

## **Lithium-Ion battery systems for maximum range: AKASOL presents its latest solutions for buses and coaches at Busworld 2019**

- Debut of the high energy solution **AKASystem AKM CYC** - series production for first major customer already to start in 2021
- Debut of the fuel cell solution **AKASystem OEM PRC** - Fleet testing in 50 vehicles from 2020 onwards
- Debut of the 48V solution **AKARack** for hybrid and all-electric applications

**Brussels, October 7, 2019 – The increasing electrification of local and long-distance public transport is a key element in the sustainable change of transport systems. It reduces costs in many areas and also protects the environment. More and more fleet operators are therefore opting for alternative powertrain technologies: The European market for hybrid and electric buses is forecast to grow by more than 26% annually, with demand for high-performance battery systems suitable for specific requirements growing fast. One of the leading manufacturers of high-performance lithium-ion battery systems, AKASOL AG will be presenting three innovations from its portfolio of safe and high-performance lithium-ion battery systems for all-electric and hybrid city, intercity buses and coaches at Busworld 2019 in Brussels (Hall 5, Stand 530) from October 18-23, 2019. A battery system for fuel cell vehicles will also be on display.**

The future flagship of the Company is the high-energy battery AKASystem AKM CYC, which will be produced at the new headquarters in Darmstadt, Germany starting in 2021 and at the new US headquarters in Detroit (USA) starting in 2022 as part of a recently agreed production order from a leading global commercial vehicle manufacturer. The lithium-ion battery AKAModule CYC used in this third-generation system achieves an energy density of approx. 221 Wh/kg with the aid of liquid-cooled, scalable battery modules. They can be easily integrated, making it the leader in the field of liquid-cooled battery modules. With this high-energy solution for long-distance applications, AKASOL sets new standards for any bus applications in terms of energy content. All-electric city buses, for example, can be equipped with battery capacities of between 600 and 1,000 kWh, depending on vehicle size, and thus have twice the storage capacity of today's battery generation.

The new AKASystem AKM CYC can also be rapid charged at a rate of up to 1C and is therefore also suitable for use in a rapid charging infrastructure with a maximum output of up to 500 kW. This enables manufacturers to recharge their vehicles to up to 80% capacity in just 45 minutes and fully recharge them in approximately 1.5 hours. The battery module AKAModule CYC will be available in two standard versions. The small version (AKAModule 64 CYC) is the same size as the standard PHEV VDA battery module and is heat regulated by means of internal cooling plates. The large version (AKAModule 150 CYC) has an integrated liquid cooling structure, enabling highly efficient heat management of every battery cell, even in larger module designs.

AKASOL decided to use special 21700 round cells to achieve the high energy density as well as the required charging and discharging capacity. These are specially designed for use in professional and commercial applications with respect to calendar and cycle

## PRESS RELEASE

life. AKASOL can thus exceed the price-performance ratio and availability of other currently available technologies, while at the same time increasing the energy density by about 30-40%. The solution is also suitable for quick charging, which enables maximum operating time of commercial vehicles – an important customer request.

### **AKASystem OEM PRC for fuel cell powertrains**

At Busworld, AKASOL will exhibit the second generation of the AKASystem OEM PRC, which, compared to the first generation, is able to provide 33% more energy and store around 400 kWh of energy in the same space. With a charging rate of up to 2C, the system can be rapidly charged via the most powerful charging stations currently available for commercial vehicles with over 500 kW (even with smaller battery system sizes), making the system suitable for intermediate and depot charging. The second generation AKASystem OEM PRC will go into series production for two large bus manufacturers in mid-2020. In addition, however, the system will also be seen in fuel cell vehicles and will be tested in 50 vehicles as early as 2020. As a result, there are plans to expand cooperation with an Asian commercial vehicle manufacturer. Manufacture is planned in the AKASOL series production facility for commercial vehicle battery systems in Langen. This facility is already the European leader in series production of battery systems and, in conjunction with the second production line, will be expanded to a total capacity of 800 MWh from the start of next year.

### **48V AKARack solution for hybrid and all-electric vehicles**

The 48V AKARack solution is another highlight of the hybrid and all-electric vehicle applications to be showcased at Busworld: The small 19-inch battery system can be used for various applications and, with a storage capacity of 6.5 kWh per rack, can achieve a charging rate of up to 2C. It also has a powerful thermal management system made possible by liquid cooling in a special housing design. The AKARack is ideal for mild hybrid applications on 48V basis, as well as for on-board power supply in commercial vehicles of all types. In addition, it can also be used as an energy solution when a highly modular design is required. It will be used for construction machinery and marine applications as early as mid-2020. AKASOL further plans to offer the AKARack as a high-voltage solution after the introduction of the 48V version at the end of 2020.

---

#### **Further information:**

AKASOL will be exhibiting from October 18-23 at Stand 530 (Hall 5).

Both Sven Schulz (CEO of AKASOL AG) and Stefan Bergold (Vice President Sales) will be present at the trade fair.

#### **About AKASOL**

AKASOL is a leading German manufacturer of high-performance lithium-ion battery systems for buses, commercial vehicles, rail vehicles, industrial vehicles, ships and boats. With almost 30 years of experience AKASOL is a pioneer in the development and manufacture of lithium-ion battery systems for commercial applications. AKASOL AG's shares are traded on the Prime Standard segment of the Frankfurt Stock Exchange since June 29, 2018.

## PRESS RELEASE

Based in Germany, AKASOL operates a production facility in Langen (Hesse) with an annual production capacity of up to 300 MWh, which will be expanded to 800 MWh by 2020. According to AKASOL, this is Europe's largest lithium-ion battery system production plant for commercial vehicles, which can currently produce battery systems per year for up to 1,500 fully electric buses or for up to 3,000 medium-sized commercial vehicles, depending on battery size. AKASOL systems are manufactured according to the requirements of the industry standards of leading OEM customers. Current customers include two of the world's leading commercial vehicle manufacturers, Alstom, Bombardier, Rolls-Royce Power Systems (MTU Friedrichshafen) and several more. AKASOL has a technology-independent product portfolio. This allows the Company to use the best battery cells and battery chemistry according to the clients' individual needs.

Further information: [www.akasol.com](http://www.akasol.com)

### Press images:

[https://www.dropbox.com/sh/52526dk0q5y3hkl/AAAQ\\_N7todrNnvMIMbKvzilba?dl=0](https://www.dropbox.com/sh/52526dk0q5y3hkl/AAAQ_N7todrNnvMIMbKvzilba?dl=0)

### Press Contact:

AKASOL AG, Daria Hassan  
Phone: +49 (0) 6151 800 500-251  
E-mail: [daria.hassan@akasol.com](mailto:daria.hassan@akasol.com)

## DISCLAIMER

Statements contained herein may constitute "forward-looking statements." Forward-looking statements are generally identifiable by the use of the words "may," "will," "should," "plan," "expect," "anticipate," "estimate," "believe," "intend," "project," "goal" or "target" or the negative of these words or other variations on these words or comparable terminology.

Forward-looking statements are based on current expectations and involve a number of known and unknown risks, uncertainties and other factors that could cause the Group's or its industry's actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by such forward-looking statements. You should not place undue reliance on forward-looking statements and the Group does not undertake publicly to update or revise any forward-looking statement that may be made herein, whether as a result of new information, future events or otherwise.