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Ideal Power Converters and NREL Achieve Breakthrough Vehicle to Grid Demonstration

Market-changing technology improves economics of EV fleets

AUSTIN, Texas – October 16, 2012 – Ideal Power Converters (IPC), a developer of disruptive power converter solutions, is pleased to announce that the U.S. Department of Energy's National Renewable Energy Laboratory (NREL) has successfully demonstrated vehicle to grid (V2G) capabilities using IPC's bi-directional Battery Converter.

V2G will allow vehicles to optimally exchange power with the electricity grid, providing grid-storage benefits in addition to the electric vehicle (EV) transportation benefits of fuel and maintenance savings. The energy storage benefits of grid-interconnected EVs are expected to be used for local peak demand reduction and grid ancillary services, and will likely be adopted initially for fleet vehicles. The U.S. Department of Defense has announced plans to adopt EVs in their non-tactical fleets with V2G capabilities.

The NREL and IPC V2G demonstration is unique in that it not only proves technical capability, but also highlights its economic viability. IPC's Battery Converter will provide bi-directional power between the EV battery and a 480Vac power grid. The Battery Converter is based on IPC's patented indirect power converter topology and its Universal Power Converter PlatformTM, which uses a standard highly-efficient, low-cost hardware platform to address multiple markets with only embedded software modifications. This same hardware platform is already commercially shipping in the company's 30kW 480Vac photovoltaic (PV) inverter, which NREL is currently installing on a solar parking structure at their Vehicle Testing and Integration Facility.

The IPC Battery Converter weighs less than 100lbs and can be wall-mounted inside or outside and will begin shipping in 2013 following industry certifications. The Battery Converter product will be cost-effective with conventional EV fast chargers and offer higher charging efficiency (96.5% forecasted), lower installation costs due to its lightweight design, and V2G capabilities.

With support from the U.S. Department of Energy's Office of Electricity, NREL successfully integrated and used the new global fast charging standard SAE J1772 combo-connector interface between the Battery Converter and EV, enabling power flow and communications in a single wired connection. The SAE J1772 combo-connector standard has been endorsed by the majority of global automotive manufacturers and is expected to be available within a year on a variety of electric vehicles. Lessons learned from NREL's technology integration

demonstration will be applied to a demonstration of V2G-capable electric vehicles integrated with a microgrid at Ft. Carson Army Base in 2013.

“We at NREL are very excited about the progress to date in establishing V2G using industry-standard hardware coupled with IPC’s Battery Converter,” stated Tony Markel, Leader of NREL’s Electric Vehicle Grid Integration efforts. “Development of V2G systems provides opportunity to test theories that V2G will improve the economic viability of electric vehicles by providing low-cost grid storage that will facilitate higher penetration of intermittent renewable energy resources.”

“Through the active support of NREL’s efforts, Ideal Power Converters is committed to making V2G cost effective to improve the economics of electric vehicle fleets,” stated Paul Bundschuh, Chief Executive Officer, Ideal Power Converters. “It is part of IPC’s strategy to offer highly-efficient, low-cost modular power converters for photovoltaic, grid storage, and EV fast charging that will improve efficiency and cost of hybrid energy systems.”

About Ideal Power Converters
Electronic power converters provide the infrastructure for the clean energy revolution including renewable energy generation, electrical energy efficiency, smart power grids, and electric vehicles. Ideal Power Converters has patented and is further developing a revolutionary new power converter technology that significantly improves weight, size, cost, efficiency and reliability. IPC products will include solar inverters, bi-directional battery and electric vehicle chargers based on its Universal Power Converter Platform™. IPC has received funding from the State of Texas Emerging Technology Fund, and has been awarded $2.5M from the U.S. Department of Energy Advanced Research Projects Agency – Energy (ARPA-E). IPC was also included in the “Cool Vendors in Solar Energy, 2012” report published by Gartner Inc, and won the 2012 Defense Energy Technology Challenge. For more information, visit: www.IdealPowerConverters.com.

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Photos of NREL Vehicle to Grid demonstration system
http://www.nrel.gov/data/pix/searchpix.php?getrec=22236&display_type=verbose&search_reverse=1
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