

Press release

Düsseldorf, October 11, 2023

World premiere at Busworld: the innovative electric bus from the Van Hool – Kiepe Electric – Alstom consortium for Île-de-France Mobilités

- **The 100% electric, 24 meter double articulated bus from Van Hool for Île-de-France Mobilités is based on a modular platform concept eBus HPC (High Power Charging) from Kiepe Electric specifically designed for battery-electric buses**
- **Kiepe Electric is delivering the complete traction system, on-board software for energy and traction control as well as the AI-based Smart Fleet Management (SFM) system**
- **The system integration from Kiepe Electric requires optimal interaction of technologies within the system network and facilitates short charging cycles of approximately 5 minutes**

Düsseldorf, October 11, 2023 - Kiepe Electric, Düsseldorf, is pleased to communicate an important milestone in its sustainable transport concept for our customer Île-de-France Mobilités (IdFM) in Paris, France. The industry's first 24 meter double-articulated electric bus was unveiled at the Busworld in Bruxelles in partnership with Van Hool. Kiepe Electric is supplying the complete traction system (motors, high-performance quick-charging batteries, traction distribution units), the on-board software for energy and traction control as well as the AI-based Smart Fleet Management (SFM) for this next generation vehicle platform. The Exqui.City bus will initially serve the new BRT (Bus Rapid Transit) line Tzen 4 in the south of Paris in 2024.

Alexander Ketterl, Managing Director of Kiepe Electric: "This project represents a groundbreaking milestone in the transformation to e-mobility. Together with our experienced consortium partners Van Hool and Alstom and with our customer Île-de-France Mobilités, we were able to design and offer one of the most modern electric buses available in the world today. Using our system expertise, we designed the entire electric system of the bus and integrated our own components for this project. This meets an important customer requirement: potential 24/7 operation with limited downtime when charging the batteries."

Christoph Wede, Director Global Sales for E-Mobility and Business Development at Kiepe Electric: "We offer OEMs a manufacturer-independent platform concept for battery-powered electric buses. This allows transportation authorities to efficiently replace their diesel buses with zero emission based technology solutions. Île-de-France Mobilités is consistently pushing forward toward sustainable mobility and we sincerely appreciate the trust that has been placed in us for this innovative project."

Modular platform concept for battery-electric buses from Kiepe Electric

The 100% electric Exqui.City 24 articulated bus from Van Hool incorporates our most advanced electric propulsion system technology developed to date. The manufacturer-independent, standardized and modular platform concept for battery-electric buses – called eBus HPC (High Power Charging) – was developed for all vehicle lengths, including 12, 18, 24 meter variants. The bus is charged via Alstom's conductive static ground charging system (SRS), which is coupled to an on-board power system supplied by Kiepe Electric. The equipment is specifically designed to ensure the highest safety and most advanced passenger amenities including air conditioning, passenger information systems and accessibility. The 24 meter platform has a capacity for up to 140 passengers. Thirty buses

are scheduled to be delivered by the end of 2023, and launched on Paris' Tzen 4 line. It is anticipated that these vehicles will transport roughly 40,000 passengers daily in 2024 (Viry-Chatillon and Corbeil-Essonnes). These vehicles will also service the Tzen 5 line between Paris and Choisy-le-Roi. An additional option for 26 buses is expected to be exercised in the near future.

System know-how and expedited loading times are convincing

Kiepe Electric's expertise in system integration improves the performance of the bus. The optimal interaction of the technologies in the system network results in a significantly increased charging capacity of up to 800 kilowatts. This results in abbreviated recharging cycles and greater overall vehicle availability. Alexander Ketterl explains this: "Kiepe Electric relies on low battery capacity when designing the system. The necessary range, including extensive reserves, can be achieved with short charging cycles of 5 minutes." Ketterl underlines the innovative character: "The solution conserves natural resources and raw materials for batteries and at the same time reduces specific energy consumption due to its lower weight. As a result, more passengers can be transported and the vehicle's CO₂ footprint improves."

Kiepe Electric GmbH has the entire electrification value chain under one roof. Starting from system design and integration, development, production, testing & validation through to full service and obsolescence management. In the electric Exqui.City 24 articulated bus from Van Hool, Kiepe Electric has integrated the complete electric drive concept for two driven axles, including traction batteries, the heart of the traction system itself, and our multifunctional [Kiepe Traction Inverter \(KTI\)](#). Auxiliary consumer converters and cooling systems are also included in the scope of delivery, as is the power distribution unit (high-voltage distribution), vehicle software for energy management and drive control. A cloud-based data application consisting of consumption, route and performance parameters improves operational safety. The AI-based [Smart Fleet Management \(SFM\)](#) collects the operating data and ensures the highest possible circulation safety because the system knows or covers the necessary electricity charging requirements based on route information captured and learned. In addition, SFM supports battery-friendly charging, which has a positive effect on the lifespan of the batteries. SFM transfers all recorded (charging) information to a cloud based application, so buses also benefit from the data on routes that have not previously been traveled. Kiepe Fleet Management (KFM) in turn transmits the data to the transport company's base station.

Captions:

(IMG_0163) On October 6th, 2023, the Exqui.City 24 articulated bus celebrated its world premiere at Busworld Europe. Those who were enthusiastic about the new e-bus, which is scheduled to serve the south of Paris in 2024, were (from left): Guillaume Delabriere, Sales Kiepe Electric; Katharina Vagts, Tzen4 project manager at Kiepe Electric; Stéphane Beaudet, Mayor of Evry-Courcouronnes and Vice President of the regional council of the Île-de-France region responsible for transport; Alexander Ketterl, Managing Director of Kiepe Electric; Djearamin Ganesh, deputy mayor of Grigny. | © Kiepe Electric

(IMG_0180) Alexander Ketterl, Managing Director of Kiepe Electric at the world premiere of the Exqui.City 24 bus at Busworld Europe: "Together with the consortium partners Van Hool and Alstom and with our customer Île-de-France Mobilités, we were able to realize one of the most modern electric buses." | © Kiepe Electric

(IMG_0253) A public highlight at Busworld Europe: The electric 24-meter double-articulated bus from Van Hool for Île-de-France Mobilités includes the modular platform concept eBus HPC (High Power Charging) from Kiepe Electric. | © Kiepe Electric

(IMG_0310) Christoph Wede, Director Global Sales E-Mobility and Business Development at Kiepe Electric, understands the Tzen BRT project for Île-de-France Mobilités as an great example of how sustainable mobility can be advanced. | © Kiepe Electric

Knorr-Bremse (ISIN: DE000KBX1006, ticker symbol: KBX) is the global market leader for braking systems and a leading provider of other systems for rail and commercial vehicles. Knorr-Bremse's products make a decisive contribution to greater safety and energy efficiency on rail tracks and roads around the world. Some 32,600 employees at over 100 sites in more than 30 countries use their competence and motivation to satisfy customers worldwide with products and services. In 2022, Knorr-Bremse's two divisions together generated global revenues of EUR 7.1 billion. For more than 115 years, the company has been the industry innovator, driving developments in mobility and transportation technologies with an edge in connected system solutions. Knorr-Bremse is one of Germany's most successful industrial companies and profits from the key global megatrends: Urbanization, Sustainability, Digitalization and Mobility.

Knorr-Bremse subsidiary **Kiepe Electric**, based in Düsseldorf, Germany, is a globally active supplier of electrical systems to the world's leading rail vehicle and bus manufacturers. The company offers efficient solutions and ecologically sustainable concepts for low-emission public transportation, including eco-friendly electrical equipment for light rail vehicles, metros, regional rail networks and electric buses fitted with In Motion Charging (IMC) and High-Power Charging (HPC) systems.

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