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Hillcrest Energy Technologies Wraps Up 2024 Demonstrations with Industry-Leading Results

Vancouver, BC – December 16, 2024 – Hillcrest Energy Technologies (CSE: HEAT) (OTCQB: HLRTF) (FRA: 7HI), a leading innovator in power conversion technologies, has successfully concluded its 2024 customer demonstrations with outstanding results. Through extensive demonstration tests performed at automotive manufacturers' and suppliers' facilities, as well as at Systematec GmbH's facilities in Germany, the Company's Zero Voltage Switching (ZVS) traction inverter prototype and Power Factor Correction (PFC) prototype have delivered significant performance gains, solidifying the Company's position at the forefront of power electronics innovation.

Unlocking New Levels of EV Efficiency with Hillcrest's ZVS Traction Inverter Prototype

Recent testing of Hillcrest's ZVS traction inverter prototype, conducted with top automotive manufacturers and suppliers, demonstrated system-level efficiency gains of up to 6% at various low-power operating points. These results, measured using the Worldwide Harmonized Light Vehicle Test Procedure (WLTP), highlight Hillcrest's potential to significantly enhance EV performance compared to existing solutions.

At the core of these advancements is the prototype's industry-leading inverter efficiency of **99.7%**, which drives system-level improvements by reducing energy losses and maximizing usable power. This efficiency translates to meaningful benefits across the entire powertrain:

- **Minimizing Energy Loss:** Virtually eliminates switching losses, ensuring more energy reaches the electric motor.

  Delivering Low Electromagnetic Interference (EMI): Simplifies system design and enhances reliability.

- **Reducing Heat Generation:** Enhanced efficiency simplifies thermal management, lowering cooling system complexity, weight, and cost.

- **Extending Range:** Even a 1% boost in system efficiency can increase EV range by up to 2%, according to multiple automotive manufacturers.

- **Optimizing Semiconductor Usage:** Achieves unparalleled efficiency with less than 3 mm^2/kW, resulting in cost-effective, compact designs.

By enhancing the inverter's efficiency, Hillcrest's ZVS technology amplifies overall system performance, offering both EV manufacturers and consumers substantial advantages, such as **greater driving range**, **reduced energy consumption**, and **lower system costs**. These benefits can position Hillcrest as a leader in driving the next wave of EV innovation.

Enhancing Power Quality with Hillcrest's PFC Prototype

In separate demonstrations with several automotive manufacturers and suppliers at Systematec GmbH's facilities in Germany, Hillcrest's PFC prototype showcased its ability to optimize energy systems by minimizing reactive power.

Power factor measures how effectively electrical power is converted into useful work. A high power factor means more useful power is available, while a low power factor means more power is wasted as reactive power, which does not do useful work. This imbalance can increase energy costs and reduce the working capacity of electrical systems.

In electric vehicles, PFC is integral to the operation of onboard chargers, ensuring the efficient conversion of AC from the grid into DC for battery storage and vice versa. Hillcrest's PFC prototype demonstrated:

> **Improving Energy Efficiency:** Maximizing usable power in EV onboard charging systems.
>
> **Cost Optimization:** Efficient semiconductor utilization and low EMI support the development of smaller, lighter and more affordable onboard chargers.

The potential for Hillcrest's PFC goes beyond EVs. In stationary applications like renewable energy systems, grid-connected solutions, data centers and devices like heat pumps and air conditioners, the PFC can operate in mirrored configurations, using the same components for PFC and inverter functions. This approach lowers manufacturing costs and boosts versatility, making it suitable for a wide range of energy applications

"Our 2024 demonstrations have been a resounding success, showcasing the tangible benefits of our technology through extensive testing at automotive facilities as well as at Systematec," said Don Currie, CEO of Hillcrest Energy Technologies. "From increased efficiency to reduced system complexity and cost savings, the results validate the incredible potential of our ZVS traction inverter and PFC prototypes. These advancements not only enhance EV performance but could also contribute to a more sustainable energy future across multiple sectors."

Hillcrest's ZVS technology is poised to deliver measurable value across automotive and stationary energy applications, driving efficiency, cost savings, and improved performance. As the Company transitions into 2025, it is preparing for additional demonstrations and an acceleration of commercialization efforts.

For more information, visit www.hillcrestenergy.tech.

About Hillcrest Energy Technologies Ltd.

Hillcrest Energy Technologies is a clean technology company focused on providing advanced 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” and on the Frankfurt Exchange as “7HI”. For more information, please visit: https://hillcrestenergy.tech/.

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