

busworld[®] DAILYtimes

EUROPE BRUSSELS MONDAY 9 OCTOBER 2023



ATTENTIVE EU delegation visits Busworld

Important visit of top people from the European Commission administration to Busworld. The delegation listened to several manufacturers. It turned out to be a fruitful meeting where the high-ranking officials could take note of the dynamics and concerns of the transport sector.

Busworld was lucky enough to be joined by a delegation from DG Move, the European Commission's Directorate-General, which focuses specifically on road transport. Jean-Louis Colson, Head of Unit for road transportation of DG Move, Mrs Eva Ptasińska, Deputy Head of Unit and Mrs Raluca Marian, Director of IRU-Europe, were welcomed and shown around by Jan Deman, director of Busworld Foundation.

This delegation entails "preparatory work for the European Commission. We are particularly pleased and honoured that they are showing interest in our sector," said Jan Deman. The high-ranking officials asked specific questions about the manufacturers' vision in relation to energy transition. How the sector can transform itself into a more environmentally friendly transport sector. In addition, the delegation was very interested in all safety measures, both for the drivers and passengers of the buses but also for the protection of vulnerable road users.

» continued article see p. 2



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Colophon

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Finally, the visitors were also curious about the approach of the Chinese manufacturers. How will the Asian manufacturers approach the European market? Discussions did not stop there as the delegation members also enjoyed getting behind the wheel of a coach. They walked by Scania, Iveco and Yutong. "The top people from the European administration showed a lot of inter-

est. We are pleased that they took the time to watch and listen. This allows the politicians to take their decisions based on the knowledge and information they have acquired," says Jan Deman.

For instance, the coach world wants to inform policymakers about the relationship of safety tools and the system of driving and rest times. "We want a separate regulation for coach drivers compared to truck drivers.

Often our drivers have to wait for hours, a period that could be included as a rest break," says Jan Deman.

The bus sector also wants European policy to take into account the different drives in the context of the transition. Long and short routes necessitate different applications.

Today, the Mobility Committee of the Flemish Parliament is visiting Busworld. ■



Hall 4, stand 402b

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INTERCITY 2024

A first for Busworld: the ZEB Conference begins today!

The European Zero Emission Bus Conference returns for its biggest ever edition with over 450 participants expected throughout the 4 half days.

The conference boasts over 75 speakers including European politicians, bus and coach operators, key associations, and OEMs leading the transition to zero emission.

The agenda covers all the considerations needed to enable full fleet transitions to battery electric/hydrogen technologies, including financing options, TCO/economics of ZEBs, technical requirements of operat-

ing and maintaining ZEB fleets, and the emerging zero emission coach market.

Day 1 kicks off at 14:30 with a policy focus, with addresses from the Flemish and Brussels' Ministers for Mobility.

Not got your ticket yet? Head to Hall 7 to secure your spot – registration includes options for day tickets and discounted 4-day tickets for bus/coach operators and Busworld exhibitors. ■





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The Busworld App replaces the paper catalogue. It has a floorplan, an exhibitor list, a product list, a seminar list and you can even see other visitors and contact them.

HOW TO DOWNLOAD?

- Step 1:** Activate your profile if you did not do this yet. An e-mail was sent to you from busworldapp@busworld.org on 1 September or later (when you ordered your ticket). You need to open this e-mail and activate your profile by choosing a password.
- Step 2:** Download the app on your phone (use QR code or look in your store for 'Busworld').
- Step 3:** Login with your e-mail and password. If you forgot your password, click on 'Forgot Password?' and you can set a new password.
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AWARDS IN 2023: 3 COMPETITIONS

The renowned Busworld Vehicle Awards



The 20th edition of this competition took place on 30 September with 14 competing vehicles: 8 buses and 6 coaches. And the winners are...



**MERCEDES-BENZ
E-CITARO**
HALL 5 | BOOTH 503



**SETRA
S 516 HDH**
HALL 5 | BOOTH 503

As always, the best performances in the different sub categories are awarded with a best of category label.

BUS

- **Label of Excellence DESIGN**
VDL Bus & Coach - Citea New Generation
- **Label of Excellence COMFORT**
Mercedes-Benz - e-Citaro
- **Label of Excellence ECOLOGY**
Ebusco 3.0
- **Label of Excellence SAFETY**
Anadolu Isuzu - Citivolt

GRAND Mercedes-Benz - e-Citaro
runner up Ebusco 3.0
runner up Anadolu Isuzu - Citivolt

COACH

- **Label of Excellence DESIGN**
Yutong T15 E 14
- **Label of Excellence COMFORT**
Setra S 516 HDH
- **Label of Excellence COMFORT**
Van Hool - T16 Astron
- **Label of Excellence ECOLOGY**
Yutong T15 E 14
- **Label of Excellence SAFETY**
Setra S 516 HDH

GRAND Setra S 516 HDH
runner up MAN Truck & Bus - Neoplan
Tourliner L
runner up Van Hool - T16 Astron

The new Busworld Digital Awards, spotlighting digitalization in bus and coach



Acknowledging the growing importance of digital technologies in the bus and coach sector, Busworld, is proud to present the Busworld Digital Awards. This exciting new competition aims to recognize and celebrate the groundbreaking digital innovations that are transforming the bus and coach experience.

Shortlist in the 4 categories

Out of the 35 candidates, the jury selected a shortlist of 3 candidates per category. The final winners will be announced at the Digital Mobility Solutions Conference on Wednesday 11 October.

DIGITAL OPERATIONAL EXCELLENCE

- **Iveco Bus**
IVECO ON Heavy Buses Digital Services
Hall 4 | Booth 402B
- **TOTT UP**
GPS Training Partner
Hall 11 | Booth 1114
- **ZF Group**
SCALAR
Hall 5 | Booth 537

E-MOBILITY MANAGEMENT

- **Chargepoint**
Battery Health Package
HALL 9 | Booth 937
- **MAN TRUCK & BUS**
eManager
Hall 4 | Booth 401
- **Rampini**
Hy4Drive
Hall 6 | Booth 606A

DIGITALLY ENHANCED DRIVING

- **Anadolu Isuzu**
V2X
Hall 4 | Booth 403
- **Daimler Buses**
Active Drive Assist 2
Hall 5 | Booth 503
- **Karsan**
Autonomous e-ATAK
Hall 5 | Booth 501

DIGITAL ON-BOARD COMFORT

- **Actia**
ACTiVi solution
Hall 4 | Booth 409
- **MAN Truck & Bus**
New Digital Cockpit and MAN SmartSelect for Model Year 2024
Hall 4 | Booth 401
- **Navaho Technologies**
Navaho Transport Systems
Hall 6 | Booth 689

Busworld Innovations, your opinion counts



In 2023, visitors can decide if an Innovation Nominee is innovative for them or not? Out of 26 candidates 10 nominees were selected by the Busworld Awards jury. Go to their booth, evaluate the new product, scan the voting QR code and... vote! If the product gets 50% or more YES votes, it will become an official Busworld Europe Innovation 2023.

**INNOVATION:
✓ OR X?
YOU DECIDE!**

- **C Trine Engineering**
EcoRapidBusDesign
Hall 11 | Booth 1182B
- **Generation Phoenix**
ELeather
Hall 7 | Booth 718
- **IRIZAR**
Irizar i6S Efficient hydrogen
Hall 6 | Booth 602
- **Jaakko-Tuote Oy**
JTSolar glass
Hall 8 | Booth 861
- **Konvekta AG**
Konvekta CO2 heat pump thermal management system for electric doubledecker buses
Hall 5 | Booth 508

- **Robert Bosch Automotive Steering GmbH**
ServoE
Hall 5 | Booth 510
- **Saint-Gobain Sekurit**
Transport Reflexcontrol
Hall 7 | Booth 760B
- **Superlee Corporation**
3 in 1 DRL/DI/POS combination light
Hall 9 | Booth 958
- **Thermo King**
Athenia ENVI heat pump with R744
Hall 4 | Booth 426
- **Twiliner**
Twiliner coach seat
Hall 2 | Booth 227

BUSWORLD CONFERENCE PROGRAM

All about zero emission on the first day of the Busworld knowledge program. Is your company involved in the switch to zero emission transport in some way? Then be sure to take part in the 5th **European Zero Emission Bus Conference**. Status of the market, the vehicles and the infrastructure will be the main point of discussion today. We kick off at 14:30 this afternoon for the first of four consecutive half days!

Tuesday promises to be a busy day to give your knowledge of the industry a boost. The EU ZEB Conference continues in the morning with a focus on operational experience with zero emission buses from various operators and the technical performance of the vehicles and their charging or fueling infrastructure looked at from different angles.

In the afternoon the bus/coach driver is at the center of attention. You have the choice to either join the **Driver Safety Seminar** which takes a closer look at government regulation & policy and safety solutions available today to keep our drivers safe. Or you take part in the **roundtable discussion** organized together with IRU on the biggest daily challenge for bus and coach operators today: **Driver Shortage**. Time to share your ideas, learn from others and look for solutions together.

Wrap up your day during the **Network Dinner** from 18:00 till 22:00. A great opportunity to meet with decision makers, expert speakers, fellow colleagues and other professionals in our industry! ■

TODAY

(MONDAY OCTOBER 9TH, 2023)

ZERO EMISSION BUS CONFERENCE (PAID)

LOCATION: MEETING CENTER HALL 7, AUDITORIUM 500

TOWARDS NET ZERO: WELCOME AND INTRODUCTION

- **14:30:** Welcome to the 5th EU ZEB Edition
- **14:40:** Transitioning to Zero Emission: Brussels ZEB Plan
- **14:50:** Overview of the Status of ZEB Deployment in Europe
- **15:00:** Panel – Overcoming Barriers to ZEB Deployment

STATE OF PLAY AND PERFORMANCE OF ZEBs (1/2)

- **16:30:** How Will the EU Keep Its Position as Leader in ZEB Deployment?
- **16:40:** State of Play of Performance of BEBs (Battery Electric Vehicles) And Charging Infrastructure
- **16:55:** State of Play of Performance of FCBs (Fuel Cell Buses) and HRS' (Hydrogen Refueling Stations)
- **17:10:** Panel – Performance of Zero Emission Buses

TOMORROW

(TUESDAY OCTOBER 10TH, 2023)

ZERO EMISSION BUS CONFERENCE (PAID)

LOCATION: MEETING CENTER HALL 7, AUDITORIUM 500

STATE OF PLAY AND PERFORMANCE OF ZEBs (2/2)

- **09:30:** Opening Address
- **09:35:** Electrifying Public Transport: RATP's ZEB Journey in Paris and Beyond
- **09:50:** The Other Electric Bus- A California Agency Deploys 33 Fuel Cell Buses & Additional Developments From the US ZEB Market
- **10:10:** Data Analytics – Optimizing Operational Fleet Performance and Planning Future Fleet Decisions
- **10:50:** Efficient Hydrogen Refueling Solutions – Performance and Innovations

THE INFRASTRUCTURE CHALLENGE: BATTERY AND HYDROGEN

- **11:30:** Panel – HRS Infrastructure: Challenges and Solutions
- **12:15:** Challenges When Scaling: How to Ensure Operational Readiness at the Lowest Cost in the EV Transition
- **12:25:** Panel – Charging Infrastructure: Challenges and Solutions
- **13:10:** Closing

DRIVER SAFETY SEMINAR (FREE)

LOCATION: MEETING CENTER HALL 11, LEVEL 3, ROOM 1122

- **14:00:** Opening
- **14:15:** Launch of Academic Report on Bus Driver Safety
 - Keynote: Available and Possible Risk Reducing and Consequence-Reducing Measures in Bus Transport
 - Panel Discussion: Perspectives on Safety From Bus Drivers and Soft Road Users
- **14:45:** Safety Systems, Solutions and Requirements
 - Keynote: Introduction to the EU General Safety Regulation
 - Panel Discussion
- **15:45:** Policy Making for Improved Safety of Bus Drivers and Passengers
 - Keynote: Towards a European Standard for Driver Safety in Low Floor Buses
 - Keynote: Safety Learning System Based on Analysis of Recent Accidents
- **16:15:** Implementation of Safety Tools and Measures by the European PTAs
 - Panel Discussion
- **17:00:** Closing

DRIVER SHORTAGE ROUNDTABLE (FREE)

LOCATION: MEETING CENTER HALL 11, ROOM 1121B

IRU, the voice of commercial transport operators, is happy to invite you to an **IRU roundtable at Busworld, "Driver shortages in the road passenger transport industry"**, featuring decision-makers and road transport representatives. The roundtable will explore the work that is currently being done, and the steps that are still needed to tackle the shortage of drivers.

Take part in the discussion and share your ideas, best practices and solutions!

NETWORK DINNER (PAID)

TIME: 18:00 – 22:00

LOCATION: MEETING CENTER HALL 11
PRICE: 125 EUR PP

European Zero Emission Bus Conference and Busworld Foundation Network Dinner. A great opportunity to meet with vehicle manufacturers, suppliers and major European public and private transport agencies & operators, as well as speakers from the various conferences taking place during Busworld Europe.

ADD SESSIONS TO YOUR SCHEDULE VIA THE BUSWORLD APP:



Top executive Filip Van Hool: 'Customisation remains our speciality'

Van Hool can breathe again after pandemic

Van Hool's latest touring coach, the 24-metre-long T Astron, is on display in Palace 5 at Busworld.

A top product that expresses the Belgian coachbuilder's vitality. Top executive Filip Van Hool is breathing a sigh of relief after several difficult years. One more push and the Belgian company will be back on track next year.

A three-year crisis deeply disrupted the world of coachbuilders. Covid,, energy, inflation were a severe blow to the family business in Koningshooikt that now employs 2,350 workers. Sales were at a complete standstill from 2020 until after the first half of 2022. Only in the past 12 months did it really revive.

'The market is recovering, which is a relief.' But not everything is running smoothly. With supply disrupted by an unpredictable China, US protection-

ism and imminent electrification, the challenges remain many,' says Filip Van Hool.

In a normal year, Van Hool sells between 1,000 and 1,200 buses and coaches. In 2020, that number dropped to 547, and in 2021 barely 190 were sold. Last year, sales climbed to 524. And the figures for this year look promising. More cars have already been sold than factored in, and for 2024 it is half that. In 2025, the group expects to sell some 1,000 vehicles again.

Van Hool continues to profile itself as the customisation specialist. 'Identical buses do not exist with us. That is our great asset. Our teams practically act as architects for the customer,' stresses the top executive. 'A vehicle can be assembled completely according to your choice. A special case for bikes is popular for commuting in the US,

where young workforces travel by bike on the giant tech campuses. And in luxury tourism, coaches are increasingly equipped with kitchens. The ground floor is almost like a small bistro. But also lifts for wheelchair users or modular toilet cabins, anything is possible,' says Filip Van Hool.

TRANSITION

The Belgian manufacturer is also pushing the transition to electric vehicles here and overseas. 'We were the first to market a 100 per cent electric double-decker in the United States. It contains a battery with a range of up to 500 kilometres. By 2022, about 100 electric coaches were delivered in the US. I am very excited that we have always continued to invest in that innovation.'

To continue penetrating the US market, plans are on the table for a plant in Tennessee, which would be built



based on the model of the one in Skopje.

In Europe, Van Hool will only make zero-emission vehicles for transport companies. The demand for electric coaches is not present yet.

The Kempen manufacturer is not unhappy about that. 'When I think of the trouble we've had with the disrupted supply chain, I don't think it's a bad thing that zero-emission vehicles are still a minority of our portfolio for now. It is not yet profitable for customers to drive electric. You can't make a bus full of tourists wait four hours in a car park because you need to recharge your bus,' concludes the manager. ■



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Streamax introduces 'open system' software platform

Streamax introduces an 'open system' software package supported by Linux and Android that can run numerous programmes, driving tools and safety systems.

The Chinese company Streamax has been active internationally since 2002 in the development of products offering artificial intelligence-based solutions for active safety, driving tools for drivers, video telematics and all kinds of applications to inform and track travellers. Currently, the software applications are already functioning in more than 3.5 million commercial vehicles in more than 100 countries.

"With the Intelligent Bus Central Unit solution (IBCU), we differentiate ourselves from other applications because it is an 'open system' software," says Balazs Berki, business development director. "This system allows for a complete integration with third-party software. Moreover, our platform supports both Linux and Android. From that point of view, it is a unique and extremely user-friendly platform."

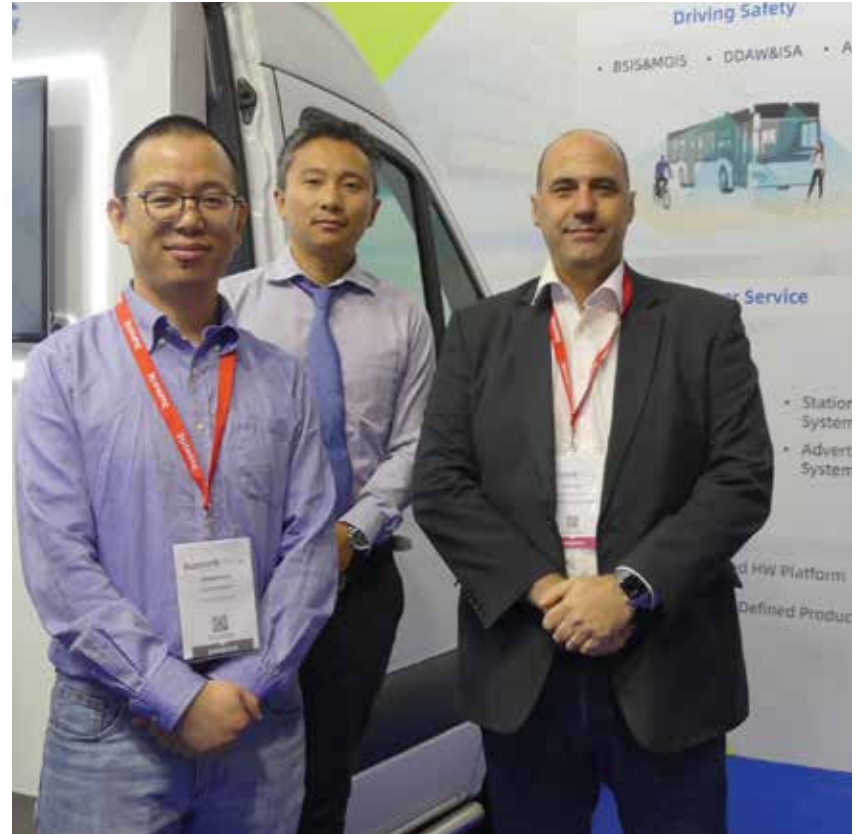
"Information technology and intel-

ligent systems are rapidly gaining importance in buses and coaches. The implementation of it in solutions from different manufacturers poses many challenges in terms of maintenance, interconnectivity and usability. For example, disparate systems such as CCTV equipment, AI-enabled devices for driver and vehicle safety management, dispatching and control systems and passenger information service systems typically operate isolated."

Streamax introduces the intelligent Blind Spot Information System (BSIS) & Moving Off Information System (MOIS) and Driver Drowsiness and Attention Warning (DDAW) solutions. The AI-powered detection capabilities align seamlessly with the strict safety provisions set out in the UN R151 and UN R159 regulations. The Driver Drowsiness and Attention Warning (DDAW) system, equipped with a professionally integrated AI Driver Monitoring System, warns of drowsiness, all kinds of things that could distract the driver. It also reminds the driver of unsafe driving habits. In response to these chal-

lenges, Streamax is therefore proud to introduce the next-generation Intelligent Bus Central Unit solution,

in addition to the abovementioned two systems. ■



Balazs Berki, business development director, with his Chinese colleagues.

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Karsan Stars with its 100% electric product range at Busworld 2023

Karsan left its mark at Busworld 2023 with its complete 100% electric product range and remarkable growth performance. CEO Okan Baş: "We are uninterruptedly growing in Europe, our primary target market. Elevating our share in the European electric urban minibus and bus transport market over 5 tonnes through Karsan electric vehicles in the first half year to 6.7%, we ranked 4th in the market."

"At the end of the year, we will be on the roads in 22 countries with a total of 1,000 electric vehicles. In North America, one of our new target markets, we have already started to provide service with 30 e-JESTs, a 100 by the end of the year. We will launch our right-hand drive e-JEST model in December. We have set a sales target of 300 units in the Japanese market for the next three years. Karsan exhibited at Busworld e-JEST, Autonomous e-ATAK, and e-ATA Hydrogen models from its 100% electric product range.

E-ATAK

The Autonomous e-ATAK is as Karsan proudly announces, the first electric autonomous bus carrying passengers in Europe and America. At Busworld it can be tested in the parking area. Okan Baş proceeded: "We have been carrying passengers in Michigan and Norway for 1.5 years with our autonomous vehicles. In addition, we have implemented our Autonomous e-ATAK projects in Chateauroux, France, in Bucharest, Romania, at the Presidential Complex in Ankara, and recently at Istanbul Technical University. When all these are combined, our autonomous vehicles, in total, have reached a distance of 50 thousand kilometres and carried 20 thousand passengers. Karsan is innovating the E-ATAK further with a "Platooning" and "Remote Driving" feature. This is in cooperation with ADASTEC. Platooning technology allows 2, 3, or more 8-meter Autonomous e-ATAK vehicles during rush hours like a single articulated bus with imaginary bellows of 16 meters or 24 meters long, thus saving energy.

60 YEARS

"Karsan has 60 years of experience and a team of 2,500 people working with a start up spirit", as Okan Baş said. Having sold 318 units in Europe since its launch, e-JEST achieved a 24% market share in the first half of this year. From the ATAK, 233 units have been purchased by Europeans since its launch, which led to a 26% market share in the first half of the year. Okan Baş pointed out, "We have achieved a significant experience due to our 850 electric vehicles which have so far covered 100 million km distance in 22 countries, by the end of the year it will be 1,000 Karsan Electric Vehicles."

For the nearby future Karsan is to equip their vehicles with an "Advanced Heat Pump" which even can work even at minus 25 degrees. Also Karsan is working to reduce the weight of the vehicles, for the 12-meter e-ATA vehicle with 600 kilograms this year and that must be 900 kilograms in 2025, using recyclable, lightweight aluminium and carbon fiber materials." ■



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OVERVIEW OF THE EXHIBITORS

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3RTABLET	674	CALB GROUP CO., LTD.	7110	GDP KORAL S.R.O.	766
5M S.R.O.	909B	CAMIRA	947A	GENERAL CAB	422
A.T. INDUSTRIES	643	CAPTRON ELECTRONIC GMBH	743	GENERATION PHOENIX	829B
A&K FAHRZEUGEHEILE HEIDENAU GMBH	811	CAR-BUS.NET	805B	GERFLOR	834
AB THOREB	437	CARA - EUROPEAN CLUSTER FOR MOBILITY SOLUTIONS	1137A	GEYUSHI AUTOMOTIVE INDUSTRY GAI	801A
ABB E-MOBILITY	784	CARPENTER	1137A	GI PLAST	984
ABB TRACTION	745	CARROSS'CENTER - BELGIAN BUS SALES	680	GK DRIVE SYSTEMS	918
ABC INFORMATIQUE	647	CARSPEED	1183	GLASS4WHEELS	927A
ACDEOS BV	858	CBM	754	GLAZING BUS & TRUCKS	824
ACE INGENIERIE - MEKABOY	1140A	CEGELEC MOBILITY	1137A	GOLDEN DRAGON	P1
ACTIA	409	CEMKA	405	GRAMMER AG	960
ACTICONCEPT	816A	CENTO GROUP	805C	GRANTEX	717
ADIBUS	840	CHANGZHOU HAOCHEN IMP. & EXP. CO., LTD	434	GRAYSON THERMAL SYSTEMS	638
AESYS SPA	605C	CHANGZHOU SUNLIGHT ELECTRICAL APPLIANCE CO., LTD	7106	GRL SEATS	712
AIR PRODUCTS NV	1165A	CHARGEPOINT	937	GUANGZHOU RONGSHENG TECHNOLOGY CO., LTD.	1154
ALCOLOCK	1176	CHENGDU WHASIN ANCHENG TECHNOLOGY CO. LTD.	1163A	GUCHEN	1133
ALLISON TRANSMISSION	618	CHRIST WASH SYSTEMS	942	GÜLERYÜZ	604B
ALMIGHTY AUTO ANCILLARY PVT. LTD.	1103C	CLARIOS GERMANY GMBH & CO. KG	779	GUMMI-WELZ GMBH & CO. KG	755
ALTAS AUTO	P4	CMS AUTO	946	HABAS A.S.	1102A
ALTRO	421	COGGIOLA MININI GROUP	1137B	HANOVER DISPLAYS	441
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ASTRAGON ENTERTAINMENT GMBH	228	DANCER BUS	605B	HITACHI ENERGY LTD.	1190B
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ATS	423	DENSO EUROPE BV	792	HÜBNER GROUP	755
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AUTO COOL INDUSTRIES	765	DIRILIS AUTOMOTIVE TEXTILE	1190A	HÜRSANPER OTOMOTIV	1145
AUTO-MOTION SHADE	985B	DOGA	532	IAV GMBH	964
AUTOCAR EXPO	1164A	DORAGLASS - DORA OTOMOTIV CAM SAN. VE TIC. A.Ş.	711	ICARVISIONS (SHENZHEN) TECHNOLOGY CO.,LTD.	912B
AUTOCLIMA SPA	927B	DRABPOL	413	ICON.LU	840
AUTOEQUIPS TECH CO., LTD	1138B	DUTCH ELECTRO TRANSPORT LIGHTING	650	IKARUS GROUP	903
AUTOLIFT SRL	754B	E-POWER & INPHASE	1139D	ILESBUS	707
AUTOMECHANICA	604A	E-T-A ELEKTROTECHNISCHE APPARATE GMBH	773	IMAGRY	1164D
AUTOMET	945	EBERSPÄCHER SÜTRAK GMBH & CO KG	629	IMPACT CLEAN POWER TECHNOLOGY	785
AUTOMOBILITY-X APS	957	EBM-PAPST MULFINGEN GMBH & CO. KG	521	INDCAR	402A
AUTOTERM	1139B	EBUSCO	603	INGERSOLL RAND TRANSPORT SOLUTIONS	1164B
AVEURO	806	ECUTRONIC GMBH	755	INKA YAPI BAGLANTI ELEMANLARI SANAYI VE TICARET	1163B
AYATS	804	EJOIN	814C	INOVA OTOMOTIV	714
AYGERSAN	641	EKOENERGETYKA-POLSKA S.A.	843	INTAP AT SP. Z O.O. SP.K.	921
AZIMUT ELECTRONICS	433	ELINTA MOTORS	P4	INTEGRO	525
B.C.E.	514	ELLAMP SYSTEMS	808B	INTERGLASS	447
BAE SYSTEMS	630	EMİR VIP GRUP	1105B	IRIZAR	602
BAHATTIN DOĞAN AUTO LOCK SYSTEMS	923A	ENGIN OTO	909A	ISRINGHAUSEN / AUNDE	799
BALLARD POWER SYSTEMS EUROPE	790	ENRX	687	IVECO BUS	402B
BARAN A.S.	780	EPENGLE	518	JAAKKO-TUOTE	861
BE-GE SEATING DIVISION	451	EPSOTECH	1137A	JBM AUTO LTD.	1102B
BEDIA MOTORENTECHNIK GMBH & CO. KG	7103A	EQUIPMAKE	610	JEMA ENERGY	653B
BEIJING SINOVAION ELECTRIC VEHICLE TECHNOLOGY CO., LTD	961	ERA ELEKTRONIK	534	JING-JIN ELECTRIC	849
BEULAS	1108	ERDAL LABEL	880A	JUJING NEW MATERIAL CO.,LTD.	850B
BIKELINER	823	ERDUMAN OTOMOTIV	1107	JOKON	635
BITIMEC SRL	935	ERENER DESIGN	704	JOST WERKE	1141A
BITZER	528	ERMISBUS - MERCEDES BENZ SPECIAL TRUCKS BUS PARTNER	1106	JVS ARTICULATION SYSTEM	789
BLABLACAR BUS	814B	ERP BILGISAYAR YAZILIM	1112	K-BUS GMBH	469
BLUEBUS	833B	ESREFKAROSER	948	KALIBRE BORU	1187
BMC AUTOMOTIVE	703	ETKA-D	439	KARADAG GRUP OTOMOBIL MOTORLU ARACLAR SAN. VE TIC. LTD. STI.	1110A
BMZ POLAND	452	EUROCOLVEN SAU	947	KARSAN	501
BODE - DIE TÜR	759B	EUROLINE	956	KEMPOWER	833A
BODE SUD S.P.A.	513	EVERISE INDUSTRIES (S.Z.) LTD	1161A	KEYES ENGINEERING	754C
BORGWARNER	523	EVERSUM MOBILITY SOLUTIONS GMBH	1103B	KIEPE ELECTRIC GMBH	1169
BRASLUX	615A	EVM LTD	805A	KING LONG	P3
BRIGADE ELECTRONICS BV	750	EVONITY BV	1111	KNEITZ / HOLMBERGS / SCHÖPF	446
BRIST AXLE SYSTEMS SRL	763	FAINSA	767	KNORR-BREMSE	1161
BSG AUTO GLASS CO.,LTD	1134B	FARHYM AUTOMOTIVE	522	KNS OTOMOTIV	807A
BSPL 1 SP. Z O.O.	651B	FARPLAS	830	KOMTELSYS REUM GMBH	880B
BUR-CAN OTOMOTIV NAK.İNŞ.İTH.İHR.SAN.TIC	1105A	FÉDÉRATION NATIONALE DES TRANSPORTS DE VOYAGEURS	852	KÖNIG KFT.	738
BURGAFLX	769	FERQUI - NEGOBUS	1109	KONVEKTA AG	508
BURSA TRIM OTOMOTIV	735	FIAA - INTERNATIONAL FAIR OF BUS & COACH	1164E	KORMAS ELECTRIC MOTOR	419C
BUS FACTORY	801B	FILTRATION CONTROL	1179	KOTA FABRICS	408
BUS LED DISPLAY-ZHONGZHIGU	748	FINN LAMEX SAFETY GLASS OY	825	KREATE PLUS	7100
BUSSIPRO	826	FLEXIN GROUP SRL	1167B	KREISEL ELECTRIC	854
BUSTRONIC	919	FLOKSER TEKSTIL	415	KUANTUM GLASS	531
BUSWORLD	1105	FOGMAKER	512	LAM S.P.A.	890
BUSWORLD APP HELPDESK	1105	FORSEE POWER	790	LANG	651A
BUSWORLD SOUTHEAST ASIA - GEM INDONESIA	1105C	FORTAL	526	LANGZAUNER GMBH	611
BUSWORLD TÜRKİYE	1189A	FPT INDUSTRIAL S.P.A.	424	LANTAL TEXTILES	675
BUVETEX INTERNATIONAL	620B	FRANZ HARBECK GMBH	1128	LANTECH COMMUNICATIONS GLOBAL, INC.	850
BYD	705	FRANZ KIEL	758	LAZZERINI	639
C.E. NIEHOFF & CO. LTD.	612	FREEWAY®	1136B	LEMANIA ENERGY	1189F
C.F. MAIER EUROPLAST	1138C	FRENZEL COMPETENCE GMBH	7103B	LESSWIRE GMBH	808B
CAETANOBUS	810	FREUDENBERG E-POWER SYSTEMS	715	LEX & HESSE GMBH	950
		GAMA	807B		

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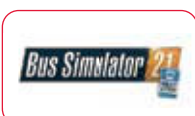
EUROPE BRUSSELS
7-12 OCT 2023



MAIN ENTRANCE
EXIT NORTH



ASTRID HALL



- Catering
- Reception
- Vestiaire
- Toilet
- Accessible to people with disabilities
- Hotspot
- Defibrillator
- Meeting point



MAIN ENTRANCE
EXIT SOUTH





CATERING POINTS

- 1** 4 Eat Fastfood
Belgian Fries & burgers
- 2** Nina
Assortment of italian pasta & pinsa
- 3** Poule et Poulette
Chicken nuggets, chicken wings and fries, soupe tom ka kai & wrap with chicken
- 4** Pico Bello
Assortment of pasta & panini
- 5** Thai Café
Thai Specialities
- 6** Be Shop 5
Mini market with sandwiches, hot dishes, soft drinks, snacks and hot beverages
- 7** Brasserie 58
Table service 'Brasserie'
- 8** Eaters
Asian streetfood with pokéballs & banh mi
- 9** Mr. Boudin
Belgian upgrade hot-dog
- 10** Belgian Beer Bar
Belgian beers, salads, sandwiches, croques & sweets
- 11** O'6 Gin bar by Open Up Farm Distillery
Gin bar & meet stew based on gin
- 12** Dim's
Dim sums & bao
- 13** Fritkot De Corte
Belgian fries & fricandel and poulycroc
- 14** Mamy
Croque Monsieur, pancakes & cookies
- 15** Joris
Assortment of belgian artisan sweets
- 16** Hot-Dog
Hot-dog
- 17** Cocotte en scène
Fresh juices, smoothies & healthy bagels
- 18** Le Pain Quotidien
Bio sandwiches, salads, soups & sweets
- 19** Ellis Gourmet Burger
Famous burgers & fries
- 21** Be Shop 9
Mini market with sandwiches, hot dishes, soft drinks, snacks and hot beverages
- 22** Chess Catering
Self-service with pasta, salads, vol-au-vent, 1/2 chicken

Opening hours catering

07-11 OCT
10:00 until 19:00

12 OCT
10:00 until 18:00

- 23** Les délices d'Eric
Assortments of hot coffee, pancakes, waffles, sweets, sandwiches, ...
- 24** Kaffee velo
Barista, waffle & croque monsieurs
- 25** La belle liegeoise
Waffles, sweets

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OVERVIEW OF THE EXHIBITORS

LEYLAND HOSE & SILICONE SERVICES LTD	923B	REVAR AUTOMOTIVE	505	TELMA	648
LINDE	435	ROBERT BOSCH GMBH	510	TEMSA	400
LOOP ENERGY	682	RÖCHLING INDUSTRIAL SE & CO. KG	693	TEQ SA	941
LUMINATOR TECHNOLOGY GROUP	438	ROŠERO	202	TEZPAR BUS SPARE PARTS LTD.	652A
LUMIPLAN	428	ROSHO AUTOMOTIVE SOLUTIONS GMBH	1138A	THE GAME EXPERIENCE	1189D
M.S.R. OTOMOTIV	713	ROTA / NSK OTOMOTIV	614B	THE PICTURE EXPERIENCE	1189B
MAFELEC	530	ROTAREX FIRETEC	1185	THERMO KING	426
MAFLOW BRS S.R.L.	940	RPS S.R.L.	906	THERMOBUS S.R.L.	808B
MAGNA POWERTRAIN ENGINEERING CENTER STEYR	814A	RUD SAVOIE CHAINES	856	TM TEKNIK OTOMOTIV EKIPMANLARI LTD. STI	519
MAGNETIC NORTH	683	RUPF INDUSTRIES	1146	TONGDA	920
MAKERSAN	731A	RUSPA	467	TOTT UP	1114
MAN TRUCK & BUS	401	SAFE - T-PUNCH™	851	TRAMMUSEUM BRUSSELS	803
MARCOPOLO S.A.	702	SAFETY TECH, A GAUZY COMPANY	636	TREMONIA MOBILITY	419A
MASATS	507	SAFRA	955	TRIBUS GROUP	944
MATTEI GROUP	535	SAINT GOBAIN	760B	TRONTEQ	853
MAYSER GMBH & CO. KG	742	SAINT JEAN INDUSTRIES	1137A	TRUST FOR ENGINEERING INDUSTRIES	1189
MCF SAFETY BELTS SRL	739	SAND PROFILE	788	TSL-ESCHA	530
MCV	601	SANEL AUTO ELECTRONIC	442	TWILINER AG	227
MCY TECHNOLOGY LIMITED	733	SANZ CLIMA	516	UEG TEKSTIL	445
MEKRA LANG	533	SAR TEKNIK OTO YAN SANAYI	798	UGURLU GLASS	768
MELLOR	505A	SBRS - A MEMBER OF THE SHELL GROUP	605D	UNICLA INTERNATIONAL LIMITED	769
MERCUS	708	SCALABROS	911	UNIVERSALS	701B
METATRONIX	410	SCANIA	404	UNVI	470
MEYIS AUTOMOTIVE	828	SCHNIELE SEATING SYSTEMS	509	UPIC SA	7104B
MINGSHANG TECHNOLOGY CO., LTD.	1139C	SCHUNK TRANSIT SYSTEMS	686	UYGUNER	429
MITS AUTOMOTIVE	649	SEFAC	913	V. S.E. VEHICLE SYSTEMS ENGINEERING B.V.	755
MMI SP. Z O.O.	759A	SEGE SEAT	444	VA-Q-TEC AG	1167A
MOBILE CONTROL SYSTEMS	623	SEREM OTOMOTIV	925	VAGBUS ROMANIA	954
MOLPIR	688,691	SETCOM	746	VALEO THERMAL COMMERCIAL VEHICLES	609
MOVON	690	SEVIM AUTO GLASS CO.LTD.	529	VAN DAMME	892
MRS ELECTRONIC	1188	SFB OTOMOTIV	979	VAN HOOL	504
NAILI CO., LTD	1166	SGUINZI PIETRO	947B	VANSTAR	736
NANJING AE SYSTEM TECHNOLOGY	1161C	SHANGHAI HIGHLY NEW ENERGY TECHNOLOGY CO., LTD.	1103D	VDL BUS & COACH	605
NAVAHO TECHNOLOGIES	689	SHEKONIC COMPOSITES	1148	VEHICLE SECURITY SYSTEMS EUROPE LTD.	812
NET FLOOR COVERINGS	1191	SHENZHEN INDUSTRIAL MAN PRODUCT RP& M CO.,LTD	1163C	VEHTEC	839
NINGBO MEIXING AUTOSHADOW CO., LTD	963	SHENZHEN SINEXCEL ELECTRIC CO.,LTD.	891	VELDO	7102
NINKASI	776B	SHENZHEN VIEWTECH ELECTRONIC TECHNOLOGY CO., LTD.	1180	VENTURA SYSTEMS	628
NISO TECH AB	924	SHIP-CAR SRL	929	VIDURGLASS	654
NPT SRL	7105	SIEMENS AG	760A	VIGNAL SESALY	616
NSS NEW SIGN SOLUTIONS	818	SINALSUL	622	VISCOUNT VEHICLE & SPORTING GOODS (KUNSHAN) CO., LTD	1170
OCTILLION POWER SYSTEMS, INC	1164C	SINO-SYNERGY HYDROGEN ENERGY TECHNOLOGY (JIAXING) CO., LTD	702	VKM PLASTIK	732
OE INDUSTRY	981	SISTEM ALUMINUM	842	VOGELSITZE	517
OES-LINE (OMNIBUS ELEKTRONIKS & SERVICE GMBH)	838B	ŠKODA GROUP	802	VOITH	520
OFFICINE MARIO DORIN SPA	536	SKYAUTONET	1184C	WAVECOM	1181
OFOLUX	838A	SMART EYE AB	1149B	WEBASTO	7113
OLIMPIA AUTO GLASS	653A	SOLARBUS.PRO - PART OF GREEN ENERGY / MIPV.PRO	425	WENZHOU NO. 2 AUTOMOBILE ACCESSORIES FACTORY	1129
OMR OMNIBUSHANDEL MARIO RÖTTGEN GMBH	761	SOLARIS BUS & COACH SP. Z O.O.	502	WIDENSENSE	1184A
ONWAY AG	418	SONGZ	741	WIEJELO EQUIPMENT	978
OPTIBUS	816B	SONO MOTORS GMBH	1163D	WIGAM SPA	914
ORIONDERI LTD	621	SPAL AUTOMOTIVE	511	WOLF OIL CORPORATION	801A
ORTAKCI GLASS	642	STALATUBE	837	WOLFTANK GROUP	841
ORTEM ELEKTRONIK A.Ş.	710	STARGLASS	822	WORTHINGTON INDUSTRIES	1141B
OTM PLASTIK	835	STER GROUP	1143	WUXI HONGYU AUTO-PARTS MANUFACTURING CO., LTD.	808B
OTO NUMUNE OTOMOTIV	910	STILLA PASSENGER SEAT	819	XIAMEN HARINE TECHNOLOGY CORPORATION LIMITED	1153A
OTOKAR	505B	STONERIDGE ORLACO	644	XIAMEN LENZ COMMUNICATION CO., LTD.	829D
OTOTRIM OTOMOTIV	454	STONKAM CO., LTD	632	YEŞİLOVA HOLDING	1147
OTTOMOTIVE	710	STRABAG INFRASTRUCTURE & SAFETY SOLUTIONS GMBH	737	YILKAR KLIMA	615B
OZGUR KABLO A.S	684	STREAMAX EUROPE	471	YUANHUA AUTO PARTS	1149A
OZLIDER A.S.	7101	STYL'MONDE	1137A	YUTONG	901
OZTEKNIK	731C	STYLEBUS & GURSOZLER AUTOMOTIVE	943	ZENITH GRAPHICS	417
PACIFIC TUR	800	SUAT OTOCAM	731B	ZENOBE	908
PAILTON ENGINEERING LTD	936	SUPERLEE CORPORATION	958	ZEROVA EUROPE BV	692
PALAZ SAFETY BELTS	1150	SUSTAINABLE BUS / VADO E TORNO EDIZIONI	1105F	ZF FRIEDRICHSHAFEN AG	537
PALMIYE DESIGN	1140C	SYMBIO	965	ZHEJIANG KELI VEHICLE CONTROL SYSTEM CO.,LTD	1153B
PAS	808B	SYSTEMY AUTOBUSOWE GROUP	754C	ZHEJIANG CHUANGLI AUTOMOTIVE AIR CONDITIONER CO.,LTD	1184B
PASSENGER LIFT SOLUTIONS	858	TAIPALE AUTOMOTIVE LTD	813	ZHEJIANG GROUPSTAR AUTOMOTIVE LAMP CO., LTD.	1134A
PAYEPLAST	922	TAM EUROPE	701A	ZHEJIANG LEILI AUTO PARTS CO., LTD	7104C
PEI MOBILITY BRAND OF P.E.I. SRL	676	TAMWARE	829C	ZHEJIANG LINRUI AUTO ELECTRIC CO., LTD	1130
PEI TEL COMMUNICATIONS	747	TARKETT	7107	ZHEJIANG PANGOOD POWER TECHNOLOGY CO., LTD.	1105E
PERINFO	436	TEKAYDINLAR MINIBUS DESIGN	951	ZHENGZHOU JINGYIDA AUTO PARTS CO., LTD	905
PHATHA	1164	TEKNIK MAKINA & TEKNIK GLASS	793	ZHENGZHOU KELIN MOTOR VEHICLE AIR CONDITIONING CO., LTD.	770
PHOENIX CONTACT E-MOBILITY GMBH	718	TEKNOWARE	832	ZHONGTONG BUS HOLDING CO., LTD.	1103A
PI LABS GMBH	1132B	TELD	1163		
PILKINGTON AUTOMOTIVE FINLAND	836				
PILOT SEATING	450				
PINET INDUSTRIE	1177				
PLASTEN OTOMOTIV	1178				
PLASTIC OMNIUM	952				
PLASTOFORM D.O.O.	1140B				
POLARIS ELEKTRONIK	671				
POLITECNICA 80	1139A				
POLITECNICA SEAT TECHNOLOGY	524				
PRETTL ELECTRONICS HUNGARY KFT.	808B				
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PURPLAST OTOMOTIV	670				
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Fired up: understanding the risks of electric and hybrid buses

The number of hybrid and electric vehicles on the road is increasing, and so are the fire risks. Due to a lack of public awareness of the risks and how these vehicles differ from those powered by conventional combustion engines, electric bus fires happen almost every day all over the world. Jonas Bergström, Business Manager for Dafo Vehicle's bus and coach division, considers how the bus industry is evolving and how this is affecting the fire risks in the automotive industry: what steps can operators take to ensure driver and passenger safety.

All electric vehicles have the potential to cause a fire, therefore it's critical that drivers and those integrating greener cars into our transportation networks are aware of the risks and take action to reduce them whenever practical. Lithium-ion batteries can occasionally encounter a phenomenon known as 'thermal runaway'. This occurs when the battery's cells malfunction, which can be caused by physical damage, overheating, over-voltage or overcharging. When this arises, the temperature rises quickly, which, if ignored, can lead to fire, the emission of poisonous gas, and even massive explosions. A battery is most dangerous during thermal runaway because, once it begins, it produces its own oxygen. This typically indicates that the bulk of traditional fire suppression techniques won't work and that a reignition is highly likely. Therefore, if a lithium-ion battery enters the stage of thermal runaway, it might take days or even weeks to completely extinguish a fire, which calls for a lot of water and extinguishing agent.

GAPS IN LEGISLATION

Despite these new risks and the potential effects on people, fleets and revenues, legislation to protect electric vehicles from fire is lagging. By mandating that vehicles powered by combustion engines have onboard fire suppression equipment, the United Nations Economic Commission for Europe (UNECE) approved Regulation 107 in 2020 to increase the safety of traditional buses and coaches.

However, there is now a legal loophole that exempts electric vehicles from the same standards, because the legislation only applies to vehicles with conventional combustion engines. Original equipment manufacturers (OEMs) and end-user organizations frequently are not aware of how variable the fire risks are based on the battery type while deploying electric buses.

To manage security and defend their fleets, they rely on laws. To lead the fire safety movement, bus and coach makers must unite globally as technology advances and the push towards electrification grows.

PROTECTING YOUR FLEET

An efficient fire suppression system is essential for preventing thermal runaway and lowering the likelihood of a fire in modern autos. Together, the Research Institutes of Sweden (RISE) and Dafo Vehicle Fire completed major research under an EU-funded programme that was aimed at understanding and addressing these new threats and using the findings to create a novel suppression solution. The research showed that



Fire suppression techniques won't work on a thermal runaway



Installing Dafo's fire extinguisher

the lithium-ion battery experiences a venting stage, where it releases gases, including carbon monoxide, in the early stages of thermal runaway before it fully takes control. The study discovered that spot cooling can lower the temperature and prevent further heat buildup during this venting stage, which is impossible if thermal runaway totally seizes control. This means that if an early

fire warning device is installed to detect carbon monoxide and begin spot cooling before it fully takes hold, thermal runaway can be halted from inflicting damage, protecting people, fleets, and businesses.

On how to protect your electric bus and coach fleet, visit Dafo Vehicle in hall 9 at stand 934 at BusWorld. ■

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Dutch bus builder Ebusco

Reduced energy consumption with composite material

Dutch manufacturer Ebusco resolutely opts for lightweight materials for the construction of its 12- to 18-metre-long vehicles. The focus is on more efficient energy consumption but also on a reduced ecological footprint.

Ebusco is living up to its aspiration of being a gamechanger. In 2012, the first bus rolled out of the production hall in Deurne near Eindhoven, and a decade later the order book is filled with 1,800 orders. Not mainstream buses, but high-end technology watched closely by the industry. For the manufacturer, the choice is clear: electric buses with lightweight bodies are no longer the future, but the present! 'Weight is the most important factor for energy consumption. So, it was an obvious choice to use lighter materials, says CEO Peter Bijvelds. 'Opting for aluminium instead of steel does not translate into sufficient weight gains. Composite materials, on the other

hand, are significantly lighter and offer additional advantages such as greater rigidity and improved passenger protection. 'Frontal and side crash tests have shown that fibre-reinforced plastic materials offer higher protection,' says the manager. Less weight also means less material and therefore more economical use of raw materials. For Ebusco, material recycling is an important aspect of the production process. 'We emphasise the re-use of materials or the use of recycled products. Every part of the vehicle is subjected to its ecological impact. Based on this, the choice of material is determined.

For its 12m vehicle 3.0, the bus maker claims a record consumption of just 0.65 kWh per kilometre. The slightly higher cost is largely offset by a lower TCO. In addition to its emission-free drive, the Ebusco bus has other strengths. For instance, the weight reduction allows the vehicle to be on only two tyres per axle. This not only reduces friction loss but also creates

a greater distance between the wheel arches with more interior space as a beneficial result.

Ebusco prides itself on its image as a local bus manufacturer. 95 per cent of all parts are manufactured in Europe, only the batteries are non-Europe-

an. In Deurne, three production lines are active and an additional production site will soon be launched on a Renault Cléon site in Rouen, France. There, the entire hull will be assembled. The construction time of a bus with steel or composite material is the same. ■



The 360-degree charging solution to electrify your bus fleet

ABB E-mobility knows the importance of flexibility to bus operators, especially as they attempt to navigate rapidly evolving fleet and infrastructure requirements. That's why our new HVC360 power cabinet offers not just best-in-class power density, but smart energy management too. Intuitive and robust, it ensures a seamless end-user experience and integrates hassle-free into existing infrastructure.

Compatible with both CCS and pantographs, HVC360's cutting-edge design allows the installation of dispensers up to 150m from the power cabinet itself and supports up to four outlets at once. The solution is configurable, scalable and upgradeable, perfectly meeting the individual challenges of fleet and depot electrification.

But ABB E-mobility's 360-degree solution is about more than just hardware. Backed up by a 97% up-time commitment with industry-leading service as well as smart software solutions, the HVC360 covers every element of the transition to electric mobility.

Simple integration with existing business tools, automated charge planning, and real-time monitoring all help to ensure a smooth transition to e-bus operation, while technology including real-time emissions reduction reporting and proactive service monitoring promotes sustainability and reliability.

Visit us on the ABB E-mobility stand in Hall 7, Booth 784 to learn more.

ABB



HALL 7 | BOOTH 784

Ambitious Zhongtong aspires to grow with partners

'We are ready for Europe,' says Cairns Jiang, the general manager of Chinese bus manufacturers Zhongtong. The company aspires to grow here with European partners.

Zhongtong is still a rather strange-sounding name in the western world, but in China, Zhongtong buses are part of the street scene. The company, founded in 1958 with the Chinese government as its largest shareholder, is the immense country's leading manufacturer of buses and touring coaches. Zhongtong, a company with 4,600 employees, builds public transport vehicles from 5 to 27 metres long.

'From city buses to coaches with all existing drives such as electric vehi-

cles, hybrid types, hydrogen buses, fuel cell cars and on CNG fuel: all types are produced by Zhongtong,' says Cairns Jiang. The manufacturer also assembles vehicles in Turkey and South America and is active in 107 countries, including Germany, Spain and Portugal.

The general manager sounds determined. 'We have all homologations for European standard norms. Eighty per cent of our production comprises electric buses. Our goal is to belong to the top class with more luxury and safety for passengers. In Europe, we want to grow with partners but they can be either manufacturers, banks or government institutions.' ■

Cairns Jiang, general manager of Zhongtong.





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 GERMANY	 GERMANY	 GERMANY	 THE NETHERLANDS	 THE NETHERLANDS	 UNITED KINGDOM	 THE NETHERLANDS	 PORTUGAL
 ITALY	 SWEDEN	 TÜRKIYE	 EGYPT	 GERMANY	 INTERNATIONAL	 THE NETHERLANDS	 FRANCE
 BELGIUM	 CROATIA	 SLOVENIA	 URUGUAY	 CHILE	 BELGIUM	 ROMANIA	 SLOVENIA
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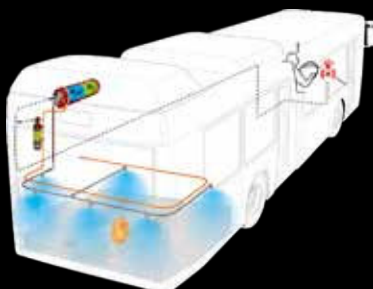
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