



UBS Flagship German Trip

Jürgen Rittersberger | Member of the Board of Management of AUDI AG Finance and Legal Affairs

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

Disclaimer

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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 Such statements are valid on the date of publication and can be superseded.

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Successful H1 2021

DELIVERIES
TO CUSTOMERS
Audi Brand

982k

OPERATING PROFIT

€3.1 bn

OPERATING RETURN

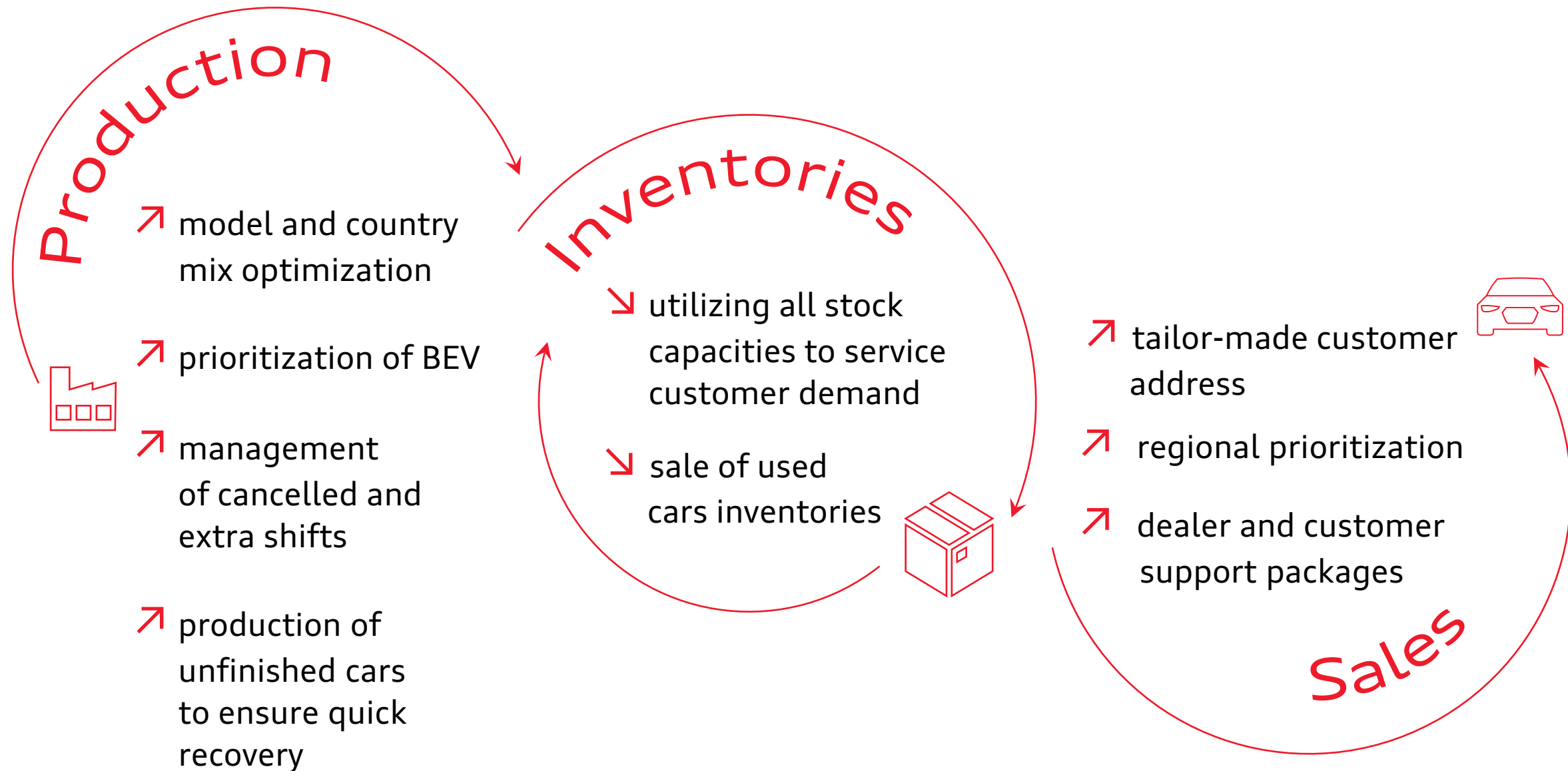
10.7%

NET CASH FLOW








€5.5 bn

Audi RS e-tron GT: Combined electric power consumption in kWh/100 km: 20.2–19.3 (NEDC); Combined CO₂ emissions in g/km: 0; Information on electric power consumption and CO₂ emissions in ranges depend on the tires/wheels used as well as the selected equipment.

Comprehensive management of semiconductor shortage limited production losses and supported strong H1. Situation in H2 remains challenging.



2021 operating return guidance remains unchanged, net cash flow expected to be between €4.5bn to €5.5bn.

	2019	2020	2021 guidance	
 DELIVERIES TO CUSTOMERS Audi brand, in k units	1,846	1,693 -8.3% ↓	significantly above 2020	↗
 REVENUE in €bn	55.7	50.0 -10.2% ↓	significantly above 2020	↗
 OPERATING RETURN in % of revenue	8.1%	5.1% -3.0 ppt. ↓	between 7 and 9% strategic target corridor: 9-11%	↗
 CASH R&D RATIO in % of revenue	7.9%	7.3% -0.6 ppt. ↓	within the adjusted strategic target corridor of 6-7%	↘
 CAPEX RATIO in % of revenue	4.9%	3.8% -1.1 ppt. ↓	within the adjusted strategic target corridor of 4-5%	↗
 NET CASH FLOW in €bn	3.2	4.6 +45.2% ↗ new	between €4.5bn and €5.5bn	↗
 RETURN ON INVESTMENT in %	12.7%	7.4% -5.3 ppt. ↓	between 12 and 15% strategic target: above 21%	↗

Vorsprung

2030

AMBITION

 3m

CARS

p.a.

 RoS

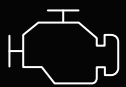
increasing
ESG
consideration

SUSTAINABLE
GROWTH

 30m

USERS

 >11%



LAST ICE SOP¹⁾
2025



LAST ICE EOP¹⁾
2033

1) Chinese market not included; SOP (Start of production); EOP (End of production);

Comprehensive action plan in the finance area will ensure operational performance and solid financial basis for the future.

SHORT-TERM 2021/22

Securing profitability



Margin-oriented volume steering



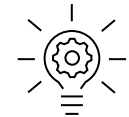
Operating performance

MID-/LONG-TERM

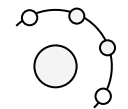
Sustainable value creation



Portfolio profitability



New business models



Brand group steering

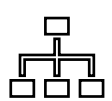


China business



ESG-performance

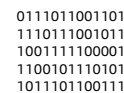
Team transformation



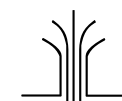
Organisational development



Powerful team



Digitalization boost



Compliance & governance

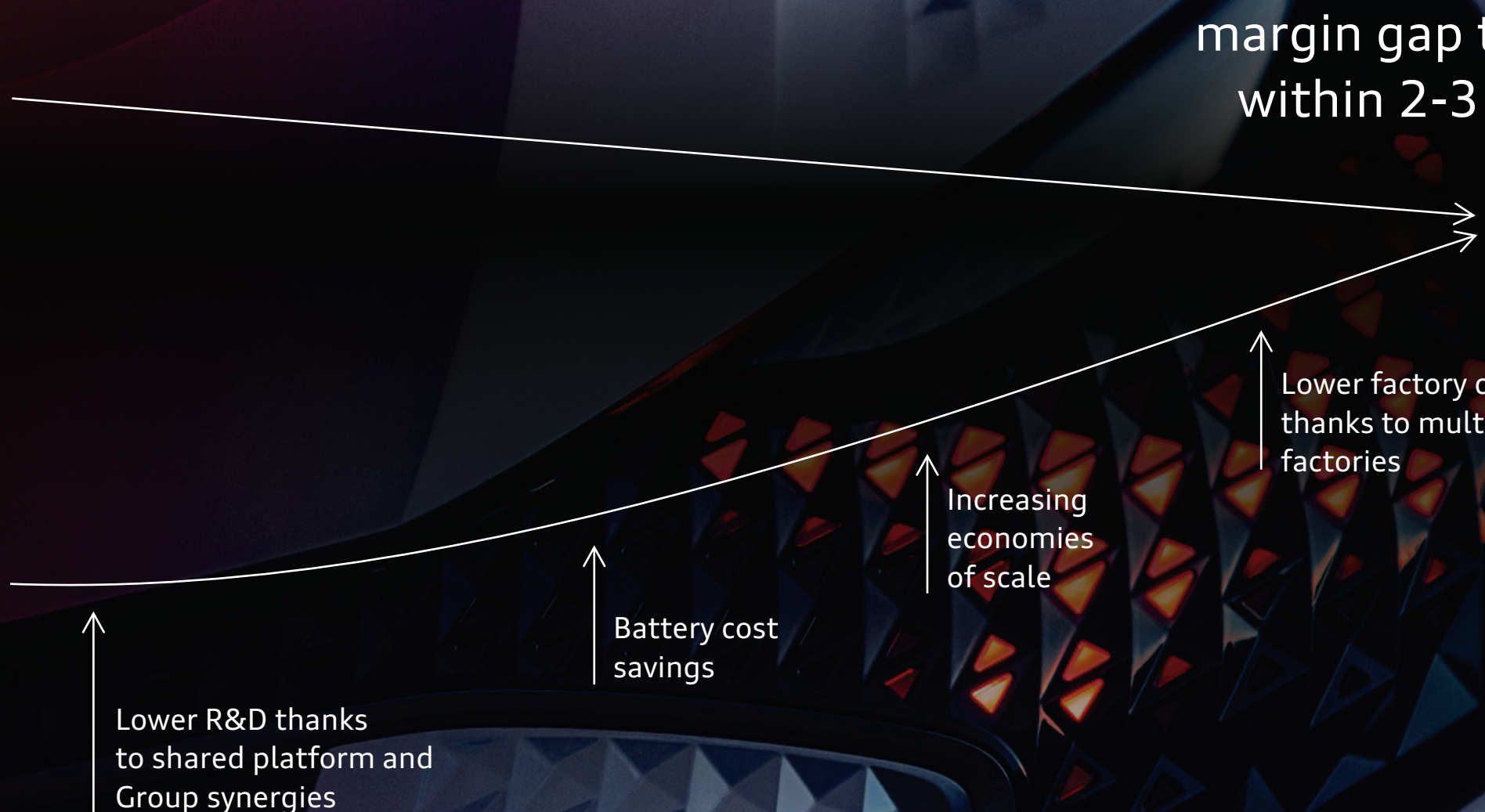
The margin gap between ICE and BEV is closing.



ICE
margin



BEV
margin



margin gap to close
within 2-3 years

Lower R&D thanks
to shared platform and
Group synergies

Battery cost
savings

Increasing
economies
of scale

Lower factory costs
thanks to multi-brand
factories

Comprehensive action plan in the finance area will ensure operational performance and solid financial basis for the future.

SHORT-TERM 2021/22

Securing profitability



Margin-oriented volume steering



Operating performance

MID-/LONG-TERM

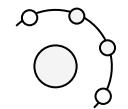
Sustainable value creation



Portfolio profitability



New business models



Brand group steering

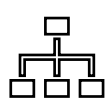


China business

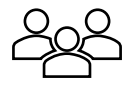


ESG-performance

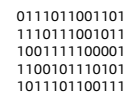
Team transformation



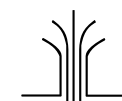
Organisational development



Powerful team



Digitalization boost



Compliance & governance



UBS Flagship German Trip

Fermín Soneira Santos | Head of Product Line for Electric Models from the A to C Segment
Dr. Joachim Doerr | Project Lead PPE

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

Audi's e-roadmap is well underway.

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



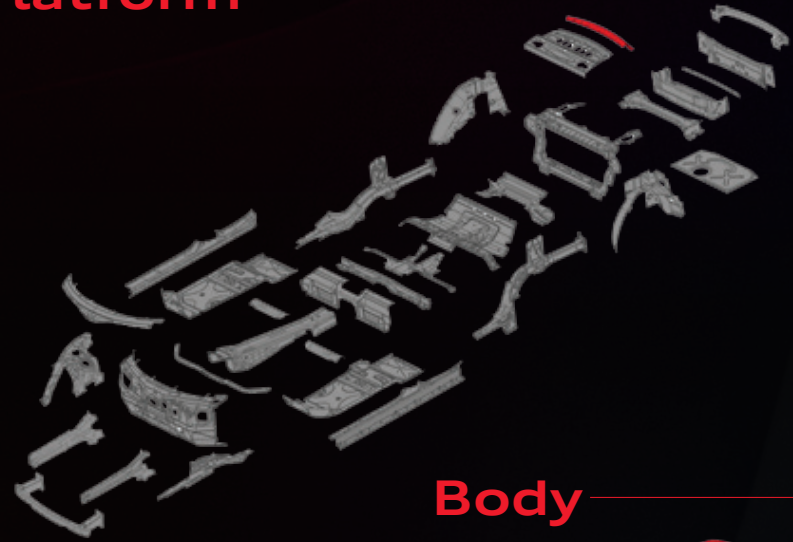
UNIFIED TECHNOLOGY
AND SOFTWARE PLATFORM
FOR ALL VEHICLES
IN THE VOLKSWAGEN GROUP

MEB



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.

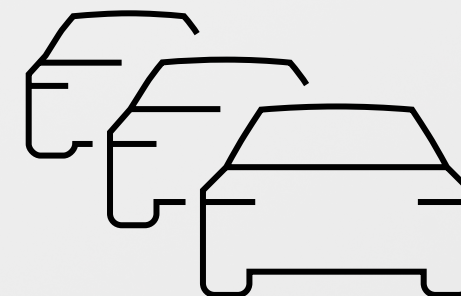
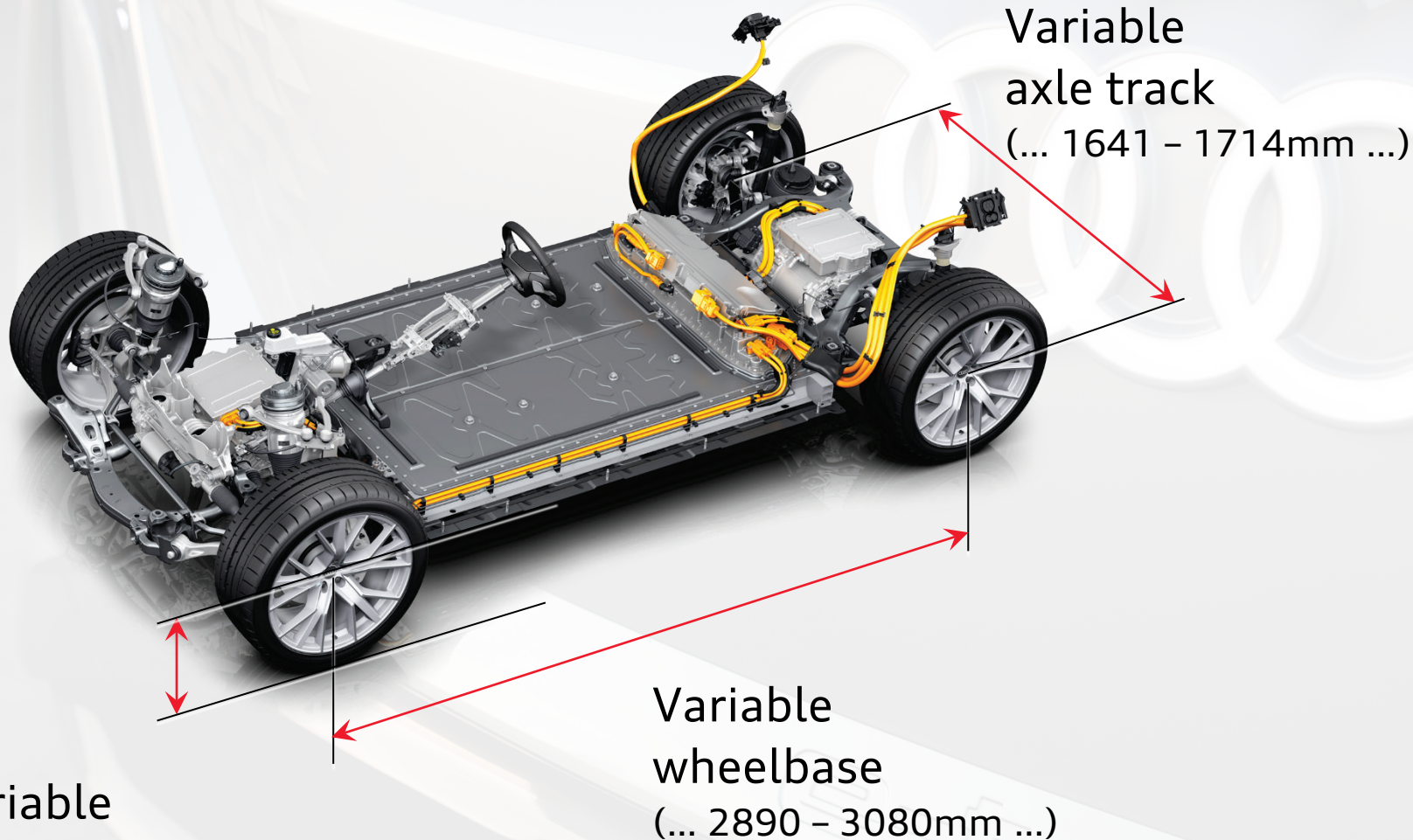


Taycan 4S : Combined electric power consumption* in kWh/100 km: 28.7 – 26.2 (NEDC); combined CO₂ emissions* in g/km: 0 (NEDC); Information on fuel/power consumption and CO₂ emissions in ranges depending on the chosen equipment level of the car.



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

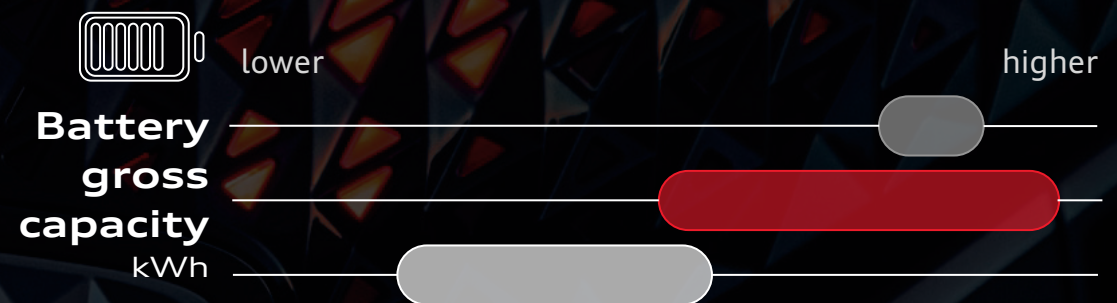
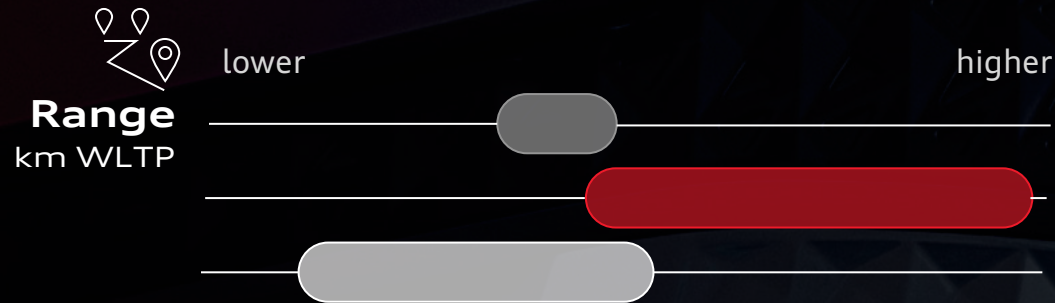
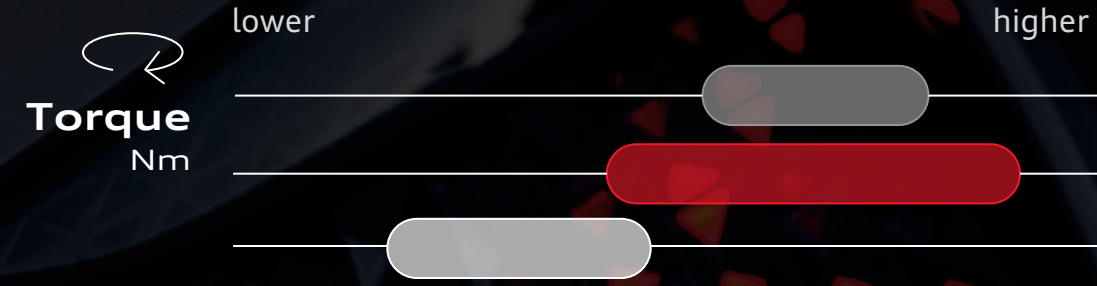
power output up to 350 kW
and a torque of 800 Nm
Audi air suspension with
adaptive dampers



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

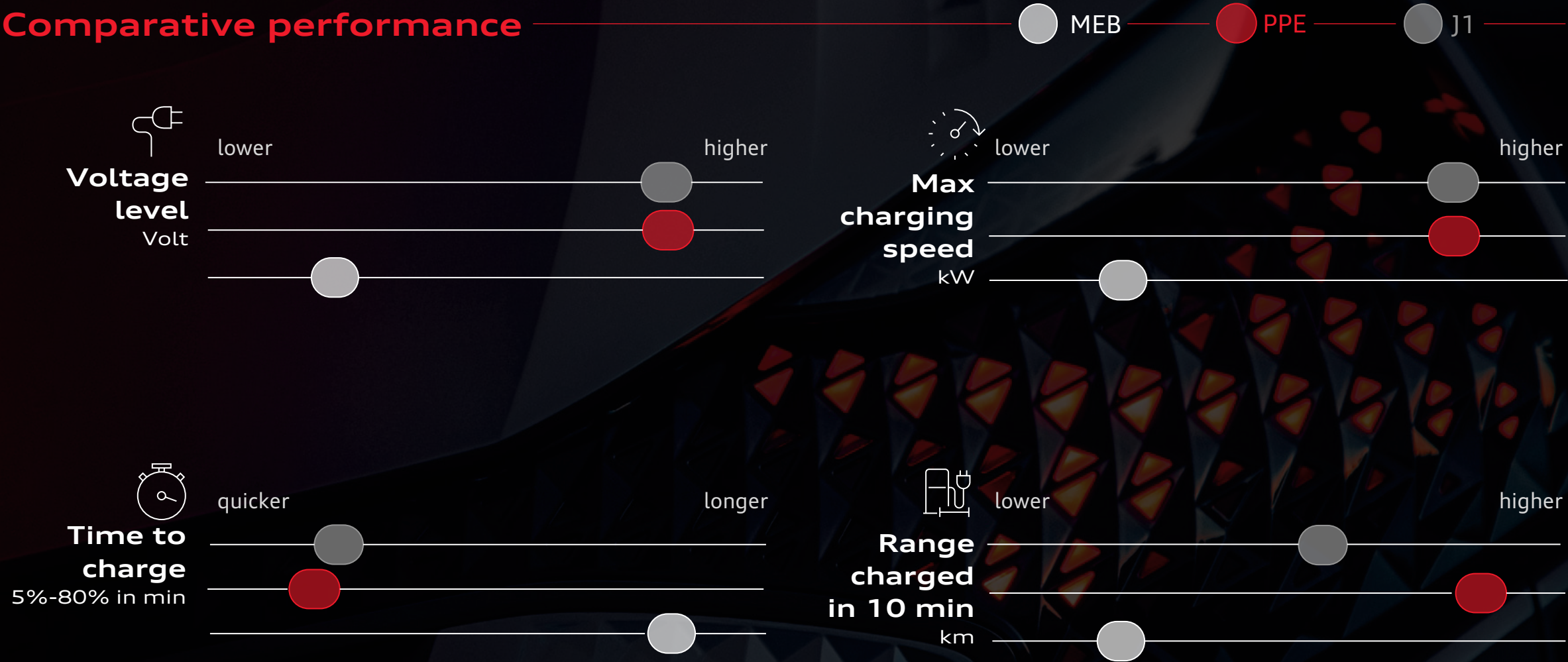
With the PPE we scale the high-end performance of the J1 platform and cover broad range of customer segments.

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)

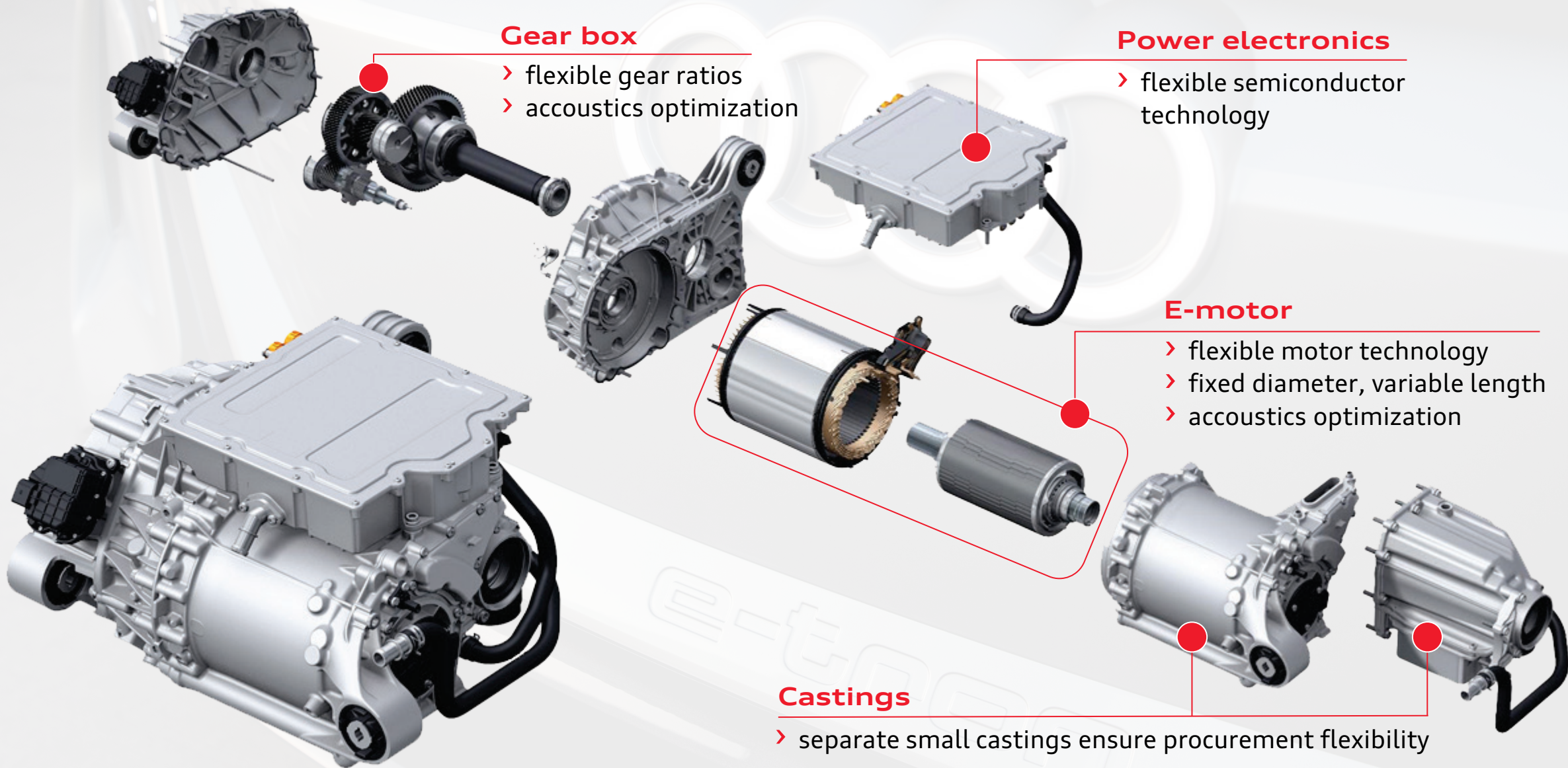


Audi Q6 e-tron vs. Audi A6 e-tron



● carry-over parts ● modified parts ● new parts

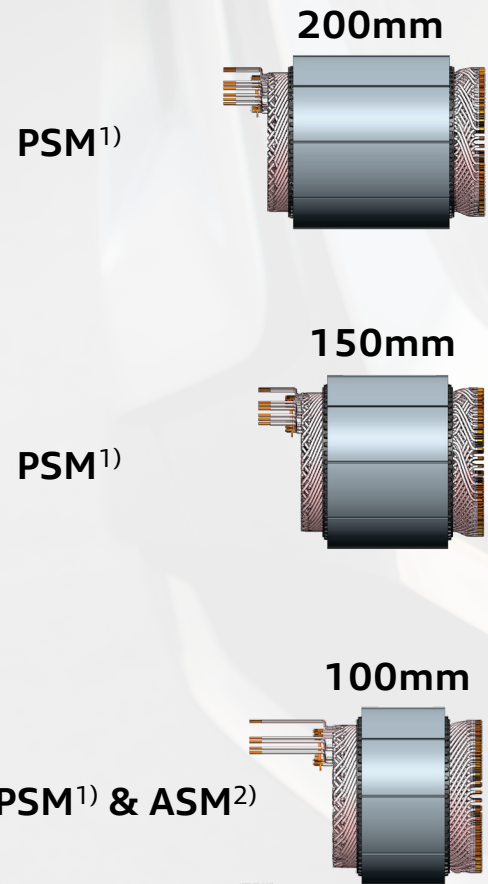
E-axle development with the design-to cost approach: reduced variance combined with flexibility in key components enabling highest efficiency and performance.



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

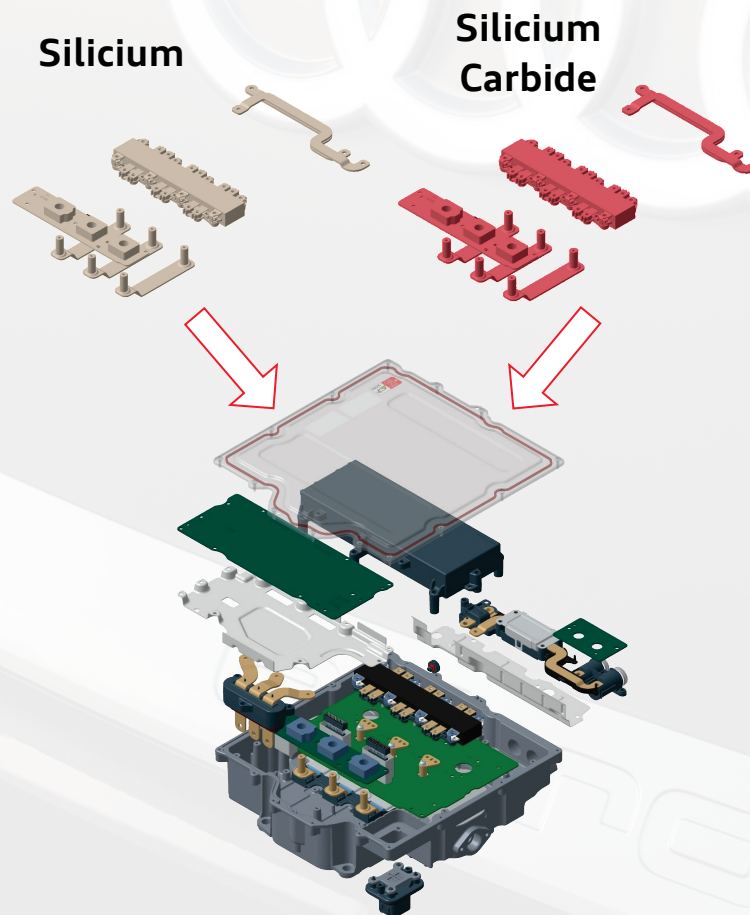
Electric motors

same diameter / 3 different lengths



Power electronics

semiconductors Si & SiC



Gearbox

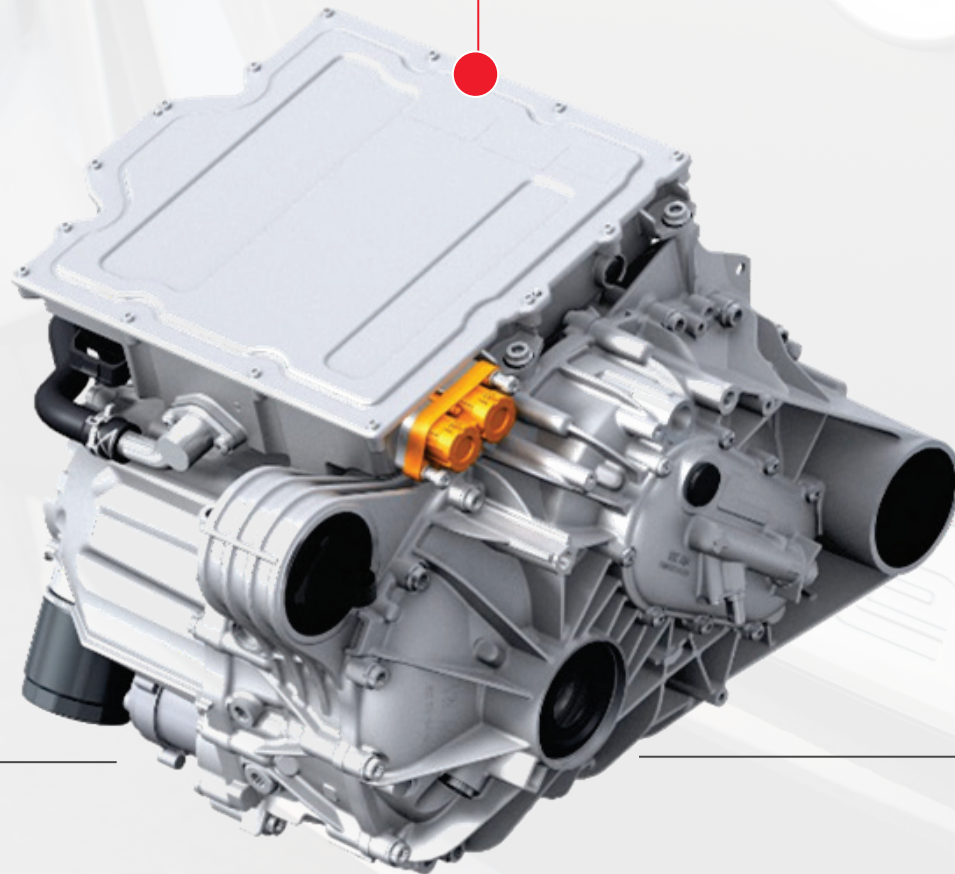
up to 4 different gear ratios realized via 1st reduction stage



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

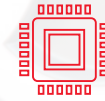
Technological advances and comprehensive system optimization lead to improved efficiency and performance.

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

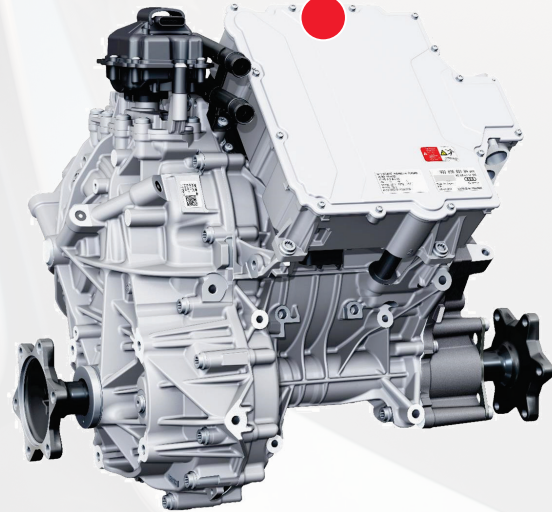


E-motor with hairpin winding and direct oil cooling for stator and rotor

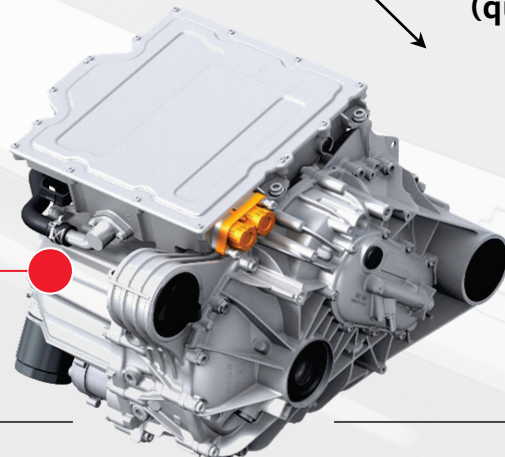
→ high power density / reduction of rare earths

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%



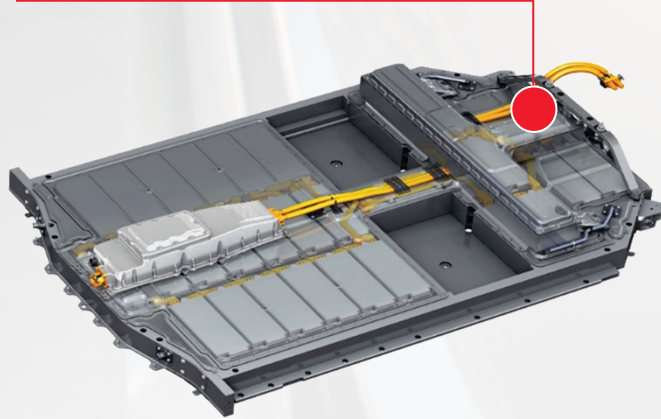
energy consumption¹⁾

- ~30%

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

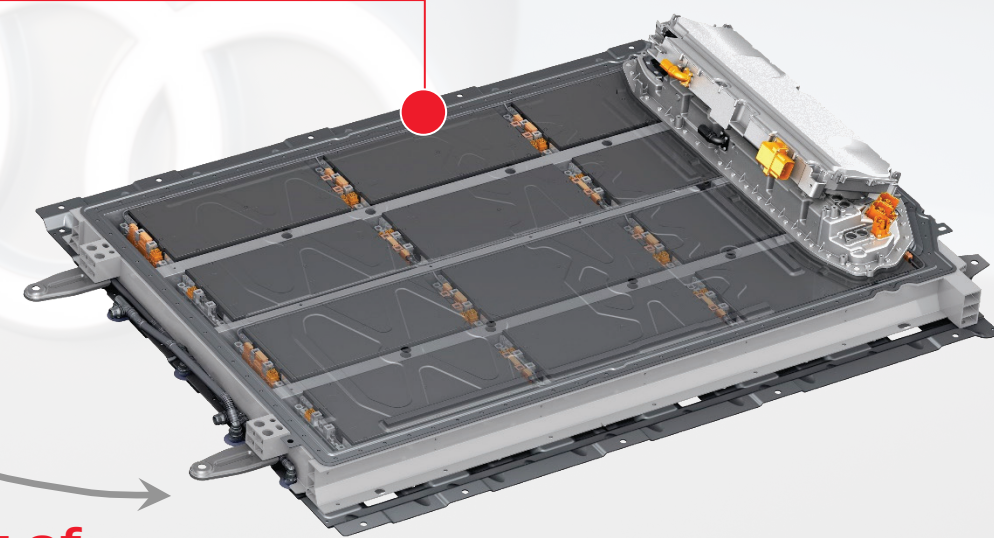
PPE battery system is “best of two worlds” – combines high performance with industrialization benefits and ensures capabilities to integrate new technology.

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

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

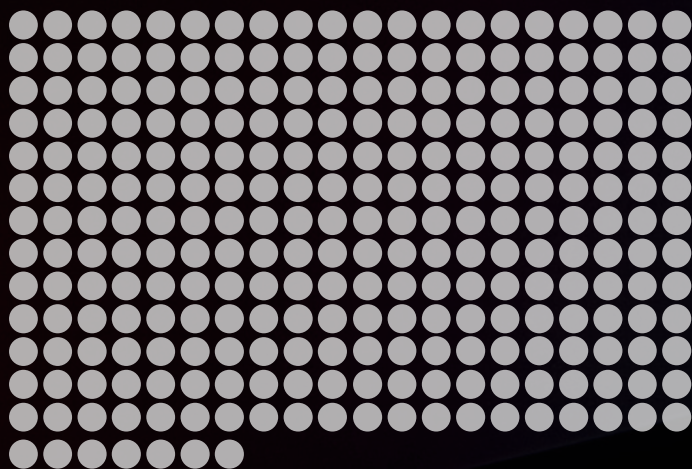


Cell design	-15%
Production process	-10%
Cathode/anode material	-20%
Battery system concept	-5%

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

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**

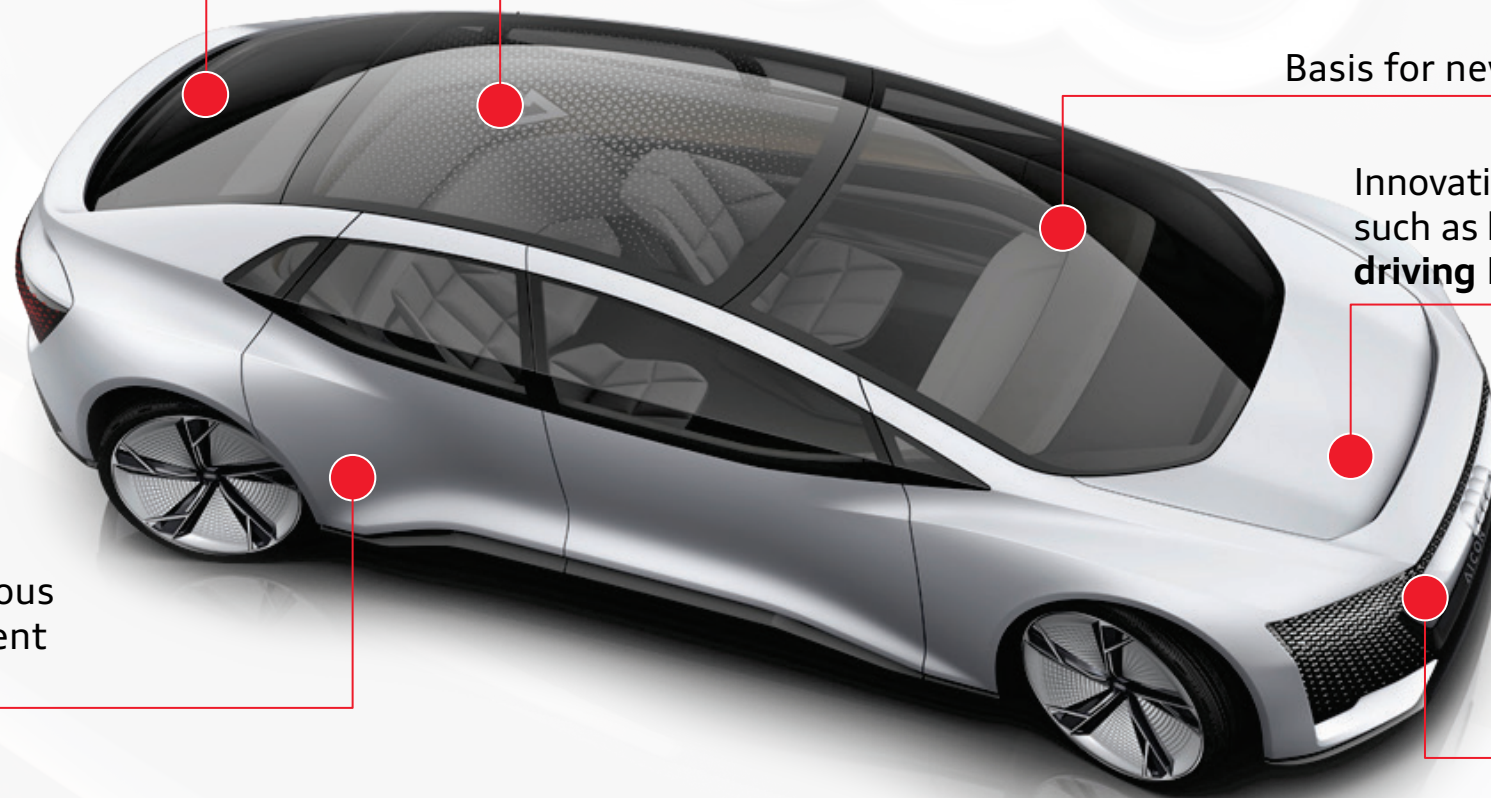
Worldwide scalable from **A0 to D segment**

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

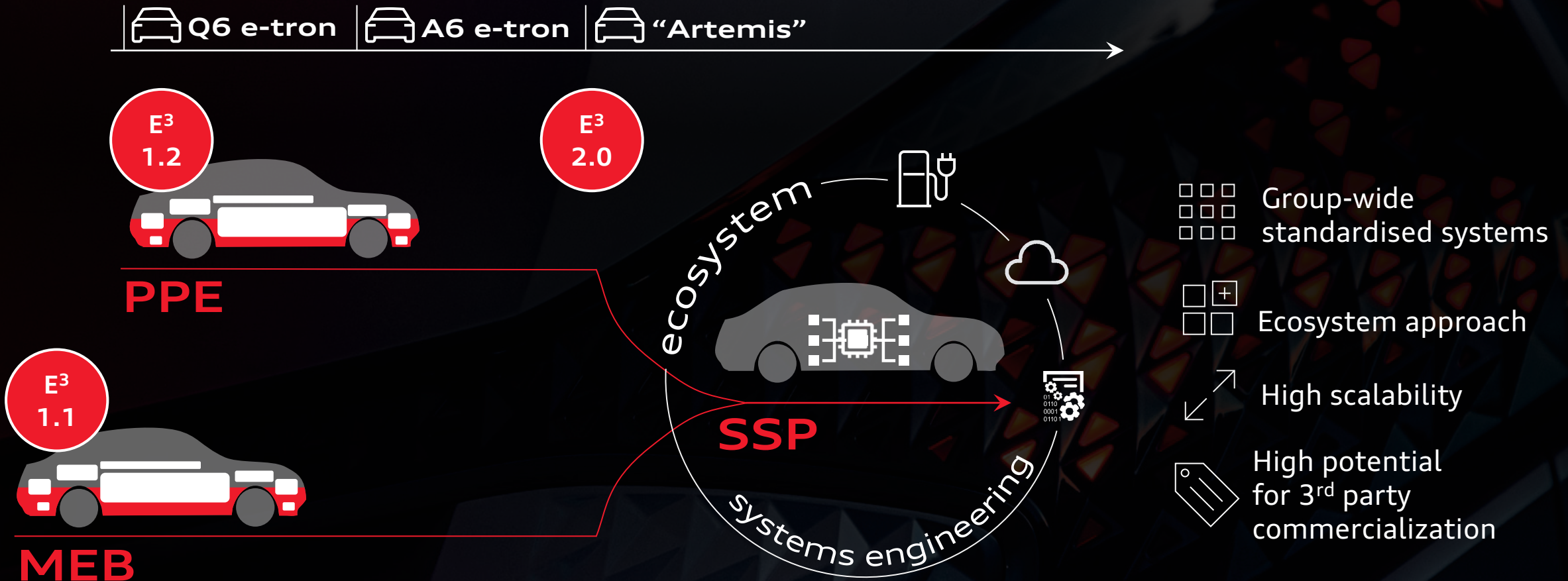
Big Loop foundation by data collection



The 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.



grandsphere
concept



Audi grandsphere concept: The vehicle shown here is a concept car that is not available as a production model.

A silver Audi A6 e-tron concept car is shown in profile, parked on a dark, paved surface. The background features a range of mountains under a clear blue sky. In the upper left corner, there are four overlapping white circles of varying sizes, arranged in a horizontal line. The car has a sleek, aerodynamic design with large, multi-spoke wheels and a prominent front grille with the Audi logo.

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