New Bosch technologies for commercial vehicles

Hybrid powertrains for commercial vehicles

Eco-friendly, lower operating costs

- Focus on medium and heavy-duty vehicles up to 40 metric tons
- Up to 20 percent less fuel consumption on multi-drop delivery runs
- Systems and components expertise from the passenger-car segment

Following the successful launch of parallel full-hybrid technology for passenger cars, Bosch is now working on hybrid technology for commercial vehicles. The company is transferring its hybrid expertise to components and systems for long-haul trucks up to 40 metric tons in weight and for medium and heavy delivery trucks. It is in these vehicle categories that the benefits of electric drive are most apparent. Fleet operators benefit from lower operating costs. A fuel saving of up to six percent is possible in long-haul traffic, while the saving on multi-drop delivery runs can be as high as 20 percent, with CO₂ emissions reduced by the same amount. In addition, hybrid technology means vehicles can be driven off purely electrically. This is not only silent, but also offers high starting torque.

Parallel full-hybrid technology

Bosch engineers are currently focusing on parallel-full-hybrid technology, in which the electric motor is positioned between clutch and transmission in the drivetrain, thus saving space. When driving long distances, electrical energy can be recuperated when driving downhill or braking, and temporarily stored in a high-voltage battery. The same applies to frequent stops and starts on delivery runs. When the truck drives uphill or starts off, this energy drives an electric motor. Delivering up to 120 kilowatts, it supports the internal-combustion engine. This reduces the engine’s need for power, and thus also its fuel consumption. The electric motor is controlled by the inverter, which converts the direct current from the battery into three-phase alternating current and sets the desired torque and engine speed. The systems supplier Bosch not only develops the
electric motor and inverter, but also the necessary control electronics and battery technology. The global supplier of technology and services can thus provide the entire electrical powertrain for hybrid commercial vehicles.

**Modular concept for all commercial-vehicle segments**

The system's modular design means that the components can cover the needs of a wide market, and be adapted to diverse applications in the medium and heavy-duty commercial vehicle segment, in long-haul and multi-drop delivery traffic, and in buses. A start-stop function can also be integrated, opening up further fuel-saving potential, especially in urban delivery traffic.

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A ([Automotive Technology](#)) is the largest Bosch Group business sector. Its sales came to 30.4 billion euros, or 59 percent of total group sales, in fiscal 2011. This makes the Bosch Group one of the leading automotive suppliers. Worldwide, more than 175,000 Automotive Technology associates work in seven areas of business: injection technology for internal-combustion engines, powertrain peripherals, alternative drive concepts, active and passive safety systems, assistance and comfort functions, in-car information and communication, as well as services and technology for the automotive aftermarket. Bosch has been responsible for important automotive innovations, such as electronic engine management, the ESP® anti-skid system, and common-rail diesel technology.

The Bosch Group is a leading global supplier of technology and services. In the areas of automotive and industrial technology, consumer goods, and building technology, more than 300,000 associates generated sales of 51.5 billion euros in fiscal 2011. The Bosch Group comprises Robert Bosch GmbH and its roughly 350 subsidiaries and regional companies in some 60 countries. If its sales and service partners are included, then Bosch is represented in roughly 150 countries. This worldwide development, manufacturing, and sales network is the foundation for further growth. Bosch spent some 4.2 billion euros for research and development in 2011, and applied for over 4,100 patents worldwide. With all its products and services, Bosch enhances the quality of life by providing solutions which are both innovative and beneficial.