

Toyota and Pepco Team Up to Research Vehicle-to-Grid Technology in Maryland

June 17, 2024

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PLANO, Texas and WASHINGTON, D.C. (June 17, 2024) – Toyota Motor North America (Toyota) and local energy utility Pepco are working together on vehicle-to-grid (V2G) research for battery electric vehicles (BEVs) using a [Toyota bZ4X](#). This collaborative effort will explore bidirectional power flow technology that will allow BEV owners to not only charge their vehicle’s battery but also send power back to the local energy grid. V2G technology has the potential to support and provide benefits to customers through improved energy reliability and resilience, the integration of renewables, and the possibility of reduced electricity costs.

This collaboration aims to understand the needs of EV owners through their charging habits and vehicle usage, which will be crucial in driving widespread adoption of V2G technology. Nearly 80 percent of owners currently charge their EVs at home overnight when demand for energy is lower. With bidirectional capability, these vehicles could send power back to the local energy grid during peak demand hours or at other critical times, such as severe weather.

“Bidirectional charging is a great way for customers to leverage their electric vehicles in a way that supports the grids and their home electricity ecosystem,” said Christopher Yang, group vice president, Toyota EV Charging Solutions. “Working with Pepco will help us understand charging and discharging use-cases, which will ultimately benefit our customers and help utility providers better understand grid demands.”

Maryland is one of the fastest growing EV markets in the nation and is targeting to have 300,000 EVs on the road by 2025. Pepco is helping Maryland lead this charge by installing 250 EV chargers across Montgomery and Prince George’s Counties. In April, Maryland also became the first state to pass vehicle-to-grid legislation when it passed HB 1256 – the Distributed Renewable Integration and Vehicle Electrification (DRIVE) Act – that requires utilities to develop interconnection processes for bidirectional chargers.

“Pepco is leading the energy transformation in the communities we serve by embracing technology that is helping to drive the clean energy transition,” said Tyler Anthony, president and CEO of Pepco Holdings. “V2G is designed to connect with the local energy grid and is part of our roadmap to ensure a successful and equitable energy transition. This collaboration with Toyota allows us to better understand V2G technology and its impact on the grid, our customers, and overall service reliability as we work together toward a more sustainable and resilient future for the communities we serve.”

The V2G research will take place at Pepco’s Watershed Sustainability Center, located at the company’s Rockville Service Center in Montgomery County, Maryland, using a bidirectional charger. Pepco will lead the effort to design and evaluate a variety of EV charging and discharging use-cases that can potentially provide grid and customer benefits. The demonstration project will also assist Pepco in understanding the infrastructure needed to enable the rapid growth of EV charging infrastructure and the nuances of interconnecting large numbers of V2G assets to the grid to better prepare the utility to implement requirements of the DRIVE Act and support customer adoption of this technology.

Currently, Toyota offers two mass-market BEVs in the U.S. and Canada – the [Toyota bZ4X](#) and [Lexus RZ](#). Toyota recently announced plans for two all-new three-row BEV SUVs that will be assembled at Toyota Motor Manufacturing Kentucky (TMMK) and Toyota Motor Manufacturing Indiana (TMMI). By 2030, Toyota aspires to offer 30 BEV models globally across its Toyota and Lexus brand nameplates and produce up to 3.5 million BEVs annually.