Battery energy storage systems - BESS

Client
LBS Group

Description

Lule Building System (LBS) is a Swedish engineering and construction group specializing in renewable energy and energy infrastructure projects. LBS delivers end-to-end solutions from design to commissioning, with strong expertise in BESS, wind power, and electrical infrastructure.

Project objectives

CeLLife enables advanced entry checks and ongoing battery health diagnostics for LBS group's BESS projects, supporting data-driven operations and predictive maintenance across the system lifecycle.

Solutions

With its EFP™ technology, CeLLife's AI-based battery diagnostics and lifecycle analytics enhance performance, reduce risk, and increase the commercial viability of large-scale energy storage assets. From quality assurance and commissioning to long-term operations, predictive maintenance, and regulatory readiness. CeLLife provides actionable insights across the entire battery lifecycle, directly strengthens asset confidence and improves bankability.

Benefits

• Reduced Warranty and Quality Risk
• Higher System Reliability and Availability
• Optimized and Predictable O&M Costs
• Regulatory and Battery Passport Readiness

ABOUT BESS

LBS Group's BESS initiatives focus on large-scale Battery Energy Storage Systems (BESS) that store and release electrical energy strategically to support grid stability, peak demand management, and the integration of variable generation such as wind and solar.

BESS systems play a key role in enhancing grid flexibility, reliability, and resilience. As these systems are critical assets for grid stability, they must consistently meet technical specifications and operate as designed under all conditions.

LBS delivers turnkey BESS projects, taking responsibility from engineering and construction through commissioning and ongoing operations and maintenance, ensuring long-term system performance and availability.

CeLLife's EFP™ Technology

CeLLife's Electrical Fingerprint (EFP™) technology acts as a decision-support layer for operational battery systems, providing fast, reliable insight into battery condition and performance at module and rack level. It forms a full solution for predictive, data-driven operations and maintenance across large-scale BESS assets.

By combining ultra-fast and high-resolution electrical measurements with AI-based analytics, EFP™ enables scalable diagnostics with minimal system downtime. This enables:
• Verification of battery condition and usable capacity
• Early detection of degradation and emerging failure risks
• Targeted preventive actions and predictive maintenance

EFP™ scales efficiently from individual modules to full BESS installations, supporting entry checks, ongoing health diagnostics, and lifecycle management.
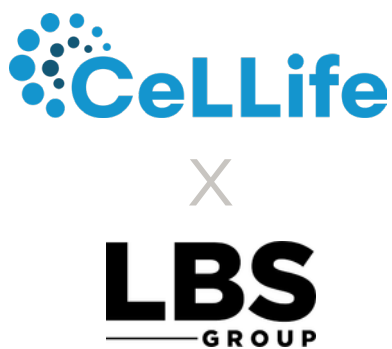
How CeLLife Brings Value to LBS BESS Solutions

Pre-Deployment & Commissioning
CeLLife enables ultra-fast, module- and rack-level diagnostics, allowing large BESS systems to be fully verified before commissioning. Modules are assessed in seconds to confirm battery condition, consistency, and system balance, creating a reliable operational baseline and traceable reference data from day one.

Value delivered
• Reduced commissioning risk and rework
• Higher usable capacity and protected revenue from day one
• Faster commissioning with full-system verification
• Warranty intelligence and traceable day-one baseline data

Battery, perfected.

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How CeLLife Brings Value to LBS BESS Solutions

Operations & Maintenance

CeLLife supports condition-based and predictive maintenance through regular, fast battery diagnostics at module and rack level. Ongoing health checks provide early visibility into degradation trends and emerging risks, enabling targeted preventive actions without disrupting system operation

Value delivered
- Reduced unplanned downtime and revenue losses
- Early detection of degradation and failure risks
- Targeted maintenance actions instead of reactive repairs
- Lower and more predictable O&M costs
- Extended asset lifetime and improved long-term returns

Lifecycle Management & Sustainability

CeLLife supports long-term lifecycle management and regulatory readiness by providing traceable battery intelligence from commissioning through operation and end-of-life. This enables transparent evaluation of battery condition, remaining value, and sustainable end-of-life options at module and rack level, while preparing assets for current and future regulatory requirements.

Value delivered
- Alignment with battery passport and emerging EU regulations
- Data-driven decisions for reuse, refurbishment, or recycling
- Extended value extraction from battery assets
- Improved ESG transparency and sustainability reporting
- Reduced regulatory, compliance, and end-of-life risk

Strategic Benefits

- Reduced warranty and liability risk through early fault detection and traceable battery condition data
- Higher system reliability enabled by accurate, module- and rack-level health insights
- Optimized O&M costs by focusing maintenance only where needed and reducing unnecessary testing and analytics
- Data-driven asset and portfolio management that scales across multiple BESS sites and improves bankability
- Alignment with future regulations, including battery passport readiness and full lifecycle traceability

Battery, perfected.