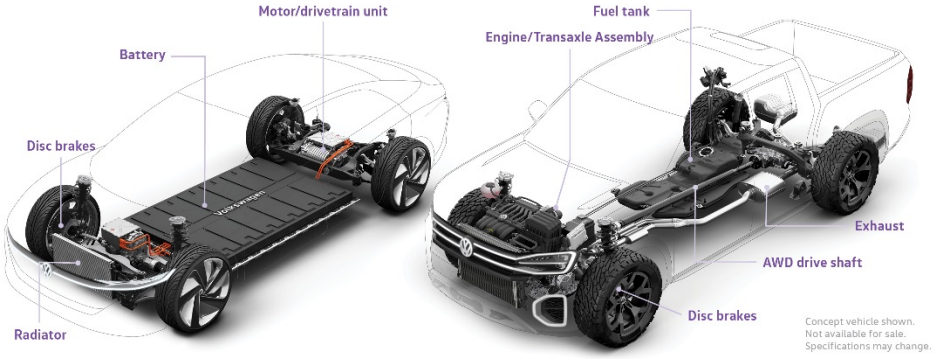
A Tale of Two Powertrains

How will your future Volkswagen electric vehicle — coming in 2020 — differ in ways big and small from the current Volkswagen platform? We compare the two.

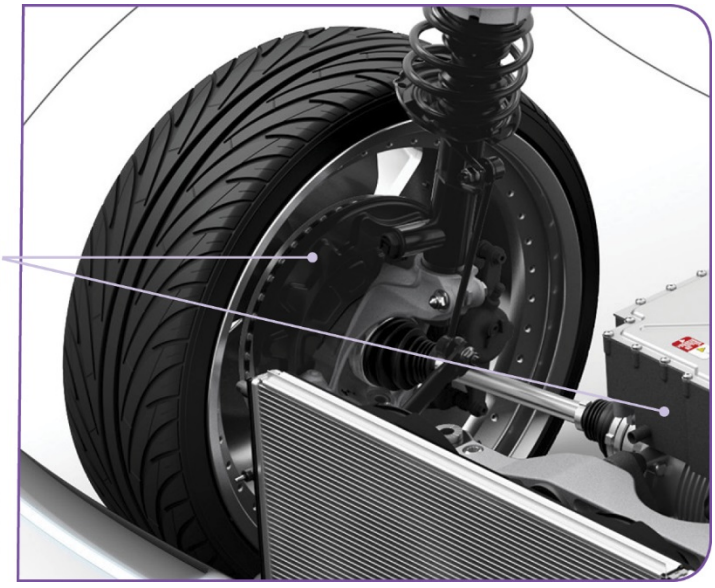
The push toward "Electric for All" rests on the Volkswagen all-new MEB platform, which was designed from the ground up. So what makes the platform so different?



MEB **MQB**

Let's talk about the motor

The all-new MEB platform utilizes an electric motor, located in the back, which powers the rear wheels. This platform also supports all-wheel drive with another front motor that can power the front wheels. In the current VW MQB platform, the engine is located in the front to drive the front wheels — and may have a centre drive shaft connecting to the rear differential for available all-wheel drive on select models.



Concept vehicle shown.
Not available for sale.
Specifications may change.

Your brakes do more than help your VW stop

Both the current generation Volkswagen MQB vehicles and future MEB electrics vehicles use four-wheel disc brakes. However the MEB also has regenerative braking. This means that when you take your foot off the accelerator, the motor works as a generator, reversing the flow of energy back to the battery and slowing forward motion.

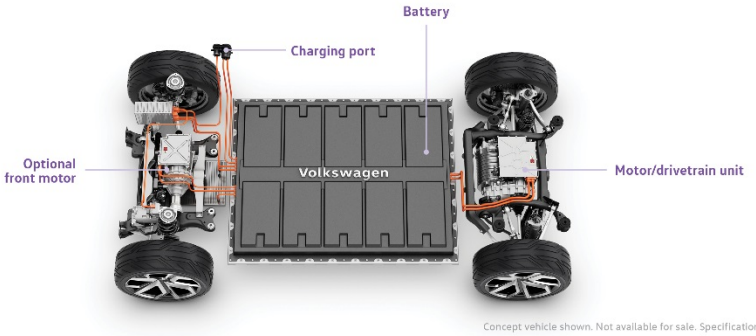
Something is missing inside a VW Electric Vehicle MEB

That hump between the front seats that's in most vehicles? It takes up lots of room because it's providing necessary space for some vehicle elements, including the centre drive shaft and shifter.

In the MEB platform, there's no need for a centre drive shaft, thus no need for that centre hump. A single-speed gearbox is housed in the same drive unit as the motor and supporting electronics, driving the wheels directly. Additionally, without the engine and transmission up front, the panel separating the engine and passenger compartment is pushed forward, which can create more interior volume.

Moving the heater and HVAC under the hood frees space in the dash; also notice the hump-less floor.

To heat the cabin, a traditional vehicle relies on a heater core in the dash, which utilizes coolant that is heated by the engine. In an MEB EV, the heater is located under the hood, freeing up even more space inside. Additionally, it is predominantly electric because heated coolant is not always available to heat the cabin. While it is mainly electric, it also uses heat generated by other components when available.



Concept vehicle shown. Not available for sale. Specifications may change.

How about the battery in the MEB EVs?

First of all, it's large, flat, and mounted under the floor, which helps to maintain weight distribution and a centre of gravity. Secondly, the battery pack is designed to be rapidly-charged, depending on application. Future plans may include inductive charging.

How does the MEB keep the motor cool?

Surprisingly, the MEB EV has a relatively conventional radiator at the front of the car just like an MQB. However, unlike a gasoline engine (coolant circulates through the engine block), the MEB EV system uses an electric pump to circulate coolant to the motor's heat exchanger on demand — as well as other electronic components such as the battery and inverter — to keep them at their optimum operating temperatures.

But how are the platforms the same?

One of the things that made the MQB so great was its versatility: It could be lengthened, widened, and lifted to accommodate different vehicle types such as the Golf and the Atlas. That same versatility guides the MEB: It is designed to be able to support a wide range of next-generation VW EVs in all shapes and sizes.