

# busworld® DAILYtimes

EUROPE BRUSSELS SATURDAY 7 OCTOBER 2023



## New manufacturers and supply companies for charging infrastructure



### NUMEROUS NEWCOMERS AT BUSWORLD EUROPE

For the 26<sup>th</sup> Busworld Europe, the second to be held at Brussels Expo, more exhibitors will be present than ever before, including several bus manufacturers participating for the first time. Also noteworthy is the (slight) breakthrough of hydrogen as an alternative propulsion system.

"Between the previous Busworld edition in 2019 and the current edition, there are four years due to the coronavirus pandemic," says managing director Mieke Glorieux. "With a biennial edition, as soon as one edition was over, the next one began. Four years is a huge time span, also because the market has changed enormously in the meantime. Often, new contacts are also at work with manufacturers and supply companies."

"At the request of the manufacturers, we adjusted the exhibition days. This allows 'decision makers' to be present from Monday to Wednesday. Van Hool, Daimler and Iveco have stands as large as they were before. Others have reduced their stand space. Volvo is the only manufacturer to have dropped out due to a changed strategy in which they are relying on Egyptian MCV and Spain's Sunundegui for the construction of their bodywork".

» continued article see p. 2



# Otokar

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at our stand n° 505 B

# Colophon

**BUSWORLD DAILY TIMES IS A PUBLICATION OF BUSWORLD EUROPE. IT IS PUBLISHED ON A DAILY BASIS DURING BUSWORLD EUROPE 2023 ORGANISED IN BRUSSEL EXPO FROM 7 TO 12 OCTOBER 2023.**

## EDITOR-IN-CHIEF

Jean-Pierre Schoukens

## EDITORIAL TEAM

Jos Haas, Geert Van Lierde, Jan Muylaert, Dominique Blanckaert, Didier Tuytens, Sridhar Chari, Hannes Huyghe, Inge Buytaert

## EDITORIAL ADDRESS

Press room 511, near patio, hall 5  
dailytimes@busworld.org

## ADVERTISING

TC&P  
Official Agent for Busworld Europe 2023  
E-mail: advertising@busworld.org -  
advertising.busworld@tcenp.be

## TRANSLATION

Francis Demasure  
X-L-Ent taalbureau  
Markegemstraat 134  
8720 Wakken  
Belgium

## PHOTOGRAPHY

Bieke Bruggeman, Jos Haas

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TC&P  
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Mieke Glorieux,  
Managing Director Busworld Europe

» continuation of article p. 1

The free space will be filled by numerous newcomers such as Turkey's Karadag, which is focusing on city and school buses, and Turkey's Habas, which operates mainly with gas buses. India's JBM Group will be attending a Busworld exhibition for the first time. From China, Yutong, BYD, Golden Dragon and Higer as well as newcomer Zhongtong, among others, will be present. Hungarian Ikarus Bus which has a partnership with Chinese CRRC and Czech Skoda will also be present for the first time while Slovenian Tam Europe makes it comeback after several years. The German company Arthurbus, focusing on electric and hydrogen buses, will also be present.

Also noteworthy are the numerous supply companies with charging infrastructure and batteries for electric buses or with refuelling stations and facilities for hydrogen fuel cell buses.

With many new exhibitors, Busworld Europe expects around 40,000 visitors, the same number as in 2019.

## ZERO EMISSION BUS CONFERENCE GUEST AT BUSWORLD FOUNDATION

In collaboration with European Zero Emission Bus Conference, Busworld Foundation presents a four-day programme focusing on alternative propulsion.

"Zero Emission Bus Conference is organising its conference for the fifth time, and for the first time in collaboration with Busworld Europe," says an extremely satisfied Jan Deman, director of Busworld Foundation. "During the first three days, all focus will be on public transport, while the fourth day will focus on zero-emission applications for touring coaches as well as the necessary logistics infrastructure to charge batteries or refuel with hydrogen while on the road. The sessions will take place in the morning or afternoon, allowing participants to visit Busworld Europe afterwards." Besides the Zero Emission Bus Conference, Busworld Foundation also provides other events. "On 10 October, we are organising a sym-

posium on driver safety," continues Jan Deman. "Here the results of a Norwegian study analysing bus accidents will be presented. Safety systems will be set out and preventive action to avoid accidents elaborated. Furthermore, IRU will propose a study on the acute driver shortage and possible solutions will also be provided."

On 11 October, the whole day will be focusing on 'Digital Mobility Solutions for Bus & Coach Operations'. Topics discussed there will include MaaS concepts, ticketing platforms and payment systems. The focus will also be on keeping energy costs in electric buses under control, charging batteries optimally and planning trips accordingly. Finally, the future of self-driving bus services will be discussed and experiences will be shared.

Following the Zero Emission Bus Conference on 12 October, which will focus on zero-emission coaches, a symposium will take place on the future of touring coach tourism, driving and rest times, accessibility of city centres and the future of group travel. ■



## Hall 4, stand 402b

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## SOLAR GLASS FROM FINLAND

JTSolar glass, designed and manufactured by Jaakko-Tuote Oy, is a new luxury green line innovation for the vehicle industry. An investment that pays back itself. JTSolar is attending Busworld for the first time.

Jaakko-Tuote Oy is a Finnish family business that designs, develops and manufactures high quality safety glass products for demanding applications with over 50 years of experience. Shape of Excellence, the slogan and the company policy are based on

customer oriented service with flexibility and expertise from start to finish.

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## Summary

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*Interview Mieke/Redgy/Vincent/Inge*

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*Bus of the Year 2023*

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**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.

**Step 4:** Use the app as much as you can.

# busworld

## AWARDS IN 2023: 3 COMPETITIONS

### The renowned Busworld Vehicle Awards



The 20<sup>th</sup> 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 8 | Booth 808B
- **Twiliner**  
Twiliner coach seat  
Hall 2 | Booth 227

# AWARDS jury thoroughly reviews buses and coaches

Under a bright sun and armed with paper, biros, smartphone to take pictures and possibly measuring equipment, 32 judges judged the eight zero-emission buses and the six coaches competing for the Busworld Europe Awards 2023 on Saturday 30 September.

Under a bright sun and armed with paper, biros, smartphone to take pictures and possibly measuring equipment, 32 judges judged the eight zero-emission buses and the six coaches competing for the Busworld Europe Awards 2023 on Saturday 30 September.

In the connection avenue between Brussels Expo and the shiny Atomium, the fourteen vehicles were glittering in all their glory. Employees of the respective manufacturers quickly polished away a few spots or quickly browsed through technical manuals.

In the Busworld Awards, the 'bus' category was limited to zero-emission vehicles such as battery-electric buses or hydrogen fuel cell buses.

Among the entrants were : the Anadolu Isuzu CitiVOLT 12m, the Ebusco 3.0, the Higer Fencer F1 Integral EV, the IVECO E-way by Heuliez, the Mercedes-Benz eCitaro, the Tamsa LD SB E, the VDL Citea New Generation and the Yutong U18.

Competing for the coach awards were the Neoplan Tourliner L, the Marcopolo Paradiso G8 1800 DD, Scania Irizar i6s Efficient, the Setra S 516 HDH, the Van Hool T16 Astron, the Yutong T15 E and the Zhongtong Bus H12.

Technology, eco-friendliness, driving behaviour, safety and comfort for driver and passengers were evaluated. The digital applications present in the vehicle were thoroughly reviewed, as were tour guide facilities.

The judges often exchanged extensive views with manufacturers on the effective operational deployment of buses and coaches powered by batteries and CNG. Questions arose about the impact of these alternative drives on available luggage space.



Our reporter busy talking to Dirk Snauwaert and Filip Nolf of the Van Hool company.

For the buses, it was already clear that almost all manufacturers opt for a stylish interior with 'wood' panelling, colour-changing LED lighting, digital info boards and USB ports. A new element was the 'Special Observations' judging panel that

looked for all kinds of gadgets and applications not covered by the listed evaluation criteria. We are curious to see if they found anything spectacular and innovative. ■

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# Busworld Testing Days



# Marc Van Houtte jury chairman of Busworld Awards

**"We need to look at the overall picture of buses and coaches with alternative propulsion"**

"At the Busworld Awards, there was a number of evolutions without any really big innovations," says jury chairman Marc Vanhoutte of Busworld Awards. "Just think of new platforms for zero-emission buses, alternatively powered coaches, improved dashboards and camera systems. But we also need to look at the overall picture in which vehicles with alternative propulsion are moving."

"As opposed to four years ago, when electric buses were still built as variants of diesel buses, we did see vehicles built on a completely new platform," Marc Vanhoutte points out. "This has a number of advantages in terms of weight, battery pack place-

ment and stability while driving. But we as judges also looked at the wider picture. An electric bus is part of a whole within the operation. Battery status and consumption need to be monitored in real-time because they impact depot management, charge management, charge planning and operational deployment of the vehicle at that specific moment. Connectivity with other applications is required. A second concern was battery life and replacing them at, say, 80%. We need to weigh that against the residual value of those batteries and their usability for energy storage.

Among coaches and intercity buses, the first alternative propulsion vehicles made their appearance at the



For Marc Vanhoutte, the internal combustion engine is not yet a thing of the past.

Busworld Awards. "When you insert batteries, hydrogen and fuel cells, the question arises as to where you leave the luggage. For an intercity bus, it is possible because those passengers carry less luggage, but for a tourist round trip, it becomes a problem. With electric coaches, we also looked at the distance one can travel and the time you need to recharge on the way. To be honest, I don't think the internal

combustion engine is dead yet and we need to look at alternative fuels like HVO. Hydrogen certainly offers possibilities, but we have to consider the total cost of producing hydrogen," said Marc Vanhoutte. There were definitely remarkable innovations in terms of new, more ergonomic, dashboards and improved camera systems replacing the exterior mirrors. ■

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# BUSWORLD CONFERENCE PROGRAM



Researcher Eamonn Mulholland is one of the speakers on the ZEB conference in Brussels.

There is more to Busworld Europe than discovering the latest products and services in bus and coach industry. You can also take part in our **extensive knowledge program** where you will be able to gain and share new insights on various hot topics. It's also a great time to meet with other participants and experts.

The 5<sup>th</sup> edition of the **European Zero Emission Bus Conference** will be held during Busworld Europe for the first time spread over 4 half days from October 9<sup>th</sup> till 12<sup>th</sup>. We go from the current states of the technology and market, to the infrastructure challenge and financing the whole project. On Thursday we'll finish with a special focus on zero emission coaches and long distance services.

On Tuesday afternoon October 10<sup>th</sup> the bus or coach driver will be the center of attention in the **Driver Safety Seminar** and the **Driver Shortage Roundtable**. Two items that are of utmost importance to bus and coach operators, as well as vehicle manufacturers. At the end of the day there's time to meet up with all stakeholders involved in the various knowledge events during the **Network Dinner** and share your experiences accompanied with bites and drinks.

Everything in our life is getting more digital day by day in order to improve the user experience and be more (time & cost) efficient. And so is passenger transport too. Thousands of software engineers are working continuously on things like predictive maintenance, autonomous buses, MaaS-platforms, connectivity

between complete environments, energy management systems, ITS, and so on. Get the latest updates first hand during the **Digital Mobility Solutions Conference** on Wednesday October 11<sup>th</sup>. Join as a rookie in the morning, leave as an expert in the evening and start to investigate the digital opportunities in your business.

The knowledge program of Busworld Europe 2023 will be concluded on Thursday October 12<sup>th</sup> with a session and network event on **The Future of Coach Tourism**. Coach operators are facing challenging times. Although a renewed attention for group tourism by coach is clearly felt in the market, difficult access regulations for coaches in city centres and the new drive and rest time regulations for coach drivers promise to be logistical nuisance.

## COMPLETE PROGRAM OVERVIEW (7-12 OCTOBER)

### MONDAY OCTOBER 9<sup>TH</sup>, 2023 ZERO EMISSION BUS CONFERENCE (PAID)

- **14:30 – 16:00:** Towards Net Zero: Welcome and Introduction
- **16:30 – 18:00:** State of Play and Performance of ZEBs (1/2)

### TUESDAY OCTOBER 10<sup>TH</sup>, 2023 ZERO EMISSION BUS CONFERENCE (PAID)

- **09:30 – 11:00:** State of Play and Performance of ZEBs (2/2)
- **11:30 – 13:15:** The Infrastructure Challenge: Battery and Hydrogen

### DRIVER SAFETY SEMINAR (FREE)

- **14:00:** Opening
- **14:15:** Launch of Academic Report on Bus Driver Safety
- **14:45:** Safety Systems, Solutions and Requirements
- **15:45:** Policy Making for Improved Safety of Bus Drivers and Passengers
- **16:15:** Implementation of Safety Tools and Measures by the European PTAs

### DRIVER SHORTAGE ROUNDTABLE, POWERED BY IRU (FREE)

- **14:00 – 16:00:** Roundtable discussion

### NETWORK DINNER (PAID)

- **18:00 – 22:00**
- Price: 125 EUR pp

### WEDNESDAY OCTOBER 11<sup>TH</sup>, 2023 ZERO EMISSION BUS CONFERENCE (PAID)

- **09:30 – 11:00:** Economics of ZEBs
- **11:30 – 13:20:** Future of Funding Models for ZEBs and Associated Infrastructures

### DIGITAL MOBILITY SOLUTIONS CONFERENCE (FREE)

- **09:30:** Welcome and Policy Making on Data Driven Mobility
- **10:00:** Bus & Coach in Next Generation Mobility Concepts
- **11:30:** Digital Operational Excellence via Telematics
- **14:00:** Smart Energy Management When Deploying Electric Buses
- **15:45:** Digitally Enhanced Driving
- **17:00:** Announcement of the Busworld Digital Awards Winners

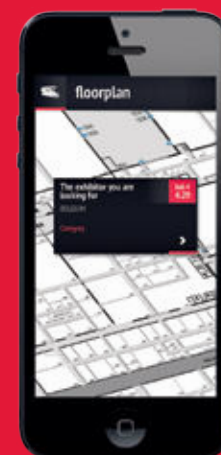
### THURSDAY OCTOBER 12<sup>TH</sup>, 2023 ZERO EMISSION BUS CONFERENCE (PAID)

- **09:30 – 11:00:** State of Play for ZE Coaches and Long Distance Services (LDS)
- **11:30 – 12:50:** ZE Coaches/LDS Challenges and Opportunities

### THE FUTURE OF COACH TOURISM

- **14:00:** Welcome & Introduction
- **14:20:** EU Policy on the Access to Cities for Coaches
- **14:40:** The New EU Drive and Rest Time Regulations for Coach Drivers
- **15:00:** The Future of Group Tourism in Europe
- **15:30:** Network Event

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## OVERVIEW OF THE EXHIBITORS

3A COMPOSITES MOBILITY AG	774	CAFÉ CHAUFFEURS	218	GDA TEKSTIL	1182A
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 FAHRZEUGTEILE 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	HÜLERYÜZ	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
AMADIO SPA	986	COJALI - OEM SOLUTIONS	614A	HELIOX	681
AMF-BRUNS	613	COMOTECH INDUSTRIES	420	HELLA GMBH & CO. KGAA OF GROUP FORVIA	634
AMPHERR AG	778	CONSAT TELEMATICS	796	HEMA	1172
ANADOLU ISUZU	403	CONTINENTAL AG	930	HEMSCHIEDT FAHRWERKTECHNIK GMBH & CO. KG	755
ANEST IWATA EUROPE	1186	CREATIVE SYNERGIES GROUP GMBH	1136A	HENAN KINGCLIMA INDUSTRY CO.,LTD.	962
ANGELET TECHNOLOGY (JIANGSU)	933	CTRINE ENGINEERING PRIVATE LIMITED	1182B	HESS	950
ANLAS KALIP	926	CUMMINS	775	HEXAGON AGILITY & HEXAGON PURUS	411
AOTOP	817	DAF COMPONENTS	619	HEYMANN	827
ARCOL	527	DAFO VEHICLE FIRE PROTECTION	934	HICI	734
ARKPRES	637	DAHUA EUROPE B.V.	817B	HIDRAL GOBEL	928
ARTHUR	809	DAIICHI ELECTRONIC	1131	HIGER BUS	P2
ASHTREE VISION & SAFETY LTD	912A	DAIMLER BUSES	503	HISPAOLD	506
ASTRAGON ENTERTAINMENT GMBH	228	DANCER BUS	605B	HITACHI ENERGY LTD.	1190B
ATECH NV	907	DANFOSS GMBH	829A	HOLLAND OTO B.V.	633
ATG AUTOTECHNIK	755	DANYANG RONGWEN VEHICLE ACCESSORY CO., LTD	7104A	HOWEN TECHNOLOGIES CO., LTD	868
ATLAS BUS / EUROLINERS	987	DANYANG DONGGANG LAMPS LANTERNS CO., LTD.	985A	HUBER+SUHNER	1151
ATS	423	DENSO EUROPE BV	792	HÜBNER GROUP	755
AUDIOBUS SL	831	DHOLLANDIA NV	453	HÜBNER TRANSPORTATION GMBH	755
AUSON AB - NOXUDOL - MERCASOL RUSTPROTECTION & SOUND DAMPING	412	DIGITAX AUTOMOTIVE ELECTRONICS	1115	HUNAN WEILI AUTO PARTS APPLIANCE CO.,LTD	749
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
AUTOMECANICA	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 DOGAN 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 SINOVIATION ELECTRIC VEHICLE TECHNOLOGY CO., LTD	961	ERA ELEKTRONIK	534	JING-JIN ELECTRIC	849
BEULAS	1108	ERDAL LABEL	880A	JIUDING 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
BLABLAÇAR 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 ARAÇLAR SAN. VE TIC. LTD. STI.	1110A
BMZ POLAND	452	EUROCOLVEN SAU	947	KARSAN	501
BÖDE - 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.TİC	1105A	FÉDÉRATION NATIONALE DES TRANSPORTS DE VOYAGEURS	852	KÖNIG KFT.	738
BURGAFLAX	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 LAMAX 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



PC  
ASTRID HALL



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



MAIN ENTRANCE  
EXIT SOUTH





- 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	SCHNIEBLE 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	STILLIA 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				
PRIMA INDUSTRIES	515				
PROTECFIRE / A-EX	1161D				
PURPLAST OTOMOTIV	670				
PVI	949				
PYSAE	1189E				
QUANXING MACHINING GROUP CO., LTD.	1161B				
RAAL	782				
RAIFOGULLARI	776A				
RAMPINI CARLO SPA	606A				
RAUWERS	716				
REFIRE EUROPE	1163E				
REFU DRIVE GMBH	808B				



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# Van Hool reveals ExquiCity for Ile-de-France

At the press day Van Hool revealed the first of 56 double-articulated battery-electric ExquiCity tram buses that will be deployed on two Bus Rapid Transit lines in the Ile-de-France region, including the busiest line in the Paris agglomeration and a third optional line. The ExquiCitys stand out for their more aesthetically pleasing and elegant front which was previously developed for the Mettis network in Metz.

For the development of this new ExquiCity variant, Van Hool collaborated with Kiepe Electric and Alstom. This world exclusive includes 24-metre-long, double-armoured electric buses from Van Hool, powered by Kiepe Electric's high-power fast-charge batteries, charged by Alstom's static charging system via conduction on the ground (SRS). The framework agreement covers a minimum of 56 vehicles. The solution offered by the Van Hool - Kiepe Electric - Alstom consortium is

intended for the T Zen 4 and T Zen 5 express bus lines in the south of Paris and for a third line under option. For passengers, this solution offers more space, comfort, silence, accessibility and speed.

For Kiepe Electric, the cooperation marks a milestone and the beginning of our presence in the public transport market through e-BRT lines. Kiepe Electric provides the traction system for two driven shafts in each vehicle. The order also includes traction batteries, auxiliary power inverters, cool-

ing systems and power distribution units (high-voltage distribution). It is also a first for Alstom because the SRS static fast-charging system is used via conduction on the ground. This solution is already in use on 15 kilometres of tram lines in Nice, where it allows for automatic and fast charging at the station without additional restrictions on its operation. The 24-metre-long, double-shaft, ExquiCity 24 vehicles can carry about 140 passengers each and are fully accessible to persons with reduced mobility. ■



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TRANE TECHNOLOGIES

# MAN Lion's City E is Bus of the Year 2023

Last year the MAN Lion's City E was selected as 'Bus of the Year 2023'. The MAN was awarded this prestigious title by the International Bus of the Year Jury after a four-day Bus Euro Test in which it was compared to four strong competitors. This Bus Euro Test took place in 2022 in Limerick, Ireland.

The MAN Lion's City E was selected by the 23 jury members as the best out of five participants: Higer Azure, Karsan eATA, MAN Lion's City E, Mercedes-Benz eCitaro and Volvo BZL Electric with MCV body. All electrically powered buses. Unanimously, the jury praised the workplace for the driver with a well-adjustable seat, steering wheel and dashboard (VDV concept). The instrument panel features clear, large gauges. The six battery packs on the roof have a maximum output of 480 kWh. MAN has already managed to squeeze out more than 500 kilometres on a single charge. Moreover, MAN offers its customers two charging strategies: max kilometres per charge (350 km) or longer battery life (270 km range). Charging is via a CCS

plug with up to 150 kW. Charging at 375 kW is a possibility.

## SUCCESS STORY

During the Bus Euro Test, this Lion's City E also proved to be one of the quietest. Together with the ZF hydraulic PCV damper system - suspension - it offers a comfortable driving experience. The electric motor - 'central drive', 160 kW, 2100 Nm peak and 1300 Nm continuous - is well tuned and performs smoothly. The degree of recovery of braking and coasting energy is easily controlled via a lever on the steering wheel (retarder operation).

The judge was also very positive about the interior which looks spacious and bright. The driver's workplace was rated as one of the best on the market: visibility is fine, almost no blind spot thanks in part to the use of cameras instead of mirrors. With more than 1,000 orders and the title International Bus of the Year MAN boasts a success story. ■



# ABB

## The 360-degree charging solution to electrify your bus fleet

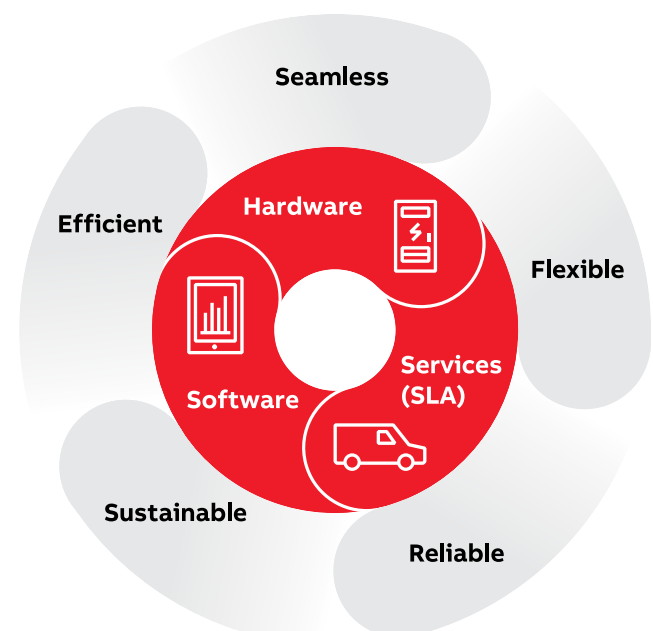
ABB E-mobility knows the importance of flexibility to bus operators, especially as they attempt to navigate rapidly evolving fleet and infrastructure requirements. That's why our new HVC360 power cabinet offers not just best-in-class power density, but smart energy management too. Intuitive and robust,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



HALL 7 | BOOTH 784

# What's new at Thermo King?

Thermo King, a brand of climate innovator Trane Technologies, is the world leader in temperature-controlled sustainable transport solutions. Since 1938, this brand has offered solutions for conditioned transport. "We do not just want to present products, but also highlight Thermo King's commitment to a personalised approach to thermal bus management systems," says Urszula von Kreijfelt, Chief Commercial Officer of Thermo King Bus.

The new product presented at Busworld is the Thermo King Athenia™ ENVI reversible heat pump on R-744 (CO2). It is an "all-in-one" rooftop unit, with an eco-friendly natural refrigerant, optimised to keep driver and passengers at the adequate level of comfort through heating, cooling and fresh air regulation. R-744, often referred to as CO2, is a natural, non-toxic, non-flammable, non-ozone-depleting refrigerant with a global warming potential (GWP) of only 1.

Thanks to its possibilities, the new Thermo King Athenia™ ENVI heat pump is optimised to offer passengers maximum comfort both in summer when cooling is required, but also in winter without the need for additional heating or an additional boiler.

The device operates in both heating mode (down to -25 °C) and air-conditioning mode (up to +50 °C). It simultaneously protects the batteries in the bus driveline by providing cooled or heated water to condition them during charging and discharging.

The integrated battery temperature management system optimises overall energy consumption. The "all-in-one" unit uses waste heat from other sources in the vehicle to further optimise energy consumption and thus contribute to passenger comfort. Thermo King Athenia™ ENVI heat pumps are already being used on "Ebusco" buses in Berlin, one of the largest fleets of electric buses in

Germany for prolonged comfort. Thermo King is also presenting two other products: Thermo King Athenia™ APX, a cooling system more specifically designed for hot countries, and

the Thermo King S30E Heat Pump, a compact, monobloc, ultra-slim rooftop heat pump for minibuses and midibuses of less than 12 metres. ■



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# Iveco Bus with full range of electric buses

With a range of new electric buses, Iveco Bus is taking the next step in its transition to an all-electric line-up: Crossway LE Elec, Streetway Elec, E-Way and the eDaily. Striking detail, all with a different driveline.

Iveco Bus claims to be Europe's number two in terms of production and sales numbers. In 2022, the company delivered 13,000 buses in Europe, a 23 per cent market share. Order inflow has grown by 53 per cent. "We want to be and remain frontrunners in the energy transition of passenger transport with a focus on TCO. It is an ecosystem based on e-buses with battery technology from Fiat Power Train to the necessary charging infrastructure and accompanying service. The next step in this process will be the introduction of fuel cell buses," says Domenico Nucera, president of Iveco Bus. To achieve this, it has now also set up an expertise centre, 'Energy Mobility Solution'.

## CROSSWAY LOW ENTRY ELEC

With the new electric Crossway Low Entry Elec, Iveco Bus offers a vehicle for both Class 1, urban transport, and Class 2, regional transport and in a 12 (44 seats) or 13-metre (48 seats) version. Battery packs range from 346, 416 to 485 kWh for Class 1 and 416 and 485 kWh for Class 2.

A full charge takes five hours at the plug, but a panto-down is optional. A Siemens centre motor with an out-

put of 240 kW (2200 Nm) provides the propulsion. As a basis, Iveco Bus has opted for the CNG version of the Crossway with the reinforced roof. There will also be a new Hybrid version of this gas version.

The Streetway Elec, on the other hand, is designed for intensive urban transport with the same battery packs, NMC li-ion, as the Crossway. The main difference is its engine: the Streetway Elec has a Voith of 310 kW.

## E-WAY

Of the E-Way, 'By Heuliez', the three 'smaller' 9.5 m, 10.7 m and 12 m models are equipped with a Siemens Elfa III e-motor (185 kW, 3000 Nm), the 18.75 m articulated version gets the 330 kW (5000 Nm). The drive axle for all models is a ZF AVE133. A 346 kWh battery pack is available for the 9.5m version and 416 kWh for the 10.7m E-Way.

For the 12 m version, there are three battery packs: 346, 416 or 485 kWh, and it can be fitted with panto-up or panto-down charging equipment. The same goes for the articulated E-Way, which, however, has more batteries packages to choose from: 416, 485, 554 or 624 kWh. The two longest versions also come in a 'Linium' BRT (Bus Rapid Transit) version.

## EDAILY FC

The smallest Iveco Bus, the eDaily 72C Elec (7.2 tonnes) comes with a 140 kW Actia engine. Three FPT li-



ion battery packs deliver 111 kWh of energy and are located at the bottom of the chassis. For an electric lift, a 15 kW ePTO is optional. There will also be an eDaily FC, i.e. with fuelcell, for which Iveco Bus is collaborating with

Hyundai Motor Group. The fuel cell in the eDaily FC produces 95 kW of power. It weighs 175 kilograms. On hydrogen, the eDaily FC can carry 12 kilograms. ■





# The traveller is the most demanding customer

A cosy seat, atmospheric ceiling lighting and a virtually silent ride: travellers in a contemporary coach appreciate comfort. Constructors also understand that travellers do not base their experiences on the vehicle's propulsion form, but rather on physical perceptions.

In all the discussions on the different propulsion types, it is sometimes overlooked that a coach is primarily just a means of transport for travellers. A transport mode that gets him or her to a destination in the most comfortable way. There was a time when a microphone for the tour guide, a ventilation hatch in the luggage rack and a storage net in the back of the seat were all the epitome of luxury in a coach. Today, comfort comes with much higher demands.

Coachbuilders work hard to make the journey as comfortable as possible for the user. Large windows deeply cut into the bodywork offer more visibility to the outside world. To block bright light, the windows are made of solar control glass. This not only prevents rising interior temperatures but also simultaneously saves energy for air conditioning.

## COLOURFUL LIGHTING

During trips in darkness, passengers are spoiled with light rails in the ceiling, side walls and aisle. The driver can switch the colour of the LED rails as desired. Creating a pleasant atmosphere in which the customer feels comfortable. Then the trip is already largely successful.

Sometimes the very best is barely enough as is the case in the luxury coach Marcopolo Paradiso, featuring only 35 seats spread over two floors. Seats is an understatement for these

imposing pieces of furniture. These wide sofas with massage function offer a wonderful soft seating comfort. Its headrests were developed by NASA for space travel. The Brazilian coachbuilder is one of the few manufacturers offering a vehicle with separate toilets for ladies and gentlemen.

While such excesses are out of the question in a city bus, a lot of comfort-enhancing gadgets do make the journey more enjoyable for everyday travellers. Frequency and punctuality remain the user's top priority. Without respecting these concepts, even the most comfortable vehicle will be met with little sympathy. But these are the very elements that are beyond the constructor's control, unless they would be caused by technical defects.

## REFRESHING CITY BUSES

New city buses no longer want to look boring. While the basic concept determines the user-friendliness of the vehicle such as the number of seats and standing places and the number of access doors, the transporter can make a difference with the interior layout. For example, Heuliez's electric city bus is an innovative concept with a very airy interior. The constructor created such an interior with a bright interior lining and partly wooden panelling in the ceiling. "We want to avoid a tunnel feeling by providing a large rear window and slightly translucent seat backs. The blue seats are a wink to Lake Annecy, the French city that will deploy these buses", reveals Thierry Vanfraechem, sales manager at Iveco Bus.

The safety aspect and especially the accessibility of a city bus weighs heavily in the judgment of commuters. Wide-opening doors for quick entry and exit no longer belong to the past.



The doors of China's Yutong city bus open automatically when a person is in danger of being trapped.

Nor are sliding - preferably automatic - ramps for wheelchair users. Imagine being trapped between the doors with an arm or leg! The articulated Chinese Yutong city bus features a safety device that immediately opens the

doors automatically before a trapped person will injure themselves. Another forward-looking aspect is different coloured coverings for a raised floor. This way, falls can be avoided. Details that contribute to safer transport. ■





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# NEOPLAN Tourliner on the road for 20 years

MAN Truck & Bus presents at Busworld 2023 the NEOPLAN Tourliner of the new model year which has received a major technical upgrade with for instance the OptiView digital mirror-replacement system. To coincide with the 20-year anniversary of the NEOPLAN Tourliner, the model will also be launched as a particularly high quality Diamond Edition.

The NEOPLAN Tourliner coach was launched as a new entry-level class 20 years ago. Following shortly after MAN's takeover of Gottlob Auwärter GmbH & Co KG in Stuttgart-Möhringen, this was one of the first coaches to be built on the common MAN technology platform. More than 3,850 vehicles have been sold since its launch – two thirds of them in the popular 12-metre two-axle version. The second generation of the Tourliner was presented in 2016 and has the distinctive Sharp Cut design. Its aerodynamic design was revamped to achieve improvements of around 20 per cent. Over the years the Tourliner received interior enhancements with features such as a floor in boat deck look, the chrome handrails,

and the backlit elements on the luggage racks.

The Tourliner is available in four variants. The smallest variant with a length of 12.1 metres seats for a maximum of 53 passengers. The three-axle medium-sized variant –

the Tourliner C with a length of 13.4 metres – can accommodate up to 57 passengers. The extra-long two-axle vehicle followed as the latest addition to the family at the Busworld 2017. The two-axle version of the Tourliner C with a length of 13.1 metres is optimised, in particular, for maxi-

mum seating, offering up to 59 seats – according to Neoplan “ideal for long-distance scheduled service”. As the largest variant with a length of 13.9 metres the three-axle Tourliner L offers space for up to 63 passengers. ■



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