ZF’s Hybrid and Electric Drives Increase Efficiency and Reduce CO₂ Emissions

- Hybrid technology paves the way for electro-mobility
- The new 8-speed dual clutch transmission with integrated hybrid module enables electric driving with zero local emissions
- ZF’s electric axle drive set to go into volume production in 2018

Detroit/Friedrichshafen. Electric drives – from the hybrid drive to all-electric concepts – play a key role in reducing CO₂ emissions in traffic. Plug-in hybrids will set the trend and become a main pillar of mobility. The ZF portfolio already encompasses all electric driveline components, including control units and power electronics. Thanks to modular kits, ZF hybrid solutions allow the electric drive to be packaged in a compact installation space. In the new 8-speed dual clutch transmission for sports car applications, an optional hybrid module also enables electric driving with zero local emissions.

“The electric driveline is an essential factor in reducing CO₂ emissions on the road, which makes it a key to sustained mobility over the long term,” affirms ZF CEO Dr. Stefan Sommer. “Until we achieve complete electro-mobility, we will continue offering a broad range of products, from conventional fuel-saving drives and hybrid systems to all-electric drives.

Hybrid technology will not compete with all-electric drives, rather it will act as an important bridge between them and the combustion engine. To this end, ZF’s electric drive will either replace or support the combustion engine not only under certain driving conditions, but it will also be integrated intelligently and efficiently into the shifting strategy. Based on its comprehensive system integration expertise, ZF can offer automotive manufacturers innovative and highly integrated solutions ranging
from integrated hybrid and electric technologies to all-electric drives with integrated power electronics.

**Plug-in hybrids are trendsetters for future electro-mobility**

To integrate electric drives into very compact installation spaces, ZF relies on modular transmission kits which can accommodate optional hybrid technology from the beginning. Along with the 8-speed plug-in hybrid transmission that went into volume production in 2015 based on the proven 8HP design, the completely redesigned and redeveloped 8-speed dual clutch transmission 8DT is now following this same strategy. It comes with a new gear set design that allows the very compact, custom-made hybrid module to be installed without making the transmission longer than its predecessor model.

With 100 kW peak output, 55 kW continuous power and 400 Nm torque, it can accelerate the car up to 150 km/h on pure electric power, without any assistance from the combustion engine. The plug-in hybrid model in the 8DT also offers all other hybrid functions, including recuperation and boosting, and combines these features with lightning-fast gear shifting typical for the dual clutch transmission.

**Volume production of all-electric drive starting in 2018**

ZF will start volume production of its all-electric axle drive system with integrated power electronics in 2018. This highly compact drive unit is positioned in the center of the axle and can drive both the front and rear axle across various vehicle and performance classes. Reaching 150 kW and a maximum motor torque of 380 Nm, the highly integrated, compact system comprising electric motor, transmission and power electronics is setting new standards in power/performance characteristics and is suitable as an all-electric drive for battery-powered, fuel cell or hybrid vehicles.
Captions:

1) ZF has integrated a highly compact hybrid module into the hybrid variant of its new 8-speed dual clutch transmission. With 100 kW peak output, 55 kW continuous power and 400 Nm torque, it accelerates the car up to 150 km/h on pure electric power.

2) The 8-speed plug-in hybrid transmission 8P75PH from ZF can achieve fuel savings of up to 70 percent in a standard cycle as specified by ECE 101, depending on the battery system capacity.

3) ZF’s light, quiet and powerful electric axle drive system is fully integrated and will go into volume production in 2018.

Images: ZF

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ZF is a global leader in driveline and chassis technology as well as active and passive safety technology. The company has a global workforce of around 137,000 with approximately 230 locations in some 40 countries. In 2016, ZF achieved sales of approximately €35 billion (preliminary figures). ZF annually invests about 5 percent of its sales in Research & Development ensuring continued success through the design and engineering of innovative technologies. ZF is one of the largest automotive suppliers worldwide.

ZF allows vehicles to see, think and act. With its technologies, the company is striving for Vision Zero – a world of mobility without accidents and emissions. With its broad portfolio, ZF is advancing mobility and services in the automobile, truck and industrial technology sectors.

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