

Voltabox Receives Another Major Order for Trolleybus Battery Systems

- **Kiepe Electric commissions Voltabox with the delivery of 80 modular battery systems**
- **Standardization enables usage in different types of trolleybuses**
- **Initial use in four cities in Switzerland and Italy**
- **Project revenue in the mid-single-digit million range – delivery to begin in summer 2019**

Delbrück, Germany, January 30, 2019 – Voltabox AG [ISIN DE000A2E4LE9] has announced a major order for standardized lithium-ion battery systems for trolleybuses today. Therefore, the newly-developed standard container presents an innovative possibility to efficiently scale trolleybus battery systems. The order was placed by long-term customer Kiepe Electric. The delivery of the systems will begin in the middle of this year.

Each battery system is made up of three structurally identical standard containers – each of which contains 12 battery modules. With the standard container, Voltabox has developed a solution that considerably simplifies the conversion of trolleybus auxiliary drives to modern lithium-ion battery systems – therefore accelerating the process of phasing out diesel backup generators, which are harmful to the environment. Prior to that, a pilot project involving two trolleybuses to test this system solution was carried out in the Dutch city of Arnhem. As part of the long-term contract of the project, Kiepe Electric ordered 240 standard containers, which will equip trolleybuses in four cities in Switzerland and Italy. Series production is due to start immediately, and delivery is planned to be completed by the spring of 2021.

In addition to the 240 standard containers, which contain battery modules with long-lasting, lithium titanate (LTO) cells, Voltabox will also deliver the corresponding air-conditioning systems for the liquid cooling of the battery systems. These ensure optimal operating conditions even under high differences in temperature, as seen in many regions of Italy.

“We are very happy that a number of large European cities, as operators of trolleybus fleets, are again relying on the joint expertise of Voltabox and Kiepe Electric for the modernization

of their vehicles. In the market, this partnership is recognized as a leader in the equipment of trolleybuses with state-of-the-art drives,” says Jürgen Pampel, Chief Executive Officer of Voltabox AG. “The next generation of high-performance LTO battery systems based on our standard containers allows us to offer cities and their public transport companies a smart solution to upgrade their existing trolleybus fleets with sustainable, emission-free drives in a fast and efficient manner.”

Voltabox benefits just as much from its comprehensive understanding of the market as from its high market penetration in the field of battery-powered trolleybuses. The standard container is designed to be compatible with all vehicles of the leading trolleybus manufacturers in Europe and North America and can of course be used as a traction battery for hybrid and electric buses as well. In addition, Voltabox has the appropriate technology for the catenary concepts for trucks that are currently under increasing discussion.

The standard container has an energy content of 15.2 kWh. Long-term charging and discharging amounts to 50 kW, but can reach up to 80 kW. The nominal voltage stands at 662.4 V. Furthermore, containers are designed with an optimal weight of around 300 kg. With over 15,000 charging and discharging cycles, the lifespan of Voltabox battery systems is five times longer than that of the previous trolleybus battery systems.

The high-voltage battery systems of trolleybuses are charged during the normal operation of the vehicle through the catenary wire. The battery-electric system makes it possible to circumvent traffic jams or flexibly extend the previously firmly defined routes beyond the existing overhead wiring network. The switch to battery-powered operation is seamless, meaning – as opposed to diesel backup generators – without disrupting the journey. The vehicle concept combines a large passenger volume with an almost unlimited range and allows for uninterrupted 24-hour operation.

The decision of public transport companies to modernize their trolleybus fleets reflects an overriding trend pushing for a new understanding of urban mobility. The trolleybus is considered to be the cleanest and most economical form of e-mobility in public transportation and, with a capacity of up to 8,000 passengers per hour and direction, demonstrates an

efficiency close to that of trams. Globally, about 40,000 trolleybuses in roughly 300 cities are currently in operation across 47 countries.

About Voltabox AG

Voltabox AG (ISIN DE000A2E4LE9), which is listed on the regulated market (Prime Standard) of the Frankfurt Stock Exchange, is a rapidly growing system provider for e-mobility in industrial applications. Its core business lies in intrinsically safe, highly developed high-performance lithium-ion batteries that are modular and in serial production. The battery systems are primarily used in buses for public transportation, forklifts, automated guided vehicles and mining vehicles. The company also develops and produces high-quality lithium-ion batteries for select mass-market applications, such as high-performance motorcycles and pedelecs.

Voltabox has production sites at its headquarters in Delbrück, Germany, in Cedar Park, Texas, USA, and in Kunshan, China, as well as development sites in Aachen and Korntal-Münchingen, Germany.

Additional information about Voltabox can be found at www.voltabox.ag.

Contact

Voltabox AG

Dr. Kai Holtmann
Artegastrasse 1
33129 Delbrück, Germany
Tel.: +49 (0) 52 50 - 99 30-964
Fax: +49 (0) 52 50 - 99 30-901
Email: investor@voltabox.ag