

# PARIS T ZEN E-BUS

## HIGH POWER CHARGING (HPC)

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). A 100% electric mobility solution that will offer travelers more space, more comfort, more silence, more accessibility, and more speed.

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# KIEPE ELECTRIC


## Project characteristics

- Customer: Île-de-France Mobilités
- 100% electric mobility solution
- 24-metre bi-articulated electric buses
- Scope:
  - 30 buses T Zen 4
  - 26 buses T Zen 5
  - 20 optional buses for a 3rd T Zen line
- Consortium: Van Hool / Kiepe Electric / Alstom
- Buses are recharged in few minutes
- Infinite operation due to opportunity charging
- Buses serve Bus Rapid Transit (BRT) lines in the Île-de-France region, including the busiest line in the Parisian suburb
- Bus timetable with high frequencies (5 - 10 minutes or 5 minutes at peek hour)
- Powered by fast-charging high-power batteries
- Charging Infrastructure is a conductive ground-based system (SRS-System) provided by Alstom


## Technical Data

<b>Design / model</b>	VanHool Exqui.City 24
<b>Vehicle size</b>	23.820 x 2.550 x 3.400
<b>Passenger capacity</b>	more than 140 passengers
<b>Range</b>	Unlimited operation due to charging of the bus at terminal stops
<b>Charging power</b>	up to 800 kW
<b>Current collector system</b>	Alstom SRS ground-based recharging system
<b>Traction motor</b>	2 x 160 kW continuous power asynchronous motor
<b>Traction motor control</b>	Kiepe Traction Inverter (KTI), incl. Traction control unit (TCU).
<b>Heating / Air Conditioning</b>	Electric HVAC System (heat pump)
<b>Special features</b>	A sustainable technology with zero local emissions AI-based application ensures a high level of operational reliability Battery cooling via heat pump


## Kiepe electric module overview Paris




**CHARGING SYSTEM**




M1




**POWER DISTRIBUTION**




M2




**BATTERY SYSTEM**




M3




**TRACTION**




M4




**AUXILIARY**




M5



**FLEET MANAGEMENT**




M6



**SERVICES**

- System Integration
- Project Management
- Installation
- Commissioning
- Homologation
- Documentation
- System Design

M7



**AFTER MARKET**

- Training
- Spare Part Package
- On-site Storage
- Service Contract
- Obsolescence Management
- Repair Centre

M8

## Project details

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 premiere, 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.

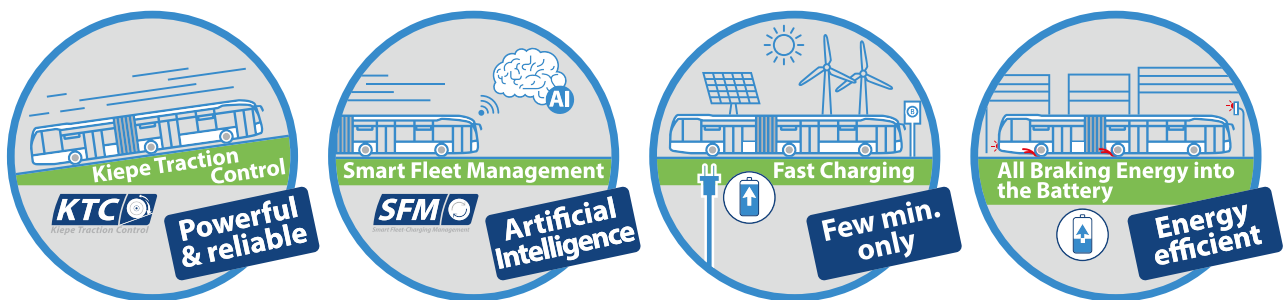
The T Zen 4 and T Zen 5 lines are express bus lines running on dedicated bus lanes. The T Zen 4 BRT line will cover the 14.8-kilometer distance between Viry-Chatillon and Corbeil-Essonnes. The new line replaces the existing 402 line, which is the busiest line in the Paris metropolitan area, transporting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

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 are able to carry more than

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. 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.

Kiepe Electric provides 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.

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 is 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).



**POWERED BY KIEPE ELECTRIC**

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