



Transforming Energy Storage

AESI and the Drive to
1500 GW

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As the global energy landscape undergoes its most significant shift in over a century, **American Energy Storage Innovations (AESI)** is at the forefront, reshaping how we store and utilize power. Born from a bold spin-out of American Battery Solutions in 2023, AESI was established to answer one pressing question: How can the energy storage industry meet the accelerating demand for reliable and scalable solutions to enable the renewable-powered future?

Led by an exceptional team of industry veterans, AESI has launched TeraStor™, a breakthrough in grid-scale battery energy storage systems (BESS). TeraStor is not just a product; it's a movement – designed to simplify, accelerate and transform the way energy storage solutions are deployed globally.

To understand AESI's meteoric rise as a global leader in BESS engineering, four key members of its leadership team got together to paint a vivid picture of how AESI is innovating and transforming the future.



Rick Cwiakala
VP of Operations



C. Michael Hoff
Chief Technology Officer



Greg Tremelling
VP of Technology Strategy



Michael Schenck
VP of Engineering

Innovation and Simplicity: The DNA of TeraStor

AESI's flagship product, TeraStor™, represents a paradigm shift in energy storage, setting a new benchmark for performance, safety and reliability. **Greg Tremelling, AESI's Vice President of Technology Strategy**, describes TeraStor as "a revolution in design – with a fundamentally different architecture that starts where legacy grid-scale systems fall down."

Traditional battery systems often fall short due to inefficiencies and underutilized capacity, but TeraStor breaks free from these limitations with a design that maximizes the potential of every component. This innovative approach amplifies efficiency, unlocks more usable energy and delivers significant returns on investment (ROI) for customers.

For power producers, utilities and renewable energy developers, TeraStor isn't just a storage solution — it's a profitability engine. By ensuring that every kilowatt-hour of energy is fully optimized, TeraStor accelerates payback periods and achieves market-leading internal rates of return (IRR). In today's rapidly evolving energy landscape, where scalability and reliability are non-negotiable, TeraStor provides the tools to stay ahead.

TeraStor's engineering goes far beyond efficiency. Its streamlined design eliminates over 280,000 components typically found in competing systems, reducing potential failure points and enhancing reliability. This simplicity, paired with advanced state-of-charge (SOC) and state-of-health (SOH) monitoring, empowers operators with actionable insights for optimizing system performance while minimizing maintenance needs.

Safety, a cornerstone of AESI's innovation, is embedded in every aspect of TeraStor's architecture. The system features groundbreaking cell-level thermal containment that halts thermal runaway before it begins — a standard unmatched by legacy module designs. Zero cell-to-cell thermal propagation, continuous gas mitigation technology and intelligent monitoring work together to ensure maximum safety during operation. "TeraStor isn't just meeting industry standards for safety; it's setting new ones," explains **Michael Schenck, AESI's Vice President of Engineering**. "We designed TeraStor to deliver worry-free performance, even in the most demanding environments."

By prioritizing reliability, efficiency and safety in equal measure, TeraStor redefines what's possible in energy storage. It's more than a product — it's the future of grid-scale energy storage, designed to meet the needs of a world rapidly transitioning to renewable energy.



Meeting the 1500 GW Challenge

The G7 nations' goal of deploying 1500 GW of energy storage by 2030 demands bold, innovative solutions. AESI is answering the call. With TeraStor, deployment timelines are slashed. "It's not just about hitting the target," said **C. Michael Hoff, AESI's Chief Technology Officer**. "It's about doing it right — fast, safe, efficient, reliable and at scale."

TeraStor's unparalleled energy density — an impressive 7.9 MWh per unit — offers customers a compact solution that delivers maximum return on investment. "Efficiency and scalability are at the heart of TeraStor," added **Hoff**, "and they're exactly what the market needs right now."

Looking Ahead

AESI is positioning itself for ongoing success with a newly announced strategic manufacturing expansion to Malaysia. It will enable the company to scale production and serve a global market — ensuring large cost-efficiencies and capacity resilience in an unpredictable geopolitical climate.

Looking further ahead, AESI is exploring next-generation technologies that enable even greater utility. These advancements aim to redefine energy storage as not just a tool for the grid but as an essential enabler of an on-demand, renewables-driven energy system.

"Our mission is to bridge the gap between the energy demands of today and the energy future we all envision," said **Rick Cwiakala, Vice President of Operations**. "We're not just building batteries — we're building the future of energy." With TeraStor and a **relentless commitment to innovation**, AESI is redefining what's possible in energy storage. The road to 2030 is ambitious, but with AESI leading the charge, it's a vision within reach.