Hillcrest Energy Technologies Finalizes A-Sample Design of ZVS PCS1000 Sidecar Power Unit for Next-Generation AI Data Centers

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250 kW ZVS module designed for high power density and lower cost — prototype demonstrations on track for June 2026

VANCOUVER, April 23, 2026 - Hillcrest Energy Technologies Ltd. (CSE:HEAT)(OTCQB:HLRTF)(FRA:7HI) ("Hillcrest" or the "Company") today announced that it has finalized the A-Sample design of its ZVS PCS1000 Grid Power Conversion System, a purpose-built 250 kW, 800V DC sidecar rectifier module developed for next-generation AI data center infrastructure. The A-Sample design finalization is a key engineering milestone, confirming the product architecture, form factor, and performance specifications ahead of the prototype demonstration program planned to begin in June 2026.

Hillcrest ZVS PCS1000 A-Sample

Purpose-Built for the 800V Data Center Sidecar Architecture

The ZVS PCS1000 A-Sample has been designed in a 19?, 4 rack unit (4RU) form factor supporting both liquid cooling and forced air, targeting 250 kW maximum continuous power output at 800V DC, with a modular architecture supporting scalability from 200 kW to 1.2 MW or greater through parallel units. The design incorporates N+1 redundancy with 25% extra capacity and hot-swap capability intended to support 24/7 operational availability in mission-critical AI compute environments.

The ZVS PCS1000 is designed to align with the Open Compute Project (OCP) 800V data center sidecar power architecture, converting 400/480V AC grid power to 800V DC for direct distribution to IT racks at up to 1,500A. The OCP sidecar power architecture is defined in the Mt. Diablo specification, published by the Open Compute Project Foundation in October 2025. (Source: Open Compute Project Foundation, "Realizing the Open Data Center Ecosystem Vision," October 13, 2025.)

The ZVS PCS1000 incorporates grid fault ride-through (FRT) capability, enabling the power conversion system to remain electrically connected during short-duration voltage and frequency disturbances. Without FRT, such grid events can lead to cascading load disconnections and subsequent system instability. By integrating FRT, the ZVS PCS1000 helps stabilize grid behavior by maintaining electrical coupling and ensuring smooth power transitions during transient conditions.

Competitive Design Positioning

The ZVS PCS1000 A-Sample design targets 200-250 kW in a 19? form factor, which the Company believes provides a high-power density solution with the potential to reduce the total number of modules required per sidecar deployment and lower overall system cost. The 800V data center sidecar power market is an actively developing segment of the data center power industry. (Sources: NVIDIA Technical Blog, October 2025; Schneider Electric Blog, October 2025.)

The PCS1000's performance targets are based on Hillcrest's proprietary Zero Voltage Switching (ZVS) topology, which the Company believes offers the following design advantages versus conventional hard-switched converters:

Efficiency

Hillcrest's ZVS topology eliminates switching losses by ensuring power transistors transition at zero voltage. The ZVS PCS1000 A-Sample design targets peak conversion efficiency exceeding 99% - compared to the 98% typical of hard-switched designs. Hillcrest's ZVS technology has been independently validated through testing completed at facilities of global automotive OEMs and suppliers. Those tests confirmed 99.7% peak inverter stage efficiency, with greater than 99% efficiency maintained across 90% of the full operating range - results first publicly disclosed in the Company's December 16, 2024, news release. The PCS1000 is built on the same underlying ZVS platform validated in those tests.

EMI Performance

Hillcrest's ZVS technology produces significantly lower dV/dt than hard-switched designs, as first publicly disclosed in the Company's March 4, 2024, news release. Certified lab radiated EMI testing of the ZVS switching stage, conducted without any EMI filter in place, showed radiated emissions below applicable pass limits. These results demonstrate the intrinsic EMI advantage of the ZVS topology and are expected to reduce filter complexity and cost in the ZVS PCS1000 A-Sample design.

Thermal Management

Lower switching losses are expected to reduce junction temperatures and thermal cycling in power semiconductors, supporting simplified cooling architecture and reduced thermal stress on power semiconductor components.

Switching Frequency and Passive Component Size

The ZVS PCS1000 design operates at 48 kHz - approximately four times the practical ceiling of thermally-limited hard-switched designs - which is expected to reduce passive component size by up to 50% and contribute to its power density in the 19" form factor.

June 2026 Prototype Demonstration Program

The ZVS PCS1000 prototype remains on track, with customer and partner demonstrations being scheduled starting in June 2026 at Hillcrest's facility in Vancouver, British Columbia and at Systematec GmbH's facility in Germany. The Company is currently in active discussions with several parties across the data center, energy storage, and grid-connected applications markets regarding demonstration opportunities. There is no assurance that these discussions will result in commercial agreements.

Don Currie, CEO and Director of Hillcrest added, "Finalizing the design of the ZVS PCS1000 A-Sample is a significant step in advancing the deployment of our ZVS technology across data center and microgrid markets. Scheduled prototype demonstrations will give potential customers a firsthand look at what our ZVS platform delivers - superior efficiency, power quality, and EMI performance that we believe conventional hard-switched designs cannot match. We are excited to showcase these capabilities and look forward to the opportunities ahead."

About Hillcrest Energy Technologies

Hillcrest Energy Technologies is a Canadian clean technology company focused on developing and commercializing advanced power conversion technologies and digital control systems for next-generation powertrains and grid-connected energy systems. The Company's proprietary Zero Voltage Switching (ZVS) technology platform is being commercialized across multiple markets, including next-generation AI data centers, microgrids, and electric vehicle powertrains. 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:

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SOURCE: Hillcrest Energy Technologies Ltd.

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