Highstar Launches Full-Chain Battery Cell Portfolio for AI Data Centers

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NANTONG, China, July 27, 2026 /PRNewswire/ â?? Highstar unveiled its full-chain battery cell solution for artificial intelligence data centers (AIDCs) at the 2026 GGII Energy Storage Industry Summit. The portfolio spans three critical power layers: grey-space UPS and high-voltage direct current (HVDC) systems, white-space battery backup units (BBUs), and grid-side energy storage.

Targeted cells for grey-space and white-space challenges

As AI workloads increase rack density and load volatility, data centers require faster response, dependable backup, controlled temperature rise and stronger lifecycle performance. Highstarâ??s solution centers on two products for the layers closest to computing loads.

For grey space, the 85Ah high-rate lithium iron phosphate cell is designed for UPS and HVDC systems that must deliver high power rapidly and sustain reliable backup under frequent pulse conditions. High-rate discharge, thermal control, safety and durability support compact system design while helping operators balance availability with lifecycle cost. In addition, the 50Ah sodium-ion battery cells are better suited for operation across a wide temperature range of -40Â°C to 80Â°C.

For white-space BBUs, Highstar offers a portfolio of tabless cylindrical cells spanning 18650 and 21700 formats, with both LFP and high-nickel NMC chemistries. Designed for BBU applications, these cells deliver high instantaneous power, low internal resistance, reduced temperature rise and enhanced safety, while accommodating different rack-space, power and cost requirements.

Completing the chain with grid-side storage

The grid-side system uses 314Ah lithium-ion cells and 160Ah sodium-ion cells, balancing long-duration energy storage, cycle life, and rapid power support. Together, the three layers create a coordinated portfolio extending from rack-level protection and system-level backup to upstream energy storage.

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The portfolio combines lithium-ion and sodium-ion chemistries with prismatic and cylindrical platforms. Highstarâ??s technology integrates cathode, anode, electrolyte and separator development with structural approaches including tabless current collection, precision pressure relief and directional venting.

From individual cells to application collaboration

The full-chain architecture is designed to reduce selection and integration complexity for power equipment suppliers, system integrators and data center operators. It also provides a common foundation for joint validation and application-specific development across AIDC power architectures.

During the summit, Highstar also participated in the launch of the â??2026 Global AIDC Power Supply Industry Development Blue Bookâ?• and was honored as a â??Top Benchmark in AIDC Energy Storage,â?• earning authoritative recognition from the industry.

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