Antriebstechnologien zur Erreichung zukünftiger CO_2-Ziele

Powertrain Technologies for Future CO_2-Emission Targets

Prof. Dr.-Ing. Leopold **Mikulic**
Daimler AG

Abb. 1: Challenges for Future Mobility

Abb. 2: Daimler's Technology Portfolio for Future Mobility

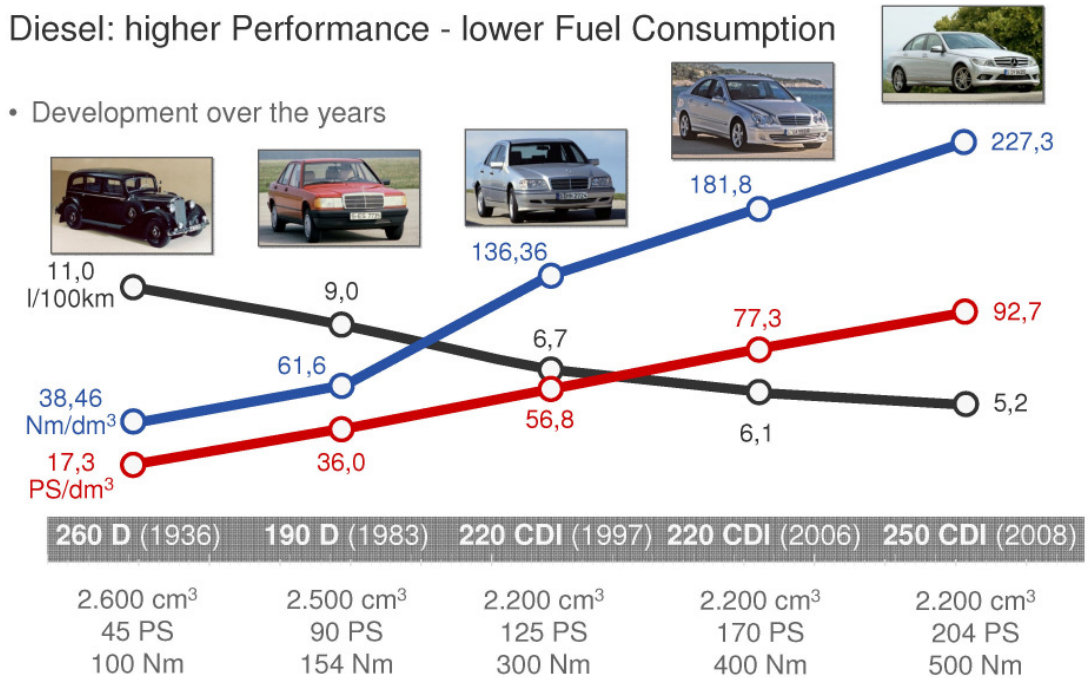


Abb. 3: Diesel: higher Performance – lower Fuel Consumption

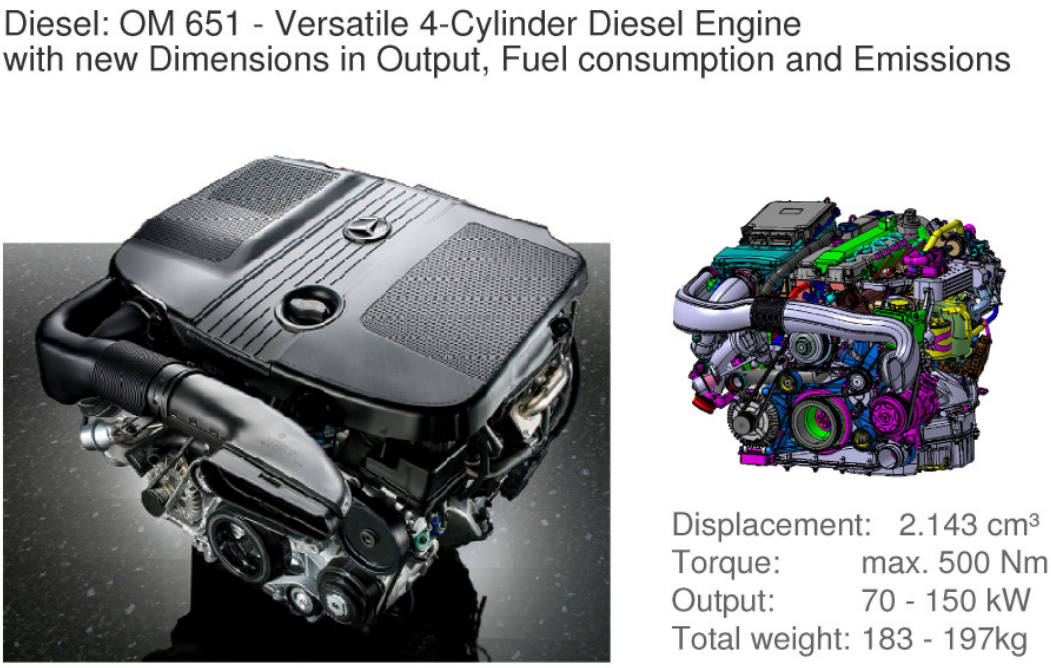


Abb. 4: Diesel OM 651 – Versatile 4-Cylinder Diesel Engine with new Dimensions in Output, Fuel consumption and Emissions

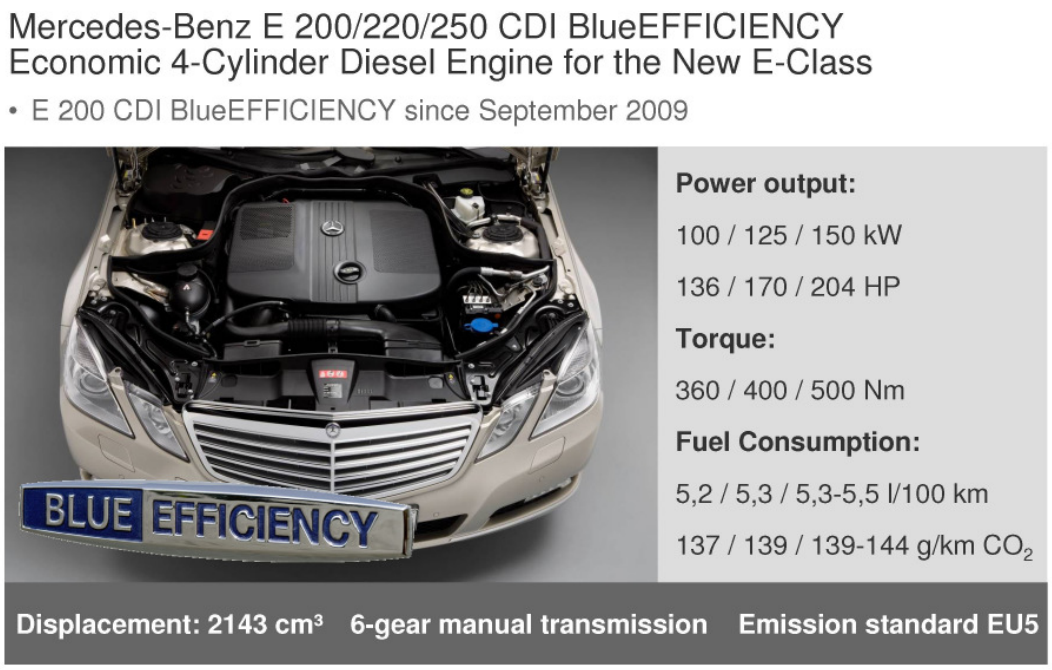


Abb. 5: Mercedes-Benz E 200/220/250 CDI BlueEFFICIENCY
Economic 4-Cylinder Diesel Engine for the New E-Class

Abb. 6: Diesel: S250 CDI BlueEfficiency with OM 651 Diesel Engine
The world‘s first 5-litre car in the luxury segment

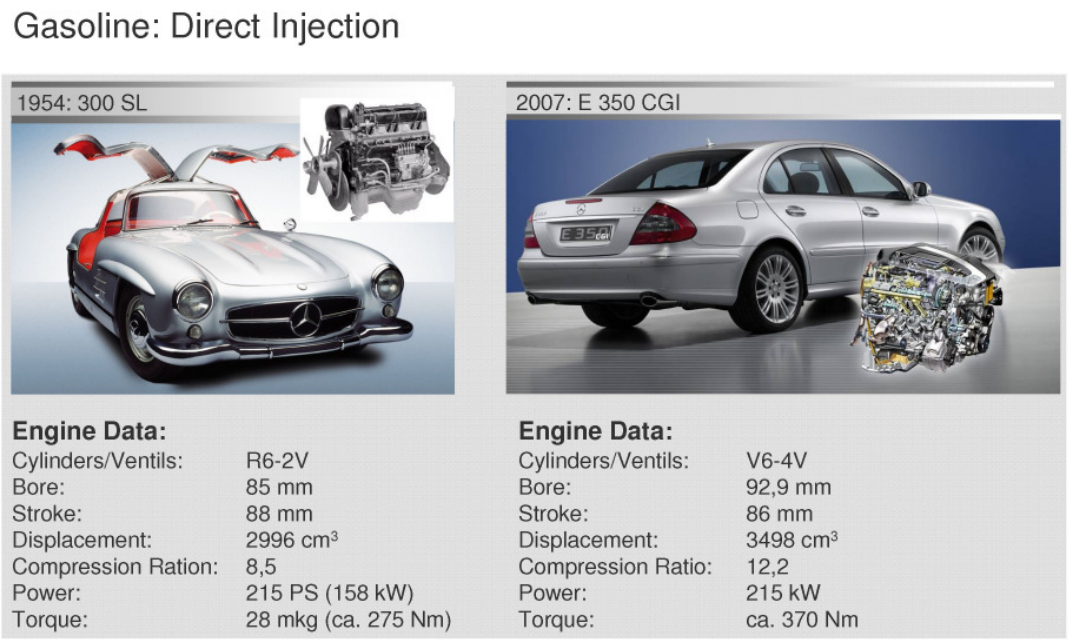


Abb. 7: Gasoline: Direct Injection

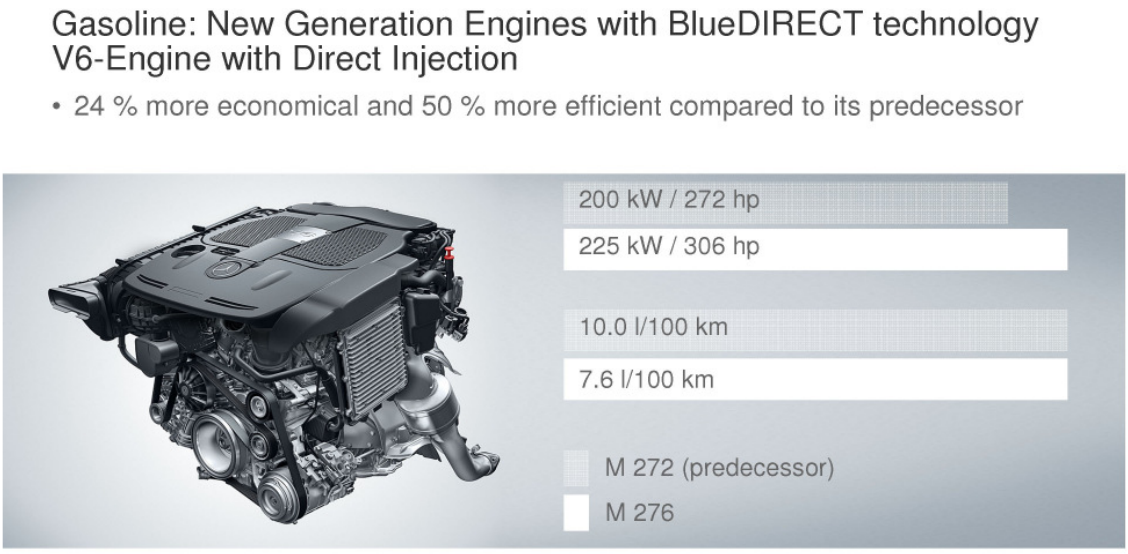


Abb. 8: Gasoline: New Generation Engines with BlueDIRECT technology V6-Engine with Direct Injection

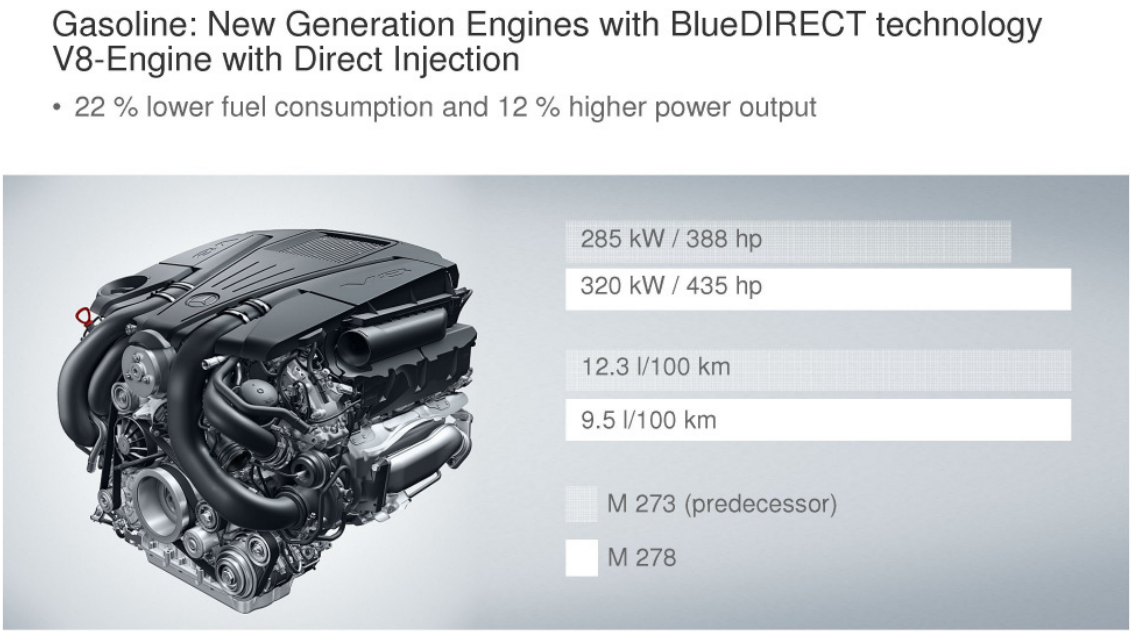


Abb. 9: Gasoline: New Generation Engines with BlueDIRECT technology V8-Engine with Direct Injection

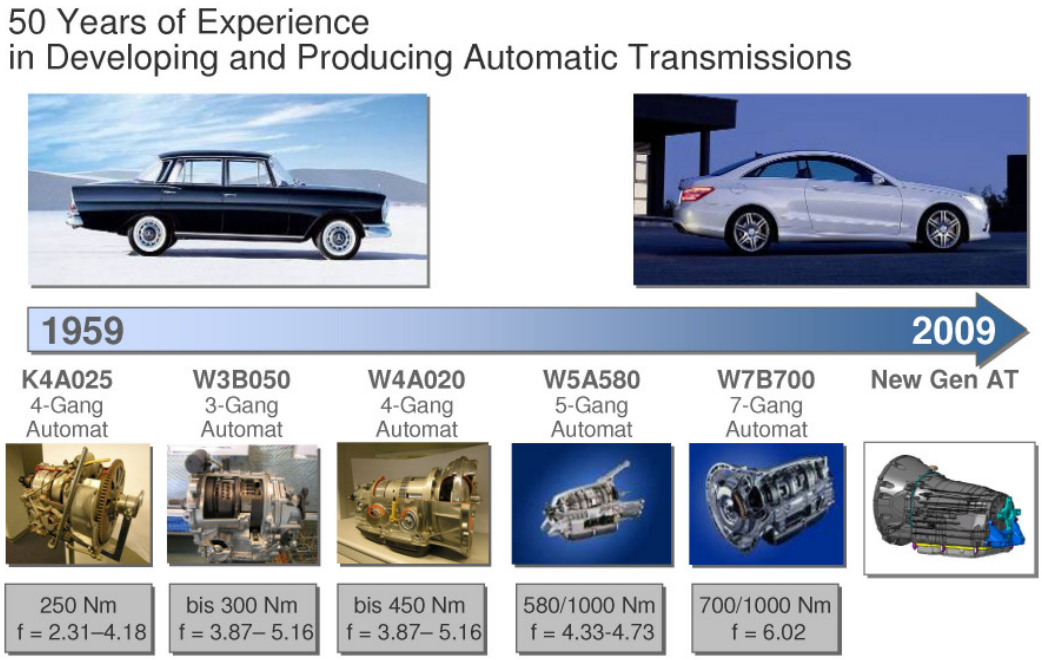


Abb. 10: 50 Years of Experience in Developing and Producing Automatic Transmissions

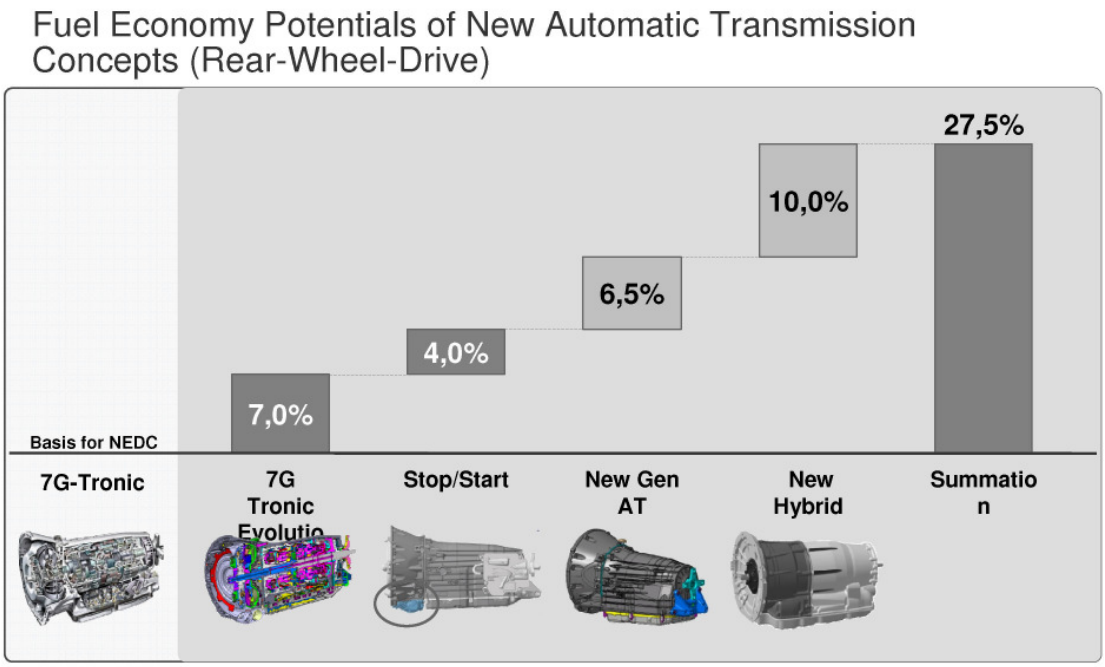


Abb. 11: Fuel Economy Potentials of New Automatic Transmission Concepts (Rear-Wheel-Drive)

Abb. 12: Hybrid Powertrains during History

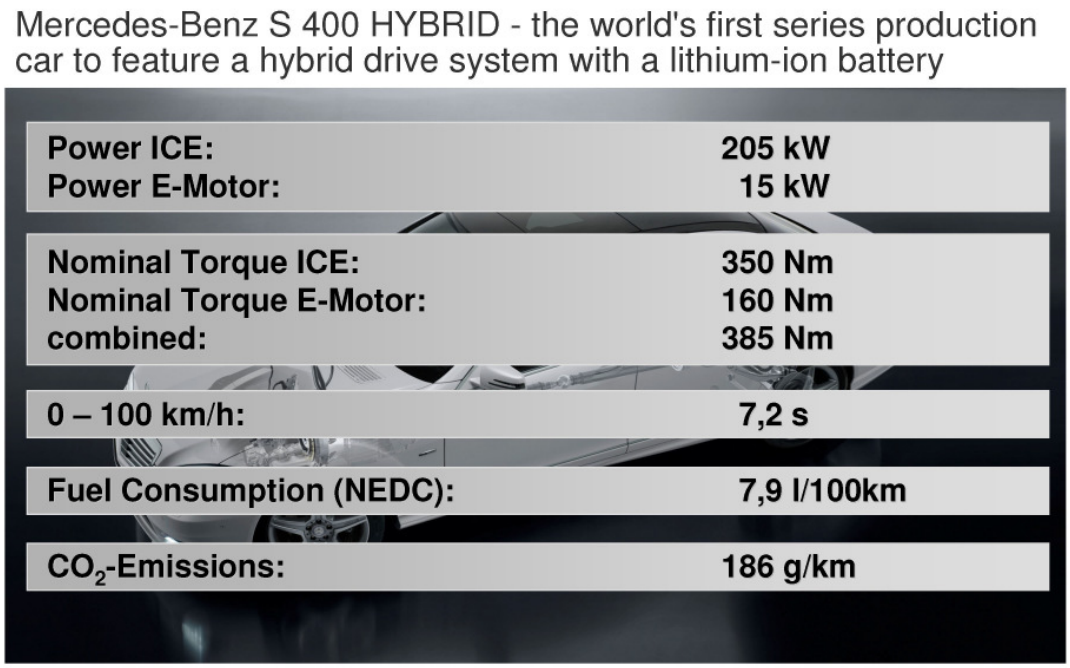


Abb. 13: Mercedes-Benz S 400 HYBRID - the world's first series production car to feature a hybrid drive system with a lithium-ion battery

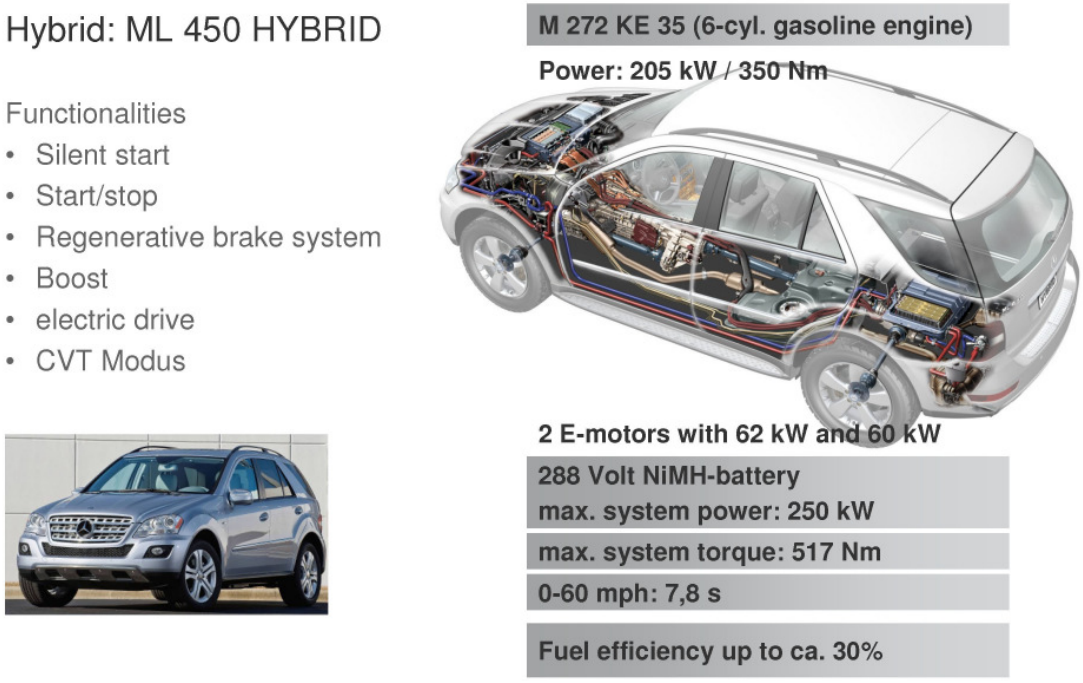


Abb. 14: Hybrid: ML 450 HYBRID

Abb. 15: Near future:
E 300 BlueTEC HYBRID

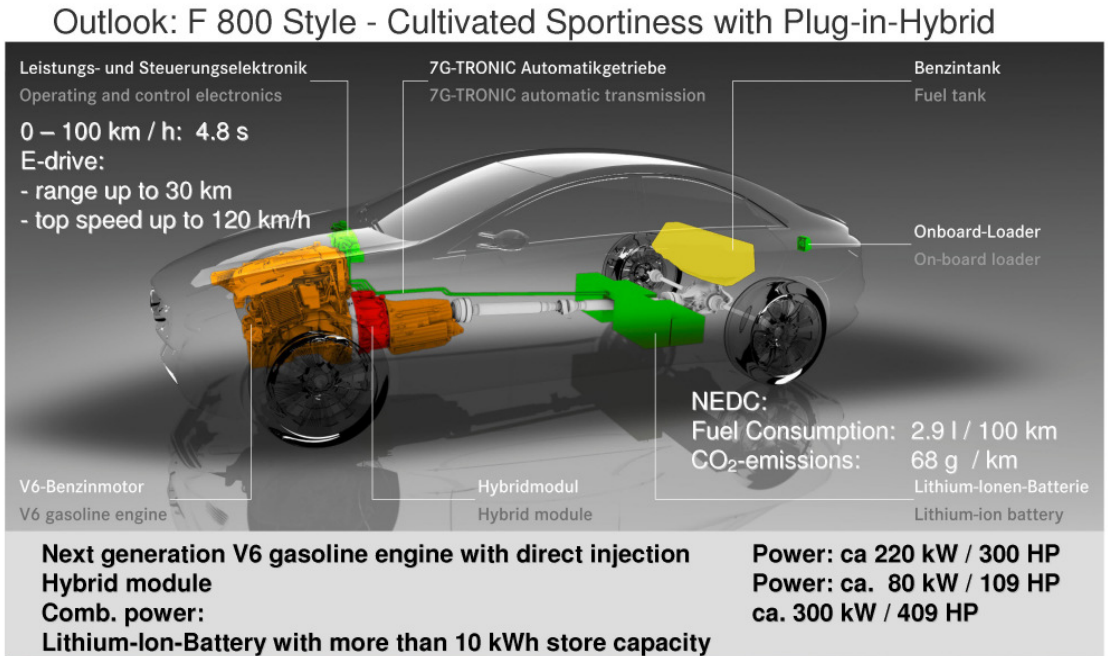


Abb. 16: Outlook: F 800 Style - Cultivated Sportiness with Plug-in-Hybrid

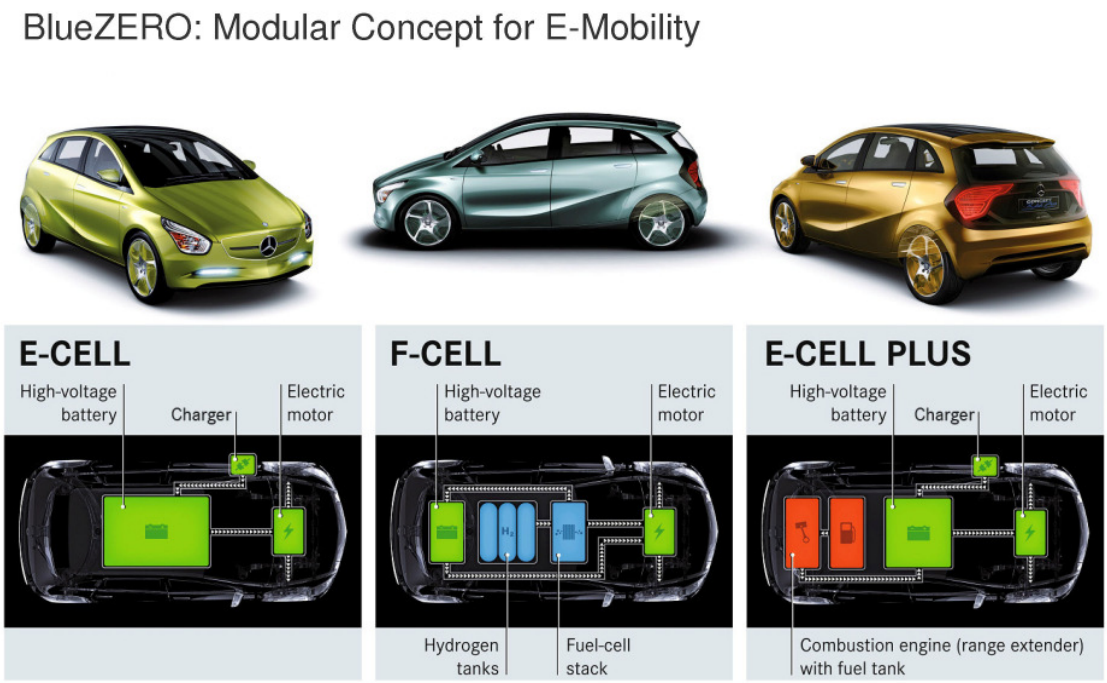
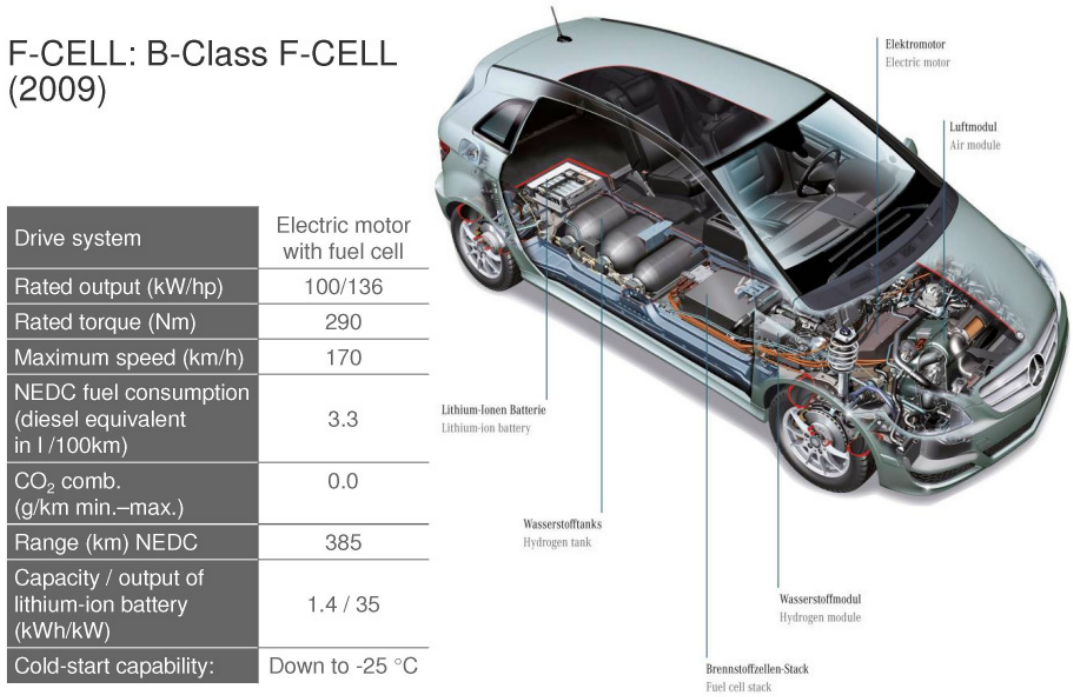


Abb. 17: BlueZERO: Modular Concept for E-Mobility



Drive system	Electric motor with fuel cell
Rated output (kW/hp)	100/136
Rated torque (Nm)	290
Maximum speed (km/h)	170
NEDC fuel consumption (diesel equivalent in l /100km)	3.3
CO_2 comb. (g/km min.–max.)	0.0
Range (km) NEDC	385
Capacity / output of lithium-ion battery (kWh/kW)	1.4 / 35
Cold-start capability:	Down to -25 °C

Abb. 18: Fuel Cell: B-Class F-CELL (2009)

E-CELL: A-Class E-CELL (2010)

- Permanent-field synchronous unit:
  - continuous power rating 50kW (68 hp)
  - peak output 70 kW (95 hp)
  - high maximum torque of 290 Nm
- Two high-efficiency lithium-ion batteries providing a range of over 200 km (NEDC)
- Dynamic performance:
  - Maximum speed 150 km/h
  - 0 - 60kph in 5.5s
- Production of small series started at Rastatt Plant. Vehicles will be leased to selected customers in several European countries including Germany

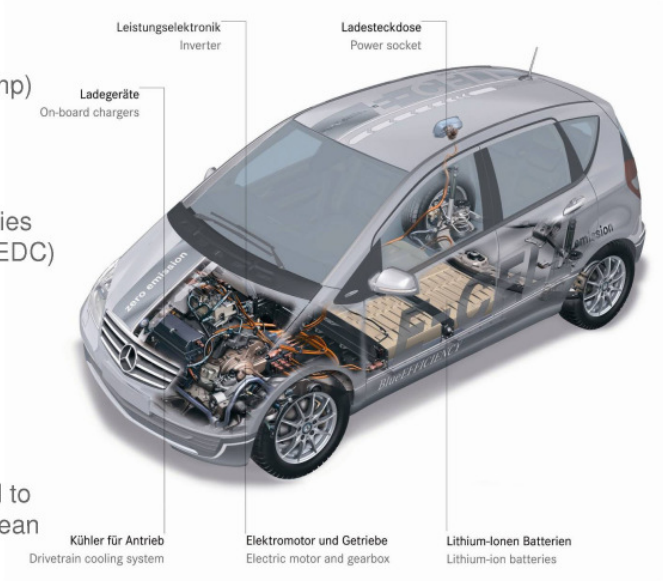


Abb. 19: E-Cell: A-Class E-CELL (2010)