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Ideal Power Adds Leading Commercial Electric Vehicle Manufacturer to its B-TRAN™ Test and Evaluation Program

AUSTIN, Texas, March 01, 2022 (GLOBE NEWSWIRE) -- Ideal Power Inc. (Nasdaq: IPWR), pioneering the development and commercialization of highly efficient and broadly patented B-TRAN™ bidirectional power switches, today announced that a leading manufacturer of commercial electric vehicles (EVs), EV powertrain components and EV charging infrastructure will be sampling B-TRAN™ devices for use in power conversion applications in its commercial EVs, initially for the DC-DC converter, with other EV and EV charging applications potentially to follow. This represents Ideal Power's third test and evaluation announcement in the EV space.

The power switch market for EV and hybrid EVs was approximately $1.5 billion in 2020 and, with a forecasted compound annual growth rate (CAGR) of 15%, is the fastest growing segment of the power switch market. Power semiconductor switches, which are the second highest cost component of EVs after batteries, representing 8-10% of the total EV production cost, are needed in the drivetrain, DC-DC converter and on-board charger and for circuit protection. Replacing existing insulated-gate bipolar transistors (IGBTs) with BTRAN™s is expected to increase drive cycle efficiency, reduce cooling requirements and either reduce battery size and cost or improve the driving range of EVs. B-TRAN™ significantly reduces the power losses of traditional power semiconductors, which typically account for about 20% of the total electric power losses in hybrid EVs and potentially more of the losses in an EV. Additionally, the B-TRAN™, which is currently fabricated in silicon, can reduce component count by up to 75% in bidirectional applications and has the potential to offer a compelling and much lower cost alternative in EV applications to power semiconductors fabricated in silicon carbide.

"We are excited to collaborate with this EV leader and look forward to seeing the results of B-TRAN™ testing and evaluation in EV power conversion applications," stated Dan Brdar, President and Chief Executive Officer of Ideal Power. "The fast switching, low conduction losses, and bidirectional capability of B-TRAN™ are well-suited for EVs, where fewer components and less weight mean better power efficiency and greater EV range. We are now working with a broad range of leading companies as well as smaller, innovative companies and research universities, in each of our target market segments – EVs, EV charging, renewable energy, uninterruptible power supply (UPS) systems for data centers, and solid-state circuit breakers – who are looking for new, more efficient approaches to their product offerings."

Ideal Power's patented semiconductor power switch, the Bidirectional Bipolar Junction

Transistor, or B-TRAN™, reduces power losses by 50% or more over conventional power switches, depending on the application. B-TRAN™'s higher efficiency results in less heat being generated and therefore significantly lower thermal management requirements, requiring significantly smaller surface area to dissipate heat and giving rise to potentially smaller original equipment manufacturer products. B-TRAN™ offers the industry's only symmetric bidirectional operation, reducing the number of components required for an application by 75% as compared to a conventional bidirectional switch utilizing IGBTs and diodes. This highly efficient and unique symmetric operation provides a strong competitive advantage in bidirectional applications, which are growing rapidly as transportation electrifies and power generation shifts to renewable energy coupled with energy storage.

About Ideal Power Inc.

Ideal Power (NASDAQ: IPWR) is pioneering the development of its broadly patented bidirectional power switches, creating highly efficient and eco-friendly energy control solutions for electric vehicle, electric vehicle charging, renewable energy, energy storage, UPS / data center and other industrial and military applications. The Company is focused on its patented Bidirectional, Bipolar Junction Transistor (B-TRAN™) semiconductor technology. B-TRAN™ is a unique double-sided bidirectional AC switch able to deliver substantial performance improvements over today's conventional power semiconductors. Ideal Power believes B-TRAN™ modules will reduce conduction and switching losses, complexity of thermal management and operating cost in medium voltage AC power switching and control circuitry. For more information, visit www.IdealPower.com.

Forward-Looking Statements

All statements in this release that are not based on historical fact are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995 and the provisions of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These statements include, but are not limited to, statements regarding the CAGR for the power switch market for EV and hybrid EVs, our expectations that B-TRAN™ will increase drive cycle efficiency, reduce cooling requirements and either reduce battery size and cost or improve the driving range of EVs and that the B-TRAN™ has the potential to offer a compelling and much lower cost alternative in EV applications to power semiconductors fabricated in silicon carbide. While Ideal Power's management has based any forward-looking statements included in this release on its current expectations, the information on which such expectations were based may change. These forward-looking statements rely on a number of assumptions concerning future events and are subject to a number of risks, uncertainties and other factors, many of which are outside of Ideal Power's control that could cause actual results to materially differ from such statements. Such risks, uncertainties, and other factors include, but are not limited to, the risks and uncertainties associated with market conditions as well as risks and uncertainties set forth in Ideal Power's quarterly, annual and other reports filed with the SEC. Furthermore, Ideal Power operates in a highly competitive and rapidly changing environment where new and unanticipated risks may arise. Accordingly, investors should not place any reliance on forward-looking statements as a prediction of actual results. Ideal Power disclaims any intention to, and undertakes no obligation to, update or revise forward-looking statements.

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