

Press release

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Île-de-France Mobilités: innovative high power-charging solution from Alstom and Kiepe Electric for Tzen 4 goes into operation

- **First journey and high power-charging for the 100% battery-electric Tzen 4 double-articulated bus from the Van Hool - Kiepe Electric - Alstom consortium for Île-de-France Mobilités**
- **Charging solution with SRS static ground charging system from Alstom and on-board charging technology from Kiepe Electric in test operation**
- **System integration from Kiepe Electric and Alstom enables charging power of up to 800 kilowatts and a short charging time of less than 5 minutes**
- **Smart Fleet Management from Kiepe Electric shows charging and maintenance requirements for buses and supports battery-saving charging**

At the presentation of the new depot of Île-de-France Mobilités in Corbeil-Essonnes, the innovative 24-meter double-articulated, battery-electric bus from the Van Hool - Kiepe Electric - Alstom consortium completed its first drive in front of an audience. The high-power charging solution from Alstom and Kiepe Electric was presented live for the first time. The SRS static ground charging system from Alstom and the charging hardware and software from Kiepe Electric enable high-power charging with up to 800 kW and fast charging processes of less than 5 minutes. Kiepe Electric, provider of innovative electrical systems for public transport, also supplied the complete traction system.

The new BRT (Bus Rapid Transit) line Tzen 4 in the south of Paris is a pioneering project in terms of technology and sustainable urban transport. Alexander Ketterl, Managing Director of Kiepe Electric, is delighted: "The dimension of the project with the construction of the infrastructure and the new depot is enormous and at the same time shows what responsibility we as Kiepe Electric assume. On the one hand, we supply the entire vehicle drive including the software for the electric buses. In addition, together with Alstom, we have developed a reliable charging system that enables short downtimes and is important for the planned short bus frequency. In this way, Kiepe Electric makes a decisive contribution to the performance of the entire system." The Tzen 4 line of Île-de-France Mobilités between Corbeil-Essonnes and Viry-Châtillon will go into operation by the end of 2024.

The innovative French public transportation network Île-de-France Mobilités will receive 30 vehicles of the 100% electric 24-meter Exqui.City double-articulated bus from Van Hool. Each bus offers capacity for more than 140 passengers and includes the modular eBus HPC (High Power Charging) platform concept from Kiepe Electric for battery-electric buses. Katharina Vagts, Project Manager at Kiepe Electric, explains the charging process: "The bus is powered by the compact SRS static ground charging system from Alstom and an on-board system in the bus from Kiepe Electric. When the bus stops over the charging pad, this is detected by a coded radio system. The pantograph automatically extends from the bus and contacts the pads at the floor. Charging of the batteries with an output of up to 800 kilowatts can begin."

Each of the large buses has two electric motors with a maximum output of 180 kW each and 11 lithium-ion batteries, which are suitable for rapid charging. This means that the required range, including extensive reserves, can be achieved with short charging times of less than 5 minutes. The solution conserves natural resources and raw materials for batteries and also reduces specific energy consumption thanks to the lower weight. The bus can carry more

passengers and improves its CO₂ footprint. Furthermore, the HPC system allows to reduce the number of buses required. In addition, renewable energies such as photovoltaics can also be used during the day. With this innovative system solution from Kiepe Electric and Alstom operation is facilitated and optimized.

Smart Fleet Management for efficient energy use

Fast charging is a prerequisite for reliable driving and the same applies to the efficient use of energy. This is where Kiepe Electric's learning software helps with battery management, as Katharina Vagts reports: "The new buses are equipped with 'Smart Fleet Management'. This software monitors the entire bus fleet and learns with every kilometer driven in order to optimize power consumption. It displays the charging requirements precisely and also facilitates vehicle maintenance." In this way, Smart Fleet Management supports a gentle charging process for the batteries, which has a positive effect on their service life.

The charging stations are currently being installed on the future Tzen 4 route as part of the infrastructure work (bus lanes, stations, etc.). In the next step, the new buses will take test drives there and test the charging process.

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Image material:

(1 Tzen Van Hool - Jérôme Salomon) The Tzen 4 bus from Van Hool at the new Île-de-France Mobilités depot in Corbeil-Essonnes charges in less than 5 minutes with technology from Alstom and Kiepe Electric. | ©Van Hool, Jérôme Salomon

(2_Tzen4 et SRS_Alstom) Île-de-France Mobilités will receive 30 vehicles of the 100% electric 24-meter Exqui.City double-articulated bus. | ©Alstom

(3 Tzen4 et SRS_IDFM - Brice Perrin) At the the new depot of Île-de-France Mobilités in Corbeil-Essonnes, the double-articulated, battery-electric bus from the Van Hool - Kiepe Electric - Alstom consortium completed its first drive in front of an audience. | © Île-de-France Mobilités, Brice Perrin

Kiepe Electric, based in Düsseldorf, is a global supplier of electrical systems for leading rail vehicle and bus manufacturers. The company offers efficient solutions and ecologically sustainable concepts for emission-reduced public transportation with environmentally friendly electric equipment for streetcars, metros and regional trains as well as electric buses with In Motion Charging (IMC) and High Power Charging (HPC).

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