THE LONGi FLEXI L261X

THE HIGH-INTEGRATION AND FLEXIBLE C&I ENERGY STORAGE SYSTEM

Summary and overview

The LONGi Flexi-L261x is a commercial and industrial energy storage system based on a 261-kilowatt-hour lithium iron phosphate battery platform and available with either 125 kilowatts or 250 kilowatts of rated power. It is designed for commercial and industrial operators with high energy demand, limited grid capacity, or critical loads that require reliable and scalable backup capability. Dedicated AC and DC cabinet versions enable flexible system configuration, including backup durations of up to 24 hours through DC expansion.

More than 80 percent of core components, including the Battery Management System (BMS), Power Conversion System (PCS), and Energy Management System (EMS), are developed and manufactured in-house. This level of integration reduces system interfaces, simplifies installation and commissioning, and ensures clear responsibility for service and long-term support.

The system enables direct connection of photovoltaic systems via a 63-kilowatt Maximum Power Point Tracking input, as well as integration of diesel generators, grid supply, and electrical loads within one cabinet architecture. This supports applications such as peak shaving, transformer capacity expansion, demand response participation, and hybrid photovoltaic–storage–diesel configurations. For sites facing transformer limitations or increasing electrification, the system can defer infrastructure upgrades while improving energy autonomy.

Flexible expansion for evolving energy demand

The LONGi Flexi-L261x follows a cabinet-based modular design that allows projects to scale in line with operational growth. In AC configuration, multiple units can be connected in parallel to increase both power and capacity. In DC configuration, additional cabinets can be added to extend storage capacity independently of power output. Backup durations of up to 24 hours can be achieved, supporting manufacturing plants, logistics centers, data-driven facilities, agricultural sites, and commercial buildings where production continuity and load security are business-critical.

This structured expansion capability enables phased investment while maintaining a consistent system architecture.

Integrated safety architecture

The system integrates the Intelligent Cell Connection System (iCCS) as a central element of its safety concept. Voltage, temperature, and internal resistance are monitored at individual cell level, enabling early detection of irregular behavior. Potential thermal risks can be identified months in advance, while abnormal temperature development can be detected seconds to

Flexible power resilience

Long-duration backup helps of up to 24 hours prevent costly production interruptions and revenue losses.

Flexible energy integration

Integrated hybrid operation reduces grid strain and helps avoid or postpone expensive transformer expansions.

Modular cabinet expansion

Scalable AC and DC expansion enables phased investment, adapts to growing energy demand, and supports long-duration backup to protect business continuity.

minutes before escalation. In such cases, charging and discharging currents are isolated and suppression measures are activated to limit propagation.

The six-dimensional safety architecture is complemented by compliance with NFPA 855 and relevant IEC and UL standards. Combustible gas detection, exhaust systems, aerosol fire extinguishing, smoke and thermal detection, and a fire water interface are integrated into the cabinet design. This layered protection approach supports regulatory acceptance, insurability, and operational risk reduction.

Factory-configured EMS and operational control

An integrated Edge Energy Management System is factory-configured with European grid parameters, reducing on-site commissioning effort and accelerating project deployment. The EMS coordinates charging, discharging, and grid interaction in real time. Functional capabilities include peak-valley optimization, demand response execution, anti-reverse power flow control, backup switching, and remote operation and maintenance.

Low-latency communication between iCCS and EMS ensures stable system coordination and controlled protective response under dynamic load conditions.

Installation efficiency and lifecycle management

The integrated cabinet design shortens installation time by approximately 30 percent compared to conventional systems. Battery and electrical compartments are physically separated and equipped with independent heat dissipation systems, reducing internal thermal interaction and improving lifecycle performance.

With an IP55 protection rating and an operating temperature range of –30°C to +55°C, the cabinet is suitable for outdoor installation without requiring a separate machine room. Automatic disconnection of faulty battery clusters and automatic connection of expansion clusters support operational continuity. The system also supports mixing old and new battery packs for future capacity expansion. Modular replacement design reduces operation and maintenance time by approximately 50 percent, supported by European spare parts warehousing and remote technical service structures.

Predictive safety monitoring

Cell-level monitoring and staged protection reduce thermal risk, support regulatory compliance, and strengthen operational safety and insurability.

Real-time energy optimization

Pre-configured grid parameters reduce on-site commissioning time while enabling real-time optimization and stable system coordination.

Optimized field installation

Integrated cabinet design accelerates commissioning and minimizes long-term maintenance requirements.

THE TOP 10 BENEFITS FOR EPCS AND BUSINESSES

1. REDUCED ENGINEERING COMPLEXITY AND FASTER EXECUTION THROUGH HIGH INTEGRATION
2. LOWER INSTALLATION EFFORT WITH CABINET-BASED DESIG
3. CLEAR SERVICE RESPONSIBILITY UNDER SINGLE-SOURCE ACCOUNTABILITY
4. SCALABLE SYSTEM DESIGN WITH AC AND DC EXPANSION
5. EXTENDED BACKUP CAPABILITY UP TO 24 HOURS
6. DEFERRED INFRASTRUCTURE UPGRADES THROUGH HYBRID INTEGRATION
7. OPTIMIZED ENERGY MANAGEMENT WITH REAL-TIME CONTROL
8. ENHANCED OPERATIONAL SAFETY WITH CELL-LEVEL MONITORING
9. IMPROVED INSURABILITY AND COMPLIANCE ALIGNED WITH NFPA AND IEC
10. REDUCED LIFECYCLE MAINTENANCE EFFORT THROUGH MODULAR REPLACEMENT