

Press Release
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The innovative and sustainable bus system from the Van Hool - Kiepe Electric - Alstom consortium, chosen by Île-de-France Mobilités

- **A World Première**: an innovative mobility solution consisting of 24-metre bi-articulated electric buses powered by fast-charging high-power batteries and recharged by a conductive ground-based static charging system (SRS).
- The framework contract includes a minimum of 56 vehicles. The solution is intended for two Bus Rapid Transit (BRT) lines in the Île-de-France region, including the busiest line in the Paris area and a third line in option.
- A 100% electric mobility solution that will offer travellers more space, more comfort, more silence, more accessibility, and more speed.

The Île-de-France region, known worldwide for its ambitious sustainable mobility initiatives, and the transport authority, Île-de-France Mobilités, have chosen the innovative and sustainable transport solution from the Van Hool - Kiepe Electric - Alstom consortium. This solution, which will be a world première, is composed of 24-metre long, bi-articulated Van Hool electric buses, powered by Kiepe Electric's high-power fast-charging batteries which will be charged by Alstom's conductive ground-based static charging system (SRS). The framework contract includes a minimum of 56 vehicles.

The solution from the Van Hool - Kiepe Electric - Alstom consortium is intended for the T Zen 4 and T Zen 5 high service bus lines in the south of Paris, as well as a third line in option. It will offer passengers a higher level of space, comfort, silence, accessibility, and speed.

Filip Van Hool, CEO of Van Hool, commented on this announcement: *"We are happy and proud that Van Hool, in close collaboration with partners Kiepe Electric and Alstom, has been selected by Île-de-France Mobilités for the realization of this unique mobility project in Île-de-France. The future of public transport is zero emission. This solution, a world first, fully meets the high expectations of the transport authority, the drivers and maintenance staff, and passengers, for quality public transport that is sustainable and economically responsible."*

Dr. Peter Radina, Member of the Management Board of Knorr-Bremse Rail Vehicle Systems and responsible for Kiepe Electric GmbH in the Knorr-Bremse Group, observes that *"For this project, Île-de-France Mobilités has put its faith in our highly experienced consortium and innovative High-Power Charging (HPC) concept for buses. For Kiepe Electric, this successful bid is a milestone, and heralds our entry into the mass transit market for e-BRT lines."*

"Alstom's teams in France are proud to contribute to the realisation of an innovative and sustainable mobility solution for Île-de-France Mobilités, alongside our partners, with our conductive ground-based static charging system, SRS. This solution will be a world first and will offer a high level of service with great ease of operation. It will also benefit from the experience of the Nice tramway, where SRS was deployed and put into service on 15 km and 34 trams," commented Jean-Baptiste Eyméoud, President of Alstom in France.

Buses that meet strict sustainability criteria and offer a high level of service

The 24-metre long, bi-articulated, 100% electric Exqui.City 24 vehicles built by Van Hool meet high expectations in terms of passenger comfort and ease of operation. The buses will be able to carry approximately 140 passengers each (compared to 70 for a conventional bus and 100 for an 18-metre articulated bus) in optimal conditions of comfort and modernity: space, lighting, air-conditioning, video surveillance, real-time visual and audio passenger information. The vehicles are fully accessible to people with reduced mobility (PRM), thanks to wide sliding doors and low floor, which will make it easier for passengers to get on and off the bus at the station and to move around inside the bus.

Operation is facilitated and optimised by very fast vehicle recharging thanks to Alstom's conductive ground-based static charging system (SRS) interfaced with an on-board energy system from Kiepe Electric.

High-performance electric equipment

Kiepe Electric is supplying the traction system for two driven axles in each vehicle. The scope of the order also includes traction batteries, auxiliary power converters and cooling systems, as well as power distribution units (high-voltage distribution). In addition, the company is providing the onboard software for energy management and traction drive control. Other Knorr-Bremse Group components will also be installed, including screw-type compressors from Knorr-Bremse and brake resistors from Heine Resistors. Kiepe Electric will ensure a very high level of operational reliability using a cloud-based data application that measures consumption, routing, and performance parameters. This operating data will be collected by the company's Artificial Intelligence-based Smart Fleet Management (SFM) system for subsequent transfer to the operating company's base station via Kiepe Fleet Management (KFM).

An innovative ground-based recharging system

Alstom is providing the conductive ground-based static charging system (SRS). It is an innovative and interoperable technology for electric transport, buses, and trams, of all brands and sizes. As a compact solution, SRS blends invisibly into the cityscape. SRS ensures safe, automated, and fast high-power charging at stops and line terminals. This solution is already in use on 15 kilometres of tramway tracks in Nice, where it allows automatic and fast in-station recharging with no additional constraints for operations and with ground-breaking availability (>99.9%). SRS is designed by Alstom in Vitrolles, a world centre of excellence for ground power solutions. Alstom's catenary-free systems are reliable and proven with over 15 years of commercial service in France and internationally. For the T Zen 4 and T Zen 5 project, Alstom will engineer the charging systems, as well as supply the equipment, install, commission, and provide warranty. The framework agreement also includes a service level agreement on reliability and availability of the bus and charging system.

The T Zen 4 and T Zen 5 bus lines

The T Zen 4 and T Zen 5 lines are express bus lines running on dedicated bus lanes. The T Zen 4 BRT line will cover the 14.8-kilometre distance between Viry-Chatillon and Corbeil-Essonnes. The new line will replace the existing 402 line, which is the busiest line in the Paris metropolitan area, transporting nearly 26,000 passengers every day. The T Zen 5 line is a new 9.5-kilometre bus route connecting Paris-13 with Choisy-le-Roi via Ivry-sur-Seine and Vitry-sur-Seine.



About

Van Hool

Van Hool is an independent family-owned bus, coach and industrial vehicle manufacturer. The company, which was founded in 1947, is based in Koningshooikt, Belgium. In 2022, the company turns 75. The vast majority of units produced are destined for Europe and North America. Van Hool has around 3.500 staff worldwide, the majority of whom work at the production facilities in Koningshooikt (Belgium) and Skopje (North Macedonia). www.vanhool.be/en/

Kiepe Electric

Knorr-Bremse subsidiary Kiepe Electric, based in Düsseldorf, Germany, is a globally active supplier of electrical systems to the leading rail vehicle and bus manufacturers. The company offers efficient solution and ecologically sustainable concepts for low-emission public transportation with eco-friendly electrical equipment for light rail vehicles, metros and regional rail networks as well as for the battery, trolley and in Motion Charging (IMC[®]) buses. www.kiepe.knorr-bremse.com/

Alstom

Leading societies to a low carbon future, Alstom develops and markets mobility solutions that provide the sustainable foundations for the future of transportation. Alstom's product portfolio ranges from high-speed trains, metros, monorails and trams, to integrated systems, customised services, infrastructure, signalling, and digital mobility solutions. Alstom has 150,000 vehicles in commercial service worldwide. With Bombardier Transportation joining Alstom on January 29, 2021, the enlarged Group's combined proforma revenue amounts to €14 billion for the 12-month period ended March 31, 2021. Headquartered in France, Alstom is now present in 70 countries and employs more than 70,000 people.

Its employees in France total approximately 12,500, providing a pool of expertise to serve French and international clients. Approximately 30,000 jobs are created in France amongst its 4,500 French suppliers.

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