

# The Electric Vehicle Module



Volkswagen's Modular Electrification Toolkit (MEB), currently under development, is a modular system for manufacturing electric vehicles. But exactly how will the MEB work and what do we need it for? We answer ten important questions.



## 1. What is the MEB?

The Modular Electrification Toolkit (MEB) is a flexible modular system (actually a matrix of common parts) for manufacturing electric vehicles that's currently being developed by Volkswagen. It's one of the next big things at VW for building electric vehicles following the introduction of the Modular Transverse Matrix (MQB) in 2012. The MEB has been in development since 2015, and it builds on the MQB in an effort to make building electric vehicles more efficient than in the past.

## 2. What distinguishes the MEB from the MQB?

When the conceptual design for the MQB was first developed, the idea of an electric vehicle for the mass market wasn't as important as it is today. The MEB is now being specifically developed to help realize this vision. It ensures the vehicle is optimally equipped for electric vehicle requirements by taking into account what axles, drive units, wheelbases, and weight ratios need to look like. It also considers the best design and position for the batteries.

### 3. Why the need for a new modular toolkit?

The MEB is being specifically developed to make the manufacture of electric vehicles more efficient — and potentially less expensive — in the long term. The MEB will allow Volkswagen to produce electric vehicles with a more systematic focus and to cater to increasing demand for electric vehicles.



### 4. Are there vehicles out today based on the MEB?

So far, Volkswagen has presented several e-concept vehicles based on the MEB, including the ID. at the Paris Motor Show in 2016; and the ID. BUZZ, the VW camper van of the future showcased at the Detroit Auto Show in January 2017.



*The ID., one of the first cars based on the MEB, features classic doors at the front and sliding doors at the rear.*

*Image is a dramatization.*

### 5. Will drivers notice the difference?

Future generations of vehicles based on the MEB could bring advantages such as full torque from a standstill, rear drive and the advantages it brings to traction and acceleration, optimized driving balance (thanks to the lower position of the battery), and better digital functions.

### 6. Will the MEB impact the design of the vehicle interior?

A central element of the MEB is the high-voltage drive battery. Its design and placement plays a key role, as its flat and comprised of submodules. Components installed in the vehicle floor would free up an unexpected amount of space in the interior. For example, the outside length of the concept ID. is similar to that of the Golf. However it could offer a similar amount of interior space as a Passat. The dashboard insert is more compact and the position of the centre console can be varied.



The I.D.: Similar in size to a Golf on the outside with almost the same space as the Passat on the inside because MEB components are installed on the floor to free up space in the interior.

Image is a dramatization.

## 7. What are the biggest challenges when developing the MEB?

Ever-changing technology, efficiency, and costs. Future elements like digitalization, connectivity, and fully automatic driving will also need to be factored into the MEB. What does a vehicle's architecture need to look like to allow the integration of as many applications and interfaces as possible? Retrofitting hardware in a defined architecture is always a challenge, so digital locking systems for car sharing or sensors for autopilot should be implemented in the MEB right from the start.

## 8. What still needs to happen before series production of vehicles based on the MEB?

Since work on the MEB began in 2015, great progress has been made. The early phase of development is set to end in the spring of 2017, and series production of the first electric vehicle in the same style as the concept ID. is scheduled to start in 2020.

## 9. Will the MEB supersede the MQB?

No. Even if the role of electric drive gains significance over the coming decade, Volkswagen will continue making vehicles with combustion engines — something that requires the MQB as the basic architecture. And although making electric vehicles using the MQB as a basis is possible, it doesn't work the other way around: A combustion engine is not currently designed to fit into the MEB architecture.

## 10. What significance does the introduction of the MEB have for Volkswagen?



The "TRANSFORM 2025+" strategy foresees the sale of one million Volkswagen electric vehicles per year by 2025 (accounted for by around 30 different models across the group). Meeting this strategy depends on the MEB and the high-volume series production of electric vehicles it will allow.

### The MEB Principle



1. The low-voltage battery installed at the front will supply power to the vehicle electronic system and lights, among other things.
2. Batteries installed in the vehicle floor distribute the axle load uniformly.
3. Rear-wheel drive offers advantages when it comes to the MEB. An all-wheel version has been factored into the concept.
4. Electric drive, digitalization, autonomous driving: The MEB will consider all of today's major issues.
5. The traction battery will be installed between the axles. Visually, it resembles a bar of chocolate.
6. Wheels on the corners of the vehicle create space for batteries of different sizes.

*Image is a dramatization.*