

Press release

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Strong interest in MAHLE range extender for e-trucks

- First specific projects launched with commercial vehicle manufacturers
- Range extenders can accelerate the adoption of battery-electric trucks regardless of gaps in the existing charging infrastructure
- Higher range and greater flexibility combined with lower vehicle weight can reduce total cost of ownership
- New MAHLE Contactless Transmitter (MCT) e-motor for trucks eliminates dependence on rare earths and boosts the efficiency of electric drive systems
- MAHLE calls for technological diversity in political regulation for the successful defossilization of road transport
- MAHLE CEO Arnd Franz: "The market needs economical, practicable solutions for electrification."
- "Electrified. Efficient. Economical." MAHLE showcases innovations for sustainable, economical road transport at IAA TRANSPORTATION

The new MAHLE range extender system for battery-electric trucks has already aroused considerable interest among customers prior to its world premiere at IAA TRANSPORTATION 2026. The technology group has launched first specific projects with commercial vehicle manufacturers in order to produce prototypes and test vehicles on the road in the near future. The range extender can accelerate the ramp-up of battery-electric commercial vehicles as it provides additional range and flexibility, allowing road haulage companies to combine economics and sustainability. "The positive response from our customers shows that the market needs economical, practicable solutions for electrification," said Arnd Franz, Chairman of the Management Board and CEO of MAHLE. As another world premiere in Hanover, MAHLE is showcasing a new permanent magnet-free electric motor (MCT) for heavy trucks. This motor does not require any rare earth elements, reduces the weight and improves the efficiency of electric drive systems. MAHLE is calling for technological diversity in political regulation so that battery-electric drive systems, also with range extenders, and high-efficiency technologies for the use of renewable fuels can contribute to the defossilization of road transport. Under the motto of "Electrified. Efficient. Economical." MAHLE is showcasing innovations for sustainable, economical commercial vehicles at the leading international

trade fair for transportation from September 15 to 20, 2026. The MAHLE stand is located in Hall 11 at the Hanover Exhibition Center.

Electric truck with the everyday capabilities of a diesel

The demands faced by the road transport industry are high. Haulage companies need to reduce carbon dioxide emissions at the same time as ensuring reliable, economical operation of their fleets. Especially in long-distance transport, the charging infrastructure, which is still inadequate in many areas, long charging times and high charging prices continue to pose challenges for the ramp-up of battery-electric trucks.

The MAHLE Group's response to these challenges is its new range extender system for electric trucks. This is a smart power unit that starts up at precisely the right time and significantly extends the range of a battery-electric truck as the need arises. "Range extenders may represent a breakthrough for the electrification of road transport at the same time as safeguarding fleet economics," said Arnd Franz.

The range extender is a compact unit combining generator, internal combustion engine, thermal management, fuel tank, AdBlue tank and exhaust gas treatment. The unit can easily be integrated in existing battery-electric vehicle platforms. The main component is a high-voltage generator with a continuous output of 110 kW and a peak output of up to 130 kW. Thanks to its newly developed advanced oil cooling system, the generator has a power density of more than 7 kW per kilogram. The integrated thermal management system with 48 kW of high-temperature and 15 kW of low-temperature cooling capacity also ensures efficient, reliable operation.

The range extender replaces about one-third of the present battery capacity of a battery-electric truck. As a result, the rear axle load can be reduced by about 400 kilograms and the total vehicle weight by about 600 kilograms. All in all, a BEV truck equipped with this system can reach a total range of more than 800 km, with the battery providing about 400 km and the range extender the remaining 400 km.

Compared with a conventional drive system, the CO₂ emissions in real-life operation can be reduced by more than 80 percent. If HVO100 renewable fuel is used, the truck can be operated with virtually zero CO₂ emissions.

Another world premiere at the IAA: MCT electric motor without rare earth elements

The new MCT (MAHLE Contactless Transmitter) electric motor for electric drive axles of heavy commercial vehicles is not equipped with permanent magnets and therefore does not require any rare earth elements. Compared with a conventional permanent magnet synchronous motor, the MCT electric motor saves up to 3 kilograms of rare earth magnets per vehicle, thus reducing dependence on critical raw materials.

With a peak output of 370 kW and torque of over 900 Nm, the MCT electric motor offers the high power density needed for demanding applications in heavy truck operation. It makes the drive system also up to 10 kg lighter than comparable solutions, further improving vehicle efficiency. In the VECTO driving cycle, the motor has an efficiency of 95 percent. In real-life driving cycles covering a wide variety of applications, the drive system reaches higher efficiency levels than comparable permanent-magnet electric motors. The technology therefore combines resource conservation, high performance and energy efficiency in a future-oriented drive system concept for electric commercial vehicles.

Renewable fuels play a key role in defossilization

Even though the use of internal combustion engines is declining throughout the world, especially in China and Europe, they remain relevant and account for significant volumes in all regions. This is especially the case because the demand in the commercial vehicle sector remains high. This is why MAHLE is consistently developing these drive systems for use with renewable fuels such as hydrogen, bio-ethanol, HVO100 or bio-LNG. Especially with respect to existing vehicle fleets, these fuels offer considerable potential for the rapid, large-scale reduction of CO₂ emissions.

“Technology diversity does not present a conflict for defossilization; on the contrary, it is a prerequisite,” said Arnd Franz. Battery-electric drive systems, hydrogen technologies, renewable fuels and range extender systems should supplement each other with a view to achieving climate targets as rapidly and economically as possible. This will only be possible with reliable regulatory conditions. This is why MAHLE calls for a review of European CO₂ regulations for heavy commercial vehicles in the near future which gives greater consideration to the realities of the marketplace.

MAHLE grows with commercial vehicle technologies

MAHLE is and remains a reliable partner to its 120 commercial vehicle customers. Components from the technology group are used in Europe in almost all battery-electric and fuel cell trucks and MAHLE is participating in virtually all the hydrogen engine projects currently in progress.

With many products for the commercial vehicle segment, MAHLE is either the world market leader or among the top three. "For customers who need technological expertise and system competence, MAHLE is the right address. Over the next five years, we intend to grow faster than the market with our commercial vehicle business," said the MAHLE CEO.

The digital press folder for IAA Transportation 2026 with further information and images is available at the MAHLE Newsroom <https://link.mahle.com/iaatransportation2026EN> or via this QR code:



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Arnd Franz, Chairman of the Management Board and CEO of MAHLE



With high-efficiency components, MAHLE is forging ahead with its total systems approach to the electrification of heavy trucks.



The MAHLE new range extender system for heavy electric trucks combines the sustainability of an electric drive system with the flexibility and range of an internal combustion engine.



The key component of the range extender system is a high-voltage generator that provides a reliable supply of energy to the truck drive system even on demanding routes with a full load.



The new MCT electric motor from MAHLE for use on the electric drive axles of heavy trucks is not equipped with permanent magnets and therefore does not require any rare earth elements.

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About MAHLE

MAHLE is a leading international development partner and supplier to the automotive industry with customers in both passenger car and commercial vehicle sectors. Founded in 1920, the technology group is working on the climate-neutral mobility of tomorrow, with a focus on the strategic areas of electrification and thermal management as well as further technologies to reduce carbon emissions, such as fuel cells or highly efficient, clean combustion engines that also run on synthetic fuels, renewable fuels or hydrogen.

MAHLE generated sales of €11.3 billion in 2025. Employing some 64,000 people at 127 production locations and 11 technology centers, the company is represented in 28 countries. (as at: 12/31/2025)

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