

Press Release

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Technology Concept ElvoDrive: High Efficiency and Clean Air

September 2012

The share of alternative drive concepts for public transport systems is continuously rising. Voith is taking this development on board and will present the technology concept ElvoDrive - a serial hybrid drive - at the IAA Commercial Vehicle Show. The highly efficient ElvoDrive can be combined with various energy sources and transmit the required power fully electrically. Fuel economy and the reduction of emissions, as well as the possibility of driving purely electrically, are in focus of the development.

The basis behind the ElvoDrive uses the fundamental principle of all hybrid drives: storing the highest possible amount of the energy generated during braking and utilizing it on for accelerating. This helps to save fuel and reduce the emission of harmful carbon dioxide. The ElvoDrive takes one step further, as it is designed as a serial hybrid and transmits the required power purely electrically. The combustion engine can be operated at the so-called point of lowest specific consumption, which saves even more fuel. Due to the modular design of the ElvoDrive, later stages will be offering a huge bandwidth from pure fuel savings to emission-free driving. Dr. Christian Jaufmann, Manager Bus Drives at Voith, describes a possible application: "In inner city areas, the bus drives purely electrically and thus gets its energy exclusively from the battery. As soon as the bus operates on longer routes, the diesel generator kicks in, in order to recharge the energy storage system.

Once the bus returns to the inner city, the system switches back to purely electric operation." Although this application is a vision yet to be realized, Jaufmann is optimistic: "I can well imagine that this scenario will be a normal occurrence in about five years' time," he explains.

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In a purely electrically driven bus, the Voith ElvoDrive operates with four components: the traction unit consisting of electric motor and two-stage automated gearbox, the converter, an electronic control system and a battery. Since the ElvoDrive operates with minimum losses in the driveline, the battery is optimally utilized.

Page 2
Press Release
September 2012

With the ElvoDrive, Voith is presenting a concept that can offer solutions for the environmental demands of future transport systems. Apart from applications in citybuses, the drive is also an eco-friendly option for refuse vehicles or distribution trucks, which are in frequent service in inner-urban areas.



ElvoDrive

Voith Turbo, the specialist for hydrodynamic drive, coupling and braking systems for road, rail and industrial applications, as well as for ship propulsion systems, is a Group Division of Voith GmbH.

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Page 3
Press Release
September 2012

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