FLUENCE®
A Siemens and AES Company

Accelerating the AI Economy with Battery Storage

Fluence solutions accelerate data center speed-to-power and maximize uptime for critical AI workloads.

Fluence combines cutting edge grid-scale battery storage technology with advanced controls, industry-leading commercial guarantees, and comprehensive operational services to deliver a flexible, resilient power solution for data centers.

The Data Center Revolution

With AI and high-performance computing driving a doubling of data center power demand by 2026, hyperscale campuses are growing rapidly, with many moving from 40 MW today to 60 MW+ by 2028, and some exceeding 200 MW. But infrastructure bottlenecks such as interconnection delays are now a limiting factor for rapid AI expansion. For a 500 MW AI training facility, each month of energization delay can cost up to $100 million, and unplanned downtime runs into hundreds of thousands per MW-month. In this landscape, speed-to-power is now the most critical competitive advantage.

Why Fluence

With more than 46+ GWh of battery storage deployed or contracted across 275+ projects globally*, Fluence has the team, technology, and know-how to deliver

complete storage solutions for both front-of-meter and behind-the-meter data center applications. Fluence brings deep experience partnering with utilities, power producers, and transmission service operators to deploy and operate the most complex storage systems and grid applications in the world.

Our highly modular, scalable Smartstack™ product architecture supports 2- to 8-hour discharge durations with rapid response controls to enable load smoothing, power quality management, back-up power, flexible capacity and more. We are trusted, scalable, and ready for what's next.

*As of Sept 30, 2025

1

Use Cases Tailored for Data Centers

Advance data center build-out by reducing grid constraints and improving interconnection flexibility

- **Flexible Capacity:** Improve local grid stability by contracting your storage system to the utility for frequency regulation and capacity services while still meeting your primary data center needs.

- **Load Shaping:** Achieve faster grid connection by using battery storage to manage curtailment needs and reduce reliance on the grid during peak hours without impacting compute workloads.

Expedite speed-to-power and avoid costly power outages

- **Clean back-up power:** Access on-site power during a grid outage to keep the data center running and protect uptime; replacing the need for traditional diesel generators.

- **Island Operations:** Meet immediate data center load requirements with power bridging by combining limited grid power with on-site storage capacity until full interconnection power can be provided.

Smooth AI power demand and protect critical workloads

- **Load variability:** Absorb rapid, sub-second power spikes from compute usage to meet utility ramping requirements; or smooth the load so on-site generation can continue to operate through high variability.

- **Grid Disturbance Management:** Reduce power quality issues coming from the grid to protect sensitive UPS and IT equipment from tripping offline; or mimic the load to avoid cascading grid issues if the data center needs to be islanded.

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Fluence Technical Edge

With the world's largest storage fleet, millions of operating hours, and a deep bench of interconnection, controls, and policy expertise, Fluence helps translate controls into study assumptions regulators trust.

Advanced Controls

Fluence OS protect AI performance from power disturbances via load smoothing, ramp rate reduction, 150 ms fast frequency response, voltage ride through, power oscillating damping and other critical applications.

Grid Forming and Island Operation

Fluence OS enables island operation through droop control and virtual synchronous machine techniques to regulate voltage and frequency within +/- 2% or +/- 0.1 Hz.

Blackstart

Fluence OS ensures power is restored without grid support, with critical load prioritization and voltage within +/- 3% and frequency within +/- 0.1 Hz.

Intelligent Bidding

Fluence Mosaic™ maximizes storage asset revenue and market participation with automated bidding in selected deregulated markets.

Power Density

Smartstack™ delivers up to 32% greater density than traditional AC systems to maximize site capacity.

Leading Performance Guarantees

Smartstack™ provides up to 99% availability for maximum uptime, backed by comprehensive warranties, regional service teams, and 24/7 support.

Cybersecure by design

U.S-based controls, industry-leading security standards and options for air-gapped or on-premise logging to meet hyperscaler requirements.

Safety & Compliance

All Fluence storage systems are built to NFPA 855, UL 9540/9540A, IEEE-1547/2800 and local code standards for grid- and facility-side deployments.

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Our Experience

Fluence is a leader in delivering full-service, turnkey energy storage solutions for data center use cases, covering all major applications today and evolving for tomorrow's AI workloads. While competitors focus on system supply alone, Fluence differentiates with superior digital optimization, comprehensive performance management, and power market expertise that transforms your facility from cost center into strategic power asset.tripping offline; or mimic the load to avoid cascading grid issues if the data center needs to be islanded.

Reference Projects

Ørsted, Arizona

Fluence supplied storage system for the 300 MW / 1200 MWh Ørsted Eleven Mile project co-located with solar, supplying reliable clean power to Meta data center.

Google, Belgium

Fluence supplied storage system for the 2.75 MW / 5.5 MWh project providing zero-emission data center backup power and participation in ancillary services market for Google.

AES, California

Fluence supplied storage system and bidding software for the 75 MW / 300 MWh AES Baldy Mesa project helping power Amazon data center operations and optimizing energy trading based on grid conditions.

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Fluence Energy, Inc. (Nasdaq: FLNC) is a global market leader delivering intelligent energy storage and optimization software for renewables and storage. Our solutions and operational services are helping to create a more resilient grid and unlock the full potential of renewable portfolios. With gigawatts of projects successfully contracted, deployed, and under management across nearly 50 markets, we are transforming the way we power our world for a more sustainable future.

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