



Zero Emissions in Day-to-Day Life: ZF EVplus Delivers More Current to the Plug-in Hybrid

- **Electromobility without range anxiety: PHEV is the electric car for all circumstances**
- **ZF concept vehicle runs for more than 100 kilometers purely electrically on a single battery charge**
- **Plug-in hybrids quickly lead to more electromobility and to reduced CO₂ emission levels in road traffic**

Friedrichshafen/Frankfurt am Main. ZF is demonstrating that plug-in hybrids (PHEV) can be considered as true electric vehicles: Solely on electrical power, the ZF EVplus concept vehicle runs more than 100 kilometers under real-life conditions. This is a sufficient range for most drivers to cover their commuting distances and daily drives – on just one battery charge. This makes electromobility possible in day-to-day use for a broad group of customers, with just a family car. For the more occasional long trips, on vacation or a weekend excursion, the engine comes into play. ZF is unveiling its EVplus concept at IAA 2019.

In Germany, more than 88 percent of vocational commuters cover daily distances of less than 100 kilometers in their cars. A PHEV can cover these distances entirely in electric mode – on just a single battery charge. ZF is proving that with its EVplus concept vehicle: Its purely electrical range of more than 100 kilometers covers the daily need for mobility of the vast proportion of commuters and families almost completely, and entirely on electric power, and without having to recharge the vehicle en route to accomplish this.

“For us, EVplus marks a paradigm change with plug-in hybrids,” explains Stephan von Schuckmann, Head of ZF’s Car Powertrain Technology division. “Thanks to EVplus, the next generation of plug-in hybrids are electric vehicles suitable for daily use.” The higher electric range delivers zero-emission driving locally on daily routes. At the same



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time, the engine takes away the range anxiety that besets drivers, helping to dispel existing reservations about the purchase of electric vehicles. As a consequence, PHEV vehicles could rapidly ensure that more journeys are covered entirely in electric mode, reducing local emissions of CO₂ in road traffic. Another advantage is that significantly smaller batteries can be installed in PHEV vehicles compared to battery-electric vehicles (BEV) to achieve this high proportion of electrically powered journeys. Road tests with the EVplus concept vehicle show that this kind of electrification works superbly well in the real lives of commuters and families: "EVplus provides consistent electromobility in day-to-day life. Anyone wishing to drive longer distances in the same vehicle can do so without having to stop and wait for it to recharge, with the risk of getting stranded," explains Dr. Michael Ebenhoch, Senior Vice President of Development in the Car Powertrain Technology division at ZF.

Available technology as the basis

The EVplus concept vehicle is based on a volume production passenger car with an 8-speed plug-in hybrid transmission from ZF. Engineers from this technology corporation have installed a more powerful battery – with a gross capacity of 35 kWh – in a mid-range sedan. With 65 kW continuous output and peak output of up to 95 kW, the power of the electric motor integrated into the transmission is equal to the volume production standard. Under real-life conditions, this enables the ZF concept vehicle to cover a distance of more than 100 kilometers purely electrically on a single battery charge – at any time of the year and with active auxiliary systems such as an air-conditioning or a heating system. Anyone wishing to embark upon longer journeys from time to time has a decisive advantage with the EVplus. Thanks to the internal combustion engine, which can be engaged when required, longer distances can also be covered.

More electric power, less internal combustion

With the greatly increased range of EVplus in purely electric mode, user behavior is also improved. Often, the drivers of current PHEV vehicles do not even charge the battery to start with. The reason for this is that



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the purely electric range is not sufficient for day-to-day life. This adversely affects the actual energy balance of these PHEVs. Things are very different with EVplus: once charged in the garage at home or at work, car drivers can cover a distance of 100 kilometers, entirely in electric mode.

With EVplus, the inner cities can also be accessed in purely electric mode, eliminating local nitrogen oxide emissions and achieving substantially lower fine particulate concentrations. This is a way to dissolve the discussion about driving bans and subsequent restrictions on mobility. In the very near future, appropriate driving strategies and control mechanisms – keyword “geofencing” – will ensure that PHEV vehicles actually run electrically while in cities.

Captions:

E-mobility without range anxiety: ZF EVplus transforms the PHEV into the electric vehicle for any circumstances. The ZF concept vehicle covers more than 100 kilometers purely electrically on a single battery charge.

Photos: ZF

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#MobilityLifeBalance

Mobility originally meant personal, self-determined freedom for every individual. However, due to congestion, emissions, accidents, and a lack of availability, it is now turning into an ever more present cause of stress. It is becoming increasingly difficult to



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reconcile personal life with the range of mobility solutions currently available. ZF aims to highlight this imbalance with its #MobilityLifeBalance themed campaign. In addition, the technology company provides solutions that contribute to a better and more sustainable mobility offering. The objective is to enable clean, safe mobility that is automated, comfortable, and affordable. At all times, for everyone, and everywhere.

Find out more about the topic through the #MobilityLifeBalance hashtag in social media, or online at <http://www.mobilitylifebalance.com>.

ZF Friedrichshafen AG

ZF is a global technology company and supplies systems for passenger cars, commercial vehicles and industrial technology, enabling the next generation of mobility. With its comprehensive technology portfolio, the company offers integrated solutions for established vehicle manufacturers, mobility providers and start-up companies in the fields of transportation and mobility. ZF continually enhances its systems in the areas of digital connectivity and automation in order to allow vehicles to see, think and act.

In 2018, ZF achieved sales of €36.9 billion. The company has a global workforce of 149,000 with approximately 230 locations in 40 countries. ZF invests over six percent of its sales in research and development annually.

For further press information and photos please visit: www.zf.com