Scania takes sustainability to a new level

**Unique CO₂ savings with hybridised Scania Citywide running on biodiesel**

In line with Scania’s leadership in biofuels, the new Euro 6 hybrid powertrain runs on up to 100 percent biodiesel. The SCR-only Euro 6 engine is a fuel miser in itself, and the parallel hybrid system provides impressive additional fuel savings. Unlike other hybrids, the system is optimised for city and suburban operation and allows speeds up to 100 km/h.

Scania offers a complete Euro 6 range of buses and coaches with the broadest offering of biofuels for the best environmental performance.

The comprehensive Scania Citywide range offers customers a wide selection of transport solutions with buses from 10.9 metres to 18.1 metres with Euro 6 engines from 250 to 360 hp. As an option, the 320 and 360 hp units are compatible with up to 100 percent biodiesel. High-torque Euro 6 gas engines running on natural gas (CNG) or biogas are available with 280 or 320 hp, now also on the 18.1-metre articulated version.

With the new hybridised version of Scania Citywide LE, Scania takes yet another major step towards carbon neutrality, offering the market a hybrid Euro 6 bus certified for operation on up to 100 percent biodiesel (320 hp version).

“The bus and coach business is highly cost-conscious and needs to meet the highest environmental standards,” says Klas Dahlberg, Senior Vice President Buses and Coaches, Scania. “We have taken that to heart and developed outstanding products that combine the best performance in both respects.”

**Scania-developed hybrid technology**

Scania has been running trials on hybrid technology for more than two decades. The robust parallel hybrid concept now launched responds amply to customer demands and provides attractive payback times. It will be produced in large volumes for both trucks and buses, and this will secure full service coverage via the worldwide Scania service network.
The new hybrid system is part of Scania's modularised range of powertrains that powers both buses and trucks in an immense range of combinations. It is also part of Scania's long-term strategy for powertrain electrification, which includes both trucks and buses.

**Initially 2- and 3-axle hybrid buses**

The hybrid system is initially offered on 12- and 14.8 m buses with two and three axles respectively. The buses have a low-entry layout that offers several sustainable opportunities. They can be specified to work comfortably in the city, as well as on suburban and long-distance routes.

The hybrid powertrain includes the Scania 9.3-litre engine, in 250, 280 or 320 hp guise, the latter with SCR-only technology and compatible with up to 100 percent biodiesel.

The engine is combined with Scania's standard 12-speed mechanical gearbox fitted with Scania Opticruise, the renowned automated gearchanging system. This means that standard components are used that can be serviced by any Scania service workshop.

Between the engine and gearbox is a hybrid unit comprising an electric machine (motor and generator) and automatic clutch. The electric machine is rated at 150 kW and 1,050 Nm. The oil in the hybrid unit is shared with the gearbox and cooled via the gearbox oil cooler. A chassis-mounted inverter is the link between the alternating current from the electric machine and the direct current from the battery.

1.2 kWh of energy storage is provided by a lithium-ion battery integrated in the roof structure at the front of the bus, housed in a neatly styled bulb at the front of the bus, together with a DC/DC voltage converter and a cooling unit.

As an option, slick full-length roofside air deflectors are available to provide a smooth and fluid exterior style, shielding all roof mounted hybrid and ventilation units.

The parallel hybrid design offers limp-home operation in case of malfunction in the hybrid system – no towing is required.

Overall, the added weight of the hybrid and energy storage systems amounts to 600 kg. The expected service life of the battery is 5-7 years, contributing to the competitive payoff time.
Hybrid operation

For the driver, the system interface is identical to a bus with an automatic transmission, facilitating driver changes in large fleets. The push-button gear selector has D-N-R positions.

The vehicle pulls away very silently using electric power with the engine idling. Full mechanical drive is engaged at the appropriate road speed.

Driver assistance is provided by Scania Driver Support, which continuously informs the driver about the driving style.

When the vehicle is running with low torque in the powertrain, Hybrid eco-roll is activated. The electric machine propels or brakes the vehicle, whereas the engine is idling.

The engine is stopped at bus stops when a door is open or when the gearbox is in neutral and the parking brake is applied.

All Scania hybrid buses are equipped with the Scania Communicator, which is the link to the Scania Fleet Management system. The system has an office interface for full operational monitoring and analysis of vehicle and driver data.

Scania Driver Training can be customised to suit each operator.

High efficiency – 20-25 percent fuel savings

The use of a Scania hybrid system together with a DC/DC converter, stop-start function and hybrid Eco-roll provide fuel savings of 20-25 percent, or 1.2-2.5 litres per hour of operation. The bus has been certified according to the SORT cycle with the hybrid powertrain.

50-65 percent CO₂ savings running on biodiesel

The combined savings of 20-25 percent of fuel and the use of biodiesel (320 hp version) provide CO₂ savings of 60-65 percent, a uniquely high figure for Euro 6 hybrid buses.

Payback potential

The savings are dependent on traffic conditions on the chosen route. In typical city operation 10-12 hours per day, a payback time of 7.5 to 9 years can be expected, whereas the corresponding figures in suburban driving are 5.5 to 7.5 years.

The calculation is based on a service life of 10 years with 330 working days annually.
More material and pictures are available in the Scania press room at www.scania.com

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