February 20, 2024

Ideal Power Commences Shipment of SymCool(TM) Power Module to Fulfill Customer Orders

AUSTIN, TX / ACCESSWIRE / February 20, 2024 /Ideal Power Inc. ("Ideal Power," the "Company," "we," "us" or "our") (NASDAQ:IPWR), pioneering the development and commercialization of the highly efficient and broadly patented B-TRAN™ bidirectional semiconductor power switch, today announced that the Company commenced commercial shipment of its SymCool™ Power Module to a large, global customer.

"The commencement of SymCool™ shipments to fulfill customer orders is an exciting time for Ideal Power and a pivotal step in the commercialization of our B-TRAN™ technology. We could not be more excited," stated Dan Brdar, President and Chief Executive Officer of Ideal Power. "We expect to convert large OEMs into design wins and/or additional custom development agreements this year. We're thrilled we are successfully executing against our commercialization roadmap, remain on track to achieve our 2024 milestones, and look forward to several commercial announcements in the coming months."

The SymCool™ Power Module targets several applications including solid-state switchgear, renewable energy inverters for solar and wind, industrial inverters, electric vehicles (EVs) and EV charging. Customer evaluations confirmed the B-TRAN™ technology packaged into the multi-die SymCool™ Power Module has lower conduction losses and significant efficiency benefits over existing IGBT-based designs.

SymCool™ Power Module is a Groundbreaking Innovation

The SymCool™ Power Module delivers clear advantages for several markets including the large, growing solid-state switchgear market where there is a need for low conduction losses in a wide range of applications such as solid-state circuit breakers (SSCBs), protective relays and contactors.

The SymCool™ Power Module utilizes Ideal Power's B-TRAN™ technology, a dual-sided semiconductor with inherent bidirectional capability. Existing power semiconductors, such as IGBTs, are single-sided and operate as unidirectional switches. The inherent bidirectional capability of the SymCool™ Power Module means that half as many switches are needed compared to implementation with IGBTs, as IGBT-based modules need a dedicated switch for each direction of energy flow. Fewer components translate to smaller, more cost-efficient OEM designs. In addition, SymCool™ Power Modules can be configured in parallel to achieve the required current for a wide range of applications and OEM products.

The Company looks forward to the SymCool™ sales ramp beginning in the second half of 2024 as expected.

SymCool™ Energy Savings

Circuit breakers continuously conduct current, so it is critical to keep conduction losses to a minimum. The SymCool™ Power Module exhibits dramatically lower conduction losses compared to IGBTs, thereby allowing for energy savings that are necessary as power grids are modernized. In particular, the integration of renewable energy sources and energy storage systems into the grid will require circuit breakers that do not waste the precious energy generated by solar or wind. The low conduction losses of the SymCool™ Power Module meet this requirement.

Circuit Breakers are Everywhere

Circuit breakers perform critical functions in controlling the flow of electricity and containing high currents created by faults in that flow in a wide variety of applications. In addition to the high demand for circuit breakers from renewable energy, microgrids, energy storage, and EV applications, there is a tremendous need to upgrade aging infrastructure, including utility transmission and distribution networks and railway systems.

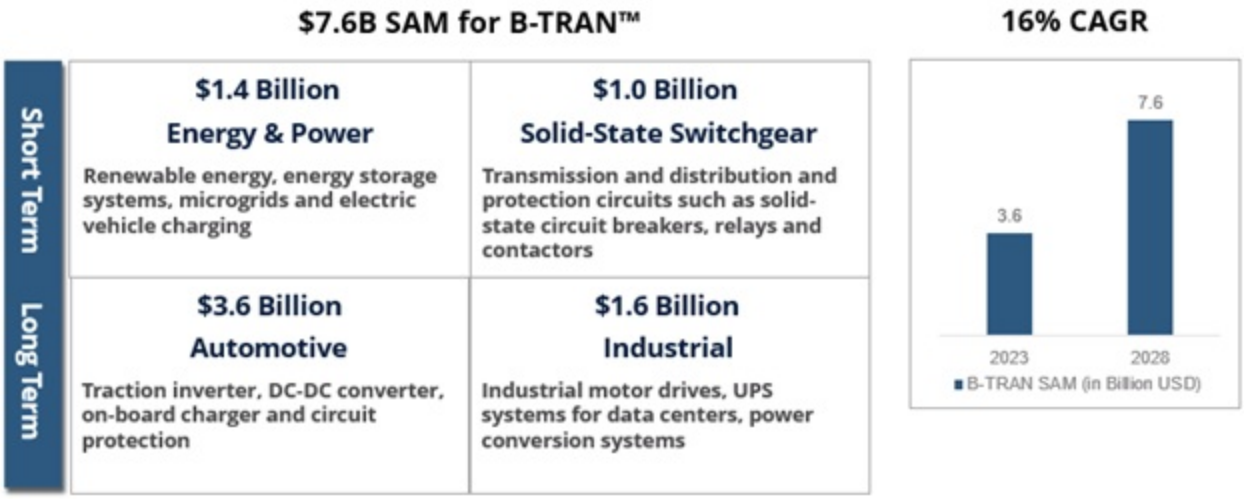
Two critical circuit breaker operating requirements are fast switching and low conduction losses. Traditional mechanical circuit breakers are slow acting and prone to wear and arcing; IGBT and MOSFET-based SSCBs suffer from high conduction losses. The fast-switching speed of B-TRAN™ solves the slow operating time and electrical arcing of electromechanical circuit breakers while also providing more than 50% lower conduction losses compared to SSCBs utilizing conventional semiconductor power switches. In addition to energy savings, the improved efficiency also results in lower cost and less complex cooling systems, benefits that significantly impact the economics of SSCBs and applications incorporating the SSCBs such as transmission and distribution systems. This is why B-TRAN™ is an enabling technology for SSCBs.

SymCool™ Video and Data Sheet

SymCool™ Power Module demonstration video can be foundhere and Data Sheet here or contact Ideal Power sales at sales@idealpower.com for additional information about the SymCool™ Power Module.

B-TRAN™ Serviceable Addressable Market

The B-TRAN™ serviceable addressable market (SAM) is predicted to more than double over the next five years. With a projected 16% compound annual growth rate (CAGR), the total SAM for B-TRAN™ is forecasted to grow from $3.6 billion in 2023 to $7.6 billion in 2028 driven by the macrotrends of electric vehicles, renewable energy and electrification. For the solid-state switchgear market, including SSCBs, the B-TRAN™ SAM is forecasted to grow to $1.0 billion during that same period.



Source: Mordor Intelligence: Global Power Electronics Market Report 2023 and Company estimates.

About Ideal Power Inc.

Ideal Power (NASDAQ:IPWR) is pioneering the development and commercialization of its broadly patented bidirectional semiconductor power switch, creating highly efficient and ecofriendly energy control solutions for electric vehicle, electric vehicle charging, renewable energy, energy storage, UPS/data center, solid-state circuit breaker 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 that delivers substantial performance improvements over today's conventional power semiconductors. Ideal Power's B-TRAN™ can reduce conduction and switching losses, complexity of thermal management and operating cost in AC power switching and control circuitry. For more information, visit the Company's website at www.IdealPower.com, on LinkedIn, on Twitter, and on Facebook.

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. 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. Such forward-looking statements include, but are not limited to, our statements regarding the current and projected serviceable addressable market for B-TRAN™, that B-TRAN™ is an enabling technology for SSCBs and our expectations that customers will begin implementing B-TRAN™-based products in their OEM designs later this year and our SymCool™ sales ramp will begin in the second half of 2024. 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, the success of our B-TRAN™ technology, including whether the patents for our technology provide adequate protection and whether we can be

successful in maintaining, enforcing and defending our patents, our inability to predict with precision or certainty the pace and timing of development and commercialization of our B-TRAN™ technology, including the timing of the completion of our wafer fabrication runs with our semiconductor fabrications partners, the rate and degree of market acceptance for our B-TRAN™, the impact of global health pandemics on our business, supply chain disruptions, and the expected performance of future products incorporating our B-TRAN™, and uncertainties set forth in our quarterly, annual and other reports filed with the Securities and Exchange Commission. 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, except as required by applicable law.

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SOURCE: Ideal Power