



PRESS RELEASE

Solaris Presents Second Generation of Hybrid Buses

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Solaris Bus & Coach has delivered the first examples of the enhanced, second generation of the Urbino 18 Hybrid city bus. It uses a smaller diesel engine, resulting in lower fuel consumption and better operating efficiency.

The first of the new Solaris hybrid buses have been handed over to customers in Bremen and Hannover. Further Solaris Urbino 18 Hybrid for customers in Germany and Poland will follow over the next months.

Two years after the premiere of the Solaris Urbino 18 Hybrid, Solaris Bus & Coach has significantly enhanced the drive train of the environmentally-friendly hybrid bus. It now uses a smaller diesel engine, which is aided in its work by the electric engines of the hybrid system. Offering 178 kW at 6.7 l capacity, the new diesel engine is even more fuel-efficient. Independent tests carried out on the new hybrid have shown the fuel consumption to be almost 24% lower than on comparable conventional diesel buses.

Development honours the commitment of hybrid bus customers

Solaris hybrid buses have been built since late 2006 and are running in the German cities of Dresden, Leipzig and Bochum as well as in Lenzburg in Switzerland. Regular passenger operation in these places has offered varied and demanding challenges for the Urbino 18 Hybrid, from which Solaris Bus & Coach has been able to gain valuable experience for the further development of hybrid city buses.

The original 243 kW (330 PS) diesel engine proved on occasion to be too generously proportioned for everyday operation. This resulted in the aimed-for reduction in fuel consumption not being fully achieved. Furthermore, although the placement of the drive train in the front section of the bus offered a significantly better weight distribution, operators favoured a more traditional arrangement. Operational experience was key to the further development of the Solaris Urbino 18 Hybrid. The process takes a big step forward with the delivery of the first second-generation examples, but is by now means at an end as Solaris Bus & Coach continues the development of hybrid city buses.

"We would not have been able to follow this route without the commitment and experience of our customers. We are indebted to them for their support in the development of sustainable mobility," said Solaris CEO Krzysztof Olszewski, honouring the contribution of the first customers of the Solaris Urbino 18 Hybrid.

20-30% less fuel thanks to smaller engine and reduced weight

The main new feature of the second generation of the Solaris Urbino 18 Hybrid is the choice of a smaller diesel engine. The hybrid bus now uses the 178 kW (242 PS) Cummins ISBe5 250B engine. At 6.7 l capacity, it produces 1005 Nm torque and meets the demanding Euro 5 emissions standard.

The hybrid system continues to be the E^p system developed by Allison Transmission. At 2×75 kW, its electric engines provide the same power as in the first generation of the Solaris hybrid bus. However, the system has been further optimised to match the performance of the new diesel engine. As before, energy recuperated from braking is stored in roof-mounted nickel-metal hydride batteries.

"Thanks to the use of a smaller diesel engine and reduced overall weight, we are able to achieve a fuel consumption that is lower than ever before. The first generation of the Solaris Urbino 18 Hybrid used about 15% less diesel. With the second generation, we expect to use between 20% and 30% less fuel than comparable diesel buses. The first tests by the TÜV SÜD group confirm this trend," said Krzysztof Olszewski about the new drive train.

The tests were carried out by Prague-based TÜV SÜD Auto CZ s.r.o. and showed that compared to a Solaris Urbino 18 with a conventional diesel engine, the second-generation hybrid bus uses 23.8% less fuel in the SORT1 cycle. Savings in SORT2 are 23.4% and in SORT3 22.9% less fuel is consumed. *"Further optimisation means we will surpass these savings in the future,"* said Krzysztof Olszewski. *"However, the most important fact is that a lower fuel consumption means lower emissions and less of a strain on the environment. A quarter less diesel means a quarter less CO₂, nitrogen oxides and particulate matter."*

In the second-generation Solaris Urbino 18 Hybrid, the drive train is located at the rear of the bus as on the standard diesel version. The engine is mounted vertically, while the hybrid unit takes the place of a conventional automatic gearbox. Power is transmitted to the rear axle.

With further components of the hybrid system such as batteries and the Dual Power Inverter Module placed on the roof, the saloon layout is the same as on the conventional diesel version of the Urbino 18. Operators of Solaris hybrid buses benefit from flexible options for saloon layouts, while passengers enjoy a familiar travelling environment. Thanks to jolt-free acceleration and comfortable driving dynamics of the hybrid bus, passengers cannot fail to notice the state-of-the-art technology of the Solaris Urbino 18 Hybrid.

Return on investment within 6-7 years

With the second generation of the Urbino 18 Hybrid, Solaris Bus & Coach once again demonstrates its leadership in innovation. CEO Krzysztof Olszewski said: *"The current increase in fuel prices shows that our early decision for hybrid technology was the right one. Currently, hybrid technology still means higher initial investment. But only courageous and determined development will allow us to reduce costs - and even today, the Solaris hybrid bus already is a cost-effective option."*

The Solaris hybrid bus fights climate change through lower emissions and by providing sustainable mobility. At the same time, the impressive fuel economy of the second-generation Urbino 18 Hybrid means that with fuel prices on the increase, at an average annual mileage of 60,000 km the extra initial investment can be amortised within six to seven years.

"This makes the Solaris Urbino 18 Hybrid not only a clear benefit for the environment, but also an economic success," said Krzysztof Olszewski, under whose leadership the Solaris engineers in Bolechowo perfected the innovative technology of the hybrid bus.

New Solaris hybrid buses for cities in Germany and Poland

The first second-generation Solaris Urbino 18 Hybrid was presented to its customer, Bremer Straßenbahn AG of Bremen, on 27 May 2008. The red and white bus proudly proclaims "I'm a hybrid bus" in large letters, making it impossible to miss its state-of-the-art technology. Its operation in Bremen is supported by the EU-funded COMPRO project for common procurement of clean public transport vehicles.

On 11 July 2008, the Solaris hybrid bus for Hannover was unveiled to the public. The second-generation Urbino 18 Hybrid was purchased with financial support of regional authorities and will form part of the fleet of üstra Hannoversche Verkehrsbetriebe AG. The modern low floor city bus will demonstrate its abilities on a busy cross-city route.

Further orders for the new version of the Solaris Urbino 18 Hybrid call for buses for Münchner Verkehrsgesellschaft mbH of Munich and for Josef Ettenhuber GmbH of Glonn-Schlacht in the Greater Munich region. These buses will be delivered shortly.

In autumn 2008, a Solaris hybrid bus will enter service in the Polish city of Poznań. The city is the host of this year's United Nations Framework Convention on Climate Change. When global leaders arrive in December for a fortnight dedicated to stopping climate change, they will be able to experience active climate protection in the form of the Solaris hybrid bus of Poznań Municipal Transport Company (MPK). The Solaris Urbino 18 Hybrid offers tomorrow's technology today and safeguards the mobility of future generations.

Additional information

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About our company

Solaris Bus & Coach sp. z o.o. is a leading producer of city and intercity buses in Europe. It focuses on the development of low-emission and zero-emission vehicles, i. e. electric and hydrogen buses as well as trolleybuses. Over 25,000 Solaris vehicles have been delivered so far and they ply the streets in 850 towns and cities across 33 countries located throughout Europe as well as beyond it. Solaris is part of the Spanish CAF Group (Construcciones y Auxiliar de Ferrocarriles) S.A. From conception, to the design and manufacturing phases, all Solaris buses are produced in Poland. All activities undertaken by the company are in line with its mission, which is reflected in the brand's promise: to change the image of public transport. Solaris also actively partners with public transport operators and provides them with comprehensive support in their transition to zero-emission mobility. Solaris products have been repeatedly awarded for quality and innovation. The Urbino 18 hydrogen bus has won the prestigious 'Bus of the Year 2025' title.