

Media Information

October 25, 2023

BMW Group Logistik successfully tests electric semi-trailer in various scenarios from real-world logistics operations.**+++ Fuel saving of around 48 percent in combination with diesel trucks +++ Range of more than 600 kilometres with an electric tractor +++ Collaboration with the technology innovator Trailer Dynamics +++**

Munich. BMW Group Logistik, in collaboration with the technology innovator Trailer Dynamics, has successfully tested an electrically powered semi-trailer on various tracks and over varying distances in real-world logistics operations. With the diesel truck used, average fuel savings of more than 46 percent over short and medium distances, and more than 48 percent over long distances, were attained. Using a combination of electric tractor and e-trailer, a range of more than 600 kilometres without recharging was achieved. There were four days of pilot tests over short and medium distances around the BMW Group location at Dingolfing, and three days of testing over long distances between Mamming in Lower Bavaria and the BMW Group plant in Leipzig. The capabilities of Trailer Dynamics' e-trailer were put to the test to identify the best application scenarios for BMW Group Logistik.

"As the BMW Group, we are – as the first German car manufacturer – a member of the 'Business Ambition for 1.5°C' of the Science-Based Targets Initiative and are committed to the target of complete climate neutrality throughout the entire value chain. Therefore, we are using visionary projects to consistently accelerate the BMW Group's Green Transport Logistics strategy. The pilot testing with Trailer Dynamics' e-trailer showed that using this kind of electrified semi-trailer significantly reduces the fuel consumption of standard diesel tractors and noticeably increases the range of e-trucks," said Michael Nikolaides, Head of BMW Group Production Network and Logistics.

Semi-trailer with electric drive axle.

Unlike a conventional semi-trailer, the e-trailer from Trailer Dynamics of Eschweiler near Aachen is fitted with its own battery and electric drive axle. This axle supports the semi-trailer truck's engine. Integrated sensors on the kingpin between the tractor and the trailer ensure an optimum load ratio and thus the best-possible fuel economy. As well as reducing the

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tractor's energy consumption, the e-trailer's powered axle also provides additional power during start-up and on slopes. In combination with a diesel truck, security of supply is also ensured even if the battery of the e-trailer is empty.

The tests over a medium distance took place over four consecutive days on real logistics routes around the BMW Group location of Dingolfing. The round trip transportations with demanding route topographies were carried out with the logistics service provider Gahr International. Up to 250 kilometres were covered per day on motorways and main roads, with automated and simultaneous data collection from the e-trailer and tractor being performed for the first time. That showed an average reduction in diesel consumption of 46.59 percent.

Even greater fuel savings over long distances.

The long distance tests were also performed on real logistics routes and with a load of more than 16 tonnes between Leipzig and Mamming. Energy modules for BMW electric cars were transported over a distance of 450 kilometres with mainly on motorways. Compared with journeys with a conventional trailer and identical load, this resulted in diesel savings of more than 48 percent on average. The e-trailer's battery was charged carbon neutrally using 100 percent green energy, meaning that with series application, a single electric trailer could facilitate a CO₂ reduction of around 120 tonnes per year ("Well to Wheel").

100 percent CO₂ reduction when used with an e-truck.

A 100 percent reduction in CO₂ while simultaneously enabling long-distance routes can be achieved by combining an e-trailer with an electric tractor and 100 percent green electricity. This scenario was tested on the final day of medium-distance testing in the Dingolfing area using a Volvo e-truck. With a normal load, a driving distance of more than 600 kilometres was achieved without recharging.

The fuel savings when using e-trailers are counterbalanced by their heavier weight and the resulting lower payload, but this is partially offset by an increase in the permissible total weight for trailers in the EU. The higher acquisition costs of the e-trailer are counteracted by lower operating costs. Over long distances in particular, the use of e-trailers can facilitate a

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significant decarbonisation of the existing fleet while simultaneously saving costs.

Trailer Dynamics' vision is to make a significant contribution to decarbonising the economy with e-trailers and to promote sustainable, and ideally zero-emission, logistics. With our partner BMW and the forwarding agents Gahr International and Elflein Spedition & Transport, with these test drives we are taking the next important step in making our vision a reality," said Abdullah Jaber, CEO and Managing Director Trailer Dynamics GmbH.

With the visionary e-trailer pilot projects, the BMW Group is accelerating the systematic implementation of their 'Green Transport Logistics' strategy. This cross-sector strategy is an integral element of the BMW iFACTORY. "It is important to us to support the development of innovative technologies in transport logistics. Establishing innovations like these helps our logistics partners and us to reduce CO₂ emissions and improve the overall footprint," explained Michael Nikolaides.

If you have any questions, please contact the following:

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The BMW Group

With its four brands BMW, MINI, Rolls-Royce and BMW Motorrad, the BMW Group is the world's leading premium manufacturer of automobiles and motorcycles and also provides premium financial and mobility services. The BMW Group production network comprises over 30 production sites worldwide; the company has a global sales network in more than 140 countries.

In 2022, the BMW Group sold nearly 2.4 million passenger vehicles and more than 202,000 motorcycles worldwide. The profit before tax in the financial year 2022 was € 23.5 billion on revenues amounting to € 142.6 billion. As of 31 December 2022, the BMW Group had a workforce of 149,475 employees.

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The success of the BMW Group has always been based on long-term thinking and responsible action. The company set the course for the future at an early stage and consistently makes sustainability and efficient resource management central to its strategic direction, from the supply chain through production to the end of the use phase of all products.

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