THE NEW BMW 7 SERIES.
DEEP DIVE EFFICIENCY AND POWERTRAIN.

THE NEW BMW 7 SERIES.
DEEP DIVE EFFICIENCY AND POWERTRAIN.

THE NEW BMW 7 SERIES.
DEEP DIVE EFFICIENCY AND POWERTRAIN.

1 **Efficiency:**
Our approach, strategy and Efficient Dynamics features of the new BMW 7 Series.

2 **Powertrain:**
Three levels of Electrification: 48 Volt tech combined with new ICE engines, Gen5 PHEV tech and Gen5 BEV tech.

THE NEW BMW 7 SERIES.
WHY IS EFFICIENCY SO IMPORTANT TO US?

Sustainability
The green BEV

Our customers experience
efficiency in a new dimension.

Every-Day use
External conditions

Long-Distance
Highways

Charging
Time & Efficiency

Regulations
Individual vehicle
and fleet

THE NEW BMW 7 SERIES.
REAL-WORLD RANGE DELIVERED BY BMW.

› BMW i4 and BMW iX perform in real-world media tests.

edmunds

TESTED: 2022 BMW iX SUV Crushes EPA Range Estimate in the Real World.

There's a new No. 1 electric SUV on our leaderboard.

BMW rockt US-Reichweiten-Test
Der US-amerikanische EPA-Testzyklus gilt als besonders hart, trotzdem überzeugten BMW i4 und das SUV iX mit Top-Ergebnis!

Bild

E-SUV kommt viel weiter als versprochen

auto motor und sport

US-Datenexperten haben die echte Reichweite des BMW iX xDrive 50 ermittelt – mit starkem Ergebnis. Auch der ADAC bestätigt die realistische WLTP-Angabe.

BMW's iX delivers its official range in our tests**, while others typically have 18% less** range than claimed.

Which?

"Efficiency, not range, is BMW's true achievement."

BMW i4 eDrive40 review: the electric car better than the Tesla Model 3 – and for a good reason

★★★★★ 5/5

The Telegraph

"End of the ICE Age"
the i4 **"...**takes full advantage of all the same Gen5 BMW electric drive tech."

car

CAR AND DRIVER

The BMW i4 "scored 280 miles of range. Just two miles short of its EPA estimate."

Where This Vehicle Ranks

BMW i4
STARTING AT: $56.895

Tesla Model 3
STARTING AT: $48.440

Polestar Polestar 2
STARTING AT: $49.800

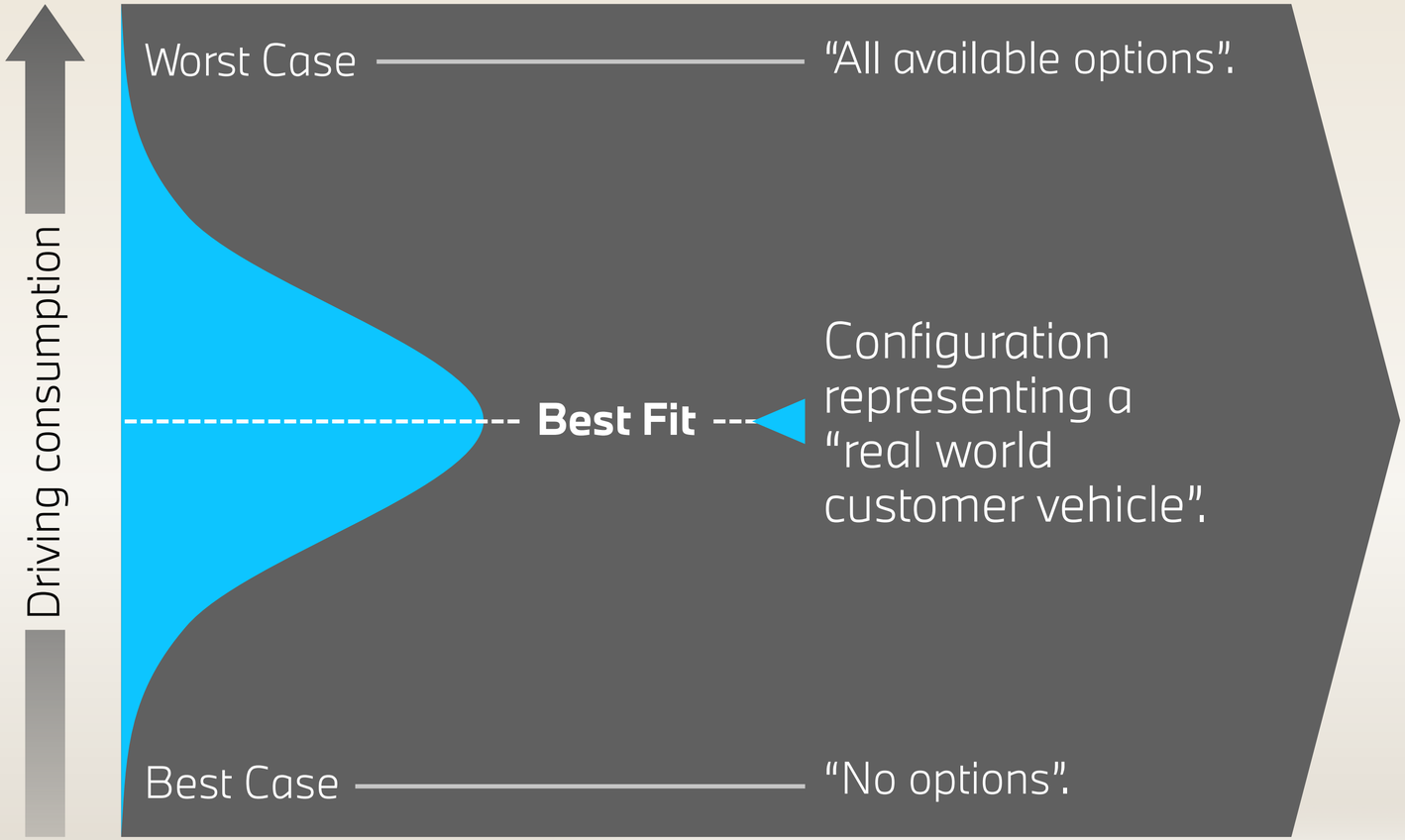
BBC TopGear

On theBMW i4 M50: **"more than just an electric 4 Series GC, this is a 'proper' BMW"**

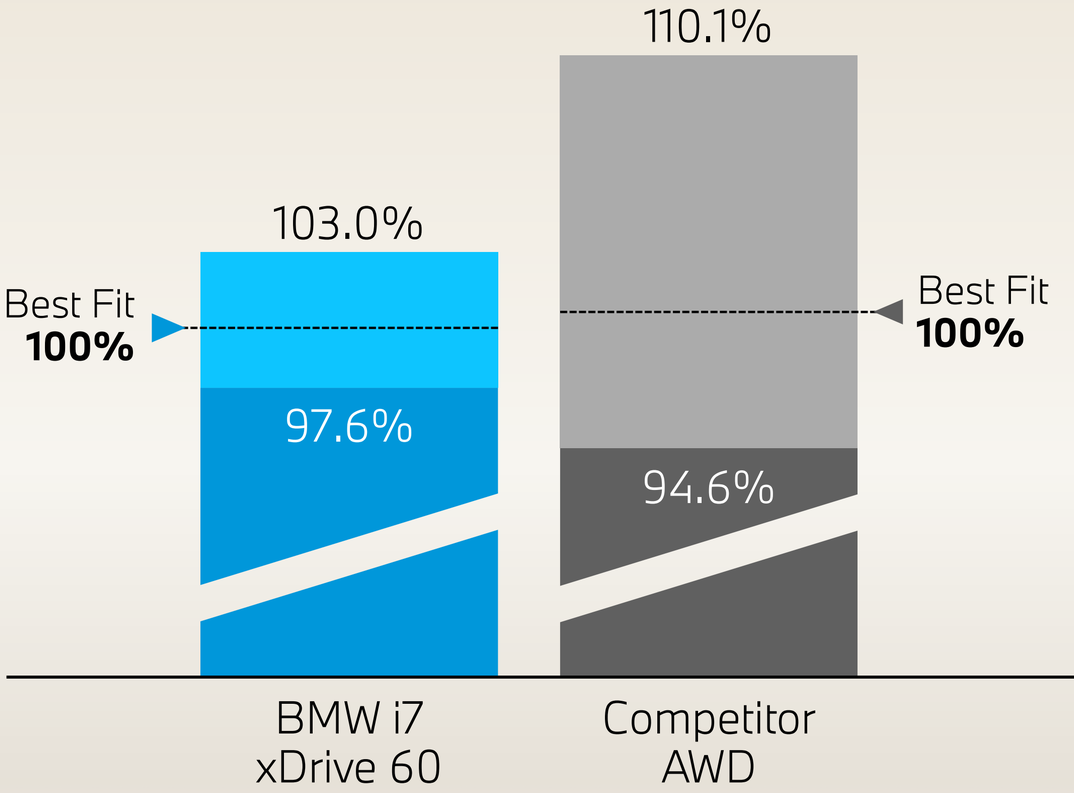
"...we've seen 3.6m/kWh or about 300 miles. Much further than our Polestar 2".

THE NEW BMW 7 SERIES.
EFFICIENT DYNAMICS – OUR APPROACH.

› Small gap between WLTP range and real world range.

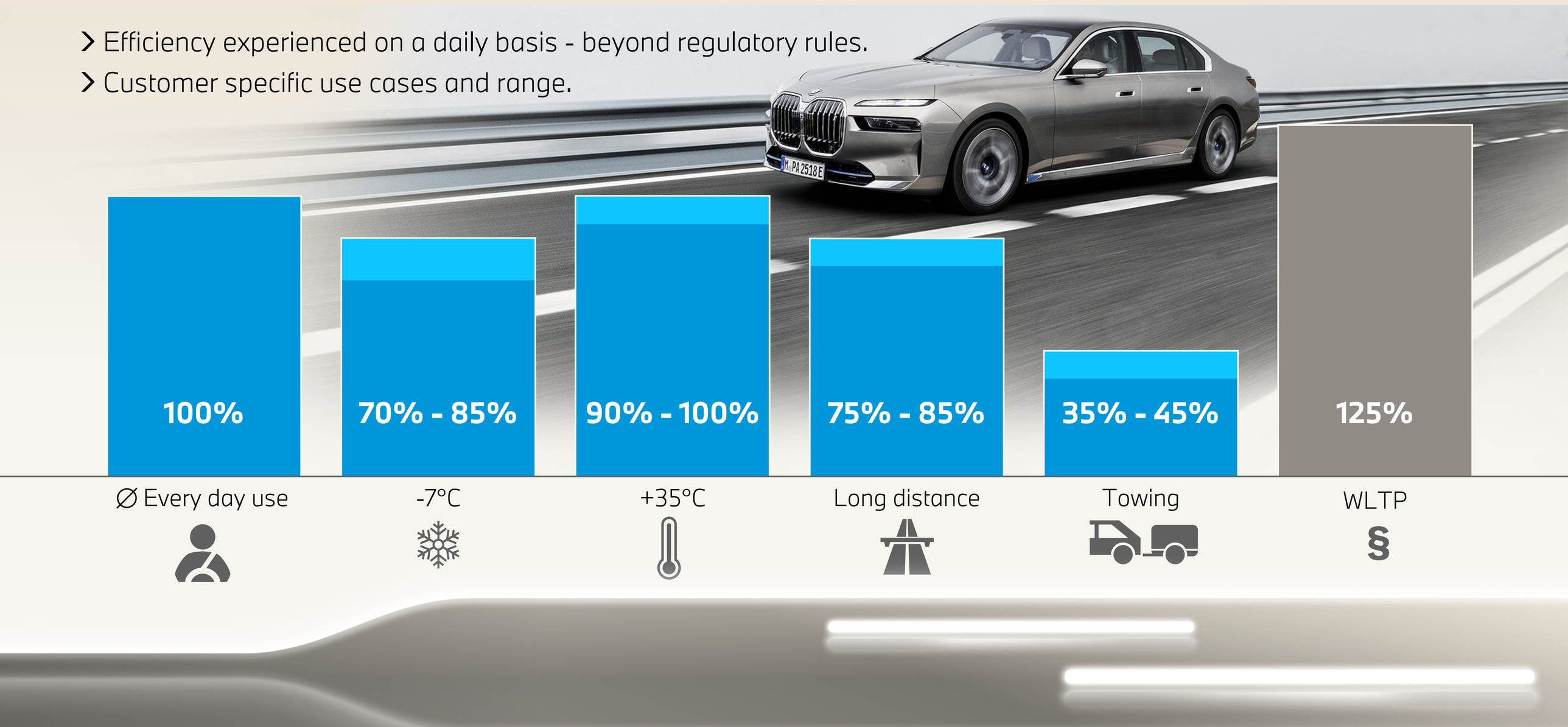


› Pure Driving Consumption [percent kWh/100 km].



THE NEW BMW 7 SERIES.
EFFICIENT DYNAMICS – DEFINING FACTORS FOR BMW 7 SERIES.

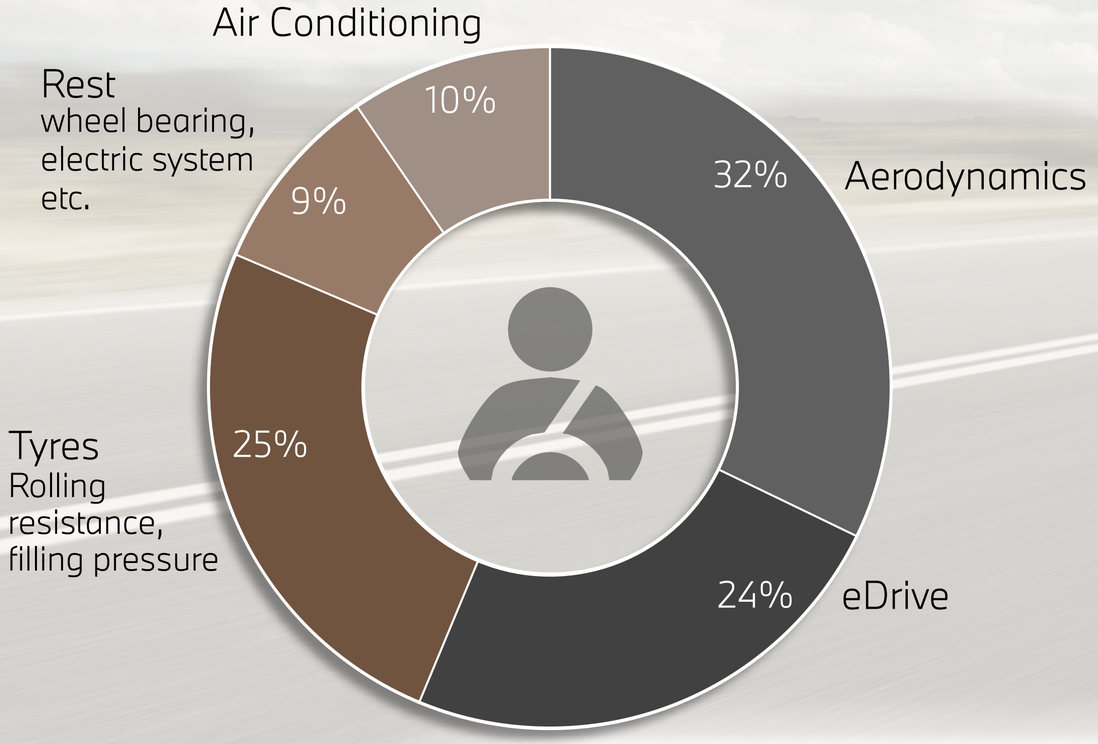
- Efficiency experienced on a daily basis - beyond regulatory rules.
- Customer specific use cases and range.



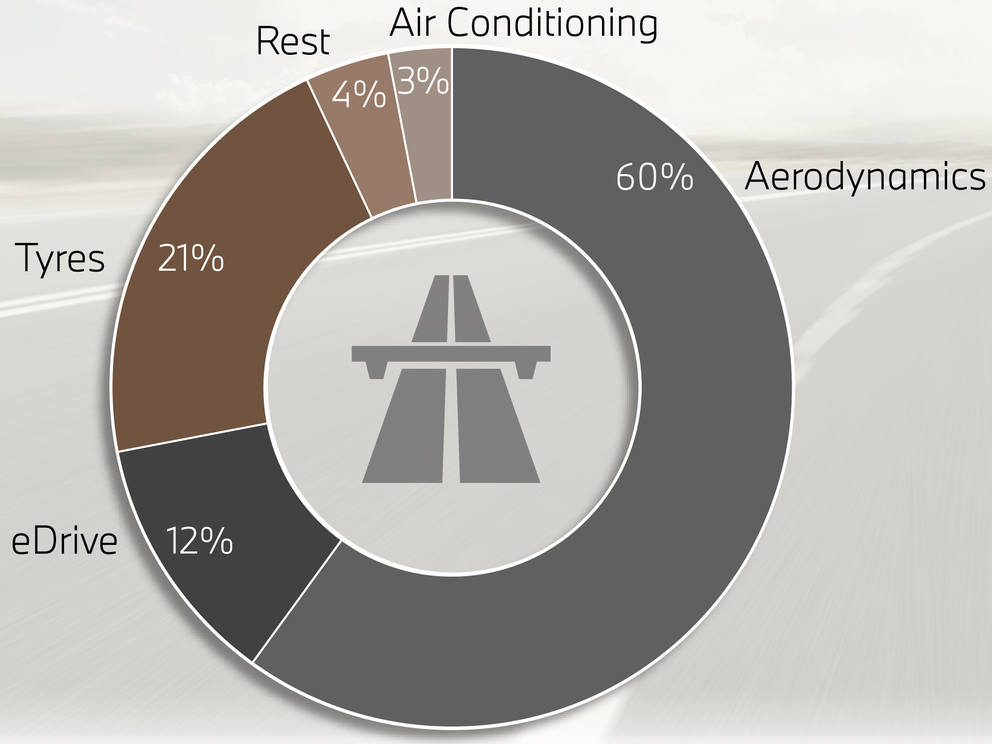
THE NEW BMW 7 SERIES.
RANGE AND DRIVING CONSUMPTION.

› The impact of the different factors depend on the actual use of the customer (Example: BMW i7).

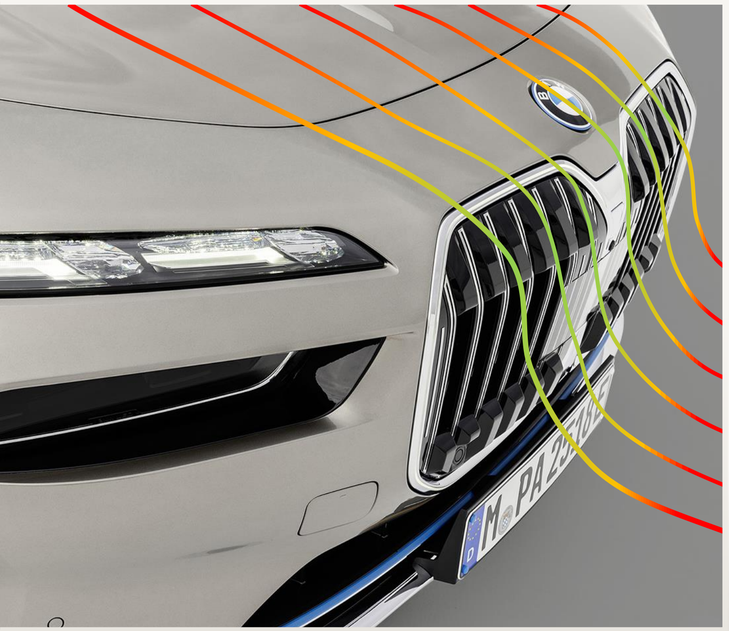
Daily use in changing situations
Share driving consumption [%]



Long Distance
Share driving consumption [%]



DEEP DIVE AERODYNAMICS.
EFFICIENT DESIGN.

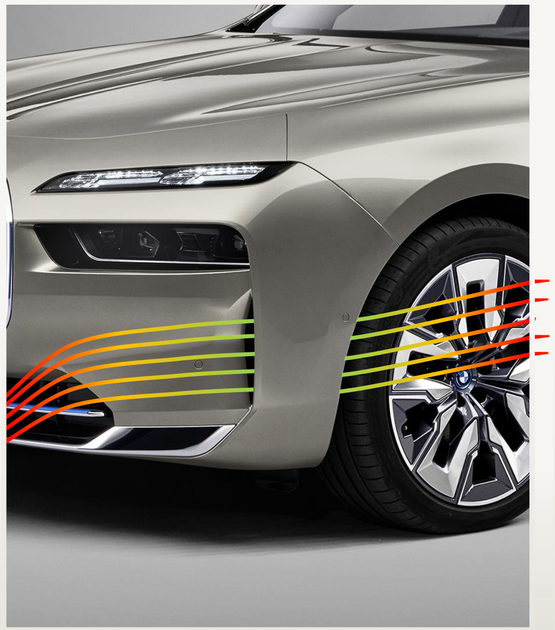


Active Air vent control.

Optimizing aerodynamics and cooling.

Up to **-6.5 Wh/km**

Up to ΔC_x: -0.030



Air Curtains.

Optimizing airflow in the wheel arches.

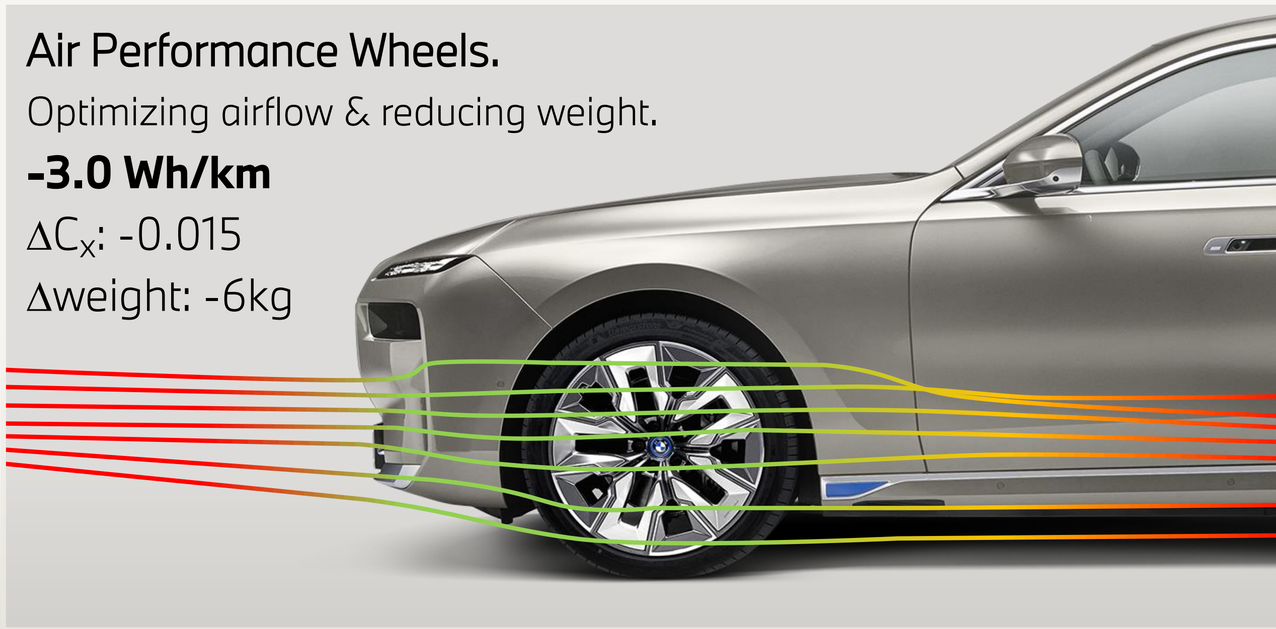
Air Performance Wheels.

Optimizing airflow & reducing weight.

-3.0 Wh/km

ΔC_x: -0.015

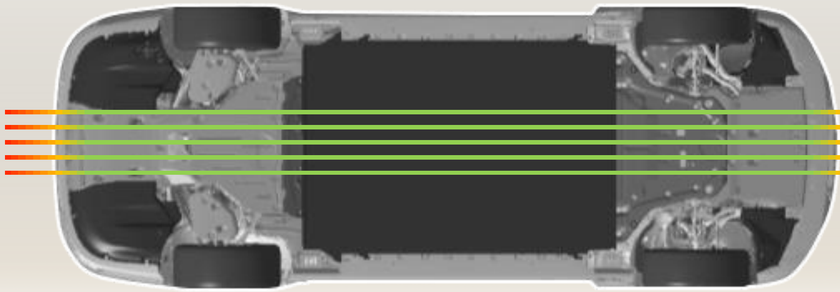
Δweight: -6kg



Optimized underfloor design.

-2.0 Wh/km

ΔC_x: -0.010



DEEP DIVE AERODYNAMICS.
EFFICIENT DESIGN.

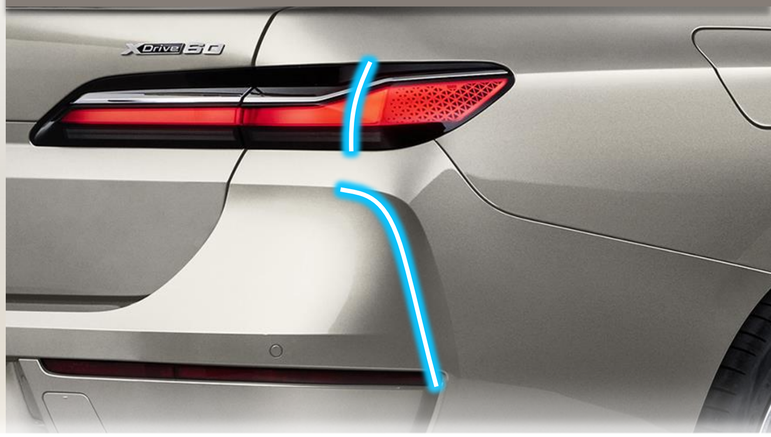
Drag pressure

$F_{Pull} = p_{Underpressure} * A_{Surface}$

Optimizing surfaces

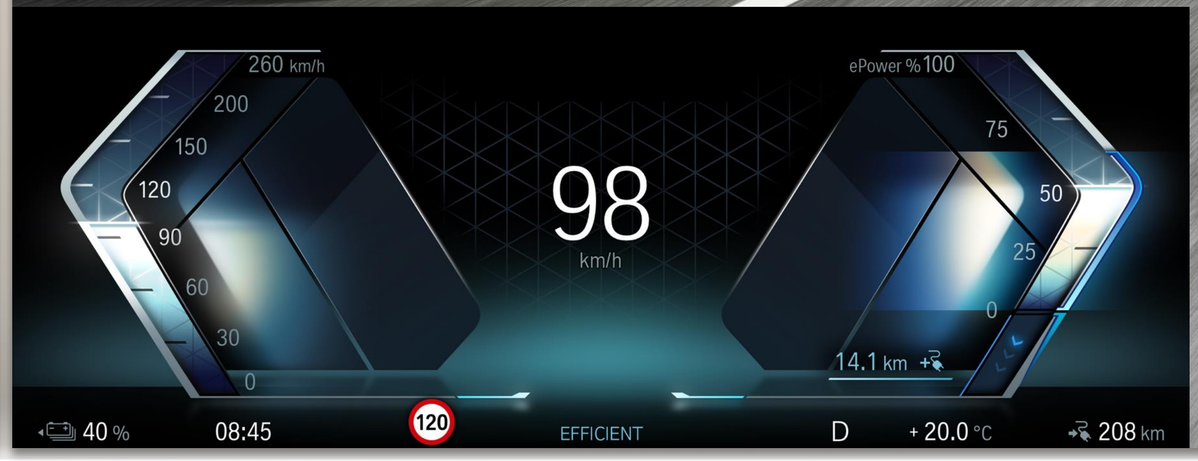
Interaction rear lid and diffusor

Great attention to details



THE NEW BMW 7 SERIES.
EFFICIENCY TRAINER.

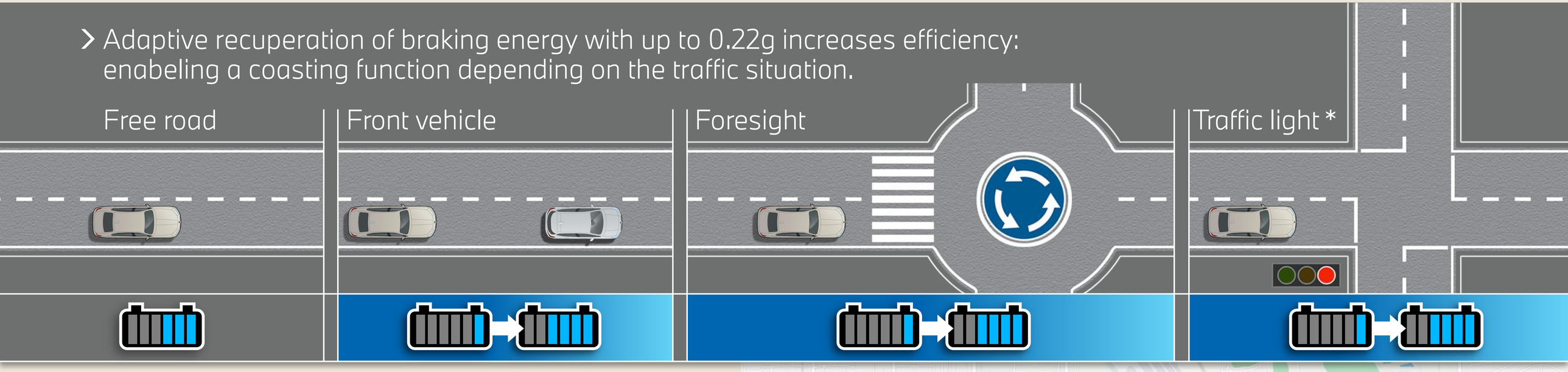
- The intelligent coach supports the driver for an efficient and predictive driving style.
- In a playful way, the driver collects electric bonus range.



Head-up Display.

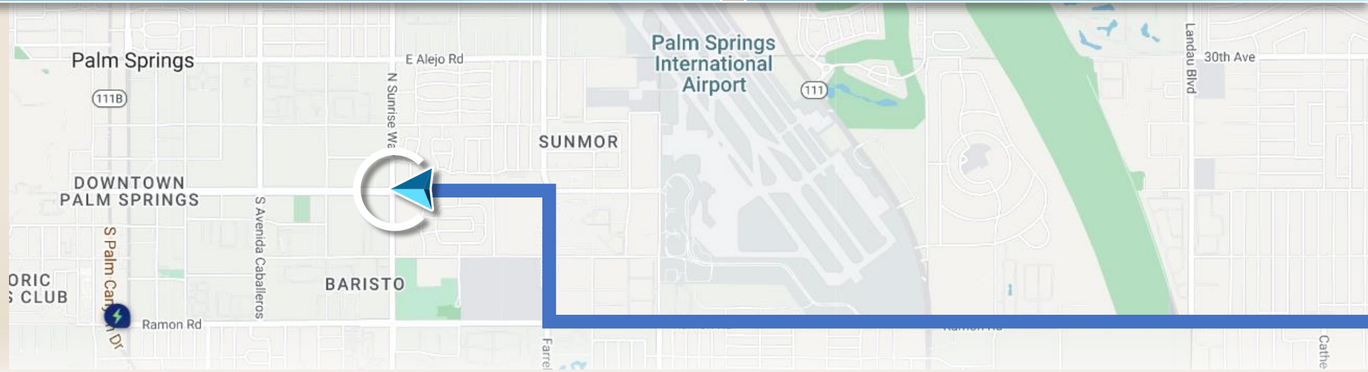
THE NEW BMW 7 SERIES.
ADAPTIVE RECUPERATION.

› Adaptive recuperation of braking energy with up to 0.22g increases efficiency: enabeling a coasting function depending on the traffic situation.



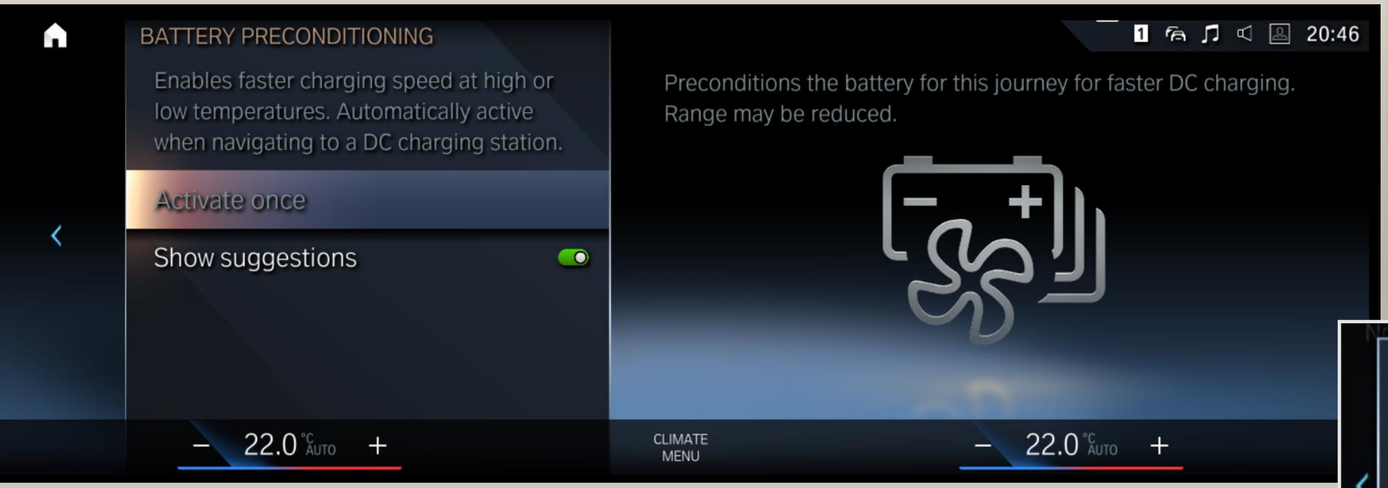
› Increased comfort and energy-efficient deceleration by means of adaptive recuperation of the vehicle through intelligent and advanced evaluation of map data, route-based events as well as situational events, such as red lights or vehicles ahead.

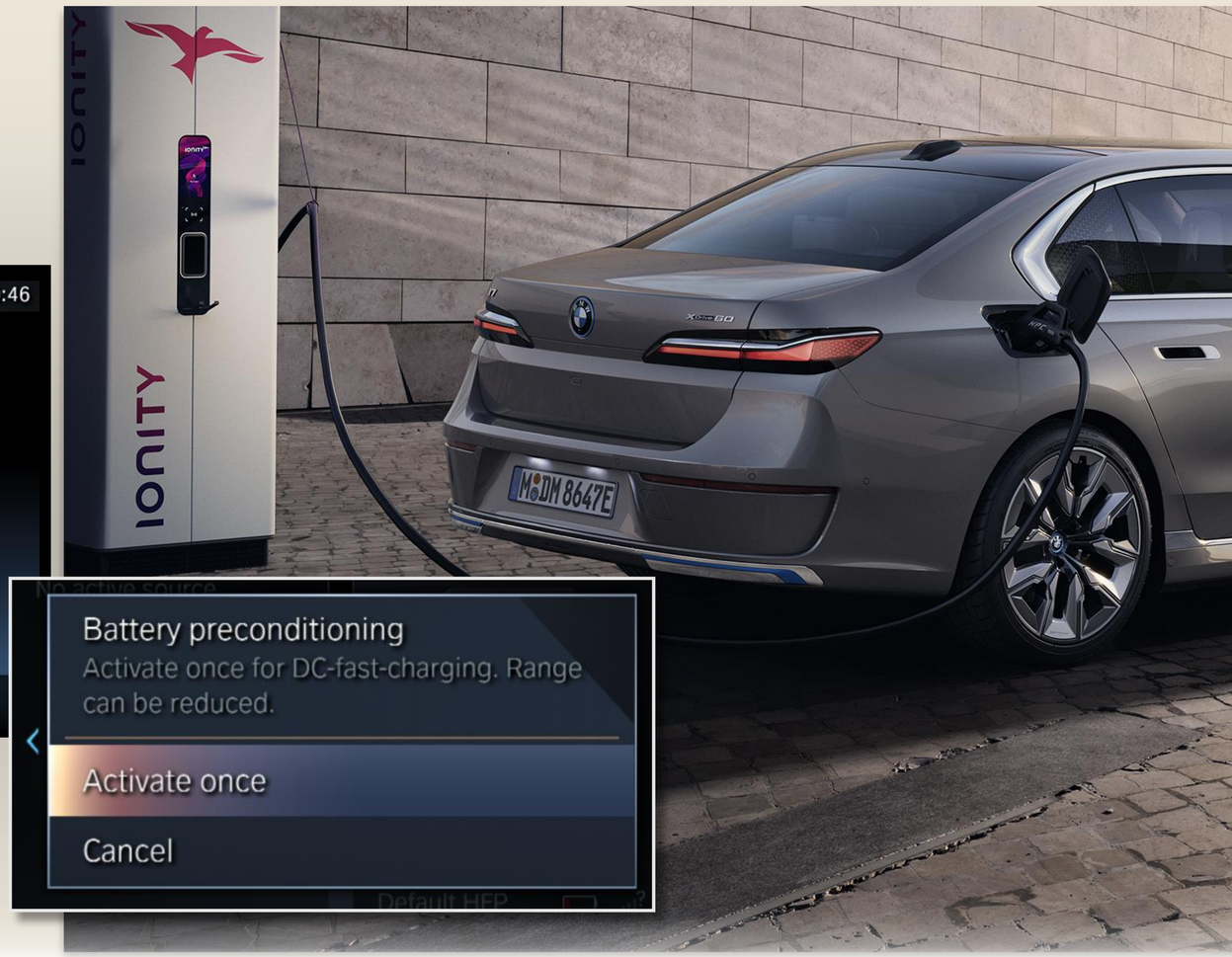
* With Driving Assistant Professional and depending on national legislation.



THE NEW BMW 7 SERIES.
PREDICTIVE THERMAL MANAGEMENT.

› Reduction of DC charging time and maximum charging power right from the start of the charging process through predictive heating or cooling of the high-voltage battery when approaching a fast-charging destination.





› The function is automatically activated via navigation to a DC charging station. It can also be accessed via the charging menu can also be started without active navigation.

EFFICIENT DYNAMICS – PART OF THE BMW GROUP DNA.

- Unique “Passion for Efficiency” - in all areas of vehicle development – going “the extra mile”.
- Efficiency is a fundamental component of the BMW Group's sustainability strategy.
- Efficiency is not about architectures – it is about the best technological components - integrated in an intelligent way.
- We are optimizing the real-world consumption of the vehicle – not test cycle numbers.

THE NEW BMW 7 SERIES.
DEEP DIVE EFFICIENCY AND POWERTRAIN.

THE NEW BMW 7 SERIES.
DEEP DIVE EFFICIENCY AND POWERTRAIN.

» „MISSION STATEMENT“
WE WANT TO OFFER OUR CUSTOMERS THE MOST EFFICIENT POWERTRAIN – INDEPENDENT OF THE TECHNOLOGY.

THE NEW BMW 7 SERIES.
90% NEW OR IMPROVED: THE SIX CYLINDER ENGINES.

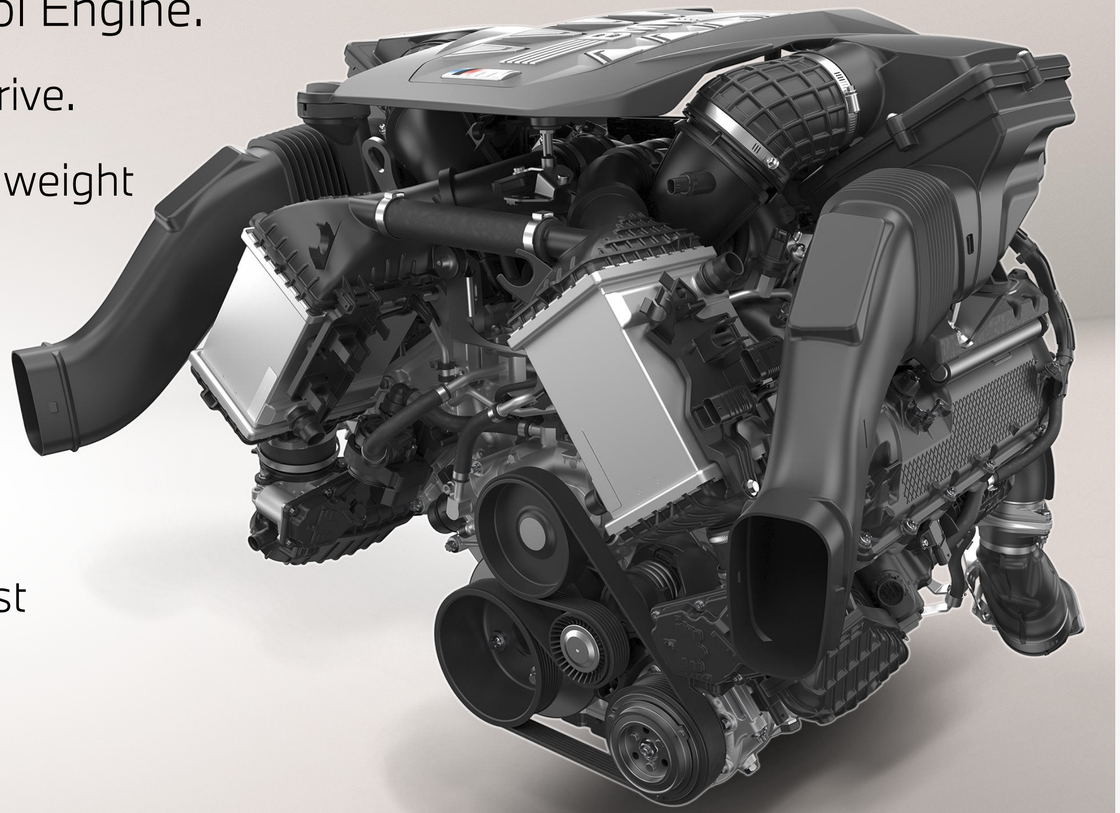
Six-Cylinder In-Line Petrol Engine.

- Miller Combustion Cycle.
- New intake ducts and combustion chambers.
- Improved ignition system.
- Improved turbo charging and cooling.
- Electric VANOS.
- VALVETRONIC with outlet rocker arms which can be switched off.

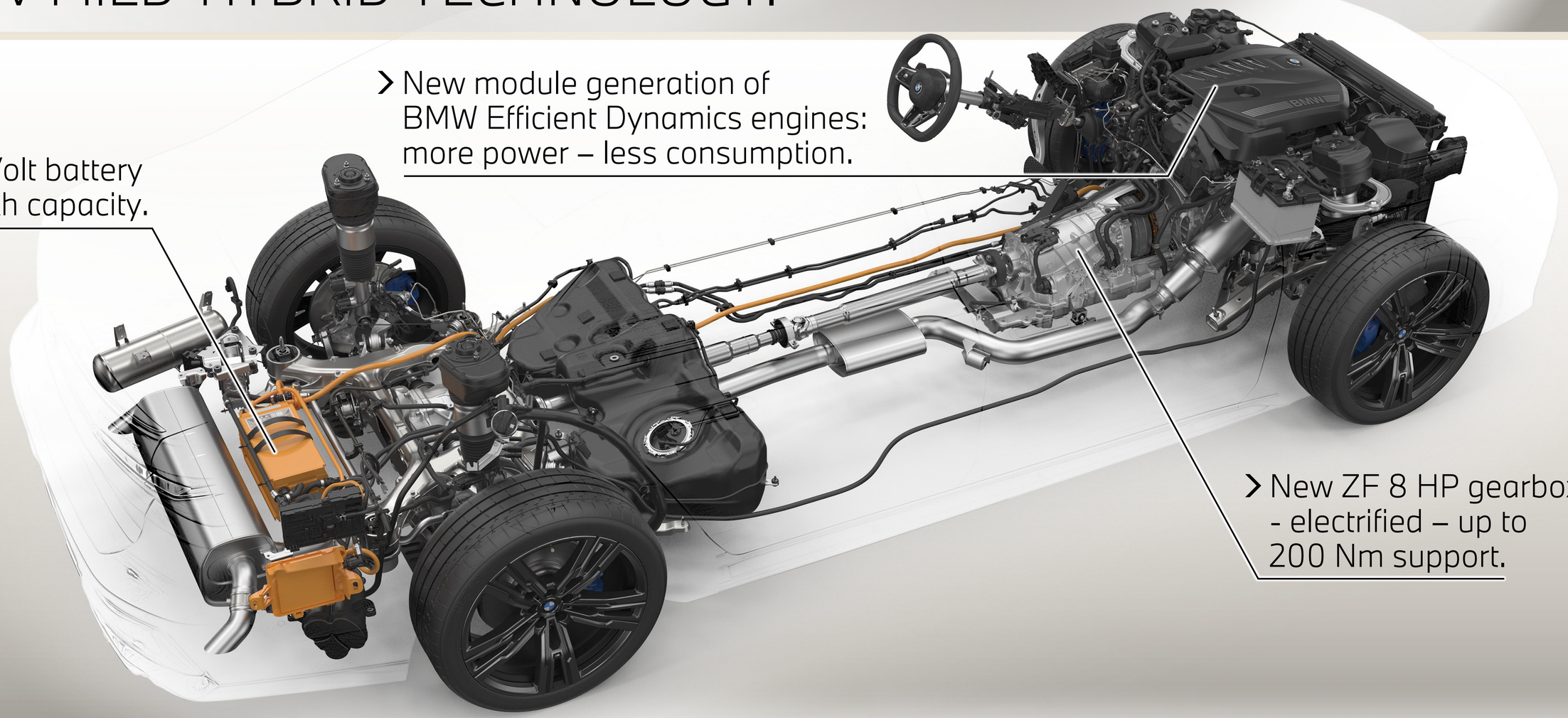
THE NEW BMW 7 SERIES.
BMW M TECHNOLOGY: THE V8.

V8 Cylinder Petrol Engine.

- Reinforced crank drive.
- New oil pump with weight optimized oil pan.
- Cylinder bank-symmetrical turbocharger & diverter valve.
- Cylinder bank overlapping exhaust Manifold.

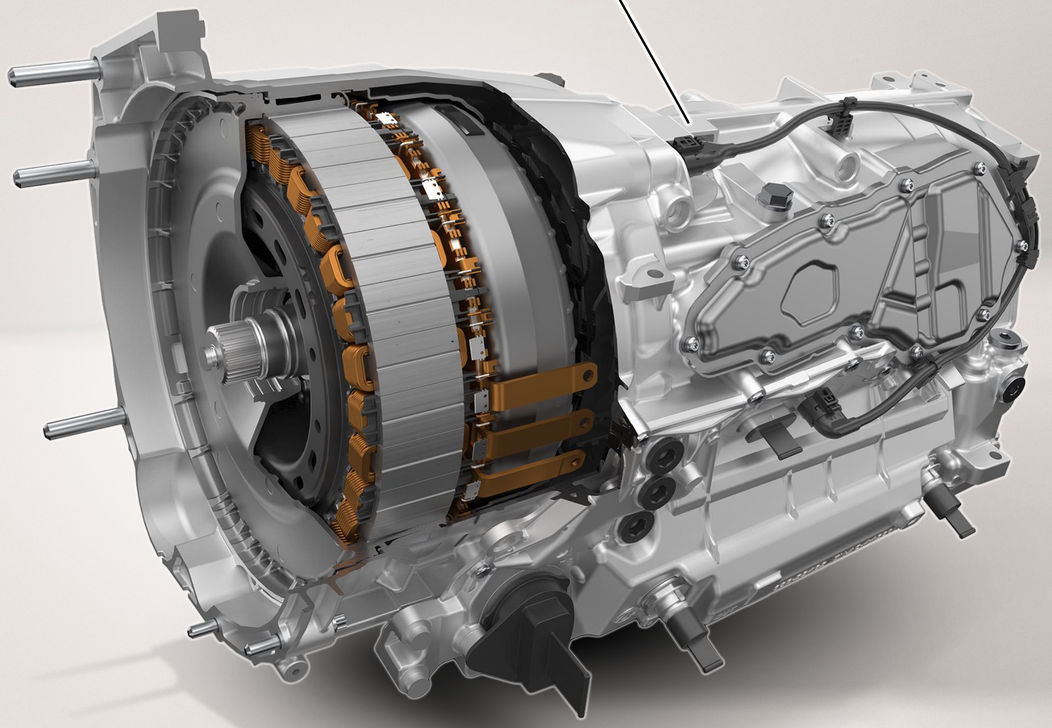


THE NEW BMW 7 SERIES.
48V MILD-HYBRID TECHNOLOGY.



THE NEW BMW 7 SERIES.
48V MILD-HYBRID TECHNOLOGY.

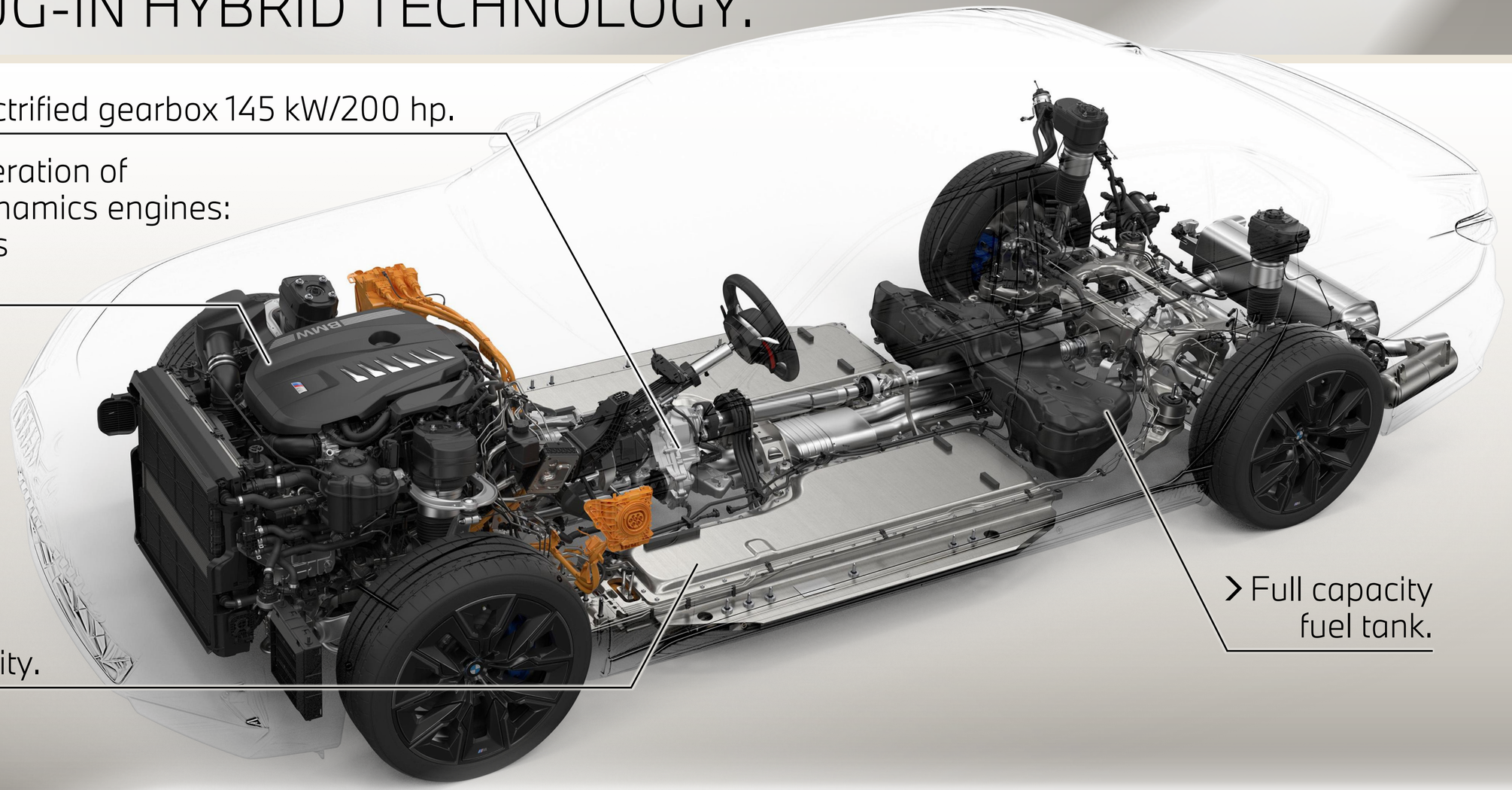
› Electric Motor and Power Electronics in one compact housing.



› Power supplied by 48 Volt battery.

THE NEW BMW 7 SERIES.
DEEP DIVE POWERTRAIN & CHARGING.

THE NEW BMW 7 SERIES.
GEN5 PLUG-IN HYBRID TECHNOLOGY.



› New ZF 8 HP electrified gearbox 145 kW/200 hp.

› New module generation of BMW Efficient Dynamics engines: more power – less consumption.

› Li-Ion Gen5 high-voltage storage / low center of gravity.

› Full capacity fuel tank.

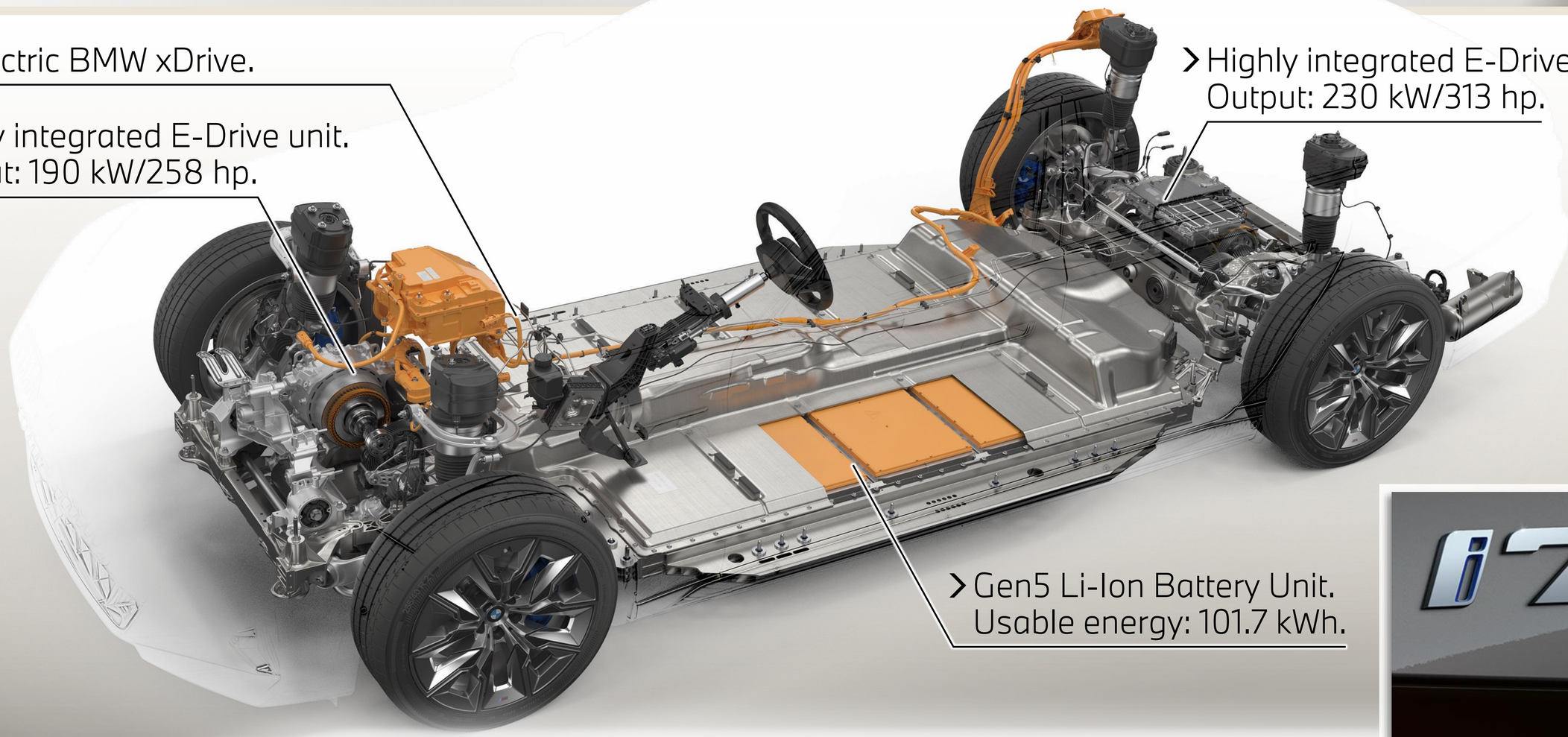
THE NEW BMW 7 SERIES.
DEEP DIVE POWERTRAIN & CHARGING.

THE NEW BMW 7 SERIES.
BMW i7 xDrive60.

› All electric BMW xDrive.

› Highly integrated E-Drive unit.
Output: 190 kW/258 hp.

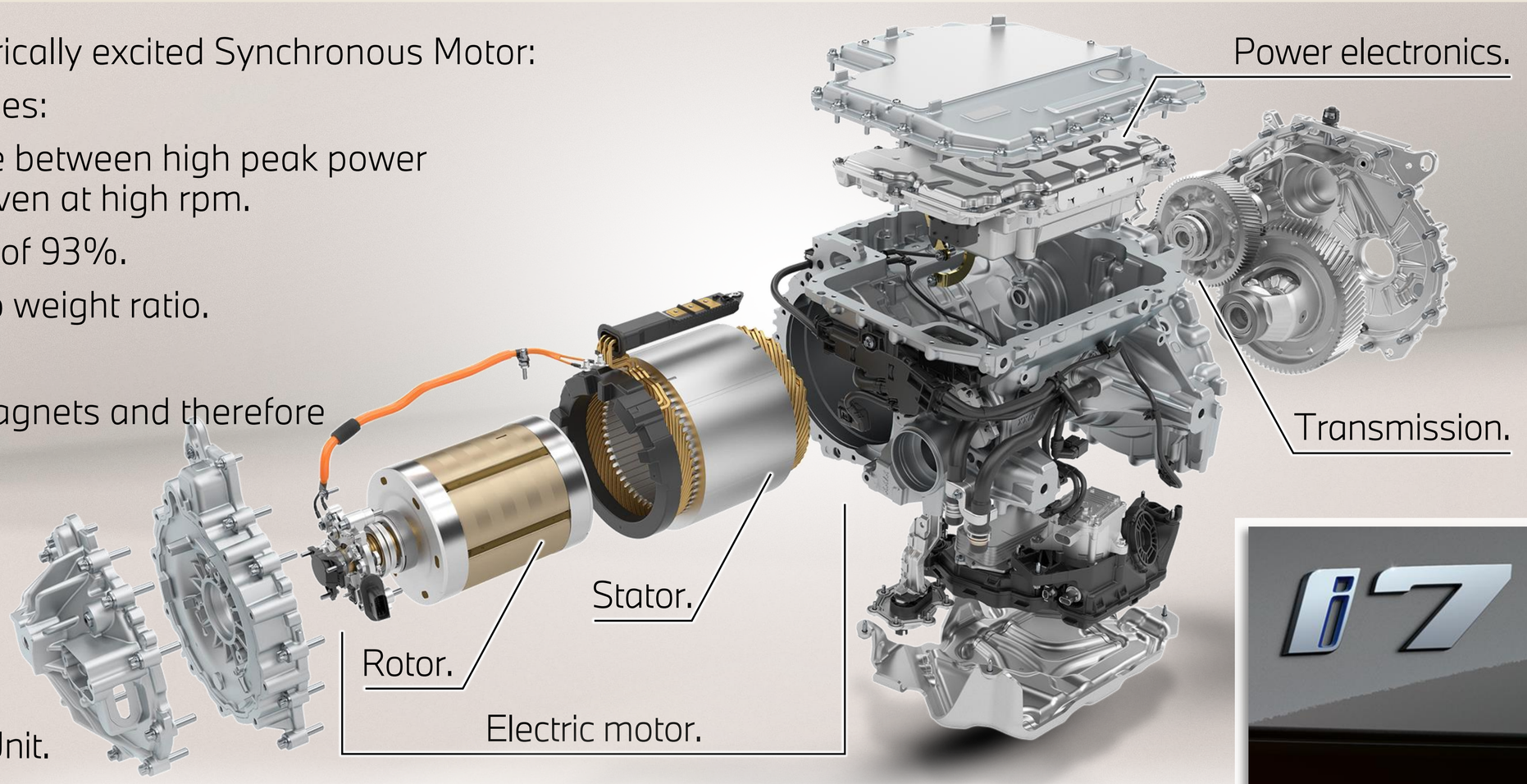
› Highly integrated E-Drive unit.
Output: 230 kW/313 hp.



› Gen5 Li-Ion Battery Unit.
Usable energy: 101.7 kWh.

THE NEW BMW 7 SERIES.
BMW i7 xDrive60.

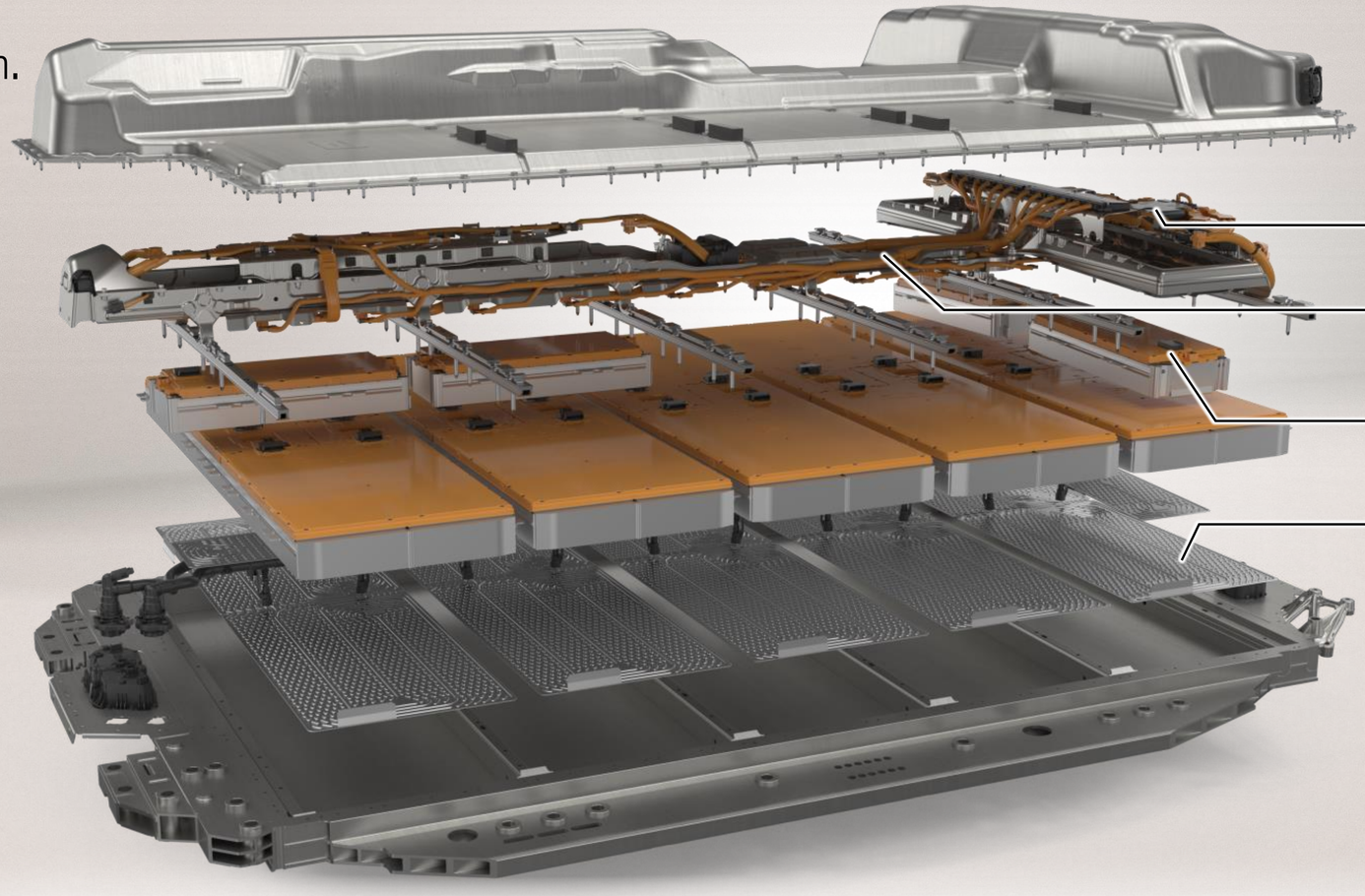
- ESM Technology: Electrically excited Synchronous Motor:
  - Conceptual Advantages:
    - Exceptional balance between high peak power and stable torque even at high rpm.
  - High efficiency factor of 93%.
  - Outstanding power to weight ratio.
  - Silent operation.
  - Avoids permanent magnets and therefore rare-earth materials.



BMW GEN5
Highly Integrated Drive Unit.

THE NEW BMW 7 SERIES.
BMW i7 xDrive60.

- BMW Gen5 HVS: a highly scalable and modular system.
- BMW Gen5 Lithium-ion technology with Prismatic cells in different heights (110mm in the BMW i7).
- Usable energy capacity BMW i7 xDrive60: 101.7 kW/h.



BMW GEN5
Highly Integrated Drive Unit.

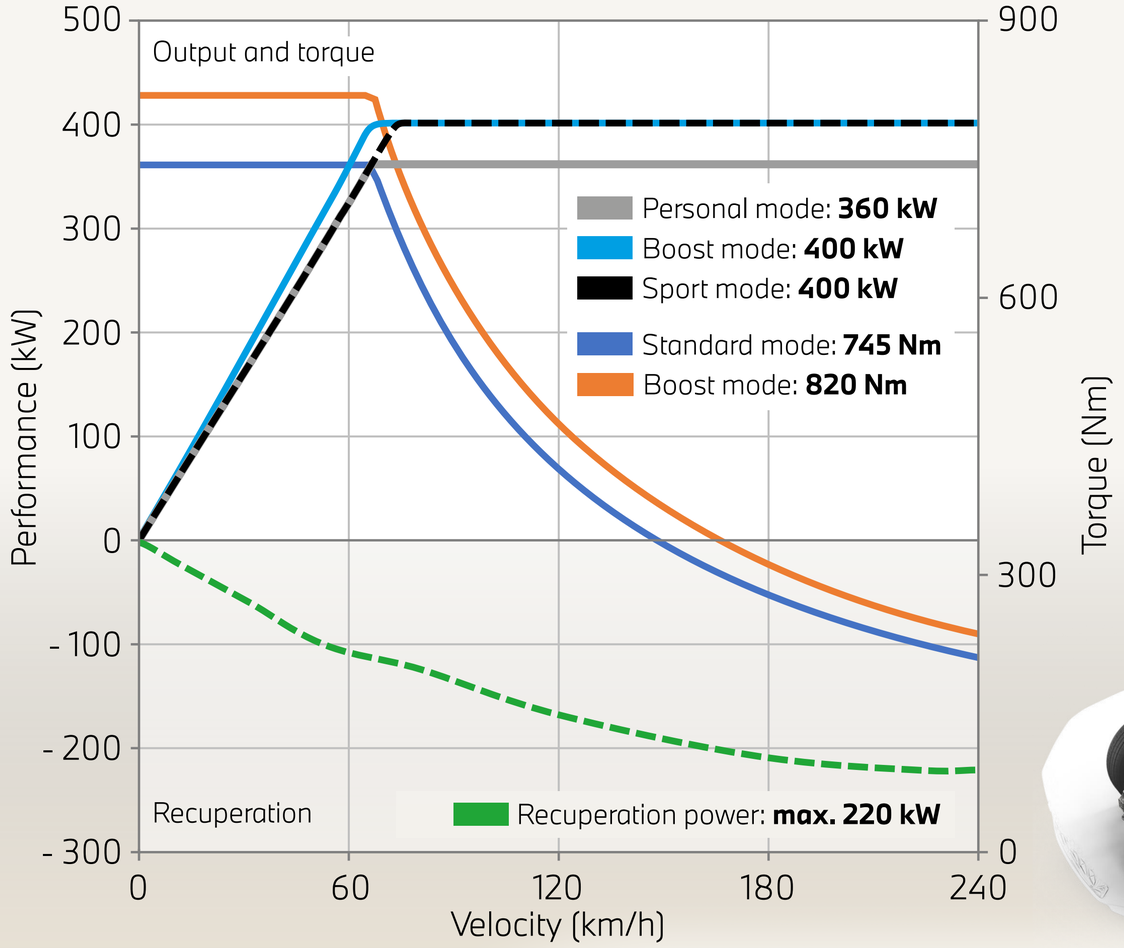
THE NEW BMW 7 SERIES.
BMW i7 xDrive60 PERFORMANCE.

	BMW i7 xDrive60
Total system output	400 kW / 544 hp
Max. torque	745 Nm
Acceleration (0 - 100 km/h)	4.7 sec (0 - 100 km/h)
Top speed	240 km/h
Range*	318 mph

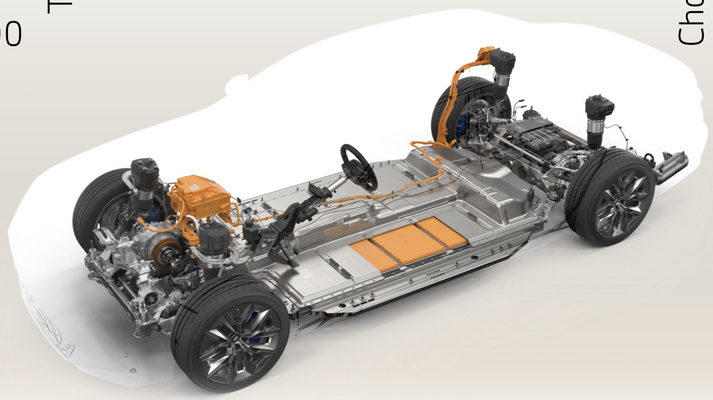
* EPA Test Cycle

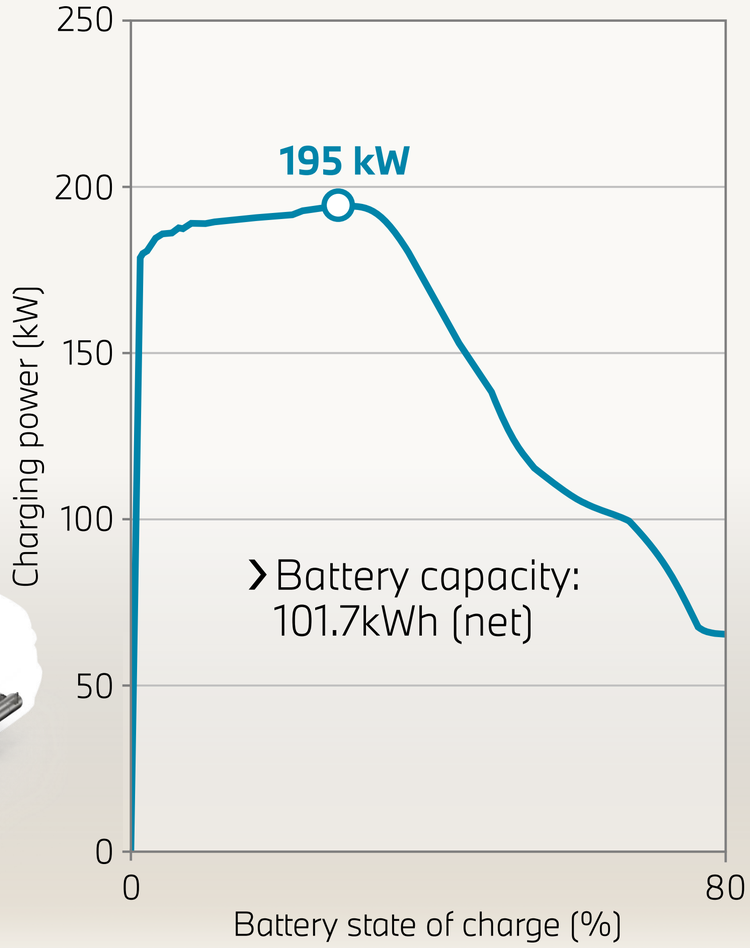
i7

THE NEW BMW i7.
PERFORMANCE AND CHARGING.



- DC Charging with 195 kW max.
- 10 to 80% SOC in 34 minutes.
- 10 mins add 180 km of new range.
- Up to 22 kW AC charging: 5.5 hrs. (0 - 100%).





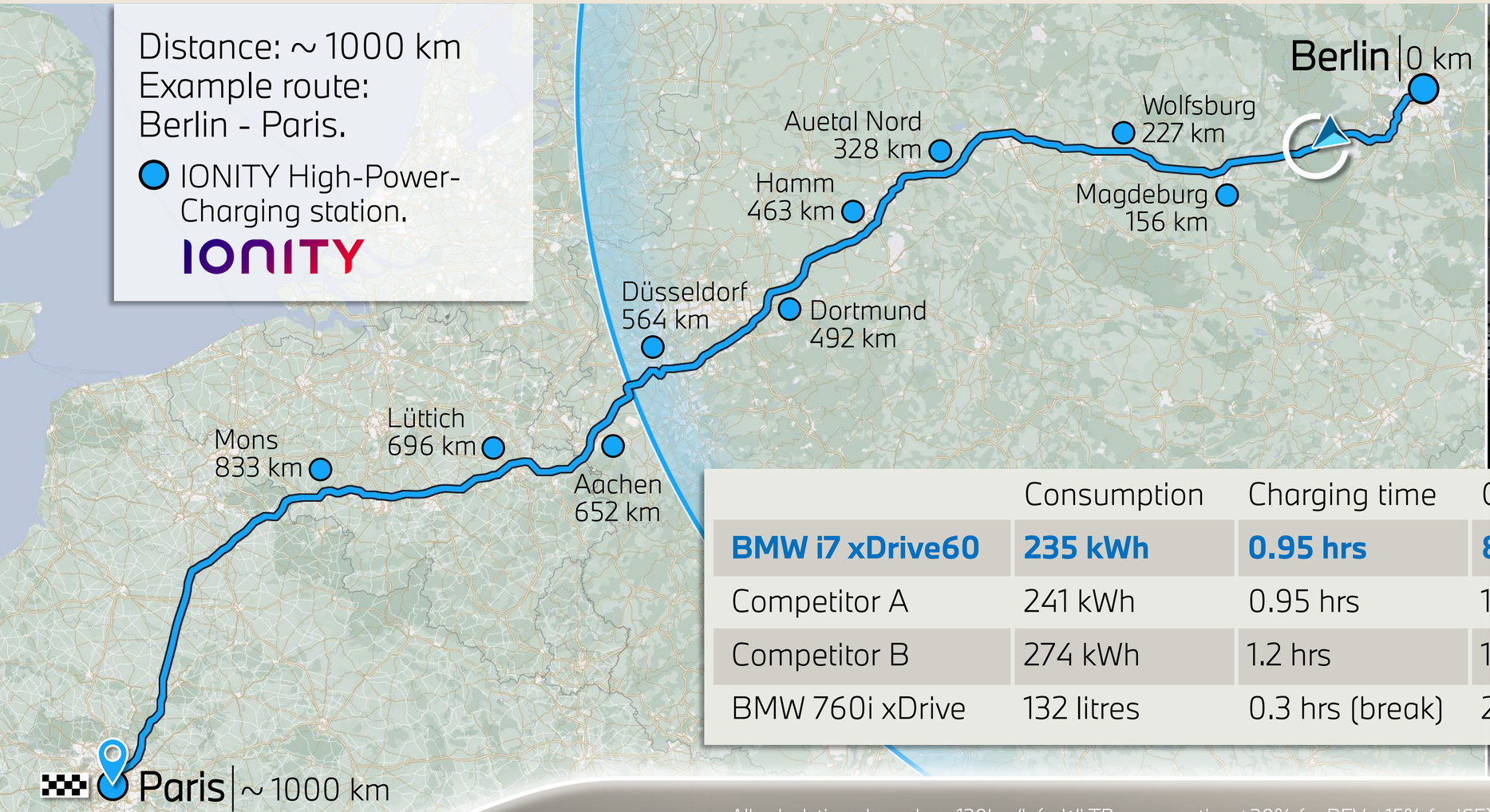
- Battery capacity: 101.7kWh (net)

THE NEW BMW 7 SERIES.
LONG DISTANCE DRIVING.

Distance: ~ 1000 km
Example route:
Berlin - Paris.

IONITY High-Power-Charging station.

IONITY



	Consumption	Charging time	Costs	Journey time
BMW i7 xDrive60	**235 kWh**	**0.95 hrs**	**85 €**	**8.6 hrs**
Competitor A	241 kWh	0.95 hrs	169 €	8.6 hrs
Competitor B	274 kWh	1.2 hrs	114 €	8.9 hrs
BMW 760i xDrive	132 litres	0.3 hrs (break)	264 €	8.0 hrs

All calculations based on: 130km/h (= WLTP consumption +30% for BEV, +15% for ICE), intermediate chargings with DC HPC 10-80% SOC; Start with full battery; final charge only to reach destination, 15°C outside temperature, air conditioning = ON; Total costs based on charging provider recommendations per brand. BMW Charging @ Ionity = 0.35 €/kWh; "Journey time" = Driving time + Charging/Break time.

THE NEW BMW 7 SERIES.
DEEP DIVE EFFICIENCY AND POWERTRAIN.

THANK YOU FOR YOUR ATTENTION