

NANJING, CHINA

PRIMOVE TRAM

First catenary-free trams with Bombardier's lightweight battery technology



The world's first catenary-free trams powered by **BOMBARDIER PRIMOVE** batteries have been put into passenger operations in August 2014, to support the Second Summer Youth Olympic Games.

Nanjing's new trams represent the next generation of tram technology. Based on new high-power *PRIMOVE* Li-ion battery systems, the trams operate without overhead cables on 90 per cent of the lines. The batteries are charged seamlessly during normal passenger service via the pantograph statically at tram stops and dynamically during acceleration.

It is the first time ever that trams with *PRIMOVE* traction batteries have entered into revenue service as well as the first time, in general, that Li-ion batteries have been used for catenary-free tram operation.

After winning the order in April 2013, Bombardier's partner CSR Puzhen is building the trams, based on successful *BOMBARDIER FLEXITY 2* tram technology, at its site in Nanjing. Besides the compact, lightweight and long life *PRIMOVE* battery systems, Bombardier also supplies the *MITRAC* propulsion and controls equipment as well as the innovative *FLEXX* Urban 3000 bogies.

primove
true e-mobility

BOMBARDIER
the evolution of mobility



	Hexi line	Qilin line		Hexi line	Qilin line
Tram line	8 km	9 km	End stops	2	2
Journey time	26 min	21 min	Charging time	approx. 10 min	approx. 10 min
Headway	approx. 7 min	approx. 7 min	Depot	1	1
Tram stations	13	13	Charging time	up to 45 s	up to 45 s
Charging time	approx. 45 s	approx. 45 s	Numbers of vehicles	8	7

High-power batteries for demanding routes

Each 5-car tram is equipped with two high-power battery systems of 49 kWh each. Optimized in energy and power density, the modular batteries are perfectly suited for the demanding route profiles of Nanjing's new Hexi and Qilin tram lines. Especially, Qilin line features steep sections and an elevated route over a major highway. Service on these challenging lines demonstrates the suitability of *PRIMOVE* batteries for reliable and efficient catenary-free operation on nearly any tram line across the globe.

The PRIMOVE trams in facts

Tram	Trams based on <i>FLEXITY 2</i> tram platform <ul style="list-style-type: none"> • 32.5 metre long and 2.65 m wide • 5 modules per tram
Charging system	Via pantograph <ul style="list-style-type: none"> • 90 % of the lines are without catenaries
Battery system	<i>PRIMOVE</i> battery 50 <ul style="list-style-type: none"> • Type: Li-ion • Capacity: 49 kWh: 2 systems per tram • Voltage: 532 V
Propulsion system	<i>MITRAC 500</i> system <ul style="list-style-type: none"> • Drive power: 4 x 120 kW • Auxiliary supply voltage: 400 V AC • 24 V DC supply • Input voltage from catenary 750 V

Bombardier Transportation

Schöneberger Ufer 1
10785 Berlin, Germany

Tel + 49 30 986 07 0
Fax + 49 30 986 07 2000

www.primove.com

BOMBARDIER, *MITRAC* and *PRIMOVE* are trademarks of Bombardier Inc. or its subsidiaries.

BOMBARDIER
the evolution of mobility