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Cummins Debuts its Unique and Versatile Hybrid PowerDrive at IAA Commercial Vehicles Show

HANNOVER, Germany--(BUSINESS WIRE)-- Cummins Inc. (NYSE: CMI) unveiled the PowerDrive, an advanced suite of plug-in hybrid electric powertrain solutions spanning light, medium and heavy-duty applications, at the 2018 IAA Commercial Vehicle Show. This further expands Cummins' broad portfolio of low emissions and fuel-efficient power solutions that includes clean diesel, near-zero natural gas, and fully electric to help each customer's distinct needs.

This unique hybrid system is centre stage at the Cummins booth in an electric hybrid utility truck, a Kenworth T370. As the most versatile hybrid system on the market today, the Cummins PowerDrive offers both parallel and series capabilities. The PowerDrive replaces the conventional transmission and switches in real time between two hybrid and two pure electric modes, optimizing the powertrain for the best fuel economics in any driving situation. The vehicle is also configured with exportable grid quality electric power to recharge vehicles and a recovery crane operating on either electric or engine power take-off.

The Cummins PowerDrive system has travelled more than six million miles in a fleet setting in the United States and China, and work is underway to introduce it to the European market in the near future. Its flexible architecture means the PowerDrive system can be combined with various sizes of diesel or natural gas engines and battery pack outputs.

"With a 100-year-long track record of powering our customers' success, Cummins demonstrates once again that we are transforming the future of transportation by offering our customers the broadest and most cutting-edge power portfolio backed by our expansive service capabilities," said Julie Furber, Cummins Executive Director of Electrified Power.

"The Cummins PowerDrive is intelligent, versatile and compact, providing our on-highway customers the flexibility needed to meet the demands of their diverse jobs and markets. Cummins is ready to offer the new PowerDrive suite through our OEM partners. We look forward to discussing how the PowerDrive's compact packaging envelope and weight saving benefits will enable OEMs to produce PHEV (plug-in hybrid electric vehicles) vehicles for diverse needs without compromising performance or range."

Cummins PowerDrive

The flexible hybrid architecture seamlessly shifts between pure electric for environmentally sensitive areas with a 50-mile (80 km) range and hybrid for jobs requiring more than 300 miles (480 km). It operates as a hybrid in either series or parallel configuration modes. Series is better suited to low road speeds such as urban driving (stop/start conditions), while parallel is ideal for higher road speeds on the highway. In a series hybrid, the electric motor is the only means of providing power to the wheels. The motor receives electric power from either the battery pack or from the engine-generator. In a parallel hybrid, the engine and electric motor combine to provide the power that drives the wheels. The third mode of electric plus comes online when higher energy is required when the system senses gradient climbing or acceleration for overtaking.

The future of transportation demands low emissions without comprising fuel economy or drivability, and the PowerDrive is designed to meet these needs. A US Class 6 truck powered by the PowerDrive with a 50-mile (80 km) electric range, realizes reduced emissions by up to 80 percent compared to conventional vehicles. Similarly, fuel costs are reduced by between 40 to 80 percent depending on the drive cycle.

Electric Hybrid Utility Truck Profile

The Cummins PowerDrive 6000 is paired with a Cummins B6.7 in the Kenworth T370, a US Class 6 truck. The vehicle's gross weight is 33,000 lbs (15 mt gvw). The service vehicle was commissioned by Cummins to support EV and PHEV vehicle field tests and pilot routes. It showcases three vehicle charging stations (1: 100 kW fast charge and 2: 6.6 kW standard chargers) with direct charging cables from the truck to the PHEV or EV vehicle requiring charging.

Note to editor: Images of Cummins Hybrid Utility Truck can be downloaded from:
<https://www.cummins.com/news/events/iaa-commercial-vehicles-2018>

About Cummins Inc.

Cummins Inc., a global power leader, is a corporation of complementary business segments that design, manufacture, distribute and service a broad portfolio of power solutions. The company's products range from diesel and natural gas engines to hybrid and electric platforms, as well as related technologies, including battery systems, fuel systems, controls, air handling, filtration, emission solutions and electrical power generation systems. Headquartered in Columbus, Indiana (U.S.A.), since its founding in 1919, Cummins currently employs approximately 58,600 people committed to powering a more prosperous world. Cummins serves customers in about 190 countries and territories through a network of some 500 company-owned and independent distributor locations and approximately 7,500 dealer locations. Cummins earned \$1 billion on sales of \$20.4 billion in 2017. Press releases can be found on the Web at www.cummins.com. Follow Cummins on Twitter at [www.twitter.com/cummins](https://twitter.com/cummins) and on YouTube at www.youtube.com/cumminsinc

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