VOLVO

Volvo Bus Corporation

Press Information

Volvo launches the market's first commercially viable hybrid bus

For the first time there is now a commercially viable hybrid bus on the market, the Volvo 7700 Hybrid. With up to 30% lower fuel consumption and hybrid components from Volvo, bus operators can earn a payback on the extra cost in only five to seven years.

The demand for a substantial reduction in fuel consumption within the transportation industry is growing increasingly stronger and for many reasons. One of the most important is the need to reduce CO_2 emissions that affect our climate. Another is the extremely high price of oil and expected increase in the foreseeable future.

The Volvo 7700 Hybrid makes an important contribution to an improved environment. The lower fuel consumption reduces the emission of the greenhouse gas CO_2 by up to 30%. The discharge of particles and nitrous oxides declines by up to 40-50% compared with the diesel version.

Hybrid technology has existed for a long time, but despite increased environmental demands it has been too expensive and provided too little fuel savings. This situation changes with the advent of the Volvo 7700 Hybrid.

Large volumes

Volvo has chosen to develop a parallel hybrid with a technology that will be used in buses as well as trucks and construction equipment within the Group. Long term, this will involve larger volumes, which reduces costs.

Volvo's hybrid concept is called I-SAM and comprises a combined start motor, electric motor, generator and an electronic control unit. I-SAM works together with a diesel engine and Volvo's acclaimed I-shift gearbox. In addition, a lithium-ion battery is used that is charged during braking via the electric motor/generator. This battery then provides energy to the electric motor for drive power.

As a parallel hybrid, the bus can be powered by the electric motor or the diesel engine independently and well as by both engines simultaneously. As a result, the bus could

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be equipped with a smaller, 5-liter diesel engine compared with the 9-liter engine in the diesel version of the Volvo 7700. The bus's performance is enhanced, but fuel consumption is reduced.

"Another major benefit with Volvo's hybrid technology is that the diesel engine will be turned off at bus stops and traffic lights," says Håkan Karlsson, President of Volvo Bus Corporation. "The bus starts moving driven by the electric motor and when the bus reaches 15-20 kph, the diesel engine starts up automatically."

This solution is a major benefit for the environment in cities. Passengers, pedestrians and fellow road-users, are spared from noise and exhaust fumes.

Volvo components

A significant reason for the fuel savings being so large as up to 30% in Volvo's hybrid bus is that all hybrid components are developed by Volvo.

"A common approach earlier was that bus manufacturers purchased hybrid components externally and attempted to adapt them to their own bus, but this is difficult," relates Håkan Karlsson. "Since we developed the components internally, we have been able to optimize the bus's fuel consumption fully. At the same time we could ensure very high reliability."

With many of today's hybrid solutions, the bus becomes substantially heavier and, consequently, can carry fewer passengers. It is the opposite with the Volvo 7700 Hybrid. The bus weights only 100 kilograms more than a diesel version. As a result of better weight distribution, it can carry up to seven more passengers than its diesel counterpart.

The first buses will be delivered to customers during 2009, while mass production begins in early 2010.

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Pictures are to find in the Volvo Bus image gallery

http://www.volvo.com/bus/global/en-gb/newsmedia/image+gallery/image+gallery.htm

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