

**Urban mobility—efficient, comfortable, agile, and affordable:
the MAHLE 48-volt vehicle concept MEET**

- Maximum efficiency: seven days in day-to-day city traffic without charging
- Comfortable: individual comfort zones implemented at less cost to the environment
- Driving pleasure: agile and networked through the city
- Affordable: 25 percent lower costs in the powertrain

Stuttgart, September 12, 2017 – In a world debut, MAHLE presents the vehicle concept “MEET” (MAHLE Efficient Electric Transport) to the public at IAA Cars in Frankfurt/Germany. MEET is systematically aligned to the needs of urban mobility. The concept combines maximum efficiency, individual comfort, driving pleasure—and is still affordable.

Efficient and highly integrated—MAHLE twin-power drive unit
MEET makes use of the new MAHLE 48-volt twin-power drive unit. It combines two electric motors, the transmission, and a 48-volt electronics system. The MAHLE IPM (Interior Permanent Magnet Synchronous Motor) traction drive provides maximum efficiency and dynamics in a wide speed range. The MEET demonstrator vehicle initially contained a MAHLE drive unit comprising two motors each with 14 kilowatts of mechanical continuous output and 36 newton meters of torque. At the IAA we are demonstrating the next evolutionary step with 20 kilowatts of continuous output and 80 newton meters of torque per motor. The motors drive the rear wheels via a central transmission.

Go further comfortably—seven days with no need to charge
In the urban application area, the technical focus of MEET is on maximum energy efficiency. The interaction of various energy-saving technologies in the fields of powertrain and thermal

management increases efficiency and significantly extends the cruising range of the vehicle.

As in all vehicles with a purely electric powertrain, one of the biggest challenges with respect to energy storage is heating the interior, particularly in winter. Indeed, by eliminating local emissions, the system lacks the most important heat source—the combustion engine. As a result, any temperature-related output such as the heating of the heating air places a burden on the battery and therefore on the vehicle's cruising range.

Maximum efficiency without compromises—and even with improvements—in comfort are therefore a top priority in MEET. MAHLE achieves thermal efficiency through measures such as a thermoelectric heat pump and surface heaters with individual comfort zones in combination with dual-zoned air conditioning. As a result, MEET achieves up to seven days of inner city trips—with just one charge. Expressed in figures, innovative thermal management increases the cruising range by 5 percent in summer and by as much as 50 percent in winter.

Driving pleasure redefined—zippy, agile, intuitive

In urban traffic, maximum speed is not what counts. With a top performance of 40 to 60 kilowatts—depending on the model of the motor—MEET is very zippy in the relevant speed range. The basic model of MEET accelerates from 0 to 50 km/h in five seconds. When using the new MAHLE motors each with a peak power of 30 kilowatts, this time drops to less than three seconds. Maneuvering and parking are supported by the torque vectoring functionality of the MAHLE twin-power drive unit: MEET is rendered exceptionally agile thanks to the selective wheel torque output of the two electric motors.

The innovative operating concept ensures that the driver is not distracted while driving but can still use all the functionality safely. Handling MEET is intuitive and simple—despite a wide range of functions such as controlling the navigation, sound, and air

conditioning systems, or accessing the technical status of the vehicle. This is where the comprehensive expertise of the MAHLE subsidiary BHTC comes into play. The operating concept enables a contact-free, gesture-based control, haptic feedback, and personalized comfort settings as well as the preconditioning of the interior, for example via a smartphone app during charging.

Affordable—designed for the end customer

Despite its technical sophistication, MEET is an affordable vehicle concept. There are several reasons for this:

- MEET is a platform concept. The modular approach can be flexibly transferred to a range of vehicle concepts.
- Economies of scale are generated. For example, the modular drive unit may also be easily used as an e-axle in a 48-volt hybrid system. In addition, MAHLE believes that all the technologies in MEET can be carried over into large-scale production.
- The 48-volt approach requires fewer safety measures in comparison with high-voltage systems, reducing the cost of the drive by 25 percent.

MAHLE combines expertise for new directions in e-mobility

MEET, MAHLE Efficient Electric Transport, is the vehicle concept for tomorrow's urban mobility. With MEET, MAHLE is actively addressing the current challenges of the automotive industry. MEET combines the broad MAHLE portfolio and expertise in the fields of thermal management, powertrain, electronics, and user interfaces, and convincingly demonstrates today what the new directions in e-mobility will be.

MEET and its overall concept will be presented by MAHLE for the first time at IAA 2017, Stand C40 in Hall 8.0. We look forward to your visit!

About MAHLE

MAHLE is a leading international development partner and supplier to the automotive industry as well as a pioneer for the

mobility of the future. The MAHLE Group is committed to making transportation more efficient, more environmentally friendly, and more comfortable by continuously optimizing the combustion engine, driving forward the use of alternative fuels, and laying the foundation for the worldwide introduction of e-mobility. The group's product portfolio addresses all the crucial issues relating to the powertrain and air conditioning technology—both for drives with combustion engines and for e-mobility. MAHLE products are fitted in at least every second vehicle worldwide. Components and systems from MAHLE are also used off the road—in stationary applications, for mobile machinery, rail transport, as well as marine applications.

In 2016, the group generated sales of approximately EUR 12.3 billion with about 77,000 employees and is represented in 34 countries with 170 production locations. At 15 major development centers in Germany, Great Britain, Luxembourg, Spain, Slovenia, the USA, Brazil, Japan, China, and India, 6,000 development engineers and technicians are working on innovative solutions for the mobility of the future.

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