

Intelligent Efficiency and Maximum Performance of the Mercedes-Benz EQS

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Advanced Electric Drive Architecture of the Mercedes-Benz EQS



1

Electric Drive Strategy

2

Technical Architecture
of the EQS e-Drive

3

Summary and Outlook

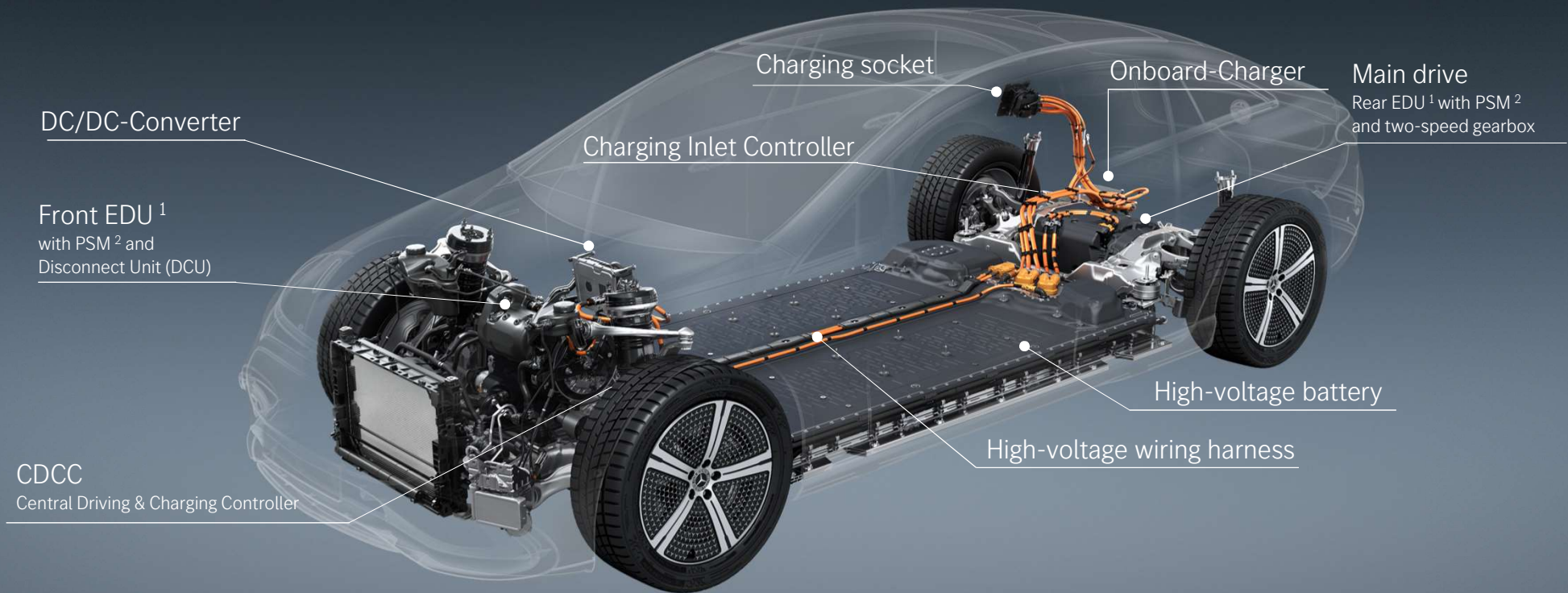
ELECTRIC DRIVE STRATEGY

Net carbon neutrality is not possible without electromobility



ELECTRIC DRIVE SYSTEM

Developed for the new Mercedes-Benz EQS



1 EDU: Electric drive unit

2 PSM: Permanently excited synchronous machine

REAR ELECTRIC DRIVE UNIT - EDU 2.0

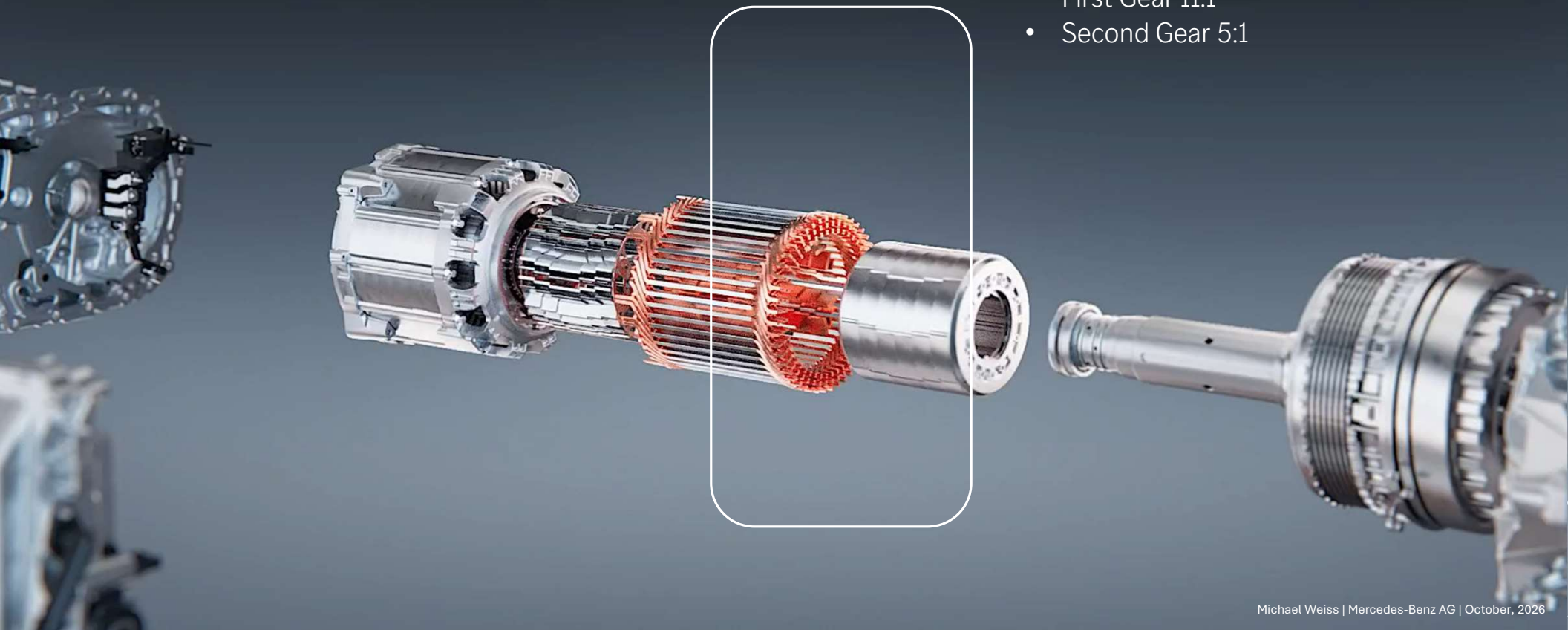
Developed and produced by Mercedes-Benz



TWO-SPEED TRANSMISSION

Combines dynamics with efficiency

- First Gear 11:1
- Second Gear 5:1



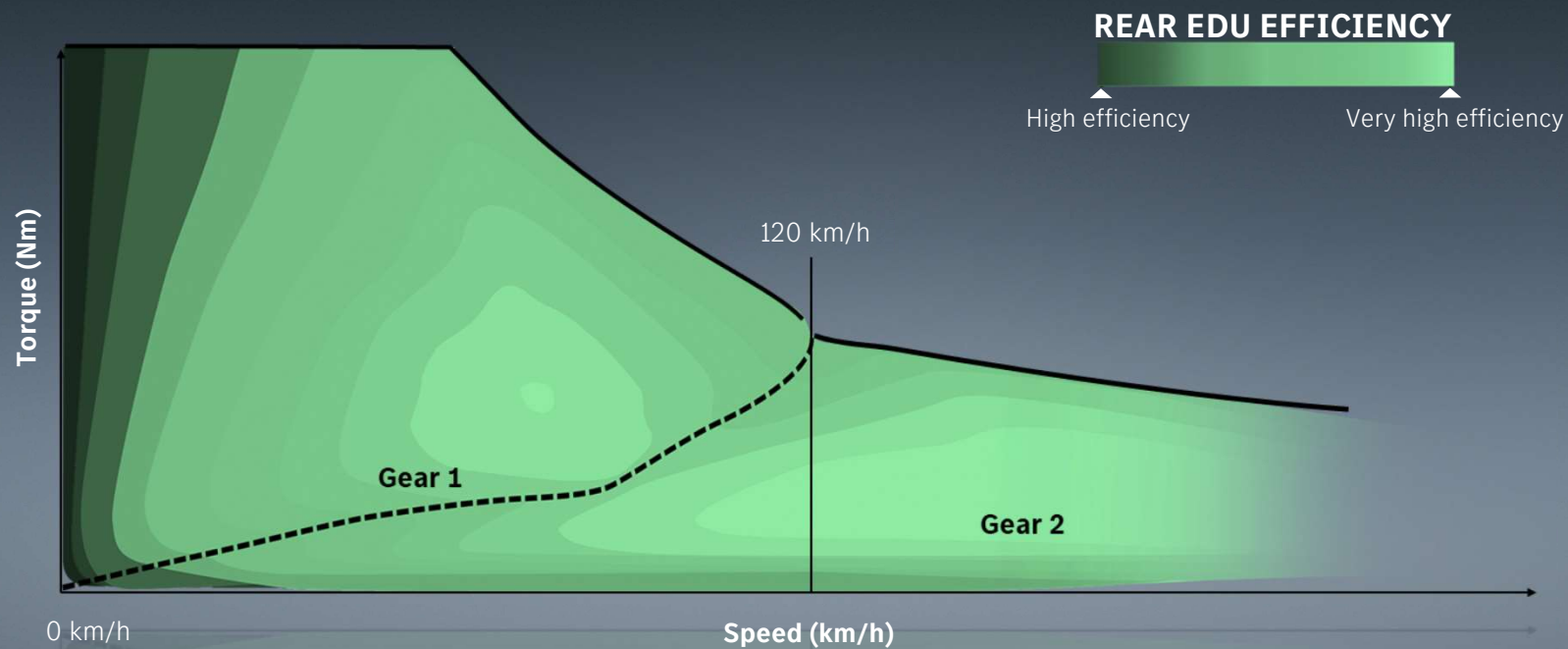
TWO-SPEED TRANSMISSION

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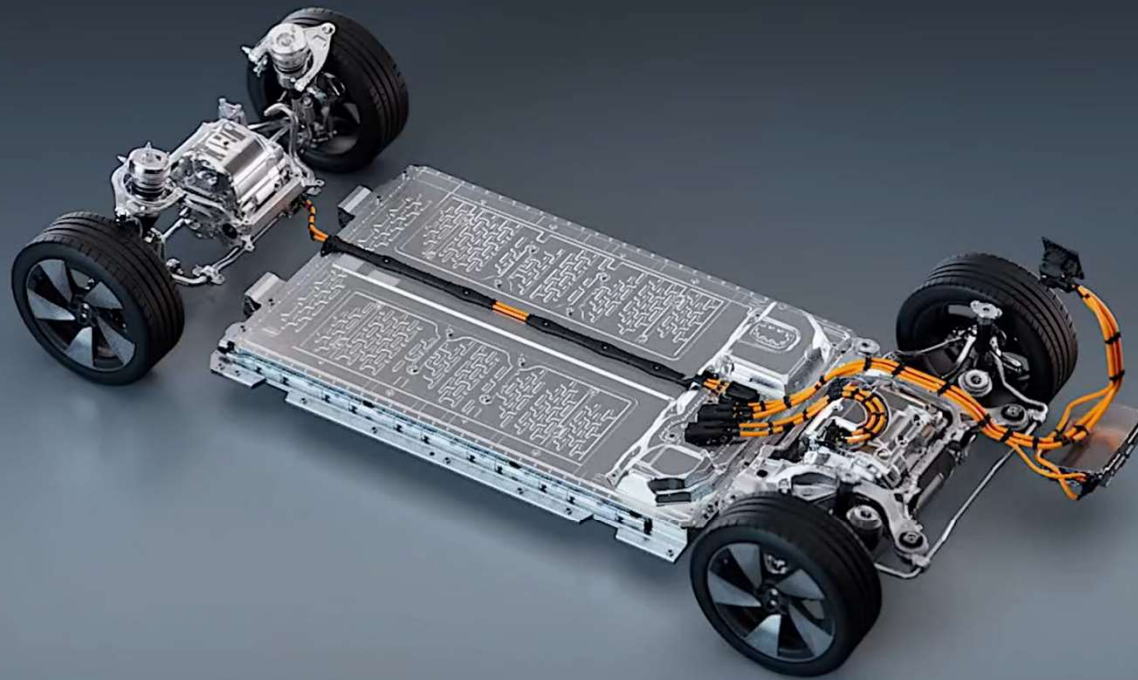
EFFICIENCY MAP OF THE REAR DRIVE UNIT

The electric drive unit of the rear axle achieves the best possible efficiency across the torque range with the 2-speed transmission.



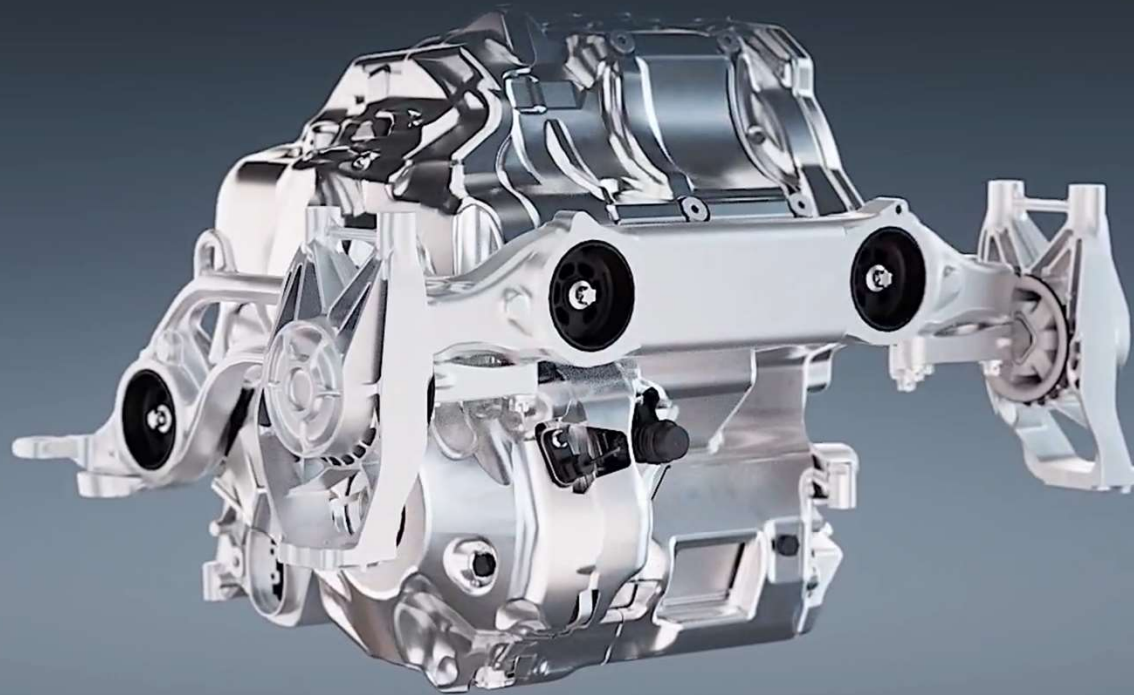
FRONT ELECTRIC DRIVE UNIT

DISCONNECT UNIT - Reduces drag losses on the front axle by 90 percent



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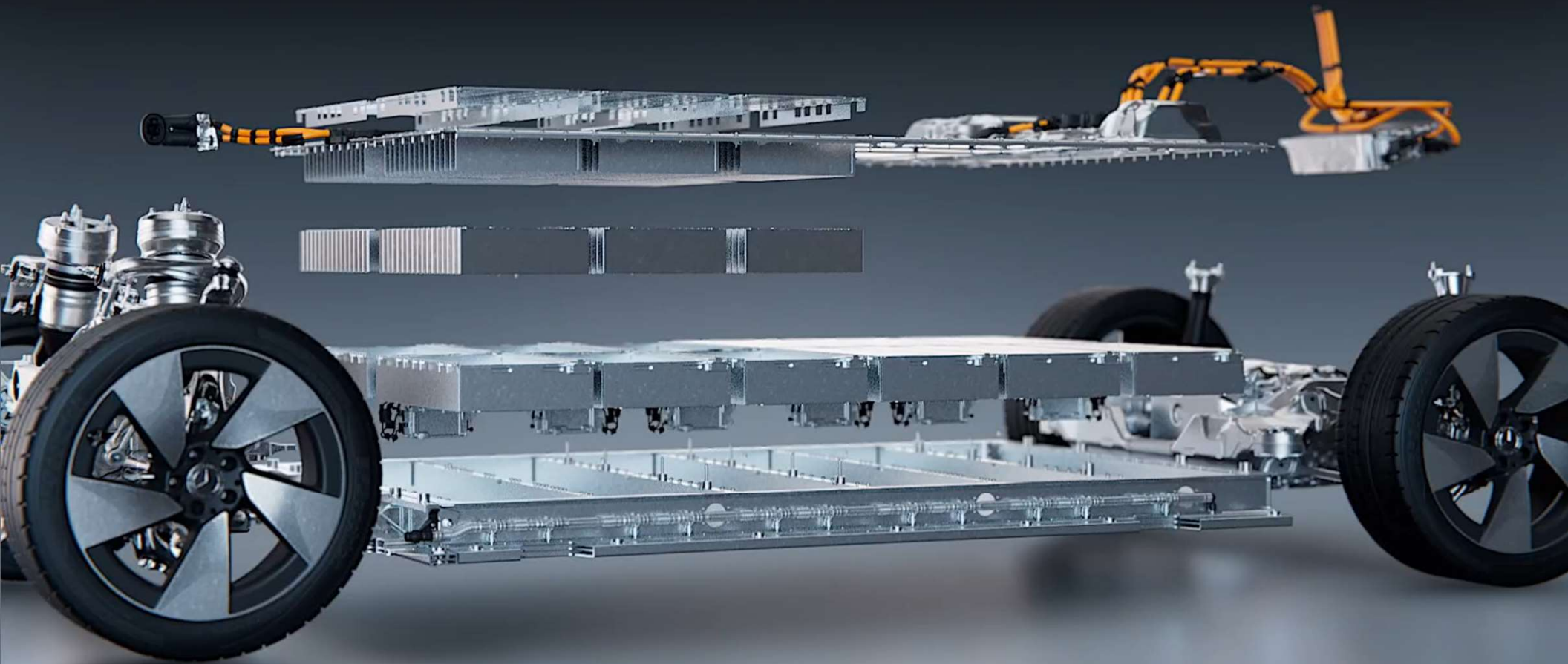
800/400-VOLT BATTERY

Upgrades in all dimensions: energy, charging and safety, within the same installation space



800/400-VOLT BATTERY

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The Charging Zone of the EQS

High Power Charging Zone

Peak power in the Phase I: 350kW

Energy @10min for >320km

Maximum charging power
quickest energy gain / reach build-up

Balanced Charging Zone

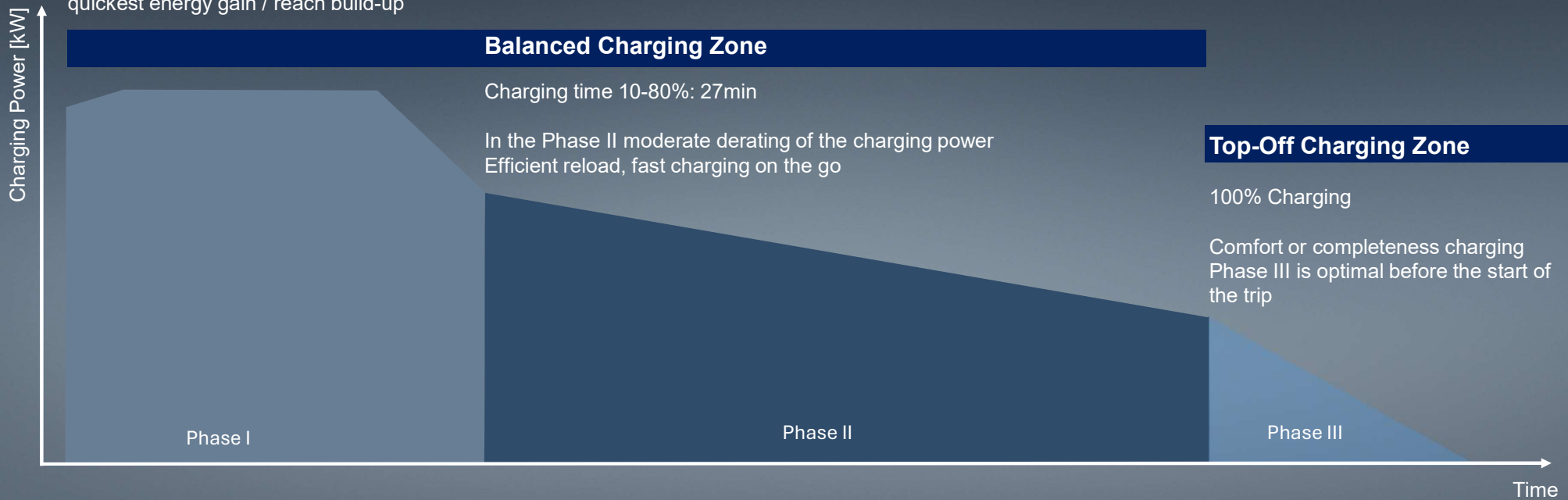
Charging time 10-80%: 27min

In the Phase II moderate derating of the charging power
Efficient reload, fast charging on the go

Top-Off Charging Zone

100% Charging

Comfort or completeness charging
Phase III is optimal before the start of the trip



Charging at home opens possibilities & new customer expectations for a car manufacturer.

Driving device



Energy device



INTELLIGENT DRIVING & RECUPERATION FOR MAXIMUM EFFICIENCY

R
N P
D-

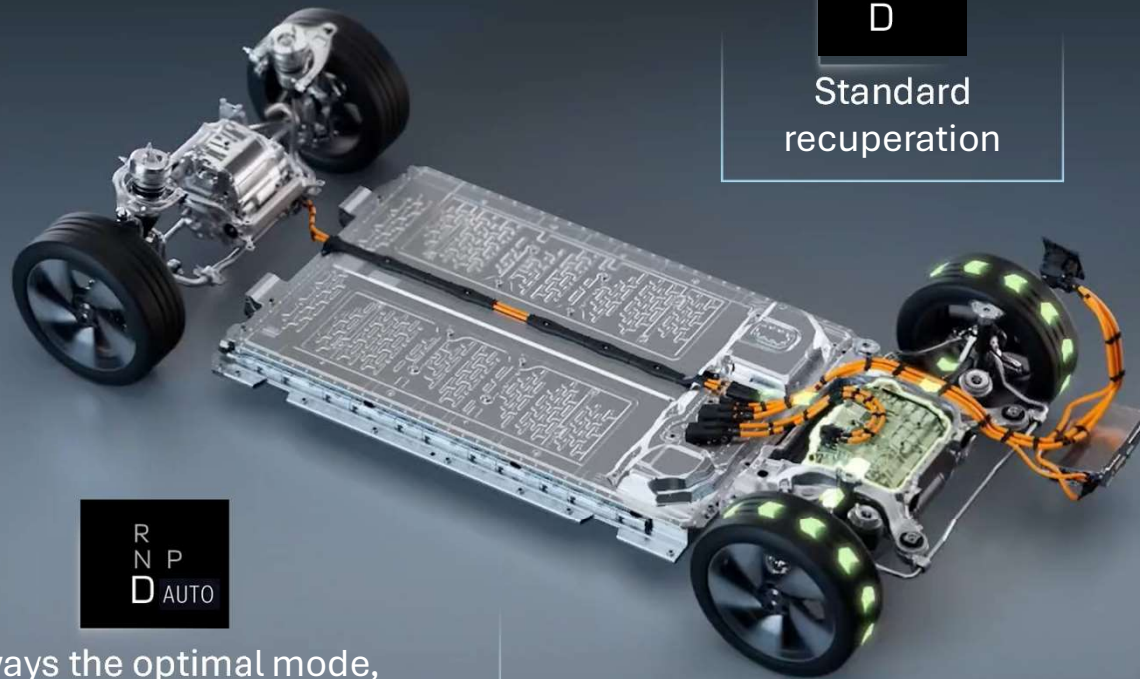
Maximum
recuperation

R
N P
D

Standard
recuperation

R
N P
D AUTO

Always the optimal mode,
networked with MB.OS



RELIABLE RANGE AND CHARGING PREDICTION

Onboard data:

Drag and rolling resistance
Air-conditioning
Preconditioning of battery
Trailer type



Cloud data:

Traffic (expected speed)
Elevation profile
Weather (including wind and road surface wetness)



Charging infrastructure:

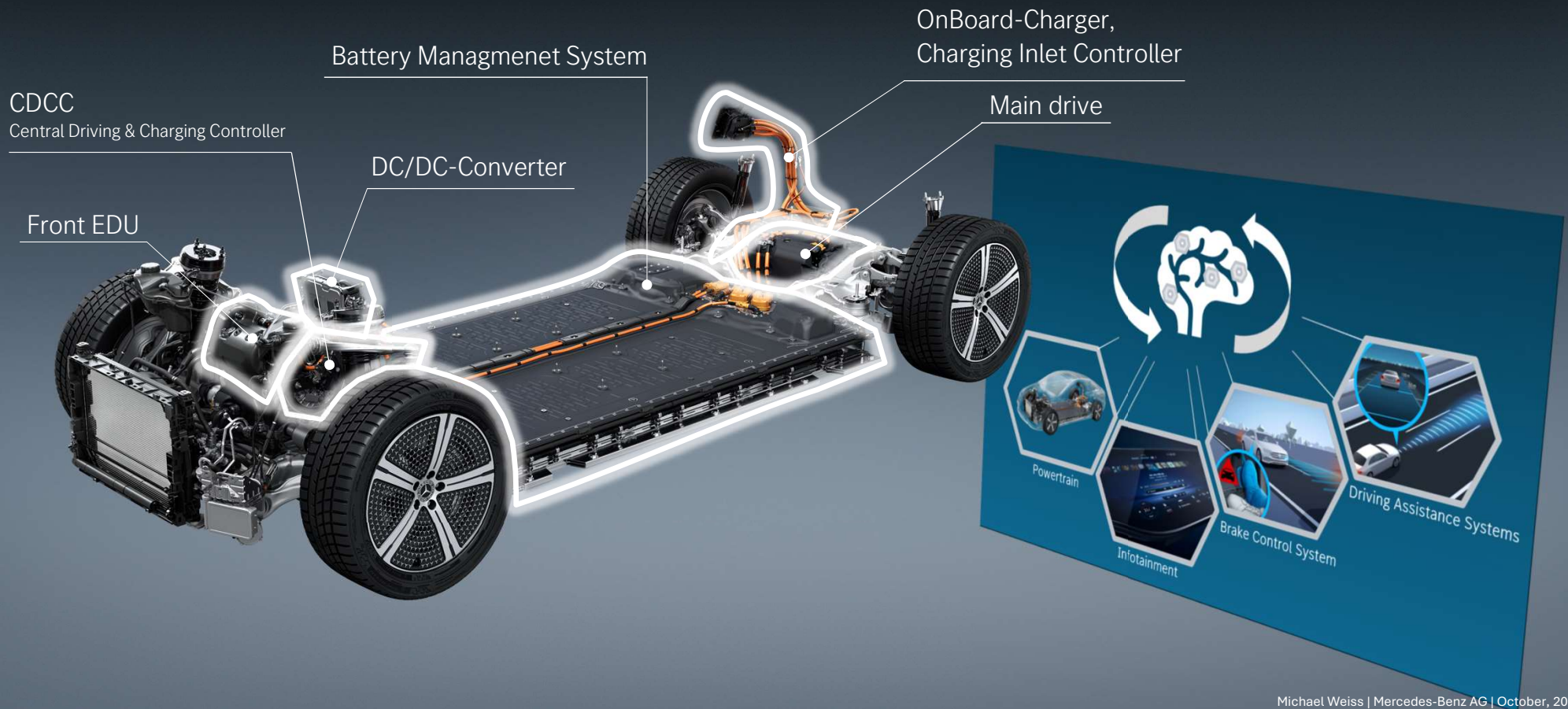
Number of charging ports
Real-time availability
Available charging capacity (800V optimised)
MB.CHARGE compatibility (optimised)



Intelligent functionalities require a software-defined drive system as a development approach



The eDrive-Software-System & its SW-Components



It's core Drive-Software-System is fed by component specific CI/CD pipelines, and is integrated in an evolving DevOps approach. This approach addresses transformation challanges while adhering to ASPICE, LEAN & AGILE, and cross-domain integration requirments.



INTELLIGENT EFFICIENCY MAXIMUM PERFORMANCE

817-926 km



112-122 kWh



350 kW at 800 V
175 kW at 400 V



~ 320 km in 10 min,
27 min 10-80%



Recuperation up to
4.9 m/s², 385 kW



< 16 kWh/100 km



Front EDU
with PSM and
Disconnect Unit (DCU)

Main drive
rear EDU with PSM, 93% efficiency
and two-speed gearbox

270-430 kW



6.2-4.1 s

0-100 km/h
(0-62 mph)

210 km/h



1.7 t

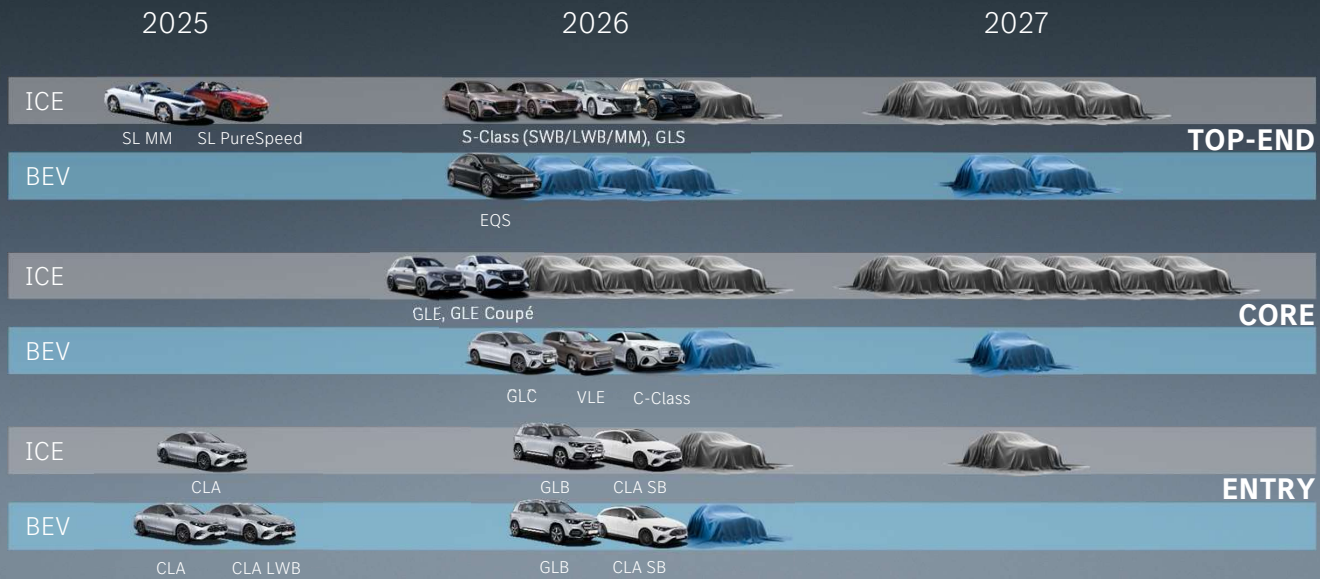


Steer-by-Wire

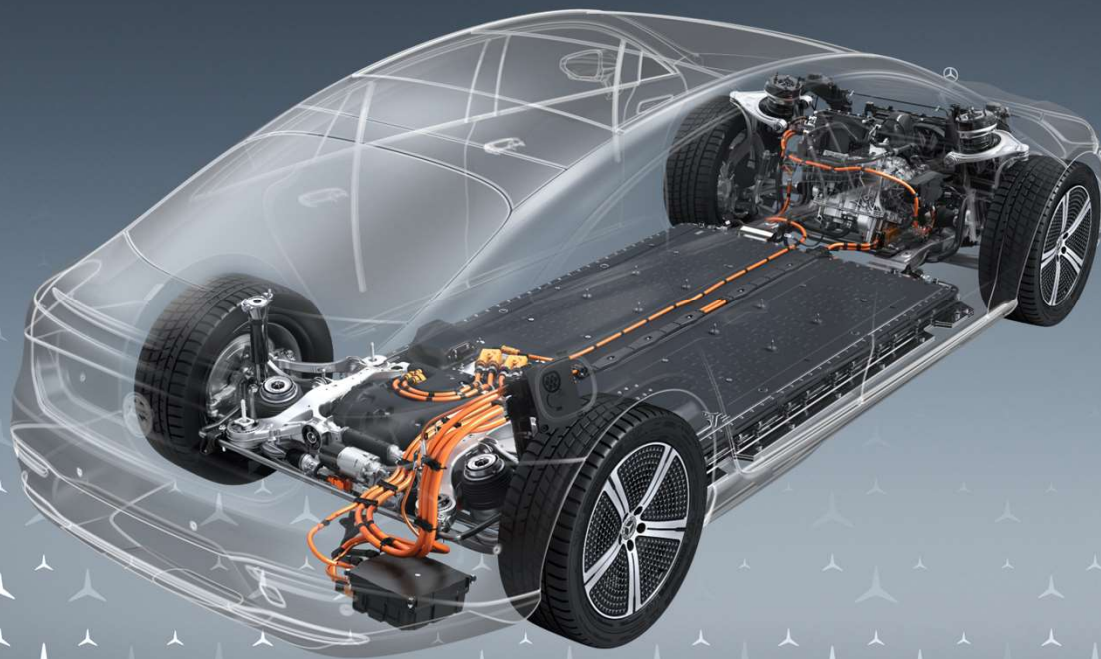
EDU: Electric drive unit, PSM: Permanently excited synchronous machine

OUTLOOK 2026-2027

Our Product Launch Roadmap



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Michael Weiss

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MERCEDES-BENZ AG

Q&A

Michael Weiss | Mercedes-Benz AG | October, 2026