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Ideal Power Announces Fabrication of First Double-Sided B-TRAN(TM) Power Semiconductor Devices

AUSTIN, TX -- (Marketwired) -- 10/20/16 -- Ideal Power Inc. (NASDAQ: IPWR), a developer of innovative power conversion technologies, is announcing today that its semiconductor foundry partner has successfully completed the fabrication of prototypes of Ideal Power's Bi-Directional Bi-Polar Junction TRANSistor (B-TRAN™). Ideal Power holds over 20 patents on the B-TRAN™ including patents on the unique double handle wafer process that was used to produce the initial devices.

Due to its anticipated low conduction and switching losses, Ideal Power believes that the B-TRAN™ has the capability to improve the efficiency of a range of power control and conversion equipment, such as variable frequency drives, solar PV inverters, bi-directional energy storage and microgrid power conversion systems, electric vehicle drivetrains, solid-state DC and AC contactors, and other power conversion products. IHS Technology projects that the power semiconductor market will be over \$20 billion by 2019. Ideal Power expects the performance advantages of B-TRAN™ to enable it to address a significant portion of the power semiconductor market that currently relies on power semiconductor devices such as Integrated-Gate Bipolar Transistors (IGBTs).

"The fabrication of the first B-TRAN™ devices is a critical step in our efforts to commercialize this unique technology. The B-TRAN™, due to its unique double-sided structure, is expected to deliver substantial performance improvements over today's power semiconductor devices in bi-directional power control applications," said Bill Alexander, CTO of Ideal Power and co-inventor of the B-TRAN™. "Currently, four conventional switches (two IGBTs and two diodes) are required to control power bi-directionally. We believe that the B-TRAN™ will be able to perform the same function with efficiency losses predicted to be 1/10th that of conventional switches. Additionally, the faster switching performance predicted for the B-TRAN™ should result in more efficient, smaller and lower cost power converters."

Earlier this year, Ideal Power announced that first silicon test results by its semiconductor foundry validated key characteristics of its B-TRAN™ technology. The test results can be found in the company's updated [B-TRAN™ White Paper](#). The results confirmed central B-TRAN™ elements and operational modes and were consistent with third party device simulations that predicted significant performance and efficiency improvements over conventional power switches such as SCRs, IGBTs and MOSFETs.

The B-TRAN™ devices produced by Ideal Power's fabricator are not production-ready devices and will be used to test and characterize the capabilities of the B-TRAN™. Ideal

Power will package these initial devices with supporting drive circuitry for testing and characterization which is expected to begin later this year. The results of this testing will be used to optimize the device design and manufacturing process. The first commercial use of the devices is expected to be in Ideal Power's PPSA-based converters.

About Ideal Power Inc.

Ideal Power Inc. (NASDAQ: IPWR) is a technology company dedicated to advancing the efficiency of electric power conversion. The company has developed a novel, patented power conversion technology called Power Packet Switching Architecture™ ("PPSA"). PPSA improves the size, cost, efficiency, flexibility and reliability of electronic power converters. PPSA can scale across several large and growing markets, including solar PV, variable frequency drives, battery energy storage, mobile power and microgrids, and electric vehicle charging. The Company is also developing and has patented a bi-directional, bi-polar junction transistor ("B-TRAN™") which has the potential to dramatically increase bi-directional power switching efficiency and power density. Ideal Power employs a capital-efficient business model which enables the company to address several product development projects and markets simultaneously. For more information, visit www.IdealPower.com.

Safe Harbor Statement

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. Specific forward-looking statements include our comments about expected performance of B-TRAN™ devices, potential technical advantages of the B-TRAN™ devices compared to competing technologies, potential markets we could address with our B-TRAN™ technology, that the B-TRAN™ is expected to be able to address a significant portion of the power semiconductor market that currently relies on power semiconductor devices such as Integrated-Gate Bipolar Transistors and the expected timing of the testing of the first B-TRAN™ devices. While 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 our control that could cause actual results to materially differ from such statements. Such risks, uncertainties, and other factors include, but are not limited to, whether the patents for our technology provide adequate protection and whether we can be successful in maintaining, enforcing and defending our patents, whether a demand for energy storage products will grow, whether demand for our products, which we believe are disruptive, will develop and whether we can compete successfully with other manufacturers and suppliers of energy conversion products, both now and in the future, as new products are developed and marketed. The B-TRAN™ is a new and novel technology, and the fabricated devices described in this press release have not been subjected to performance testing. We may encounter difficulties manufacturing the B-TRAN™ (or having the B-TRAN™ manufactured) in commercial quantities with acceptable margins or at all, and commercially manufactured B-TRAN™ devices may not achieve the technical performance improvements we expect based on preliminary tests conducted to date. There are risks that the device might not achieve market acceptance in these markets. In addition, competitors may offer products based upon competing technologies that outperform the B-TRAN™. The costs of

manufacturing, marketing and selling the B-TRAN™ may exceed our expectations so that we may not realize acceptable, or any, profit margins related to B-TRAN™ sales or license revenue. Furthermore, we operate 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. We disclaim any intention to, and undertake no obligation to, update or revise forward-looking statements.

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