



## PRESS RELEASE

### **Transexpo Kielce 2021: Solaris displays four zero-emission buses**

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**At the 15th International Fair of Public Transport, Transexpo, held on 27-29 October 2021, Solaris Bus & Coach is displaying four of its zero-emission buses. Two of them are low-entry models, Solaris Urbino 15 LE electric, unveiled last year, and the Solaris Urbino 9 LE electric bus that was launched only a month ago. The third of the vehicles is the most technologically-advanced bus made by the producer – the Solaris Urbino 12 hydrogen bus. Moreover, at Transexpo Fair Solaris is also displaying its school e-bus.**

#### **Solaris on its way towards e-mobility**

For 20 years now, Solaris has been investing in the development of technologies to reduce the impact of transport on the environment. It has delivered nearly 3000 zero-emission vehicles to clients in 22 countries over the last two decades and has thus effectively contributed to changing the image of public transport in Europe.

At Transexpo 2021, Solaris is demonstrating its latest and most innovative solutions. Thanks to its complementary zero-emission bus range, Solaris is ready for today's challenges and customers' diverse needs as regards the range, flexibility and operability of vehicles.

#### **The Solaris Urbino 15 LE electric**

Last year's launch of the Solaris Urbino 15 LE electric bus opened a new chapter in the development of the Solaris brand, because for the very first time the Urbino electric could go beyond a city's boundaries. The chief objective of the engineers in the company's Office for Research and Development, who worked on creating the Urbino 15 LE electric, was to develop a bus structure which could be effectively used both as a city and intercity bus.

The tri-axle Urbino meets the requirements for both vehicle classes I and II, and also for both these classes at the same time. Thanks to Solaris High Energy batteries with a total capacity of over 600 kWh, the Urbino 15 LE electric can cover a distance of up to several hundred kilometres on a single charge. Moreover, air conditioning with a heat pump allows the energy efficiency of the vehicle to be increased.

At the heart of the 15-metre bus is a 300 kW electric central motor. To boost the bus's efficiency and to reduce energy consumption even further, the propulsion system employs innovative SiC technology, i.e. by using silicon carbide-based circuits.

The Urbino 15 LE electric has been adapted to run on long intercity routes. The air-conditioned interior can house 53 seats featuring seatbelts and a tilting backrest. The seat layout meets the requirements of the Bus Nordic standards. Thanks to this, a ride in the Urbino 15 LE electric bus is a relaxing and pleasant experience. Two additional seats are fitted with ISOFIX, i. e. a system that enables child seats to be secured safely.

Thanks to a host of innovative systems, drivers benefit from a comfortable and safe ride, even

in difficult road conditions, An interactive panel with touch screens combines many advanced security functions. These range from warnings that remind the driver to fasten their seatbelt, to lights and windscreen wipers that automatically switch on, and wide-angle cameras instead of side-view mirrors to ensure excellent visibility. A wide range of additional equipment addresses the needs of both urban and suburban routes and allows for the perfect configuration of the vehicle to individual clients' needs.

The Solaris Urbino 15 LE electric won the "Sustainability Award 2021", handed out by German trade magazine "busplaner".

### **The Solaris Urbino 9 LE electric**

The latest addition to the electric Solaris Urbino family is a 9-metre, low-entry electric bus that has been standardised with all other vehicles of the 4th generation. This model, too, has been designed in such a way that it can be adapted to class I or class II type approval. The bus provides an excellent link between the urban and suburban road network across sprawling conurbations.

The Urbino 9 LE electric bus is equipped with an electric central motor with a peak power output of 220 kW. The drive system in this model is powered by energy from a set of Solaris High Energy batteries with a capacity of over 350 kWh. The Urbino 9 LE electric is fitted with hybrid heating, among other options. Additional energy storage facilities, and optimisation of energy consumption, allow this bus to cover much longer distances on a single charge than was the case with the Urbino 8.9 LE electric model.

Despite its compact dimensions, the vehicle has room for a significant number of seats, most of which are forward-facing. The spacious air-conditioned interior of the bus can fit up to 31 comfortable seats. Increased distances between them ensure passenger comfort, which also meets the Bus Nordic standards. What is more, the bus features dedicated spaces for passengers with disabilities and those travelling with prams or pushchairs, as well as seats fitted with ISOFIX in option. The modernised design provides more headroom in the rear of the bus, which enhances journey quality. At the same time, due to its compact dimensions, the bus will not only perform brilliantly in cramped city spaces, but also on steep climbs and on tight mountain bends.

### **The Solaris Urbino 12 hydrogen**

Solaris's most technologically-advanced bus was unveiled to the world at the Global Public Transport Summit in Stockholm in 2019. In barely two years since its launch, Solaris has delivered hydrogen buses to customers from Germany, Italy and the Netherlands, and at the moment, its order book continues to grow.

"More and more cities are investing boldly in modern and clean public transport. I am glad that Solaris can be part of this process by offering its latest zero-emission vehicles. Hydrogen has a chance to become one of the pillars of the public transport transition all over Europe. All zero-emission technologies can complement each other perfectly and they all can benefit from technological advances in electric drives and their components.", remarked Petros Spinaris, member of the Management Board of Solaris Bus & Coach sp. z o.o. for Sales, Marketing and Customer Service.

The Solaris Urbino 12 hydrogen is fitted with a fuel cell that acts as a miniature hydrogen power plant on board the vehicle. Thanks to the advanced technology applied in it, the bus is capable of covering up to 350 km on a single refill. Electric power, generated through reverse electrolysis in the fuel cell, is transferred directly to the drive system, consisting of an axle with electric motors. The sole products of the chemical reaction that takes place in the fuel cell are heat and steam.

The bus boasts a set of 70 kW fuel cells. Moreover, it has been fitted with a small Solaris High Power traction battery with a capacity of 30 kWh that boosts the fuel cell at moments of increased demand for electric power. The battery is recharged using energy derived from hydrogen and energy recovered while braking.

The hydrogen needed to propel the Urbino 12 hydrogen bus is stored in gaseous form at a pressure of 350 bar in tanks with a total volume of 1560 litres, mounted on the bus's roof. A multifunctional valve boasting a range of safety measures is installed at the end of each tank.

The Solaris hydrogen-fuelled bus on display offers 31 seats on board. Just like the Urbino 15 LE electric and Urbino 9 LE electric bus, our hydrogen vehicle also features a climate comfort system using a CO2 heat pump. In this particular case, the pump additionally uses waste heat from the fuel

cell. This guarantees very high efficiency, which translates into a long vehicle range..

### **Electric school bus**

The electric school bus is a Solaris Urbino 12 electric model adjusted to transport pupils and students. The bus presented at the fair, transports children to a school in the commune of Gręboszów on a daily basis. The vehicle was handed over to the client in 2020 and is one of very few e-buses of its type to be seen on European roads. Due to the lack of emissions at the local level, e-buses constitute a great solution for school transport.

The orange Urbino 12 electric school bus features signage placed at the front and rear of the vehicle informing other road users that children are on board. Passengers are able to get on the bus through two entrances, which sound an acoustic signal when opened. An orange beacon light mounted on the bus's roof turns on automatically when the bus doors open.

This electric school bus can carry up to 41 young passengers. All seats in the bus feature safety belts. It is fully adapted to transport persons with disabilities. At the second door a ramp to facilitate entry has been installed and, by removing the platform opposite the door, it is possible to transport a wheelchair, leaving 37 seats available on board.

The school e-bus is fitted with Solaris High Energy+ batteries boasting a total capacity of nearly 240 kWh and it is driven by an electric axle with two integrated electric motors of 125 kW each.

The purchase of the eco-friendly vehicle has been subsidised by the NFOŚiGW (the National Fund for Environmental Protection and Water Management) as part of the "Kangaroo: A Safe and Environmentally Friendly Way to School" programme.

### **Comprehensive after-sales service**

Solaris Bus & Coach's wide range of new technologies is not, however, limited to vehicles alone. As a pioneer in this market segment, Solaris has gained extensive experience over the years in servicing alternative-drive vehicles. Thanks to this, a comprehensive after-sales service has been developed that provides support during operation and contributes to reducing the time needed for fleet maintenance.

In response to the growing market share of alternative-drive vehicles in public transportation fleets, an independent team has been created to coordinate the process of hybrid and electric drives servicing. Each customer, introducing low- and zero-emission buses to its fleet, is provided with specialist support, starting from advice on workshop adjustments, to a package of technical training sessions and expert support in the event of repairs. Regardless of the level of authorization granted, in each case the customer can count on the assistance of our service network or mobile experts.

### **eSConnect**

To streamline operations, Solaris customers are offered access to the eSConnect platform. Not only does it offer access to a range of data, such as battery charge level, range forecast, and distance covered, but it also provides a basis for analysing and planning fleet activities. With the eSConnect platform, it is possible to monitor buses while in operation on their routes or prepare the workshop for immediate repair activities. Such comprehensive information allows the time a vehicle is out of operation on a given route to be reduced.

### **Spare parts**

The spare parts issue and their availability is always crucial for fleet management. At Solaris this area is managed by the Solaris Logistics Center, with support from regional warehouses. The logistics centre, located near Poznan, handles shipments of a wide range of products, adapted to the expanding portfolio of Solaris buses. In response to the growing number of vehicles delivered to the market each year, the centre's operational efficiency is also being increased. In 2021, this involved, among other things, doubling the amount of warehouse space.

In light of the challenges emerging globally in the spare parts market, Solaris offers a number of alternative solutions. In order to ensure the best possible availability and the highest quality, the Solaris Optiline line of proprietary products is regularly developed. Optiline brake pads and filters have already gained a strong position in the market. In recent months, tie rod ends have also been added to the product portfolio.

### **Transexpo 2021**

Solaris believes that the development of all e-mobility branches, be they battery buses, trolleybuses or hydrogen-fuelled vehicles, should proceed in synergy, and that this process is part and parcel of ensuring sustainable transport for the future. Moreover, the company has paid particular attention to ensuring its solutions are flexible and its vehicles tailor-made to individual client needs.

“We would like Solaris to contribute to the development of sustainable, safe and – as far as it is possible - the most climate neutral towns and cities. The expansion of zero-emission technologies is pivotal in this regard and constitutes a natural phase in the transformation of public transport. We also realise that buses are part of a larger system and we know that every town and city, and every bus route has different needs. That is why we focus on providing solutions so that our vehicles can adapt perfectly to different urban spaces and needs. Our latest and most innovative zero-emission bus models mark yet another step towards enabling cities to transition to climate-neutral mobility”, said Javier Calleja, CEO of Solaris Bus & Coach.

The Transexpo trade fair is being held in Kielce on 27-29 October 2021. Solaris would like to invite you to visit the company's stand, no. 29, in Hall E. What is more, in the Transexpo 2021 outdoor area, in zone ZF-3, Solaris is displaying its school bus with an electric drive.

#### **Additional information**

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##### **About our company**

Solaris Bus & Coach sp. z o.o. is one of the leading European bus and trolleybus manufacturers. Benefiting from 25 years of experience and having manufactured over 20,000 vehicles, Solaris affects the quality of city transport in hundreds of cities across Europe every day. Thinking of the future, the firm is setting new standards by dynamically developing its products, in particular in the electromobility sector. Solaris electric buses, trolleybuses and hydrogen buses are cutting-edge solutions for zero emission public transport. Solaris products have been repeatedly awarded for quality and innovation. The Solaris Urbino 12 electric won the prestigious European "Bus of the Year 2017" competition. In September 2018 Solaris Bus & Coach sp. z o.o. joined CAF Group.