Press Release
MAN Truck & Bus

Long-distance transport of the future: IAA premiere of the MAN TGX hybrid concept

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Major potential for CO_2 savings in long-distance transport

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Hybrid drives in commercial vehicles will be part of the drive concept of the future in all areas of application. However, different hybrid concepts are required in light of the very different drive requirements for buses and trucks in city and long-distance transport and in special vehicles: today the city bus uses a serial diesel-electric hybrid. In the form of the Metropolis research vehicle, MAN has built a fully electrically-operated heavy truck with a range extender for tasks in the city.

With the TGX hybrid, MAN is presenting a concept vehicle for a TCO-optimised hybrid drive in long-distance transport at the IAA. For heavy trucks in long-distance transport, a diesel-electric parallel hybrid is the right technology. Here the diesel engine is the main drive source – the hybrid drive opens up the opportunity of recuperating, storing and reusing braking energy. Most road miles are driven on long-distance routes, meaning that the overall potential to save CO_2 is greatest here among all commercial vehicle hybrid applications.

The TGX hybrid will be driven by a parallel hybrid, supplied by a diesel engine with 440 hp and an electric motor with 130 kW drive power. The electric motor acts as an alternator when coasting and braking. A MAN TipMatic gearbox transfers power to the rear axle.

The recovered energy is stored in a battery with a capacity of around two kilowatt hours. The TGX hybrid uses this energy to increase torque for the diesel engine on gradients. The diesel engine can therefore be driven in the most economical engine speed range and the additional torque avoids downshifts on hills, thereby saving fuel.

Heinz-Jürgen Löw, Sales & Marketing Chair at MAN Truck & Bus, explains "MAN is presenting the TGX hybrid concept at the IAA to show the advantages of the hybrid drive in long-distance transport for operators and the environment. We are looking forward to discussions with our international customers."

The hybrid concept in the TGX is designed to optimise the TCO (total cost of ownership). The focus here is on fuel savings as a result of fewer gearshifts and recovering kinetic energy when braking and driving downhill. Tests show that this design has the potential to save around eight percent of fuel, corresponding to a CO_2 reduction at the same level.

As the electric motor serves only to assist the diesel engine, the system is lean and saves weight, with the hybrid components in the system weighing around 400 kg. For this reason, MAN has focused the range of functions on fuel savings alone, as a system that allows a heavy truck to travel short distances using electric power alone would by contrast be technologically more complex, and the battery would be significantly heavier, larger and more expensive.

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