

New Mercedes-Benz hybrid bus in operation

Press Information

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- **250 customers test the Mercedes-Benz Citaro G BlueTec Hybrid city bus**
- **World's largest lithium-ion battery in vehicle operation**
- **Diesel consumption and CO2 emissions reduced by up to 30 percent**
- **Citaro G BlueTec Hybrid – future-oriented technology for the city**
- **40 years of Daimler hybrid buses**

Stuttgart - More than 250 customers from 15 countries recently had the opportunity to experience first-hand the Mercedes-Benz Citaro G BlueTec Hybrid articulated bus in operation for the first time.

Experts from European transport operations praised a number of features of the 18-metre long hybrid city bus, including its completely emission-free operation on some stretches of the route, its quiet, practically jerk-free drive system, its unique vehicle concept incorporating four electric wheel hub motors, and also its use of the world's largest lithium-ion vehicle battery. This battery stores the energy from the diesel generator and the electrical energy recuperated during braking.

As a result the Mercedes-Benz Citaro G BlueTec Hybrid reduces diesel consumption by up to 30 percent, with a commensurate reduction in highly topical CO2 emissions.

The new hybrid bus has successfully completed extensive practical trials over recent months, including several weeks of winter trials under extremely tough operating conditions near the Arctic Circle.

The first vehicles will be delivered to the transport operators before the end of this year.

Given appropriate public sector support for hybrid technology, market insiders expect a potential annual demand for at least 300 hybrid buses in Western

Europe, which would enable diesel fuel consumption, CO2 emissions and pollutant emissions in the cities to be drastically reduced.

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In North America the Daimler bus brand Orion already has 1700 hybrid buses in day-to-day operation, which makes it the world market leader for hybrid technology in commercial vehicles.

Mercedes-Benz Citaro G BlueTec Hybrid

The Mercedes-Benz Citaro G BlueTec Hybrid has a technologically very sophisticated, serial hybrid drive system which allows emission-free driving under battery power alone over short distances.

The drive system is installed in an articulated Citaro G bus, and drives the centre and rear axles by means of four wheel hub motors – a combination that makes this articulated hybrid bus unique.

The diesel engine in the serial hybrid bus does not act as a primary drive unit, but rather drives the generator to produce electric power as required. This energy is stored by maintenance-free lithium-ion batteries mounted on the roof.

The batteries are not only fed by the diesel generator, but also with energy recuperated during braking.

The energy generated by recuperation when braking on the approach to bus-stops or traffic lights is used both to supply the vehicle at standstill and when moving off. This means that the hybrid bus is able to operate purely under electric power, and therefore practically without emissions, when stationary and under acceleration – with a significant reduction in noise as well.

Power is transferred to the wheels of the Citaro G BlueTec Hybrid by four electric wheel hub motors on the centre and rear axles. Even under heavy operating conditions, the 320 kW total output of the wheel hub motors is ample for an articulated bus.

Downsizing is among the greatest advantages of the serial hybrid system in the Citaro: instead of the large, 12-litre six-cylinder in-line engine normally employed in an articulated bus, a more compact unit with a displacement of 4.8 litres is used.

As a result the engine weight is reduced from around 1000 kg to approximately 450 kg.

World's first lithium-ion battery in this output category

The lithium-ion battery used in the articulated Citaro G BlueTec Hybrid is in an output category of its own.

The battery system generates 180 kW and is comparatively light in weight at under 350 kg.

Major advantages over conventional battery systems include a higher energy density combined with a high storage capacity and a low battery weight.

Changes in the automobile industry are increasing the demand for clean, efficient and economical vehicles. According to forecasts, the market volume for powerful lithium-ion batteries is set to exceed the €10 billion mark over the next decade, with the market for battery materials exceeding €4 billion.

In Germany alone, the government envisages at least one million electric cars populating the roads in the cities by 2020.

40 years of Daimler hybrid buses

With diesel-electric hybrid vehicles from Orion in North America, Mercedes-Benz in Europe and Mitsubishi Fuso in Asia, Daimler not only has the longest, but also the most extensive experience with alternative drive systems for commercial vehicles.

The new Citaro with hybrid drive is a major step towards great economy and emission-free driving.

Despite fuel savings of up to 30 percent, this complex hybrid technology nonetheless requires incentive financing. The support of politicians and the public sector in the form of subsidies is required to make the one-third higher costs for this technology in large-scale production worthwhile for both customers and manufacturers.

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