

News Release



BorgWarner Develops Innovative Torque-Vectoring Dual-Clutch System for Electric Vehicles

- *Compact, cost-effective electric vehicle solution only requires one rear electric motor*
- *Technology features disconnect capability to minimize energy loss, increase range*
- *Contracted to supply major global OEM, start of production in 2022*

Auburn Hills, Michigan, October 28, 2019 – BorgWarner has developed an innovative torque vectoring system for electric vehicles which enables the use of just one electric motor instead of the traditional two that are typically found on electric vehicles. This solution is cost-effective and features a compact design, significantly reducing the vehicle space needed as well as the weight of the system.

Leveraging its all-wheel drive (AWD) and coupling expertise and portfolio, BorgWarner created its Torque-Vectoring Dual-Clutch unit, which features two clutches – one inner and one outer – that replace the conventional differential in an electric driveline. Traditional torque-vectoring systems require two e-machines in the rear, which are expensive and heavy, while BorgWarner’s technology conserves weight and space in the driveline, aiding in overall vehicle efficiency.

“Our new Torque-Vectoring Dual-Clutch system, which minimizes wasted torque, conserves energy and requires fewer components, exemplifies how our existing internal combustion engine and driveline expertise complements our work with electric vehicles,” said Stefan Demmerle, President and General Manager PowerDrive Systems, BorgWarner. “BorgWarner has the extensive knowledge and expertise that customers need as the industry evolves towards an electrified future.”

Designed to improve electric vehicle handling and maneuverability, BorgWarner’s Torque-Vectoring Dual-Clutch commands torque independently, distributing torque to the left and right

wheels from its position on the rear axle. The Torque-Vectoring Dual-Clutch, connected to one electric motor and featuring two reversible GenVI actuators (one per clutch), dynamically transfers torque for improved steering response and controllability, delivering a stable, fun-to-drive experience for the customer. This system has a capacity of up to 2,600 Nm per clutch and has a feature that disconnects the rear-axle when all-wheel drive isn't needed. The vehicle then operates in front-wheel drive, resulting in reduced losses and increased range for electric vehicles.

Start of production will kick off in the first half of 2022 for a major, global OEM's electric vehicle.

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 67 locations in 19 countries, the company employs approximately 30,000 worldwide. For more information, please visit borgwarner.com.



BorgWarner's Torque Vectoring Dual Clutch System for electric vehicles

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