

UBS investor meeting
July 7, 2021



Premium Platform Electric (PPE)

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Audi A6 e-tron concept: The vehicle shown here is a concept car that is not available as a production model.

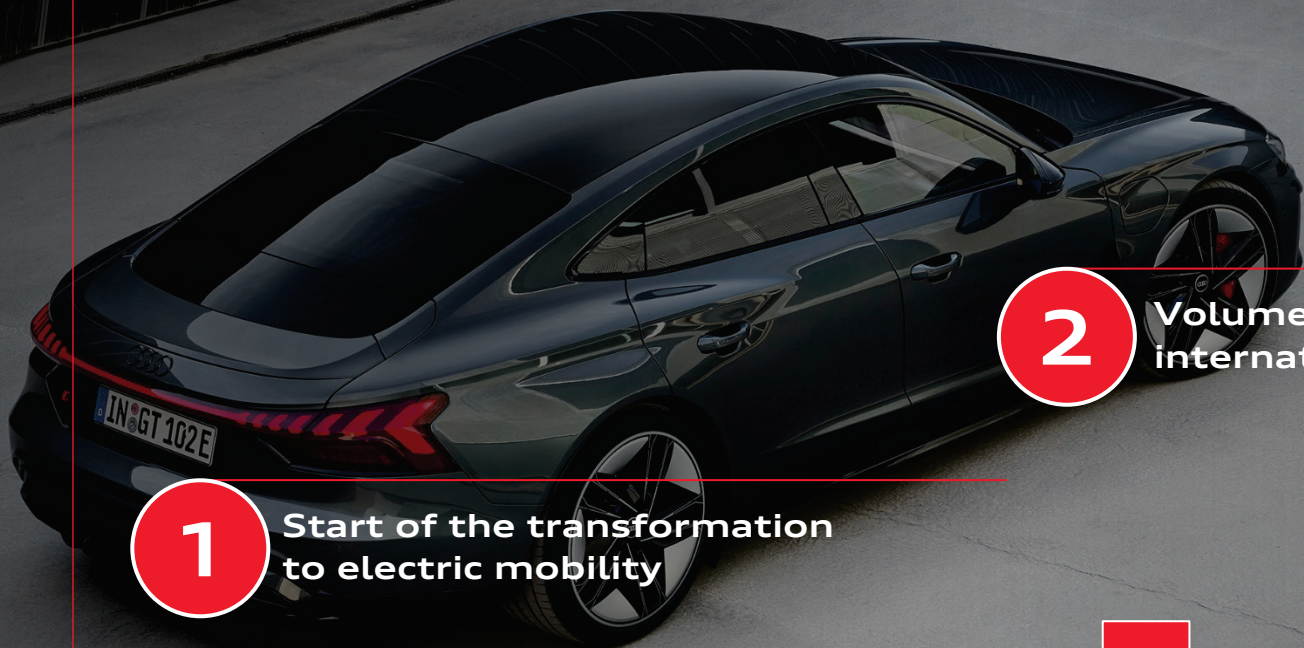
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A negative development relating to ongoing claims or investigations, the continuation of COVID-19, an unexpected fall in demand or economic stagnation in our key sales markets, such as in Western Europe (and especially Germany) or in the USA, Brazil or China, and trade disputes among major trading partners will have a corresponding impact on the development of our business. The same applies in the event of a significant shift in current exchange rates in particular relative to the US dollar, sterling, yen, Brazilian real, Chinese renminbi and Czech koruna. If any of these or other risks occur, or if the assumptions underlying any of these statements prove incorrect, the actual results may significantly differ from those expressed or implied by such statements. We do not update forward-looking statements retrospectively. Such statements are valid on the date of publication and can be superseded.

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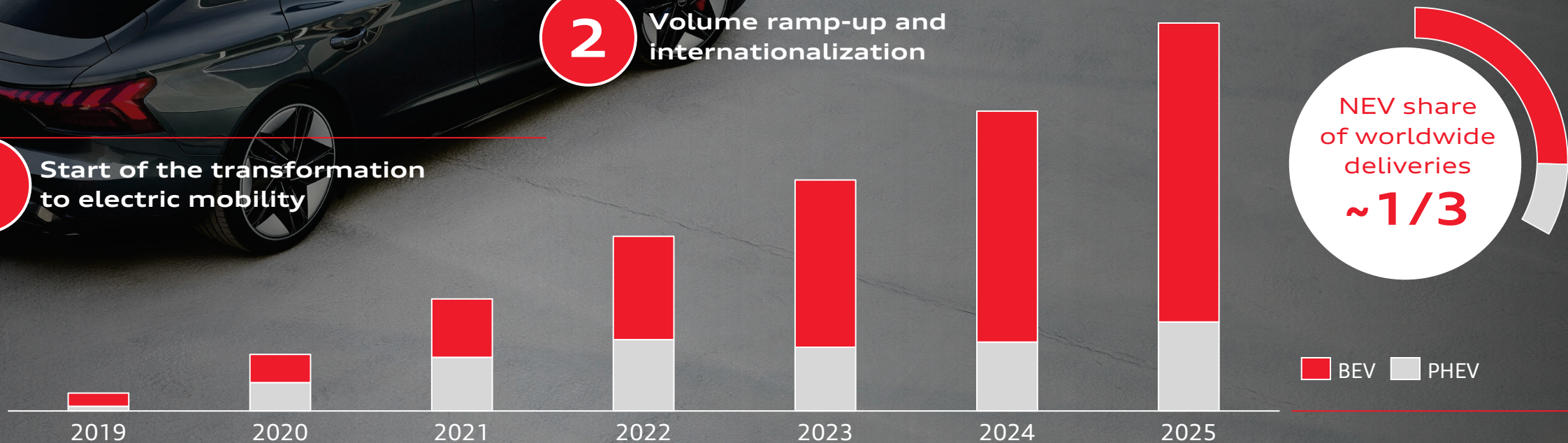
Audi's E-Roadmap is well on track – from 2026, Audi will only launch new all-electric models.



1 Start of the transformation to electric mobility

2 Volume ramp-up and internationalization

3 Variety of models and broad segment coverage



production start of the last new combustion engine model¹⁾

1) Chinese market in evaluation;
Audi RS e-tron GT: Combined electric power consumption in kWh/100 km: 20.2–19.3 (NEDC), 22.5–20.6 (WLTP); combined CO₂ emissions in g/km: 0;
Information on fuel/power consumption and CO₂ emissions in ranges depending on the chosen equipment level of the car.

After establishing Audi as a credible BEV brand with e-tron, Audi is scaling its BEV portfolio with vehicles based on dedicated electric Platforms.

e-tron

THE PIONEER

over
~100k
sold
since SOP



e-tron GT

THE BRAND SHAPER



Q4 e-tron

THE ACCESSIBLE E-TRON



PPE

THE NEXT LEVEL



Audi e-tron: Combined electric power consumption in kWh/100 km: 24.3 – 21.0 (NEDC); Combined CO₂ emissions in g/km: 0; Audi RS e-tron GT: Combined electric power consumption in kWh/100 km: 20.2–19.3 (NEDC), 22.5–20.6 (WLTP); combined CO₂ emissions in g/km: 0; Audi Q4 Sportback 50 e-tron quattro: Combined electric power consumption in kWh/100 km: 20.9 – 17.6 (WLTP); 17.9 – 16.4 (NEDC); Combined CO₂ emissions in g/km: 0; Information on fuel/power consumption and CO₂ emissions in ranges depending on the chosen equipment level of the car. Audi A6 e-tron concept: The vehicle shown here is a concept car that is not available as a production model.

We benefit greatly from the synergies in the Volkswagen Group both in hardware and software: PPE scales high-performance features for the broader market.

Hardware BEV PLATFORMS

Software

J1



C A R I A D

PPE

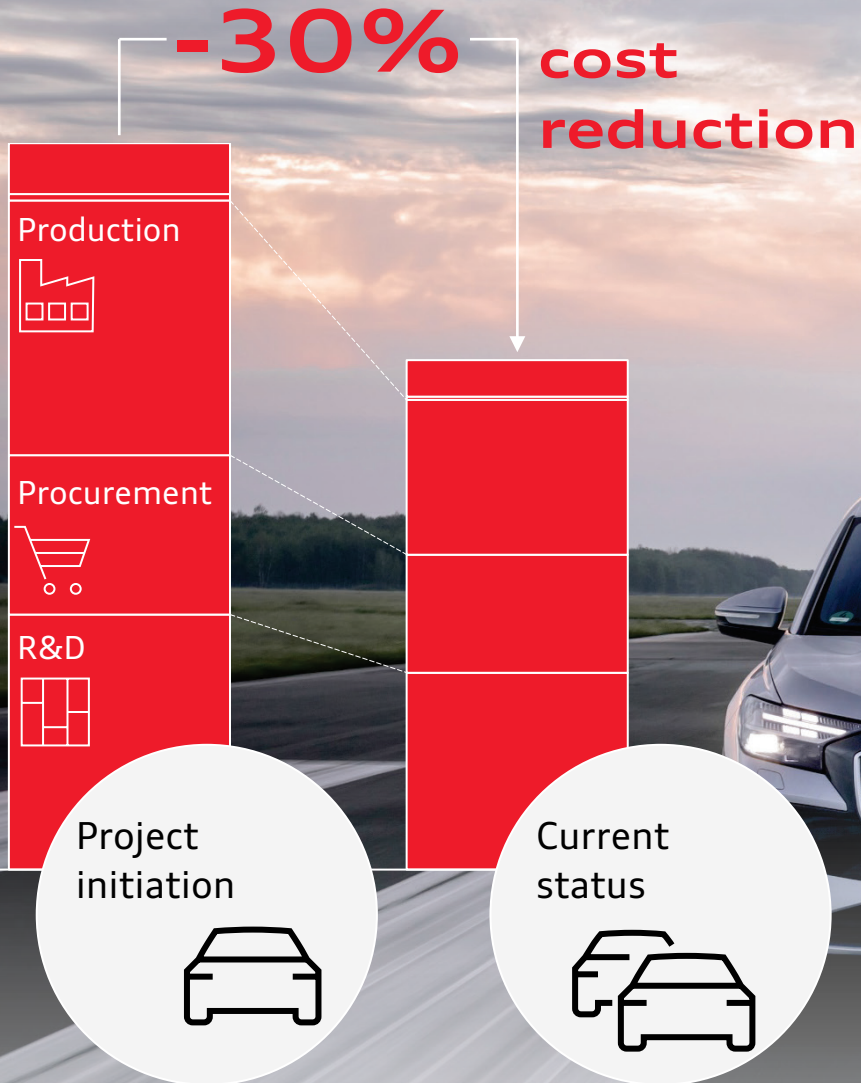


UNIFIED TECHNOLOGY
AND SOFTWARE PLATFORM
FOR ALL VEHICLES
IN THE VOLKSWAGEN GROUP

MEB



With the MEB Audi has effectively realized synergies and achieved substantial cost savings.

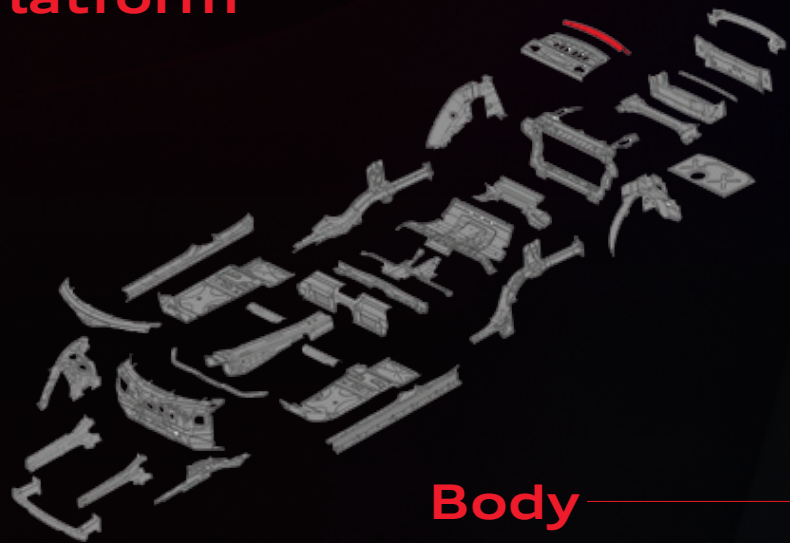


- Consistent platform use
- Reduced prototypes/tests
- Shared production site
- Synchronization of assembly
- Additional body shape
- Joint body parts procurement

Audi Q4 Sportback 50 e-tron quattro: Combined electric power consumption* in kWh/100 km: 20.9 -17.6 (WLTP); 17.9 - 16.4 (NEDC); Combined CO₂ emissions* in g/km: 0 (NEDC); Information on fuel/power consumption and CO₂ emissions in ranges depending on the chosen equipment level of the car.

Audi e-tron GT and Porsche Taycan are using carry-over parts on a large scale, thanks to J1 platform.

Platform



Body



Interior



- carry-over parts
- modified parts
- new parts

Shared platform is not an obstacle to realize brand-specific vehicle design and characteristics.

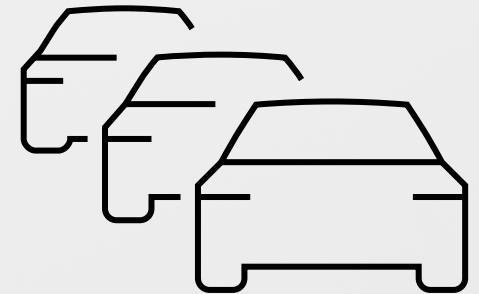
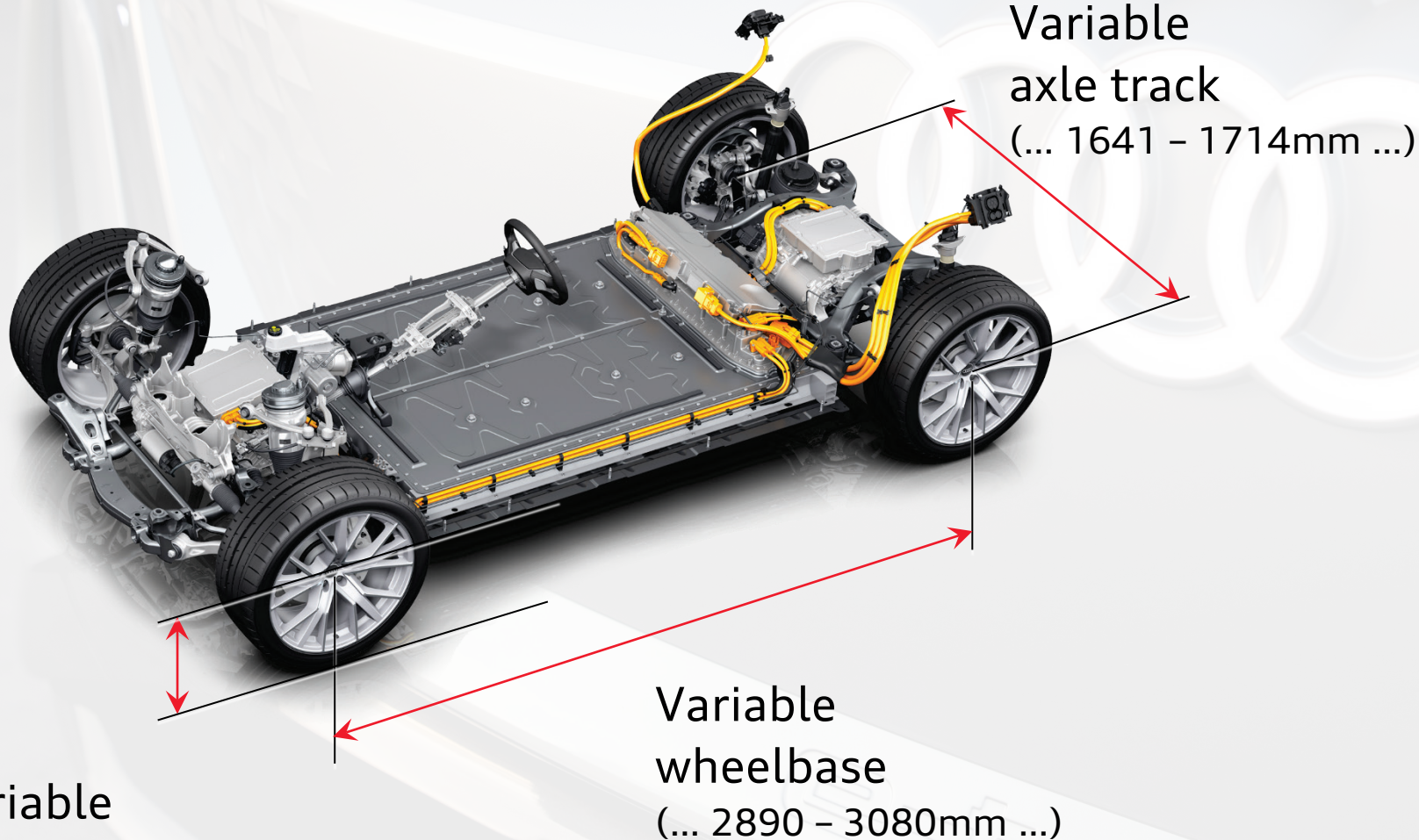


Taycan 4S : Combined electric power consumption* in kWh/100 km: 28.7 – 26.2 (NEDC); combined CO₂ emissions* in g/km: 0 (NEDC); Information on fuel/power consumption and CO₂ emissions in ranges depending on the chosen equipment level of the car.



Audi RS e-tron GT: Combined electric power consumption* in kWh/100 km: 20.2–19.3 (NEDC), 22.5–20.6 (WLTP); combined CO₂ emissions* in g/km: 0 (NEDC); Information on fuel/power consumption and CO₂ emissions in ranges depending on the chosen equipment level of the car.

PPE provides high level of flexibility, enabling products in B to D segment across the Volkswagen Group.



A6 e-tron concept shows: the PPE platform will enable superior performance.



Design

Breathtaking design with
a cW value of just 0.22
>700 km WLTP range



Charging

800V charging with
up to 270 kW
300 km in 10 min
5 → 80% in <25 min



Performance

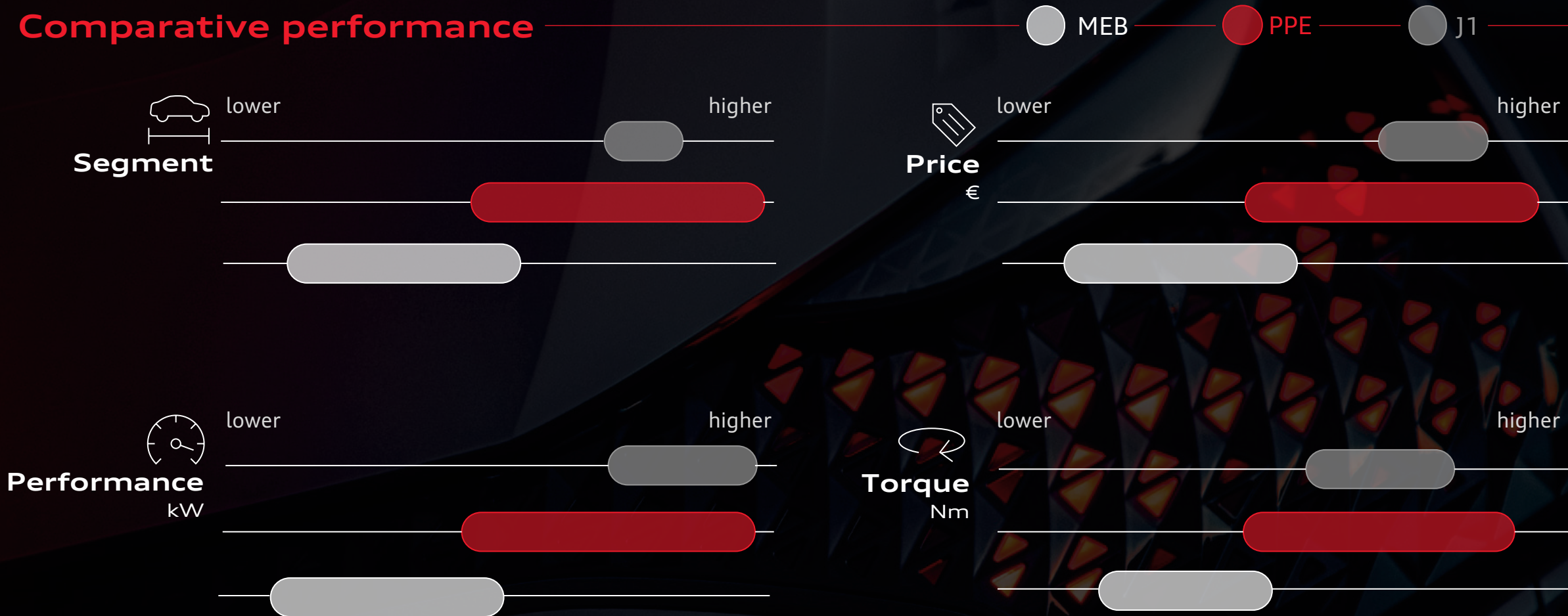
power output up to 350 kW
and a torque of 800 Nm
Audi air suspension with
adaptive dampers



Audi A6 e-tron concept: The vehicle shown here is a concept car that is not available as a production model.

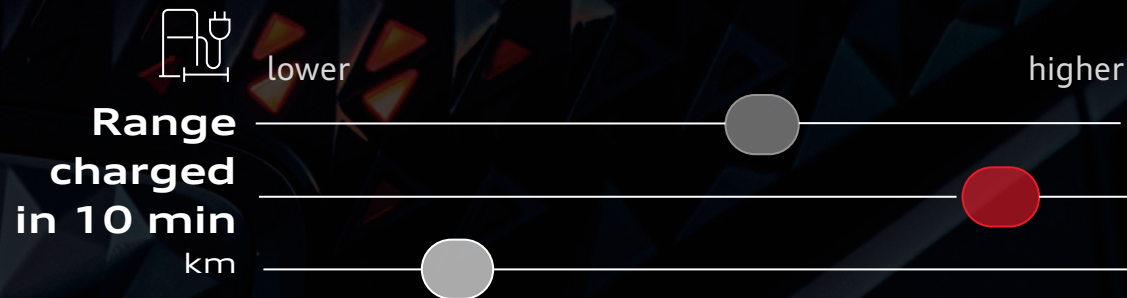
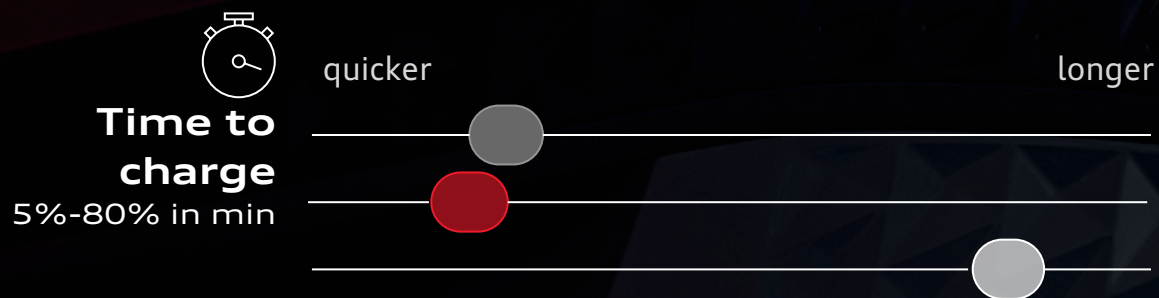
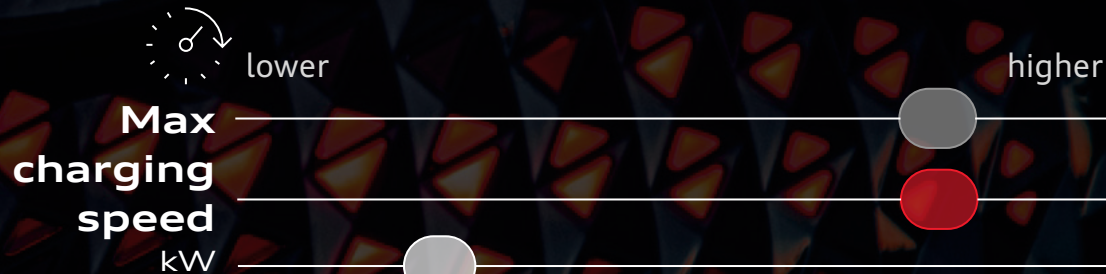
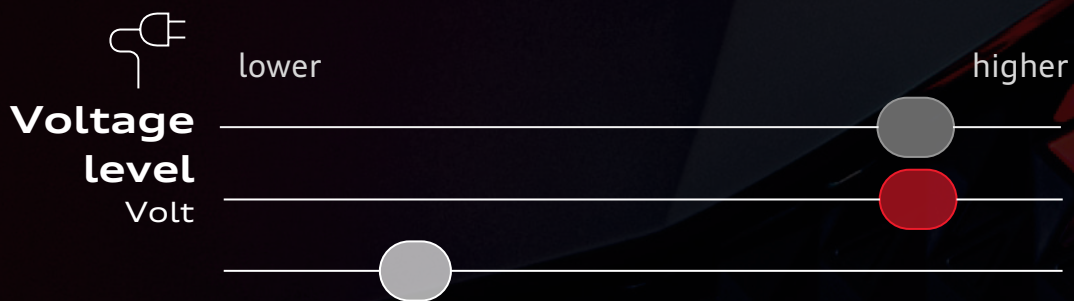
With the PPE we scale the high-end performance of the J1 platform and cover broad range of customer segments.

Comparative performance



With the PPE we scale the high-end performance of the J1 platform and cover broad range of customer segments.

Comparative performance



With the PPE platform we continue to balance differentiation with the use of carry-over parts.

**Audi Q6 e-tron
vs. Porsche Macan
(BEV)**

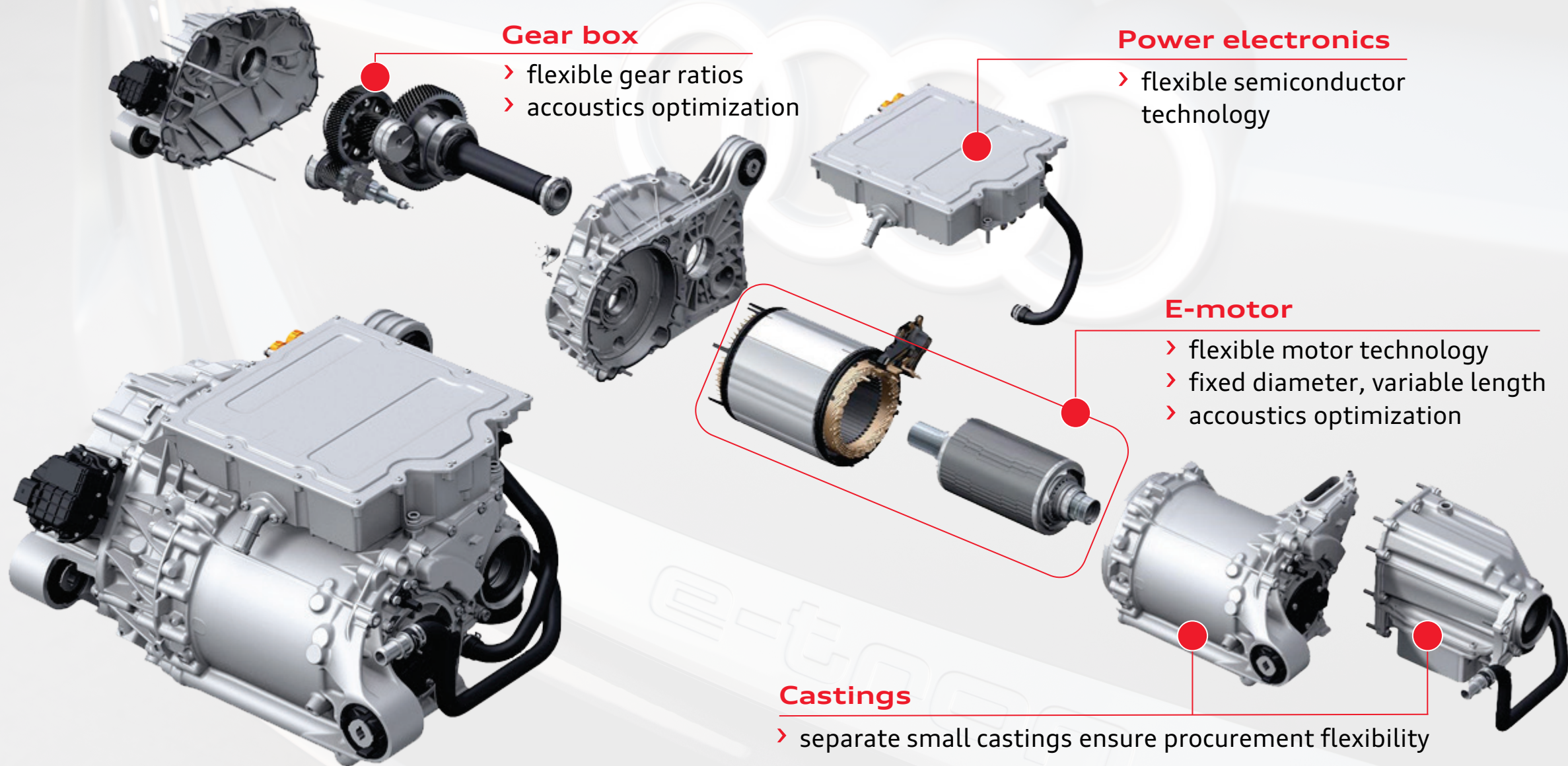


**Audi Q6 e-tron
vs. Audi A6 e-tron**



● carry-over parts ● modified parts ● new parts

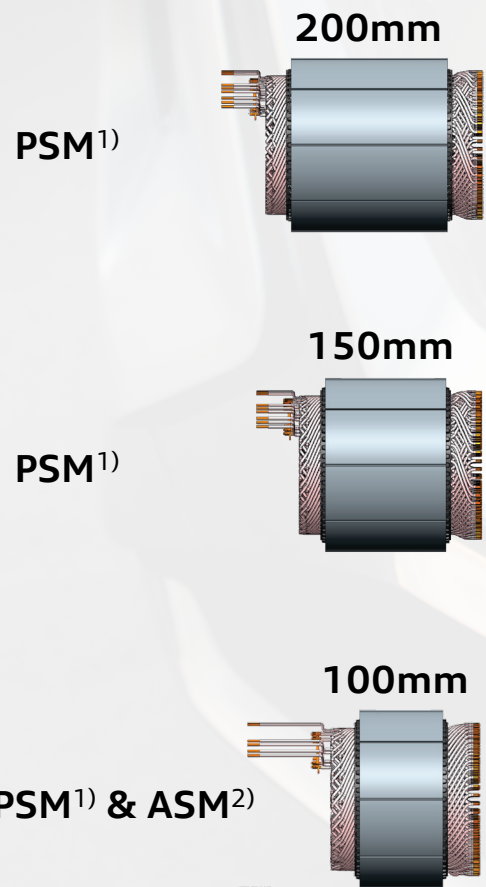
E-axle development with the design-to cost approach: reduced variance combined with flexibility in key components enabling highest efficiency and performance.



The key components in the PPE e-axle kit follow a strict modular logic with a high level of carry-over parts.

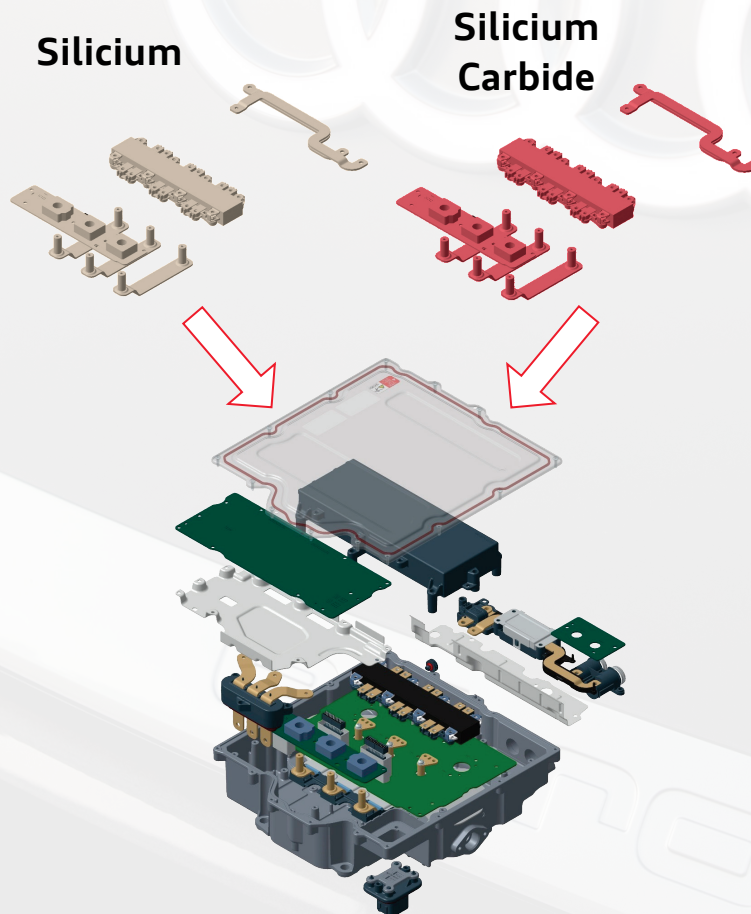
Electric motors

same diameter / 3 different lengths



Power electronics

semiconductors Si & SiC



Gearbox

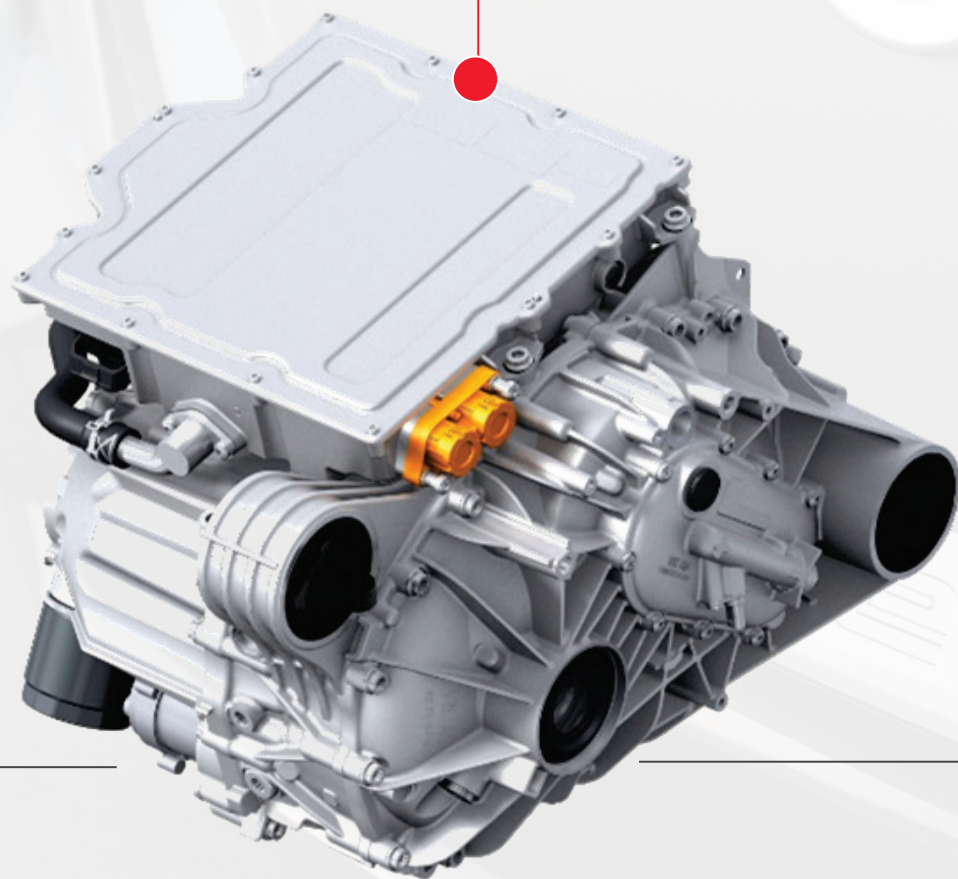
up to 4 different gear ratios realized via 1st reduction stage



¹⁾ PSM: Permanentterregte Synchron Maschine (permanent synchronous motor); ²⁾ ASM: Asynchron Maschine (asynchronous motor)

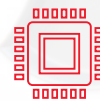
Technological advances and comprehensive system optimization lead to improved efficiency and performance.

PPE e-axle



800V HV system

→ ultra fast charging capability



Silicium carbide semiconductors

→ highest efficiency in power electronics



Oil system for gears and e-motor with electric oil pump and dry sump lubrication

→ low friction and enhanced efficiency

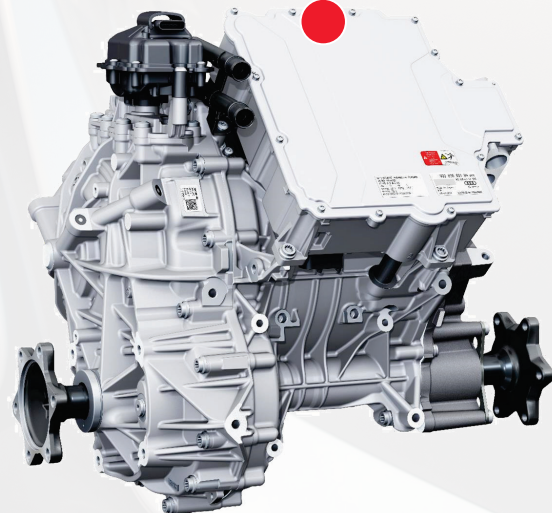


E-motor with hairpin winding and direct oil cooling for stator and rotor

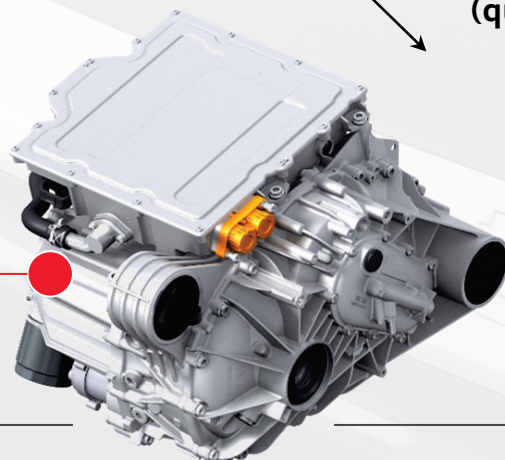
→ high power density / reduction of rare earths

Major improvements in e-axle parameters result from know-how ramp up thanks to in-house development and industrialization.

e-tron electric front e-axle



comparable PPE electric front e-axle



e-axle box dimensions

- ~30%



e-axle weight

- ~20%



e-motor dimensions

- ~35%



e-axle efficiency losses

halved

Component level

vehicle level (quattro)



system performance

+ ~33%



drivetrain costs

- ~15%



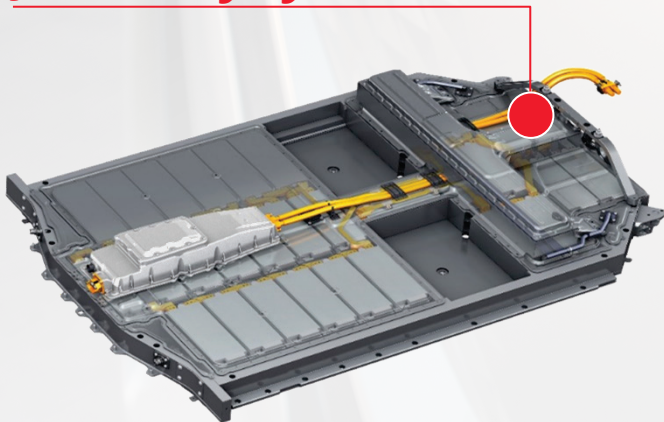
energy consumption¹⁾

- ~30%

¹⁾ Based on the full vehicle, including efficiency improvements in other components.

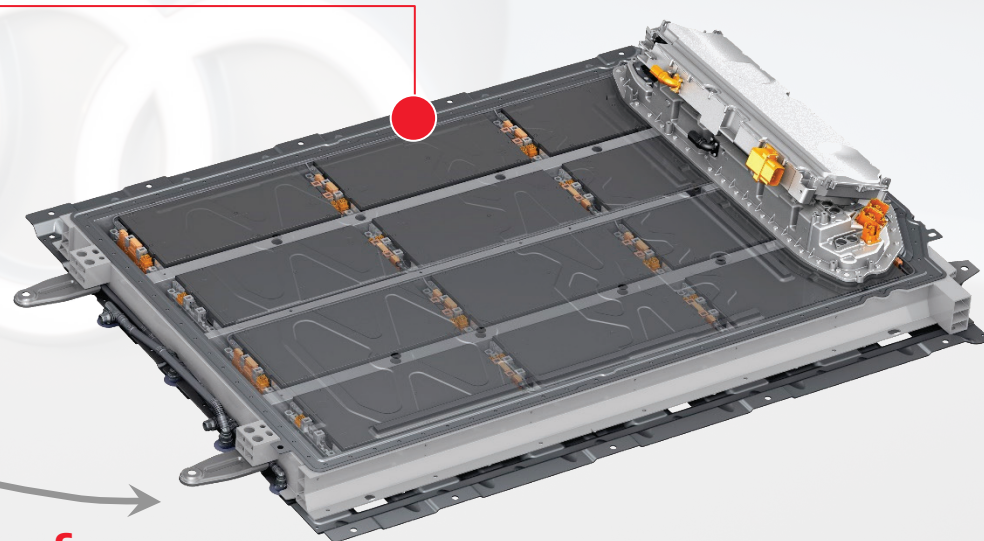
PPE battery system is “best of two worlds” – combines high performance with industrialization benefits and ensures capabilities to integrate new technology.

J1 battery system



- > 800V
- > 93kWh (gross)
- > 32 modules (pouch)
- > Performance: 475kW
- > Charging power: 270kW
- > High-tech thermal management
- > Vehicle specific design
- > Low volume manufacture

PPE battery system



“best of two worlds”

MEB battery system



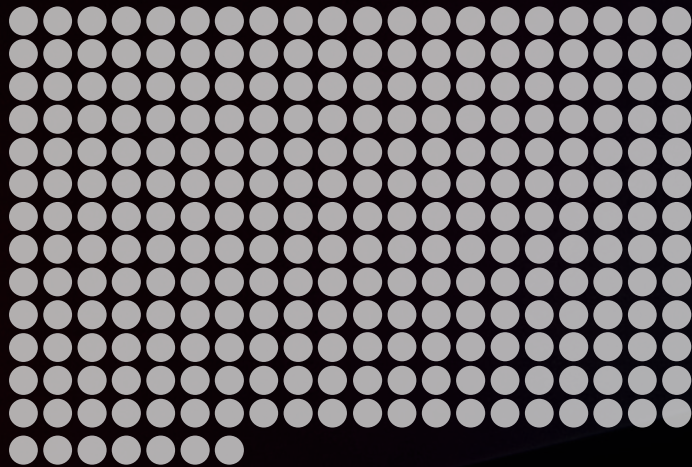
- > 400 V
- > 82kWh (gross)
- > 12 modules (prismatic & pouch)
- > Performance: 220kW
- > Charging power: 125kW
- > Compact design
- > High volume
- > Industrialization

- > 800V
- > 100 kWh (gross)
- > 12 modules (prismatic)
- > Performance: ~ 475kW
- > Charging power: 270kW
- > High-tech thermal management
- > Compact design
- > High volume
- > Industrialization

Premium customer experience: Transition from single option to focused option packages enables reduction of complexity.

Today

Single options



Option packages



Q6 e-tron

example



Packages definition based on customer experiences



Convenient decision making by customer



Sustainable premium look and feel through point-based evaluation



Stable residual values

The Chinese market plays an important role in leveraging scale advantages – Audi FAW NEV Company will be a major pillar.



Local production of PPE-based vehicles in Changchun



Scheduled production start in 2024



60% share held by AUDI AG and Volkswagen Group China



Major contribution to CO₂ emissions reduction in China



Cost-effective realization of the market specific models



Contribution reflected in the operating result

Audi FAW New Energy Vehicle Company

Audi A6 e-tron concept: The vehicle shown here is a concept car that is not available as a production model.

End-to-end electronics architecture E³ 2.0 is the key technology on the way to a software enabled car company.

E³ 2.0 Architecture C A R I A D



Hardware



Software (incl. VW.OS)



Cloud

Focus on **seamless hardware & software**

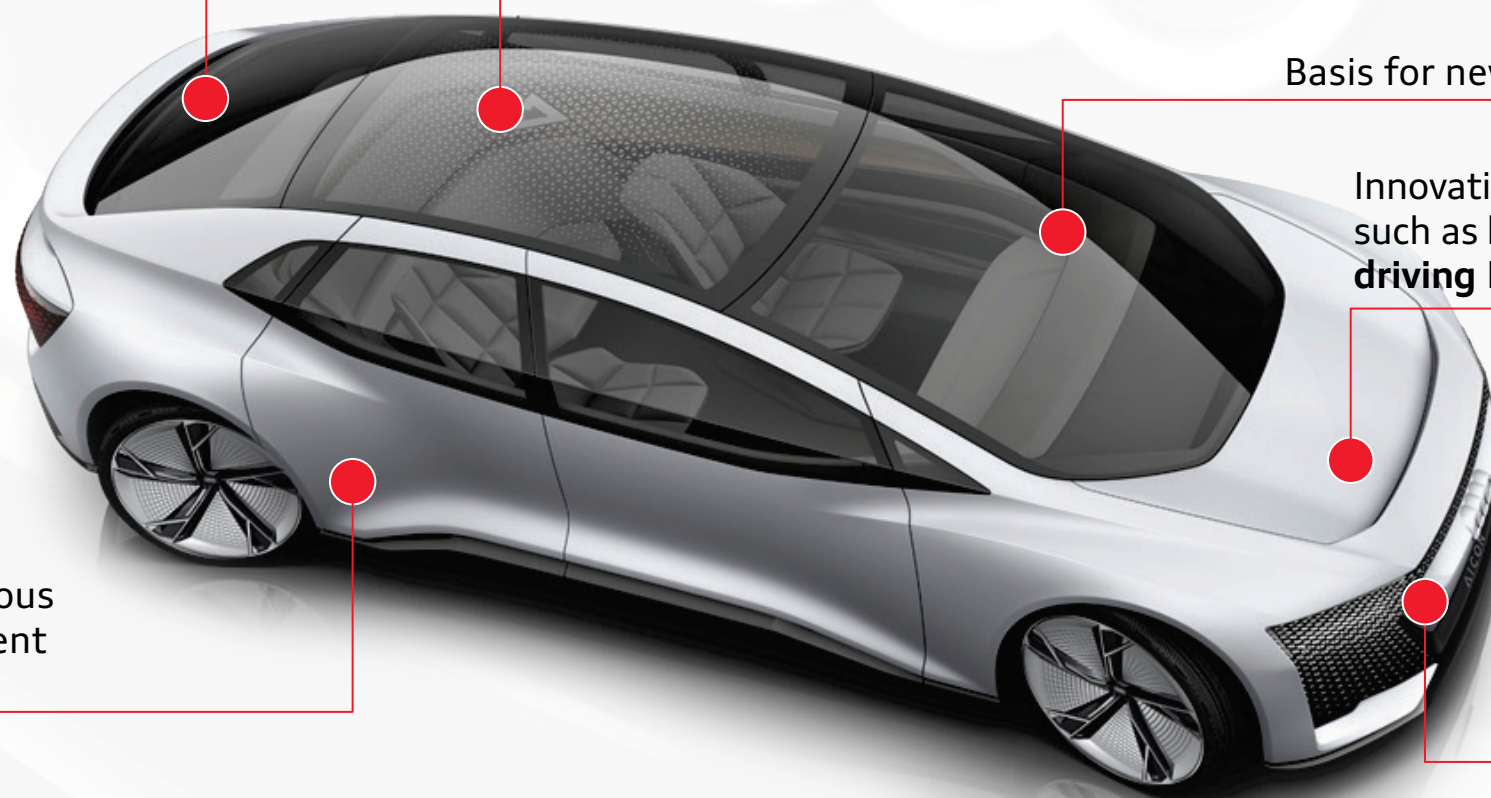
Worldwide scalable from **A0 to D segment**

Basis for new business models

Innovative customer functions such as **highly automated driving L4** and **Digital Assistant**

Over-the-air updates & upgrades enable continuous extension and advancement in customer experience

Big Loop foundation by data collection



The next stage in the Volkswagen Group battery strategy will be the unified cell.



Optimized procurement

**Unified cell /
Cell-to-pack rollout**



Value chain CO₂ emissions optimization

Supplier/partner selection takes CO₂ emissions into account e. g. Northvolt



Know-how build up and new technology readiness

Technical possibility of integration of new cell chemistries in the unified cell



Cost & complexity reduction

80% of VW Group applications covered by unified cell by 2030

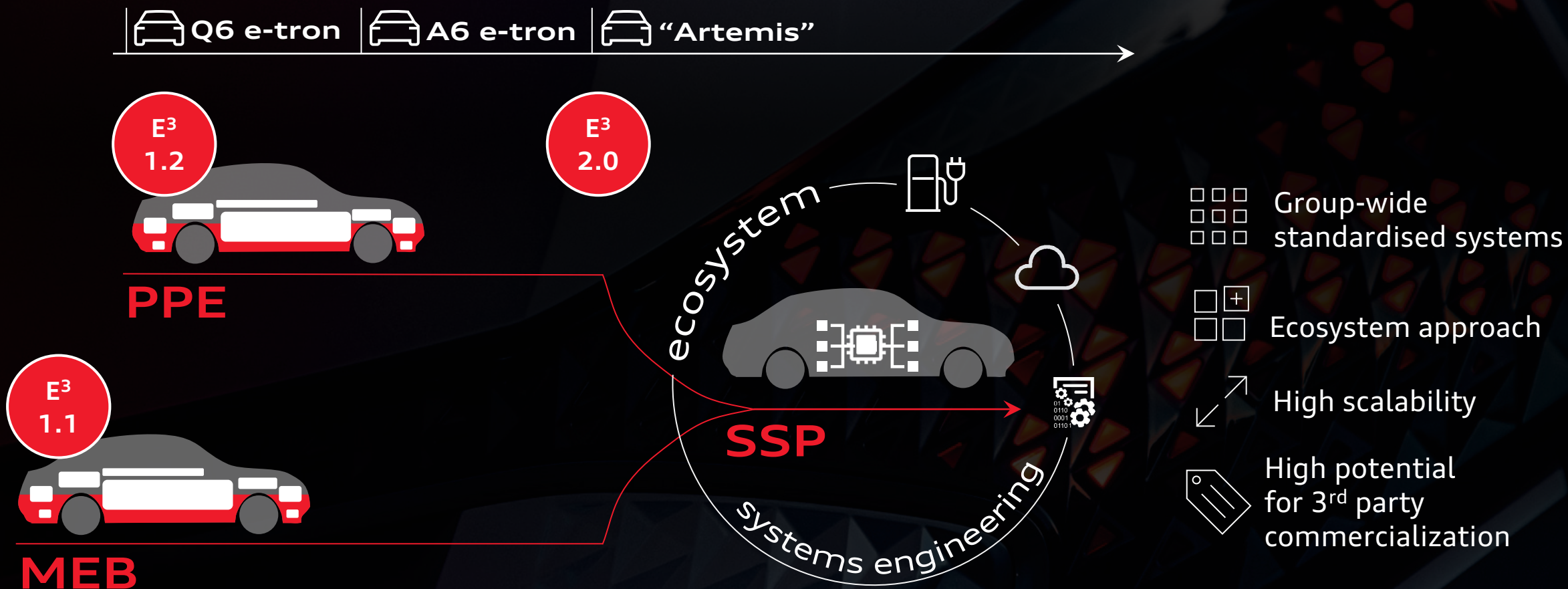


Cell design	-15%
Production process	-10%
Cathode/anode material	-20%
Battery system concept	-5%

The integration of hard- and software will be complete with the SSP (Scalable Systems Platform).

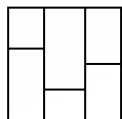
Modular Toolkit

Scalable Systems Platform



Schematic representation does not reflect number of modules.

“Vorsprung” ready for the next level.



Transforming our claim of technological leadership for the future



Focus on the ecosystem beyond the vehicle



Software competence thanks to close alliance with CARIAD



Volkswagen Group-wide synergetic end-to-end approach: systems engineering





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