Toyota Expands Vehicle-to-Grid (V2G) Research with San Diego Gas & Electric Company Collaboration

November 14, 2023

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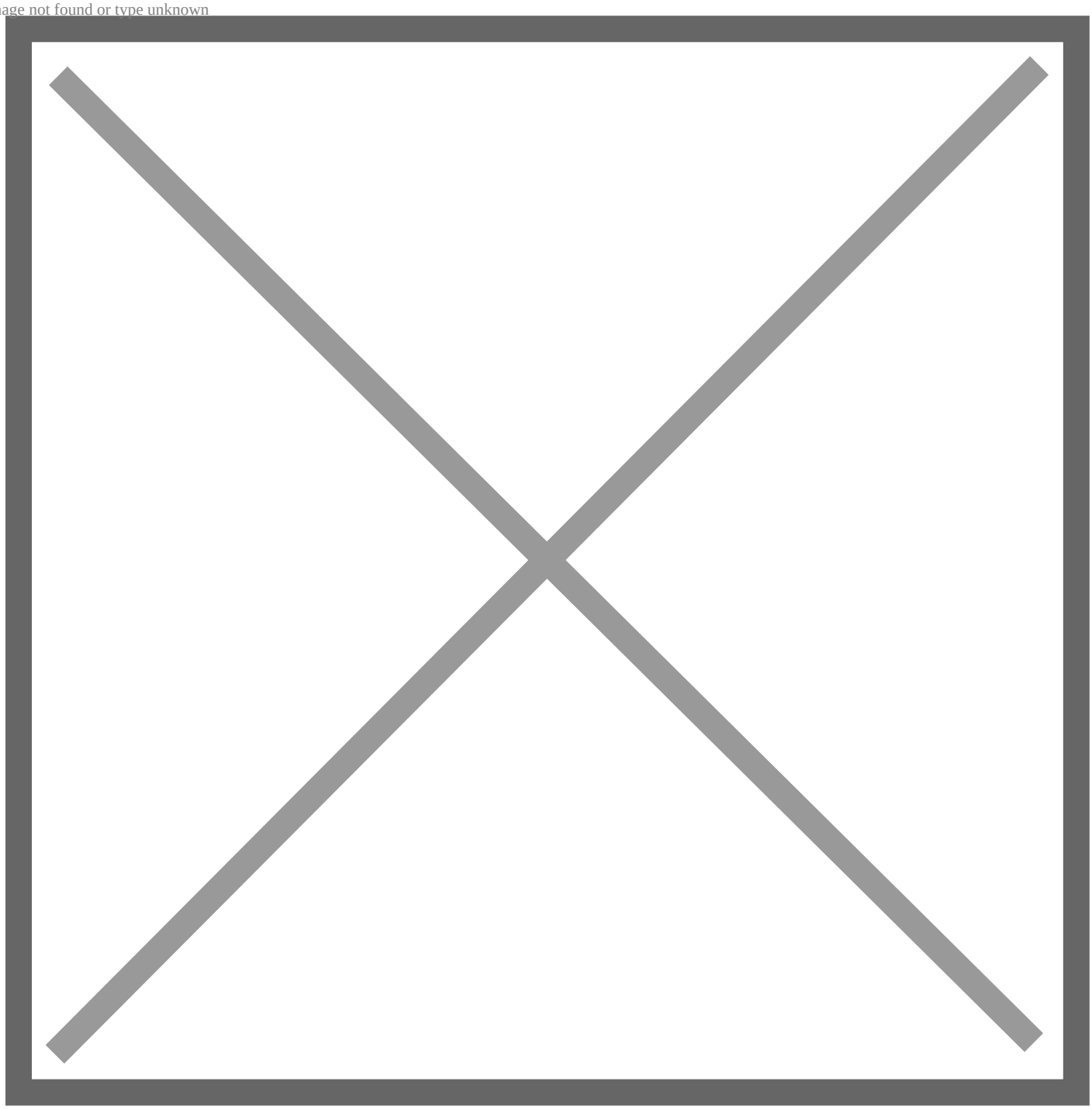

PLANO, Texas and SAN DIEGO, Calif. (Nov. 14, 2023) – Toyota Motor North America (Toyota) and San Diego Gas & Electric Company (SDG&E), a Southern California-based public utility that serves 3.7 million people, announced today that they have agreed to collaborate on vehicle-to-grid (V2G) research for battery electric vehicles (BEVs) using a Toyota bZ4X. The V2G research will explore bidirectional power flow technology that enables BEV owners to both charge their vehicle's batteries from the electric grid and discharge electricity from the batteries back to the grid. V2G technology has the potential to support customer needs through improved energy reliability and resilience, the integration of renewables, and the possibility of reduced electricity costs.

Understanding the needs of BEV owners, their charging habits, and when they use their vehicles will be crucial in driving widespread adoption of V2G. Nearly 80 percent of owners currently charge their BEVs at home overnight, when grid demand is lower. With bidirectional capability, these vehicles could send power back to the grid during peak demand hours or at other critical times, such as during rotating outages due to shortage in electricity supplies. The collaboration between SDG&E and Toyota's Electric Vehicle Charging Solutions (EVCS) team aims to find synergies between the needs of BEV owners and the needs of the electricity grid, as well as explore how to communicate with BEV owners about the potential benefits of bidirectional capabilities.

SDG&E's service territory, which encompasses 25 communities in San Diego and southern Orange Counties, represents one of the largest Toyota BEV and plug-in hybrid electric vehicle (PHEV) ownership regions in California. The Golden State is the fastest-growing EV market in the nation, making it an excellent area in which to conduct this research.

"We are embracing the concept of an entire electrified ecosystem for our customers, and the ability for vehicles to integrate with the grid is an essential component of this ecosystem," said Christopher Yang, group vice president, Toyota EV Charging Solutions. "Working with leading utilities, such as SDG&E, will ensure that customers can continue to confidently charge at home. Toyota seeks to empower utilities to better anticipate and leverage the significant number of plug-in hybrid and BEVs on their grids, both as a growing source of energy demand and, in the future, energy supply."

"V2G has the potential to be a game changer for the power grid and for consumers, and we're proud to partner with Toyota to advance this technology," said SDG&E Chief Commercial Officer Miguel Romero. "Together, we're forging new pathways toward a sustainable and resilient energy future for our customers and the communities we serve."

The V2G research will take place at SDG&E's campus in San Diego, California, using Fermata Energy's bidirectional charger and V2G platform. SDG&E employs a highly knowledgeable clean transportation team that has implemented a variety of EV charging infrastructure programs. To date, the company has installed more than 3,600 chargers at workplaces, schools, and parks, as well as industrial and commercial facilities. SDG&E has already electrified more than 20 percent of its over-the-road fleet and works closely with many fleet operators to help them transition to EV fleets.

With insight gained from the V2G research collaboration, SDG&E and Toyota aim to identify current and future customer benefits that can be achieved through new products and services. The pilot will also assist SDG&E in understanding the infrastructure needed to enable the rapid growth of EV charging infrastructure, both in public and private settings, and to further stabilize the power grid during peak hours.

Currently, Toyota offers two mass-market BEVs in the U.S. and Canada – the Toyota bZ4X and Lexus RZ 450e. Toyota recently announced plans for an all-new three-row BEV SUV that will be assembled at Toyota Motor Manufacturing Kentucky in 2025. 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.