



## **BorgWarner Innovation Helps Hybrids Significantly Improve Fuel Efficiency and Reduce Emissions**

- *Innovative solution made for HEVs and PHEVs*
- *Improves fuel economy by up to 8.5 percent and reduces emissions significantly*
- *Combines EGR and WHRS for maximized benefits*

Auburn Hills, Michigan, July 30, 2018 – Developed for hybrid electric vehicles (HEVs) and plug-in hybrid electric vehicles (PHEVs), BorgWarner’s innovative Exhaust Heat Recovery System (EHRS) will enter production later this year for vehicles from a major North American automaker. By using the heat from exhaust gas which would normally be diverted through the exhaust pipes and wasted, the company’s technology reduces engine warm-up time, enhances efficiency and significantly improves fuel economy and reduces emissions. This cost-effective solution offers compact packaging, low weight and can easily be integrated into existing vehicles.

“Until a cold engine reaches its optimal operating temperature, it is much less fuel efficient and generates higher emissions, which is one of the challenges to master for upcoming emissions regulations. Our EHRS minimizes engine heat up time, helping automakers around the globe meet new and more stringent regulations,” said Joe Fadool, President and General Manager, BorgWarner Emissions & Thermal Systems. “With the EHRS, BorgWarner serves the growing demand for highly efficient solutions to reduce emissions and strengthens its position as a leading supplier of clean technologies.”

Combining an exhaust gas recirculation (EGR) system with a waste heat recovery system (WHRS), BorgWarner leverages its vast experience in heat transfer and exhaust gas aftertreatment technologies, such as EGR coolers and valves, enabling the company to offer a superior solution. The EHRS reduces mechanical losses by using the energy conserved within the exhaust gas. During engine cold starts, a valve controls the exhaust gas flow, routing it through a heat exchanger, where the thermal energy of the gas heats up the vehicle’s subsystem fluids. As a result, the engine warms up faster, reducing emissions and improving fuel efficiency. BorgWarner’s low-pressure EGR valve precisely controls the temperatures in the combustion

chamber, improving engine efficiency and combustion timing. In addition, the technology reduces carbon monoxide (CO) and nitrogen oxide (NOx) emissions as well as particulate matter (PM).

### **About BorgWarner**

BorgWarner Inc. (NYSE: BWA) is a global product leader in clean and efficient technology solutions for combustion, hybrid and electric vehicles. With manufacturing and technical facilities in 66 locations in 18 countries, the company employs approximately 29,000 worldwide. For more information, please visit [borgwarner.com](http://borgwarner.com).



BorgWarner's newly developed EHR optimizes fuel economy, reduces emissions and improves the efficiency of HEVs and PHEVs.

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