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First electric-powered refuse-collecting vehicle

Volvo Truck shows in Hanover at IAA an electric truck model. It has been built in cooperation with Faun, a market-leading manufacturer of garbage trucks.

The Volvo FE Electric carries refuse-collecting equipment from Faun and reaches up to 200 km (Photo: Volvo)

Just three weeks after the unveiling of Volvo Trucks' first all-electric truck, the Volvo FL Electric, the company is expanding its product range with yet another electric truck. The Volvo FE Electric is designed for heavier city distribution and refuse transport operations with gross weights of up to 27 ton. Sales will commence in Europe in 2019.

"With the introduction of the Volvo FE Electric we have a comprehensive range of electrically powered trucks for city operations and are taking yet another strategic step forward in the development of our total offer in electrified transport solutions. This opens the door to new forms of cooperation with cities that target to improve air quality, reduce traffic noise, and cut congestion during peak hours since commercial operations can instead be carried out quietly and without tale-pipe exhaust emissions early in the morning or late at night," said Claes Nilsson, President Volvo Trucks.

The first Volvo FE Electric, a refuse truck with a superstructure developed together with the refuse collection bodybuilder, Faun, will start operating in early 2019 in Hamburg (Germany). The refuse collecting equipment is based on the C*/e*ANopen European standard (EN TR 16815) developed by body builders and their suppliers within the nonprofit CiA organization.

"Hamburg, which in 2011 was named European Green Capital of the EU, has worked long and successfully on a broad front to enhance green and sustainable urban development. This applies not least in the transport sector, where electrified buses from Volvo are already being used in the public transport network. The experiences and ambitions from this venture make Hamburg a highly interesting partner for us," explained Jonas Odermalm from at Volvo Trucks. Prof. Dr. Rüdiger Siechau, CEO of Stadtreinigung Hamburg, sees large potential for environmental benefits with electric trucks in the city: "Today, each of our 300 conventional refuse vehicles emits approximately 31.300 kg carbon dioxide every year. An electrically powered refuse truck with battery that stands a full shift of eight to ten hours is a breakthrough in technology. Another benefit is the fact that Stadtreinigung Hamburg generates climate-neutral electricity that can be used to charge the batteries."

The Volvo FE Electric using CAN-based in-vehicle networks will be offered in several variants for different types of transport assignment.. For instance with Volvo's low-entry cab, which makes it easier to enter and exit the cab and gives the driver a commanding view of surrounding traffic. The working environment improves too as a result of the low noise level and vibration-free operation. Battery capacity can be optimized to suit individual needs, and charging takes place either via the mains or via quick-charge stations.

"Our solutions for electrified transport are designed to suit the specific needs of each customer and each city. In addition to the vehicles, we will offer everything from route analysis to services and financing via our network of dealers and workshops throughout Europe. We also have close partnerships with suppliers of charging infrastructure," said Jonas Odermalm.

The truck is equipped with two 370-kW electric motors with a two-speed transmission. Maximal torque of the electric motors is 850 Nm. Maximal torque of rear axle is 28 kNm. For the electrical energy storage Lithium-ion batteries are used (200 kWh to 300 kWh). For the charging two systems are available: CCS2 with a maximum DC charge power of 150 kW and a low-power charging with a maximum AC charge power 22 kW. The charging time is 1,5 h respectively 10 h.

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