

Media Release

Voith Turbo

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Milestone reached thanks to retrofit: First electric tour bus type TZ-S eCoach takes to the road in Erding

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- Voith and To Zero collaborate to convert diesel tour bus to battery-electric drive system
- One of the first retrofit projects of its kind in Germany completed for Erding bus company Scharf OHG
- In the tour bus segment too, retrofits save costs, resources and CO₂ compared with vehicle new builds

HEIDENHEIM, GERMANY: Heidenheim-based global technology group Voith and vehicle conversion firm To Zero Electric Vehicles GmbH from Rausdorf/Erfurt were commissioned by longstanding bus company Scharf OHG to retrofit a battery-electric drive to a diesel tour bus – marking the next milestone on the road to more sustainable bus transport. Not just in the public transport realm, as was previously the case, but now in the tour bus sector as well.

This retrofit project is one of the first of its kind in Germany. To Zero took charge of the technical planning and the conversion, while Voith contributed its innovative Voith Electrical Drive System (VEDS). The VEDS is already being used successfully in many new electric vehicles and has won several awards in Europe for its efficiency and sustainability.

In the retrofit, the VEDS replaces the previous diesel engine and gear box. Specifically, this is a powerful electric drive with a cutting-edge design that is specially tailored to the requirements of tour coaches and fits seamlessly into the existing vehicle architecture. The electric motor achieves a peak output of 410 kW (approx. 557 HP) – and thus delivers more power than the original combustion engine.

This power is available instantaneously over the entire speed range, ensuring fast acceleration and safe overtaking on the freeway. “In addition, our VEDS is distinguished by its high efficiency and reliability. These are all properties that have already been proven in other retrofit projects. Just

recently, for example, at the Transdev Group in Schwäbisch Hall,” explains Holger Seefelder, Vice President Sales EMEA at Voith.

The battery technology is the second crucial component for a successful retrofit. For example, the converted bus uses a battery pack with a total capacity of 420 kWh. This huge battery storage volume allows a very long range in practice. The battery system consists of several modules installed in the vehicle where the diesel drive train and peripherals were previously located: One part of the battery units migrates to the former engine bay at the rear, another uses some sections of the luggage compartment. “We have optimized the battery pack so that it does not interfere with the passenger space or drastically reduce the volume of luggage that can be carried. This means that the seating and payload remain almost completely intact,” confirms Michael Pfeffer, CEO and founder of To Zero.

Another important aspect is that the existing assistance and safety systems of the TZ-S eCoach electric bus – from ABS and lane keep assistant to emergency braking and turning assistants – remain fully functional after the retrofit. The tour coach therefore continues to meet all statutory provisions, offers the accustomed level of passenger comfort, and provides sufficient range for everyday travel. “And last but not least, the retrofit offers many other sustainability and economic benefits compared with buying a new vehicle. For example, it conserves valuable resources, saves investment costs, and avoids the problem of availability and/or long delivery times – making a significant contribution to meeting the strict provisions of the Clean Vehicles Directive (CVD) and German climate targets in the transport sector,” say Martin and Andreas Scharf, the owners and managing directors of Scharf Reisen.

About the Voith Group

The Voith Group is a global technology company. With its broad portfolio of systems, products, services and digital applications, Voith sets standards in the markets of energy, paper, raw materials and transport. Founded in 1867, Voith today has around 22,000 employees, sales of € 5.2 billion and locations in over 60 countries worldwide and thus is one of the larger family-owned companies in Europe.

The Group Division Voith Turbo is part of the Voith Group and a specialist for intelligent drive technology, systems as well as tailor-made services. With its innovative and smart products, Voith offers highest efficiency and reliability. Customers from highly diverse industries such as oil and gas, energy, mining and mechanical engineering, ship technology, rail and commercial vehicles rely on the advanced technologies and digital applications of Voith.

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The TZ-S eCoach electric bus is part of the fleet of long-established Erding bus company Scharf OHG.

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