

Hillcrest Achieves Technical Proof of Concept for High Efficiency Inverter

Company Confirms Promising Advancements Designed to Boost EV Performance

VANCOUVER, BC, Nov. 25, 2021 /CNW/ - [Hillcrest Energy Technologies](#) (CSE: HEAT) (OTCQB: HLRTF) (FRA: 7HIA.F) ("Hillcrest" or the "Company"), a clean tech innovation and e-mobility development company, is pleased to announce additional proof of concept (PoC) testing results on its Silicon Carbide High Efficiency Inverter (SiC HEI) confirm the ability to eliminate switching losses and increase switching frequencies without increasing temperatures.

Proof of Concept for SiC HEI

Testing results for Hillcrest's SiC HEI PoC confirm its exceptional ability to materially eliminate significant heat generated from switching losses, thereby minimizing increases in temperature. The resultant temperature increase is significantly lower than current inverter technologies. This results in significant potential design improvements for future electric vehicle (EV) powertrains.

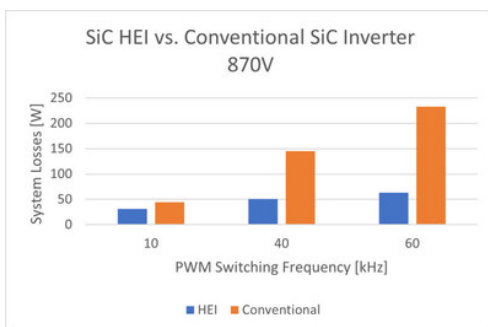
These latest testing results confirm electro-technical proof of concept for the SiC HEI as the most efficient inverter of its type, with the ability to significantly increase power density and reduce cost, size and weight for future electric vehicle and other e-mobility powertrains.

The SiC HEI PoC is a 10kW/800V inverter based on silicon carbide (SiC) semi-conductors. 800V has been selected to match designs now being adopted for use in most recent EV powertrain configurations.

"The Company believes its HEI technology has the potential to offer a new class of energy densities in inverters and electric machines not previously achievable. The ability to greatly reduce overall system losses by completely eliminating the switching losses, places Hillcrest at the forefront of inverter technology innovation," stated Ari Berger, Hillcrest CTO. "We are thrilled to share the results we've achieved thus far with the SiC HEI and continue to work with our development partners at Systematec GmbH to further improve and optimize with a specific focus not just on eliminating switching losses, but further reducing total system losses in our SiC HEI inverter."

A benchmark test compares the performance of the SiC HEI PoC to a conventional SiC inverter. The parameters for these tests range from 470V to 870V, with frequencies from 10kHz to 60 kHz at each voltage level. In each case, the SiC HEI PoC successfully demonstrated its ability to eliminate switching losses and increase switching frequencies without increasing the SiC temperatures under continuous operation.

As illustrated in the chart, the SiC HEI PoC dramatically reduces total system losses as switching frequencies increase (10 kHz up to 60 kHz) when compared to a conventional SiC inverter.



Hillcrest Achieves Technical Proof of Concept For High Efficiency Inverter. Company confirms promising advancements designed to boost EV performance. As illustrated in the chart, the Hillcrest SiC HEI PoC dramatically reduces total system losses as switching frequencies increase (10 kHz up to 60 kHz) when compared to a conventional SiC inverter. Total system losses of SiC HEI as compared to conventional SiC inverter (CNW Group/Hillcrest Energy Technologies Inc.)

As the efficiencies achieved by the HEI continue to approach theoretical limits, very accurate measurements are required to precisely quantify HEI efficiency performance.

Hillcrest and its development partner, Systematec GmbH, have identified and are currently working to secure services of specialized third parties with the most accurate, state of the art, testing equipment capable of the fine precision required to accurately measure HEI efficiency.

Hillcrest continues to optimize its sophisticated control systems to deliver higher performance levels for commercial demonstration prototypes.

Hillcrest CEO, Don Currie, stated: "The SiC HEI PoC demonstrates the value of Hillcrest's proprietary combination of innovative power electronics, control methods and system design. We look forward to providing additional development updates as they arise."

About Hillcrest Energy Technologies

Hillcrest Energy Technologies is a clean tech innovation company developing transformative power conversion devices and control systems for next-generation powertrains and charging applications. The Company is transitioning from the production of fossil fuels from its West Hazel asset in Saskatchewan, to clean energy technologies that help unlock efficiencies in electrification and maximize performance of electric systems including electric vehicles, motors and electric generators. From concept to commercialization, Hillcrest is investing in the development of energy solutions that will power the future. Hillcrest is publicly traded on the CSE under the symbol "HEAT", on the OTCQB Venture Market as "HLRTF" and the Frankfurt Stock Exchange as "7HIA.F".

ON BEHALF OF THE BOARD

Donald Currie
Chief Executive Officer and Director

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