

# The Ebusco 3.0 designed to be a gamechanger in the electric bus industry

Not constrained by a past reliant on fossil fuel, Ebusco has a ground-breaking and unique approach to developing electric buses. A multifunctional team of key experts, who have earned their spurs in the field of aerospace, automotive and electronics, has developed an innovative fully electric bus which goes beyond all existing boundaries to redefine the world of public transportation: Ebusco 3.0. Ebusco's new bus breaks the barriers of current bus design in our drive for sustainable public transport. Not only by using composite materials in the main structure of the body, but also in its approach to focus the design around passenger comfort, driver support and Total Cost of Ownership. Last but not least, it contributes to make the world we live in a safer and healthier place.



*Ebusco 3.0*

## Passenger comfort & safety

- ▶ Revolutionary design allows for more comfort due to the spacious and luxurious interior;
- ▶ Considerable noise reduction both inside and outside of the bus;
- ▶ Fully flat floor throughout the bus, allowing for maximum window size;
- ▶ Panoramic window in roof as batteries are all mounted in the floor;
- ▶ Increased freedom of movement, flexibility, passenger flow and timely operation of the bus due to an increased interior width, of up to 90 cm, between the wheel arches;
- ▶ Excellent visibility throughout the bus due to the spacious design and increased natural incidence of light.

## Driver Support

- ▶ Outside mirrors are replaced by cameras, increasing the safety and aerodynamics of the bus;
- ▶ Automatically adjustable driver seat, dashboard and camera mirror systems 'fit' the driver's workplace around the driver;
- ▶ Low centre of gravity as batteries are hidden in the floor, ensuring excellent straight line stability and exceptional steerability.

## Reduced Total Cost of Ownership

- ▶ The Ebusco 3.0 is designed for overnight charging due to its light weight and high efficiency, offering a maximum flexibility in daytime route adjustments and allowing for charging during lower night-time energy rates;
- ▶ A full composite body reduces maintenance costs considerably and extends the operational life span of the bus beyond 15 years;
- ▶ The light weight design increases its range substantially (up to 500 km).

# Corporate social responsibility and society

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Creating sustainable transport of people, that's the main objective of Ebusco. With continuing urbanisation and the end of the fossil fuel era, innovation is key. The Ebusco 3.0 is a true example of innovation: ultra light weight, zero emission, low noise, increased life span and all materials used can be recycled at the end of their life cycle in line with the demands for a circular economy.

## Composite bus

By using composite materials, a new dimension in design freedom is added:

- ▶ Innovative design elements resulted in new patents;
- ▶ The Ebusco 3.0 is substantially lighter, a **reduction in weight of 33%** compared to - even the Ebusco 2.2.



## Ready to go into production

The Ebusco 3.0 is expected mid 2020 to be ready to go into production in Ebusco's production plant in Deurne (the Netherlands). Ebusco's highly specialised team, with a proven track record in applying light weight design made of composites and advanced system integration, has developed the Ebusco 3.0 for production automation and automated assembly allowing implementation of Industry 4.0 advanced production principles.

# Summary

## Why Ebusco 3.0

- ▶ Composite bus; substantially lighter (33% - 8.530 kg)
- ▶ Extends the operational life span of the bus beyond 15 years
- ▶ Revolutionary design with a fully flat floor
- ▶ Panoramic window roof as batteries are all mounted in the floor
- ▶ Reduced Total Cost of Ownership
- ▶ Expected to be ready to go into production mid 2020 in Deurne, The Netherlands

## Our expectations

- ▶ Range up to 500 km
- ▶ Passenger experience; spacious, luxurious, much daylight, comfortable, almost no noise and an increased freedom of movement
- ▶ Bus drivers don't want anything else anymore; such a stable, comfortable, silent and safe bus
- ▶ Only overnight charging needed
- ▶ Operational life span of beyond 15 years
- ▶ Much lower maintenance costs due to composite body

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- ▶ The Ebusco 3.0 is substantially lighter, a reduction in weight of 33% - even compared to Ebusco 2.2.
- ▶ The light weight design increases its range substantially (up to 500 km)
- ▶ Reduced Total Cost of Ownership
- ▶ The Ebusco 3.0 is designed for overnight charging due to its light weight and high efficiency, offering a maximum flexibility in daytime route adjustments and allowing for charging during lower night-time energy rates
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## Creating sustainable transport of people

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## Expected Ebusco time frame

- Oct 2019** *First prototype ready (not on the road yet)*
- First half 2020** *First 2 prototypes on the road in Germany, München*
- Mid 2020** *Ebusco 3.0 ready for production*

## Stadtwerke München; our first German partner

The first 2 prototypes of Ebusco 3.0 will be driving around in München as from first half 2020.

