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 Ptaszynska, 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
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 interest. 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 drivers in the context of the transition. Long and short routes necessitate different applications.

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

Summary

1. EU visits Busworld
   Top figures from European administration welcomed

3. ZEB
   Conferences start today

6. Filip Van Hool
   Interview CEO Van Hool

7. Novelty at Streamax
   Open system software platform

8. Karsan
   Turkish bus maker shows Autonomous E-ATAK

13. DAFO
   The risks of electric and hybrid buses

14. Ebusco
   Lower energy consumption with composite material

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* SORT 2 under optimal conditions | ** Trademarks of Mercedes-Benz AG
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
• Kar-san
  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

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

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 voring QR code and... vote! If the product gets 50% or more YES votes, it will become an official Busworld Europe Innovation 2023.

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 voring QR code and... vote! If the product gets 50% or more YES votes, it will become an official Busworld Europe Innovation 2023.

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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 10:10 this morning with a talk on 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!

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.

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)
- 14:00: Overview of the Status of ZEB Deployment
- 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

STATE OF PLAY AND PERFORMANCE OF ZEBS (2/2)
- 14:00: Overview of the Status of ZEB Deployment
- 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

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: Overview of the Status of ZEB Deployment
- 09:45: Launch of Academic Report on Bus Driver Safety
- 10:15: Safety Systems, Solutions and Requirements
- 11:15: Policy Making for Improved Safety of Bus Drivers and Passengers

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 EU 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: Business Report on Bus Driver Safety
- 14:45: Safety Systems, Solutions and Requirements
- 15:45: EU Road Safety Week 2023

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.
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 protectionism 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.
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 travelers. 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 intelligent 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 an ‘open system’ software platform

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

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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YOUR PARTNER TO TAKE YOU FAR
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 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.
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-European. In Deurne, three production lines are active and an additional production site will soon be launched on a Renault Céleon 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.
“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 vehicles, 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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