EBUSCO®

MADE TO MOVE PEOPLE

COMPANY BROCHURE

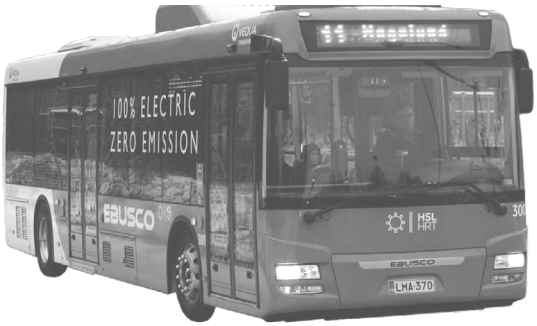
HISTORY | PRODUCTS | SERVICES | SUSTAINABILITY

HISTORY

OVER A DECADE OF EXPERIENCE

The ambitions of an individual set the tone for a complete industry. Over a decade ago, Peter Bijvelds, Founder and CEO of Ebusco, had ambitions to make an impact in the automotive industry by driving electrification. With many years of experience in the automobile industry, Peter saw an opportunity to make the bus industry more sustainable. Given that buses stood out as prominent contributors to urban pollution, this was a sector where immediate impact could be made. Given the early stage of global electrification, the supporting infrastructure was not yet at an advanced stage. However, the predicament of buses and their daily routes presented a challenge that was eminently solvable and made this industry extremely suitable for electrification. Peter assembled a group of specialists and launched the business, culminating in the official establishment of Ebusco BV. in 2012.

Not hindered by the legacy that competitors must deal with, Ebusco is now an industry pioneer with a distinct first-mover advantage proven through extensive real-road experience. Ebusco was the first European company to receive a European WVTA certificate for a 100% electric bus.

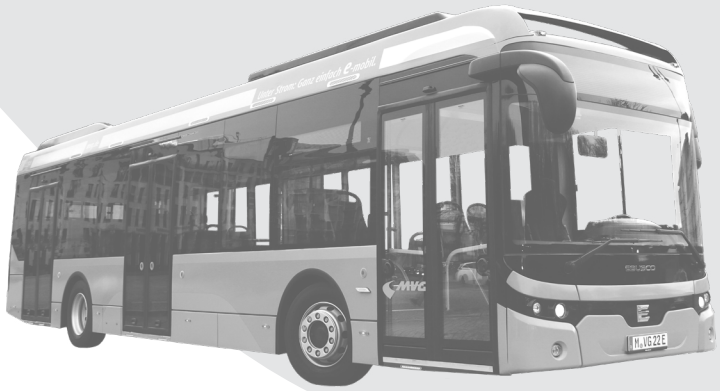


FIRST EBUSCO *ON THE ROAD* **1.0**

Throughout its journey, innovation has been the driving force behind Ebusco's bus development. Despite scepticism, Ebusco introduced the groundbreaking Ebusco 1.0 in 2013, challenging the norm and dispelling doubts about electric buses. Unyielding in its determination to prove the superiority of electric vehicles over diesel, Ebusco unveiled the Ebusco 2.0 model in 2014, boasting an impressive range of up to 250 kilometres and accommodating 90 passengers. This marked a turning point as the break-even point was achieved, making electric buses cost-competitive with their diesel counterparts.

LARGEST EUROPEAN ORDER AT THE TIME

156 ELECTRIC BUSES



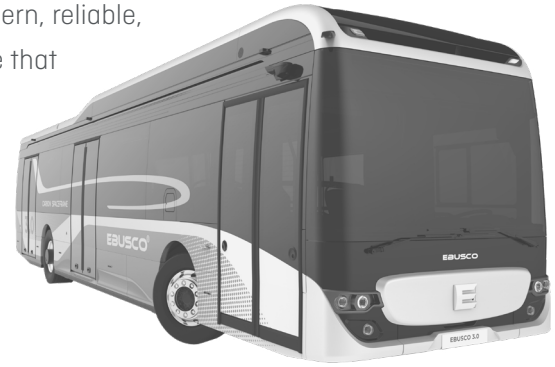
2.2

WITH A RANGE OF UP TO

550

KILOMETRES
ON A SINGLE CHARGE

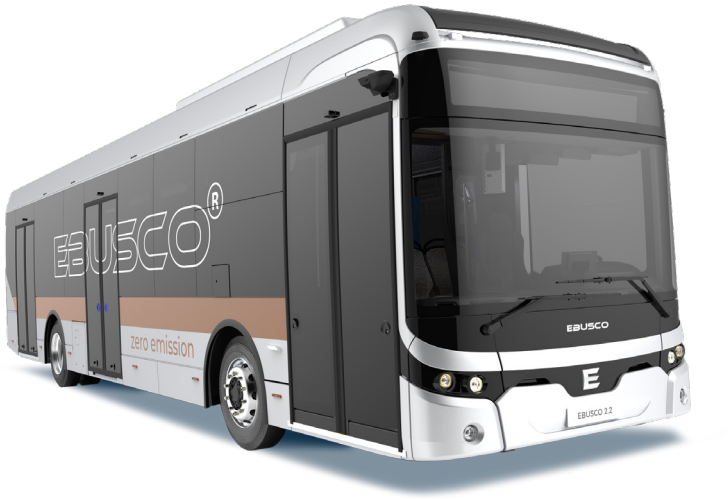
Driven by experience, insights, and the relentless pursuit of progress, Ebusco introduced the Ebusco 2.1 and later the Ebusco 2.2 models. These models represented significant improvements in the industry, offering a remarkable range of up to 350 kilometres at the time. A range that allowed most city and regional routes to be driven on a single charge. A turning point for many, and the reason that hundreds of the Ebusco 2.2 buses are driving across a still-rising number of countries. But it didn't stop there. Although the Ebusco 2.2 has a more traditional appearance, we keep innovating and improving based on the latest technologies, making this a modern, reliable, and extremely efficient bus with a range of up to 550 kilometre that is suitable for any kind of bus operation.



Simultaneously with the constant improvements made for the Ebusco 2.2 model, a lightweight project was started in 2016, resulting in the world premiere of the Ebusco 3.0 in 2019. The Ebusco 3.0 model, built with a complete composite monocoque casco, is groundbreaking in many ways. With all batteries in the floor, single tires and a range of up to 700 kilometres, this bus is all about efficiency and designed to optimize passenger comfort and bring operational expenses to an all-time low. With its first model on the road in 2021, Ebusco is a forerunner in the transition to sustainable transport.

3.0

GAMECHANGER
IN THE BUS INDUSTRY



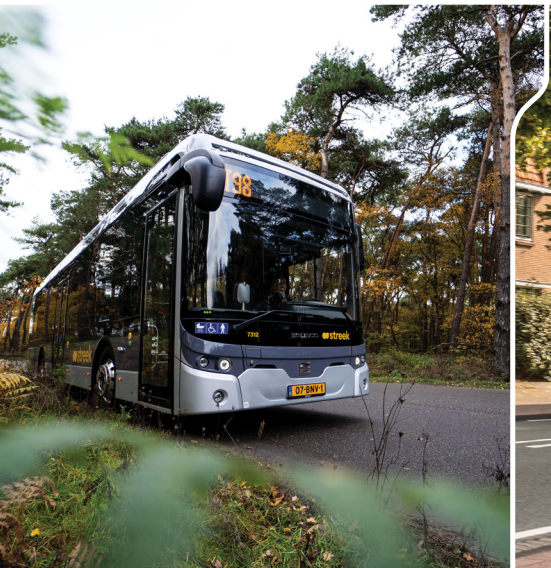
EBUSCO 2.2

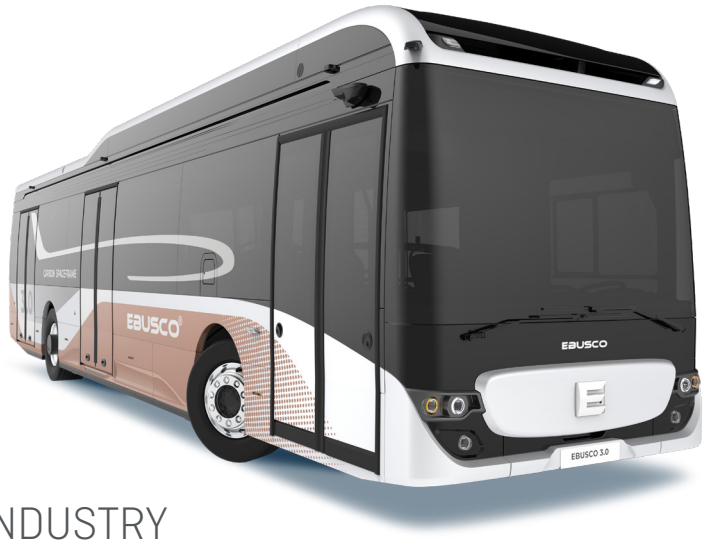
THE BUS THAT POWERED A REVOLUTION

The Ebusco 2.2 is a cutting-edge electric bus and benefits from a “blank page” approach. While the Ebusco 2.2 and its predecessors were not conversions from conventional buses to electric buses, Ebusco has consistently prioritized the exploration of optimal methods to seamlessly incorporate electric systems into its bus designs. While its appearance may resemble a traditional bus, it is advanced in many ways.

With an extensive track record, this bus benefits from many years of experience and has been optimized throughout the years. With an impressive range of up to 550 kilometre on a single charge, the Ebusco 2.2 enables seamless day-to-day operations, saving valuable time and reducing infrastructure costs.

The Ebusco 2.2 is available in multiple configurations, such as 12 Metre, 13 Metre, 13.5 Metre and 18 Metre. With an additional option for a low floor or low entry, this bus can be customised to fit any operation.





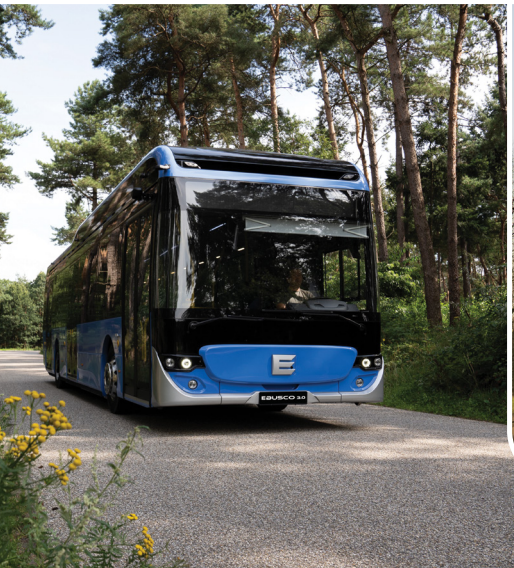
EBUSCO 3.0

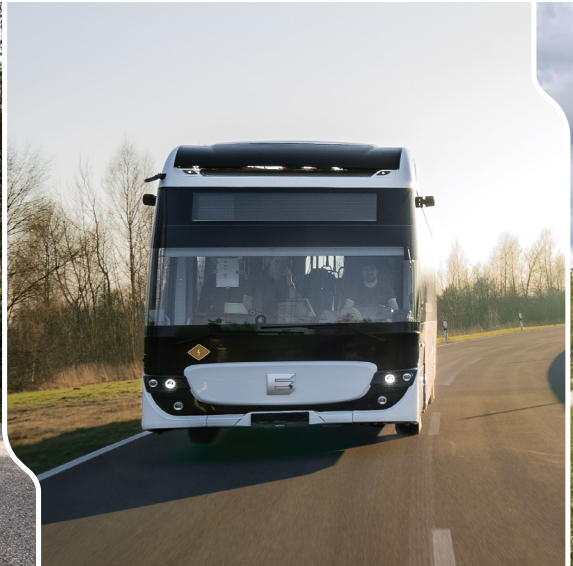
GAMECHANGER IN THE INDUSTRY

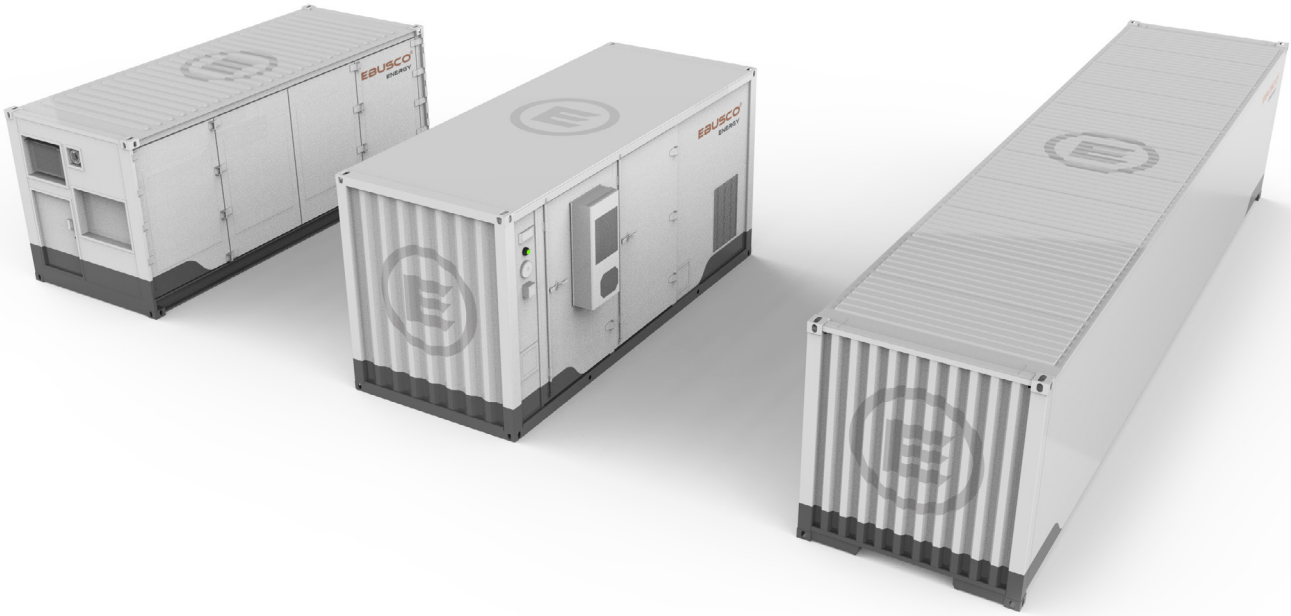
With Ebusco's first-mover mentality, innovation never stops. Therefore, the Ebusco 3.0 was started from scratch to develop the most efficient electric bus possible. The Ebusco 3.0 has a range of up to 700 kilometre and is performing extremely well, showing that an electric bus operation can be cheaper than ever before.

Thanks to its lightweight casco, the bus can now be fitted with only single tires, not only reducing material costs but also creating a wider and more spacious aisle for passengers. This enhances the overall passenger experience and accessibility.

The Ebusco 3.0 stands as a testament to Ebusco's commitment to pushing the boundaries of electric bus technology, setting new standards for efficiency, cost-effectiveness, and passenger comfort. By daring to start anew, Ebusco has elevated the electric bus industry to new heights, forging a path toward sustainable and greener transportation solutions.







EBUSCO ENERGY

THE POWER OF A COMPLEMENTARY EV ECOSYSTEM

Building on its experience with heavy-duty batteries, Ebusco is offering the complete package regarding electrification. With Ebusco Energy, provisions are made toward a more sustainable energy supply that is designed for the future. In a world where we are depending on energy supply, we do not only feel the need to act, but also feel responsible to steer towards sustainable, clean, and renewable energy solutions.

ESS – Energy Storage System

These multipurpose Energy Storage Systems are applicable to all. With the different configurations, this system is suitable for low- and high-volume users and enables several possibilities in its deployment such as energy storage, self-sufficiency, or energy trading.

Maritime

Zero emission is the future. Not only on land but also on water. With some modifications in the existing ships, propulsion can be made hybrid or even better, 100% electric. This, in combination with a mobile energy container, or maritime battery packs and the ship, vessel, or yacht will be good to go and future-proof for many years to come.

BATTERIES

THE SOURCE THAT KEEPS IT ALL RUNNING

A product that is available in many shapes and sizes and should therefore be a well-considered choice. Ebusco uses LFP batteries. This type of Lithium-ion battery is known for its safety and durability.

Safety

LFP batteries are known for their safety. The combination of raw materials used in this battery makes this battery very safe and stable. Even at high external temperatures, or when damage is done to the battery, the battery remains stable and fire will not occur. In addition, LFP batteries do not contain cobalt or nickel. These materials are scarce, damaging, and unsafe for all those who come in contact with them as well as the environment since the mining is polluting the water, air, and soil.

Lifecycle

Another important feature of LFP is its long life and durability. Lithium iron phosphate batteries live up to 5,000 full cycles or until end of life which is defined at 80% capacity. With this type of battery, you will be assured of optimal performance for many years. That is also why we offer up to 10 years warranty on our batteries.

Battery replacement

Although battery technology is constantly improving, they do not yet last as long as buses. This is why Ebusco offers battery replacements. With this, the buses will be able to drive the required range for the complete lifespan of the bus.

Second life

After multiple years, the batteries will need to be replaced. Although the batteries may no longer be suitable for buses to achieve the required range, this does not mean that they are no longer useful. After the State Of Health (SOH) of the battery diminishes to a point where it reaches a maximum usability of 80%, they can find new life in our energy storage solutions, serving for many more years.

PERFORMANCE

PROVEN IN PRACTICE

Ebusco has always had the philosophy that a day-to-day electric operation can be driven on a single charge. This is why performance has always been one of Ebusco's focus points. Improving the performance not only improves the range of the bus, it also improves the ecological footprint, and the overall Total Cost of Ownership.

Throughout the years, the Ebusco 2.2 has been improved tremendously providing the 12-metre configuration with a real road consumption significantly below 1 kWh per kilometre.

The introduction of the lightweight design in the Ebusco 3.0 for the 12-meter configuration further revolutionizes efficiency, reducing the real-road energy consumption to an impressive 0.65 kWh per kilometre.

Building on this experience with heavy-duty batteries, Ebusco offers the best possible battery solutions across multiple fields including the maritime sector and Energy Storage Systems.

Ebusco 2.2 - BVG
Driving Berlin inner city
30 hours on a single charge

Ebusco Energy - Toychamp
Providing sustainable energy with
Energy Storage Systems

Ebusco 3.0 - Transdev
Real road energy consumption
0.65 kWh per kilometre

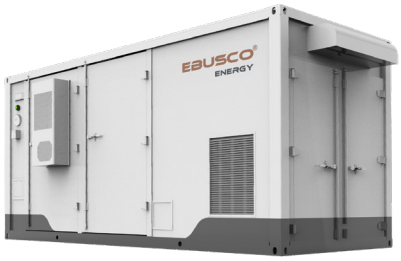
Ebusco 2.2

BVG | 12-metre | >500 kWh

The Ebusco 2.2, a cutting-edge electric bus, recently accomplished a groundbreaking achievement in the heart of Berlin's inner city, driving continuously for an impressive 30 hours. As it completed this remarkable journey, the Ebusco 2.2 proved its ability by finishing with a substantial 35 percent battery capacity remaining. This achievement highlights not only the efficiency of the Ebusco 2.2 but also its suitability for intensive urban transit. In a city known for its commitment to sustainability, this electric bus showcased how innovation and eco-consciousness are shaping the future of urban mobility.

Energy Storage System

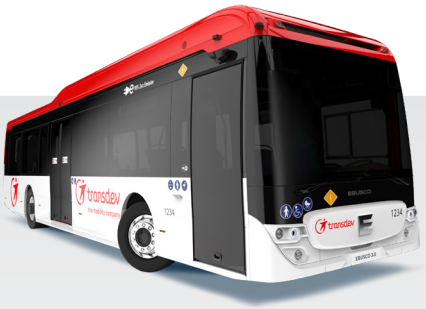
Toychamp | 10 Foot | 614 kWh



Toychamp is the number one toy shop in the Netherlands and Belgium. Besides selling toys for children, Toychamp is contributing to the future of the younger generation in more ways than just with toys. Therefore, steps have been taken to provide all shops with green energy. Ebusco's ESS containers are used to store self-generated energy, to power the shops at any time. Sustainable and future-proof, that is how Toychamp keeps its lights on for future generations.

Ebusco 3.0

Transdev | 12-metre | >350 kWh



The Ebusco 3.0 is proving to be remarkably efficient. Together with Trandev, The Ebusco 3.0 shows, during the first months in operation, a real-road consumption rate of just 0.65 kWh/km. This level of efficiency not only sets a new benchmark in the world of electric transportation but also signifies a significant leap toward sustainable and cost-effective urban mobility. With its minimal energy usage, this electric bus stands as a shining example of how advanced technology can revolutionize public transportation, reducing both environmental impact and operating costs while providing passengers with a cleaner and more economical way to get around.

TCO

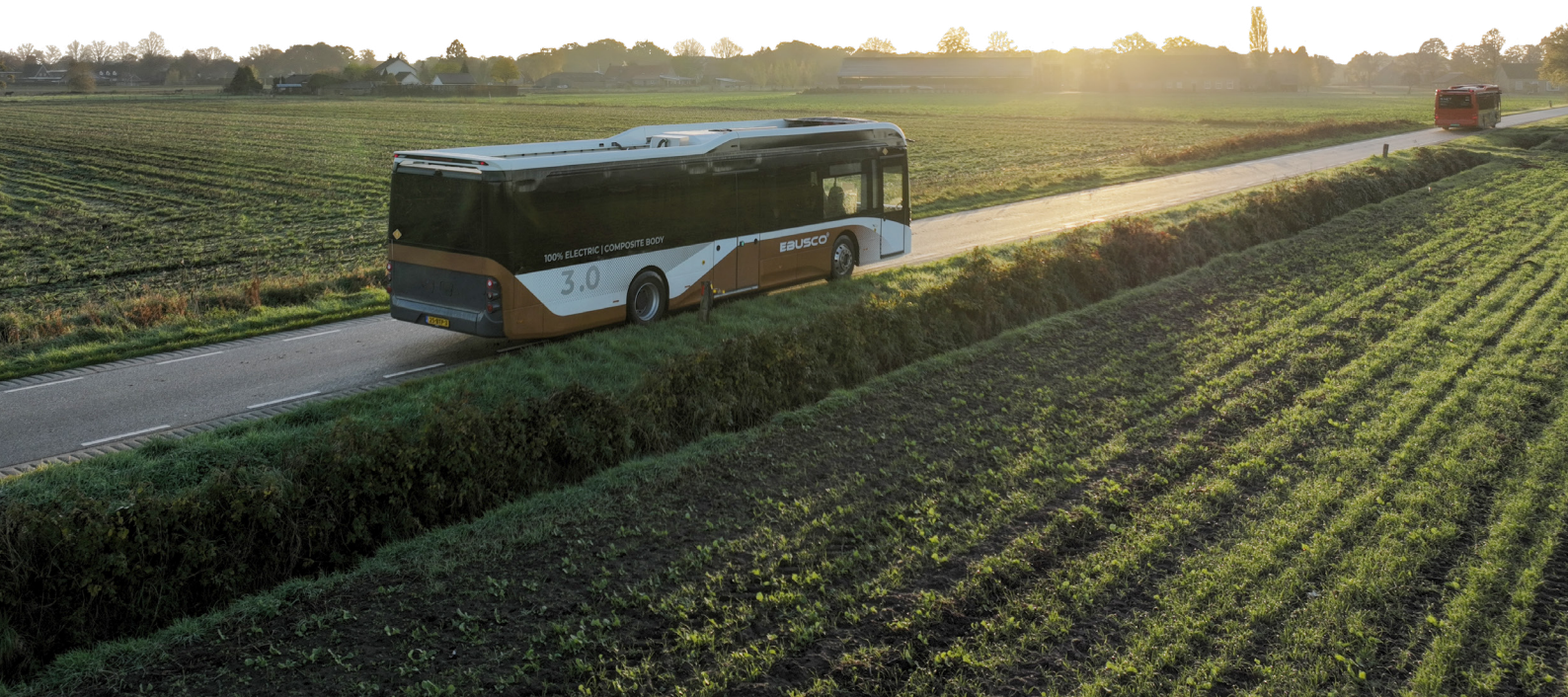
TOTAL COST OF OWNERSHIP

For a long time, electric driving seemed unaffordable. With this in mind, Ebusco started its journey with the development of an electric bus that would be affordable and compatible with any diesel bus. This first succeeded with the Ebusco 2.1 where a break-even point was achieved. No more excuses, driving zero emission was long overdue and no longer inferior to emission buses.

Although zero emission driving was no longer more expensive, improvements in the battery efficiency were made throughout the years, making the Ebusco 2.2 model, to this moment, one of the most efficient electric buses in the industry.

But the opportunities to improve did not stop with the batteries. With a blank page approach, the Ebusco 3.0 was designed to bring the Total Cost of Ownership to an all-time low. With energy consumption as the biggest expense, and weight being one of the biggest influencers of energy consumption, this aspect was tackled with the development of a lightweight bus. Although the lightweight concept brings many advantages, the main and most important one is the costs.

THE EBUSCO 3.0 IS BUILT TO REDUCE THE TOTAL COST OF OWNERSHIP



The impact of a few kWh

Although on a daily basis, a few kWh per kilometre don't seem like much, looking at the bigger picture, it has an enormous impact on the overall operational costs. Buses can effortlessly cover 80,000 kilometers annually. This translates to significant energy savings of thousands of kWh per year. The impact becomes even more substantial with a larger fleet, highlighting how an investment in an electric fleet can swiftly result in cost savings. With Ebusco, you invest in the future. For yourself and the planet.

Energy costs calculation Ebusco 3.0

Concession of:	10 years
Distance per year:	80,000 km
kWh per kilometre:	0.65 kWh
Average price per kWh:	0.15 kWh
Total km driven:	800,000 km
Total kWh consumption:	520,000 kWh
Total energy costs:	€ 78,000
X 50 buses =	**€ 3,900,000**

Energy costs calculation average electric bus

Concession of:	10 years
Distance per year:	80,000 km
kWh per kilometre:	1.00 kWh
Average price per kWh:	0.15 kWh
Total km driven:	800,000 km
Total kWh consumption:	800,000 kWh
Total energy costs:	€ 120,000
X 50 buses =	**€ 6,000,000**

A fleet of 50 x Ebusco 3.0 buses = **€ 3,900,000** energy costs

A fleet of 50 average electric buses = **€ 6,000,000** energy costs

Saving up to **€ 2,100,000** on a fleet of 50 buses

SERVICE

FOR OPTIMAL DRIVEABILITY AND RELIABILITY

Ebusco believes that excellent customer service is the backbone of successful partnerships. Our dedicated team provides comprehensive service support, including maintenance, technical assistance, and training, to keep the electric buses running at peak performance throughout their lifecycle.

AFTERSALES SERVICES

Spare Parts Supply

Ebusco offers spare parts availability, next-day delivery across Europe, a central warehouse, and an online portal with customer-specific catalogs.

Service Information & Guidance

A dedicated team provides driver manuals, maintenance schedules, and repair guides, available online in multiple languages. Authorized users can easily access manuals and schematics.

Warranty Support

Enjoy a standard warranty of 2 years or 200,000 kilometre, with options for extended warranties. Our field engineers and service partners handle warranty repairs through a hassle-free online portal.

Technical Assistance

Our 24/7 help desk, remote diagnosis, and expert field service engineers ensure rapid issue resolution, minimizing downtime.

Live Monitoring

Ebusco employs a real-time monitoring platform to track key vehicle data, including battery health, and provide fault notifications, historical analysis, remote diagnostics, and automated reports.

Training Services

We offer comprehensive training for drivers and workshop personnel, from basic maintenance to advanced diagnostics. Our training programs and materials are available in multiple languages, ensuring effective learning and smooth operations.

MAINTENANCE & REPAIR CONTRACTS

Full-Service Contract

Our Full-Service Contract is the comprehensive solution you need for all your maintenance and repair requirements. With guaranteed availability, fixed costs, and clear responsibilities, it's a seamless way to streamline your fleet operations. Trust Ebusco to take care of it all under one roof.

Service Contract for Spare Parts Supply

For operators who already have well-furnished workshops and a skilled team, Ebusco offers service contracts tailored to your specific needs. These contracts provide an ideal balance between streamlining your operations and maintaining cost transparency.

Service Contract for Preventive Maintenance

Our Preventive Maintenance Service Contract is your proactive solution for fleet upkeep. With a lower cost per kilometer (CPK), it is possible to identify and address issues early, minimizing disruptions and ensuring scheduled maintenance is expertly managed.

Service Contract for HV System

Ebusco offers specialized services ideal for operators who are experienced in diesel bus maintenance. Our services are designed to facilitate a smooth transition to electric operations. Our services are tailored to operators with a background in diesel bus maintenance, ensuring a seamless shift to electric. Ebusco takes care of all maintenance and repairs for the high voltage system at a fixed cost, eliminating unexpected expenses. In addition you won't need to invest in additional skilled personnel or new tools and equipment. Ebusco handles it all, allowing you to focus on efficient electric fleet management.

EBUSCO LIVE

REAL-TIME FLEET MONITORING

Ebusco Live is an advanced real-time monitoring system designed for buses and batteries. Its cutting-edge features offer real-time insights into the electric vehicles', charging status, battery health, and other essential parameters. This comprehensive data collection allows for more efficient organization of EV operations, facilitates preventive maintenance, and optimizes overall performance to enhance the electric fleet's efficiency.

Battery Monitoring

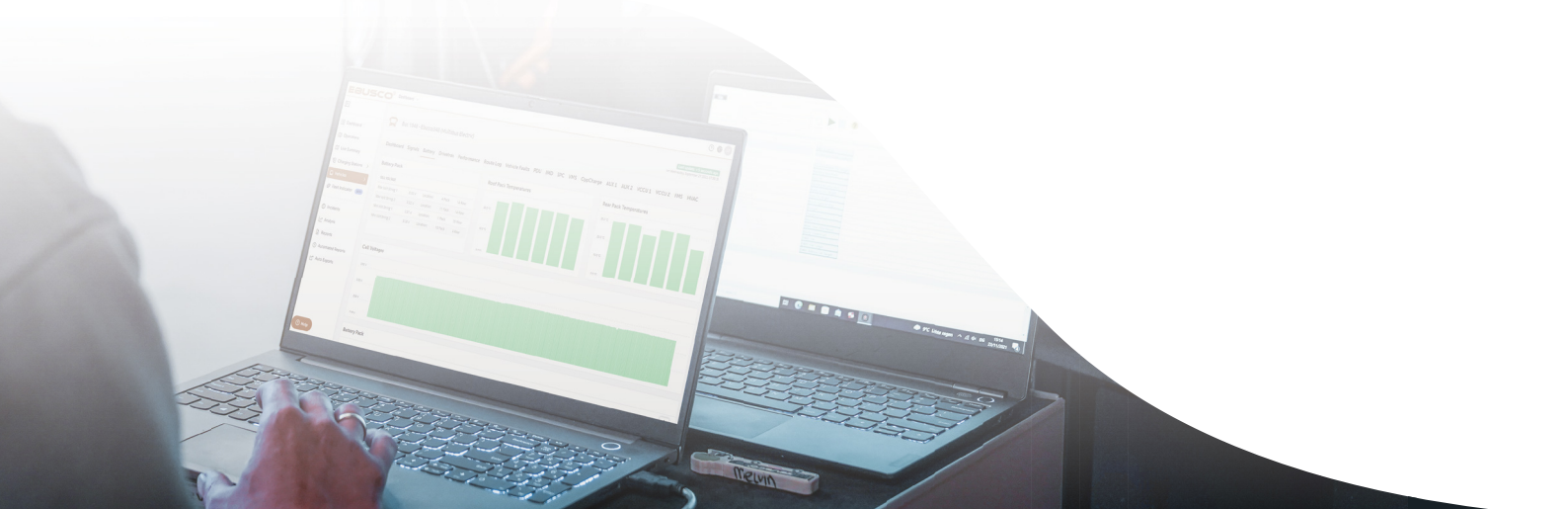
One of the critical aspects of EVs is their battery performance. A real-time monitoring system keeps track of the battery's state of charge, voltage, temperature, and health. This data helps ensure that the batteries operate optimally and enables users to make informed decisions about charging and driving habits.

Vehicle Health and Diagnostics

The system can monitor various vehicle parameters, such as motor performance, tire pressure, and brake condition. If any issues arise, the system can alert the driver or fleet manager, enabling preventive maintenance and reducing the risk of unexpected breakdowns.

Data analytics and Insights

By collecting and analysing data from multiple EVs, real-time monitoring systems can provide valuable insights into overall fleet efficiency, charging patterns, and battery performance. These insights help optimize fleet management strategies and charging infrastructure planning but also supply insights to improve future bus designs to make them even more efficient.



FOR A MORE **EFFICIENT ORGANIZATION** OF EV OPERATIONS

SUSTAINABILITY

MAKING A POSITIVE IMPACT

Ebusco aims to lead the energy transition in public transportation all around the world. By doing so, Ebusco is fully aligned with the challenges of our planet and society. Our buses not only contribute positively to the environment, but also play a crucial role in facilitating the energy transition, thereby mitigating the impacts of climate change.

The UN Sustainable Development Goals

SDG, or Sustainable Development Goal, is a global framework comprising 17 interconnected objectives established by the United Nations to address pressing global challenges and promote sustainable development by 2030.

Focusing on Sustainable Development Goals (SDGs) involves directing efforts, resources, and policies toward achieving specific SDGs, which encompass critical areas such as poverty reduction, environmental sustainability, education, and healthcare, to create a more equitable, resilient, and sustainable future for all. Ebusco's main focus is on the following four SDGs:

SDG 3

Ensure healthy lives and promote well-being for all at all ages.

SDG 7

Ensure access to affordable, reliable, sustainable and modern energy for all.

SDG 9

Build resilient infrastructure, promote inclusive and sustainable industrialization and faster innovation.

SDG 11

Make cities and human settlements inclusive, safe, resilient and sustainable.

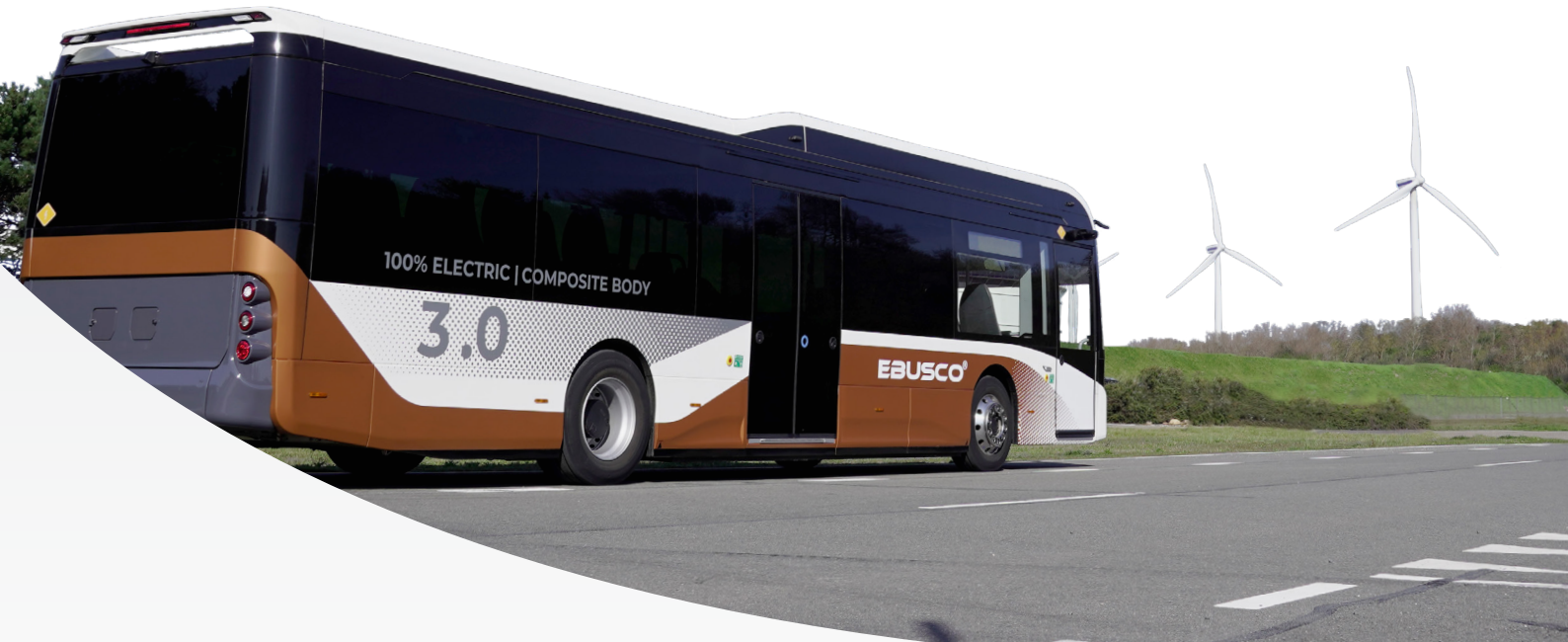
Air quality is a hugely important factor for our health and quality of life. Especially in urban areas, the quality of air can be improved immensely. By implementing zero emission buses in these areas, Ebusco contributes to a cleaner and healthier living environment on a day-to-day basis.

With Ebusco Energy, solutions are offered that accelerate the transition to sustainable energy, while simultaneously solving the challenges that this transition entails.

Our dedicated engineering and product development teams are continuously driving innovation, often geared at further improving the sustainability profile of our offering.

The most CO2 emission is produced during the “use phase” of the bus, which highlights the need to strive for lower energy consumption while driving, which in turn, emphasises the importance of lower weight and increased heating or cooling efficiency.

EBUSCO IS FULLY ALIGNED WITH THE CHALLENGES OF OUR PLANET AND SOCIETY



Steering towards net-zero public transport

Our contribution to environmental impact focuses on **reduced energy consumption**, **lower maintenance** and **longer life span for our buses**. Although many are already using green energy, we provide them with solutions to further lower their footprint.

- Reduced energy consumption: The lightweight composite body of the Ebusco 3.0 bus combined with a efficient driveline and high insulation value, results in an industry-leading low energy consumption.

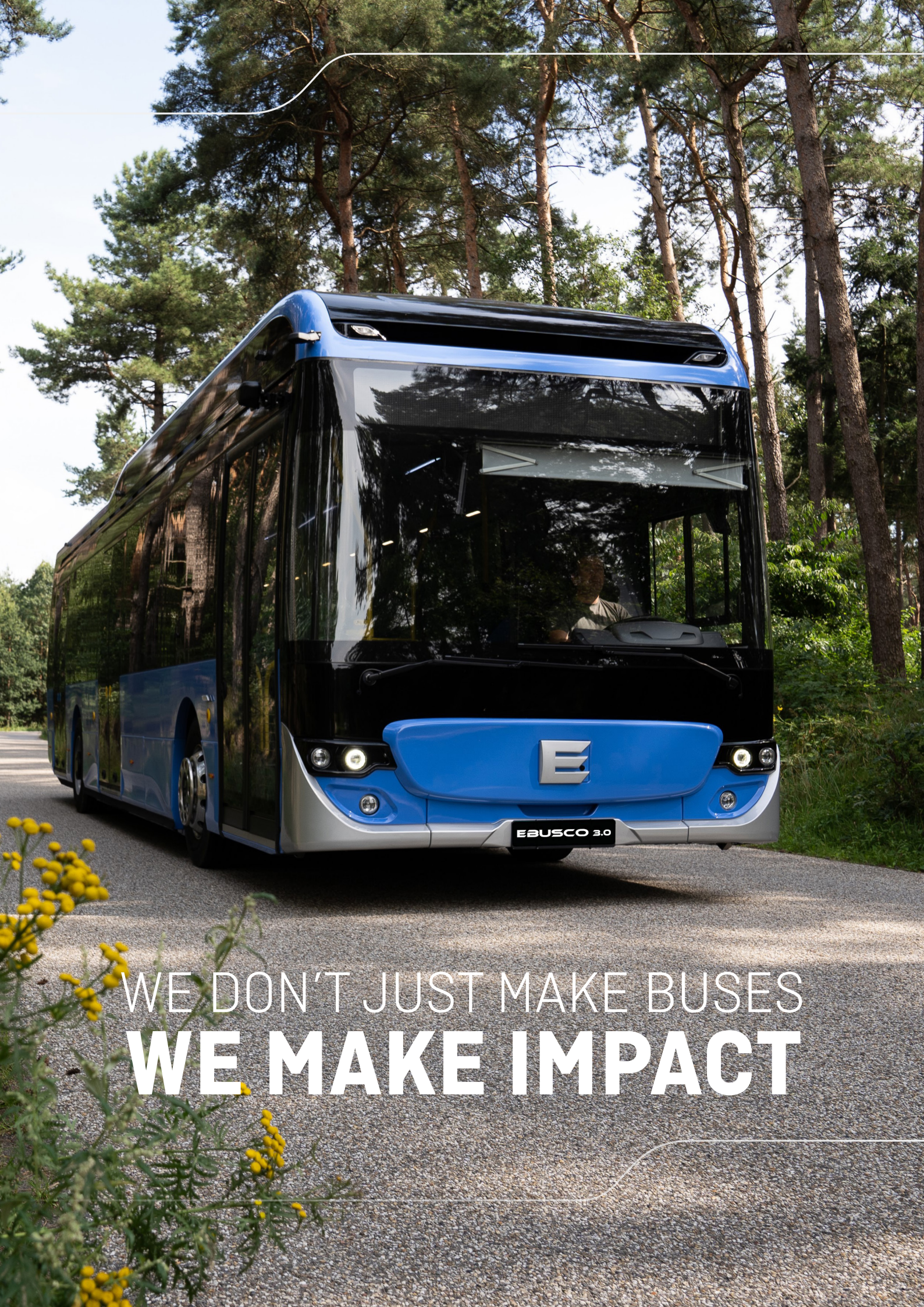
- Lower maintenance cost: With a real-time fleet management system the Ebusco buses are monitored and can provide insights in the required maintenance. As part of our service concept, we offer to take over the lifetime maintenance responsibility for customers.

- Longer lifespan: Effective integration of composite material minimises the use of steel. Composites do not age nearly as quickly as steel. This takes the expected lifespan of our casco to 25 years, which is more than double than conventional buses. Bus interior and batteries will need to be refurbished; however, the cost and environmental impact will be significantly below that of assembling a new bus. Damage to the body can be repaired simply and cheaply by either the operator at their own workshop, or by Ebusco.

Batteries

The buses and energy solutions feature high-quality, safe and long-lasting batteries with LFP technology. A key advantage of LFP over other batteries is its sustainability: LFP batteries are made without using the scarce raw materials cobalt and nickel.

After multiple years of service, the batteries that are used in the bus still have a capacity of 80% and are still highly usable. Therefore, Ebusco is able to reuse these batteries in its energy solution such as ESS containers. Here the batteries can be used for many years the come and the materials will not go to waste.



WE DON'T JUST MAKE BUSES

WE MAKE IMPACT

EBUSCO®

MADE TO MOVE PEOPLE

Ebusco leads the electrification of transport with innovative zero emission buses, by overcoming major obstacles to electrification. Not hindered by a legacy, Ebusco has proven itself to be an innovative frontrunner in the development of electric buses as well as ancillary products and services to the electric vehicle ecosystem. We believe Ebusco is at the heart of the entire EV ecosystem.

Building on its experience with heavy-duty batteries, Ebusco's offering comprises everything from zero emission buses to Energy Storage Systems, charging infrastructure, depots, service and maintenance, local energy supply and grid alignment.

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