



## Hillcrest Energy Technologies Completes First Commercial Prototype

- Company advanced from technical proof of concept to commercial prototype in one year
- 800V, 250kW traction inverter to be integrated into partner powertrains for real-world demonstrations in commercial applications
- Hillcrest's inverter technology materially eliminates switching losses and offers improved motor efficiency, performance and reliability

VANCOUVER, British Columbia, Dec. 06, 2022 -- Hillcrest Energy Technologies (CSE: HEAT) (OTCQB: HLRTF), a clean technology company developing transformative power conversion technologies and control system solutions for next-generation electrical systems, is pleased to announce the completion of its 800-volt, 250-kilowatt Zero Voltage Switching (ZVS) traction inverter commercial prototype.

"We've validated our core technology and will continue working with [Hercules Electric Mobility](#) and a [Tier 1 automotive supplier](#), our previously announced co-development partners, on integrating our ZVS traction inverter into their specific powertrain applications," says Hillcrest CTO Ari Berger. "Implementing our technology in these systems, expected to occur by Q2 2023, will mark another important milestone by transitioning the technology out of our lab and into real-world demonstrations of the Hillcrest ZVS inverter in commercial applications."

Hillcrest deploys its unique ZVS, or soft switching, capabilities to overcome challenges found in hard-switched wide-bandgap devices such as silicon carbide (SiC) traction inverters. Through the material elimination of switching losses, the 800V, 250kW Hillcrest ZVS traction inverter prototype can take advantage of higher operating frequencies at higher voltage, and offer improved motor efficiency, performance and reliability.

Enabling switching at higher frequencies with Hillcrest's ZVS inverter technology also allows for the use of much smaller capacitors in an inverter. Capacitors typically make up roughly 20% of an inverter's size and weight. With the Hillcrest ZVS inverter technology, these capacitors can be reduced in size by as much as 50%, offering a smaller, lighter inverter that in turn offers much higher power densities than EV inverters currently on the market. More information on the impacts of the Hillcrest ZVS inverter technology on DC-link capacitors can be found in a [technical whitepaper](#) published earlier this year.

These combined benefits can be directly translated into range, performance and/or gains in payload capacity as well as bill-of-material savings for manufacturers. Hillcrest's ZVS technology also offers other substantial benefits:

- motor efficiency improvements of up to 13%,
- reduced thermal management requirements and
- reduced EMI and associated cable shielding.

The Hillcrest ZVS inverter technology can be applied with batteries, electric motors, generators, fuel cells or virtually any other power source where power conversion is needed.

"In just one year, Hillcrest progressed from a 10-kilowatt proof of concept to a 250-kilowatt ZVS traction inverter commercial prototype," says CEO Don Currie. "Add the incredible customer interest we've already received, highlighted by two announced MOUs, and I believe we are clearly demonstrating our ability to be at the forefront and deliver innovations that will advance power electronics for the next generation of mobility."

### About Hillcrest Energy Technologies

Hillcrest Energy Technologies is a clean technology company developing high-value, high-performance power conversion technologies and digital control systems for next-generation powertrains and grid-connected renewable energy systems. From concept to commercialization, Hillcrest is investing in the development of energy solutions that will power a more sustainable and electrified future. Hillcrest is publicly traded on the CSE under the symbol "HEAT," on the OTCQB Venture Market as "HLRTF". For more information, please visit: <https://hillcrestenergy.tech>.

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