



# The changing role of C&I energy storage in Europe

Eva Amate, Head of Sales (C&I BESS) Europe, and Nicolás Gallego, Sales and Application Engineer C&I, Jinko ESS, discuss the European market, battery cell manufacturing, safety and the economics of commercial and industrial storage.

**PES:** Welcome to you both. We've seen significant growth in commercial and industrial energy storage across Europe in recent years. How would you describe the market today, and where are you seeing the strongest demand?

**Eva Amate:** It's an interesting time for C&I energy storage in Europe. The market is growing quickly and becoming more mature, with particularly strong interest in countries such as Italy, Spain and Germany. High energy costs, increasing solar penetration and grid constraints are all contributing to that demand.

We're also seeing a change in what customers are looking for. They're thinking more carefully about long-term performance, safety and project economics, rather than focusing simply on the cost of the battery.

**PES:** What is driving businesses towards energy storage now? Is the conversation mainly about energy costs, resilience and renewable integration, or are customers beginning to look at storage more strategically?

**EA:** Energy cost reduction and solar self-consumption remain key drivers, but customers are becoming more strategic. They increasingly want storage to combine several applications, from peak shaving and PV optimisation to energy trading and grid services. The conversation is shifting from buying a battery to optimising an energy asset.

**PES:** When a commercial or industrial customer starts looking at energy storage, what should they be considering beyond the headline capacity and price of the system?

**Nicolás Gallego:** It is important to define clearly what the energy storage system needs to do from the outset. Once this is established, customers can select equipment that meets their requirements while taking its technical limitations into account.

Battery control, managed by the energy management system (EMS), is fundamental to the operation of the overall system. Selecting an EMS that matches the site's specific needs is therefore critical to system performance.

**PES:** Europe is far from being a single market. How much do the opportunities and requirements for C&I storage differ from one country to another?

**EA:** The differences between European countries are significant. Each country has its own electricity prices, grid requirements, regulations and revenue opportunities. For us, this means having a flexible product platform while adapting the solution and business case to each local market. Our local teams help us respond to customers' specific requirements.

**PES:** Are you seeing C&I storage increasingly being considered alongside solar and other energy technologies from the outset, rather than being added later as a standalone system?

**EA:** Absolutely. We increasingly see storage being designed together with solar, EV charging and energy management from the beginning. Customers are looking at the integrated energy system, which allows the battery to be better sized and optimised while making the most of renewable generation.

**PES:** For many businesses, the economics ultimately have to work. Where can C&I storage deliver the greatest value over the

lifetime of a system, and what tends to determine whether the business case succeeds?

**NG:** Energy storage systems can deliver value through a range of applications. The most important step is for each customer to assess how storage could benefit its particular site.

The business case depends on factors including the electricity tariff structure, the difference between peak and off-peak prices, the site's load profile, any existing photovoltaic system, demand charges and electricity consumption patterns. Other considerations include the availability of grid services locally and the value of backup power in avoiding production downtime or other significant losses.

One example is an industrial recycling plant in León, northern Spain, where ten SunGiga G1 cabinets provide 2.15 MWh of storage capacity and 1 MW of power. Working alongside an existing 2 MW rooftop solar installation, the system is designed to increase self-consumption, store surplus solar generation and reduce peaks in electricity demand through energy arbitrage and peak shaving.



Eva Amate



Nicolás Gallego



The installation has an estimated annual energy supply potential of more than 1.5 million kWh, with projected savings exceeding €100,000 a year and an anticipated reduction of more than 130 tonnes of CO<sub>2</sub>.

Because facilities have different operating conditions and objectives, a tailored analysis is essential to establish the most suitable configuration, operating strategy and system size, and to assess the likely return over the project's lifetime.

**PES:** Jinko ESS manufactures its own battery cells. What does having control at cell level allow you to do differently when developing a complete C&I storage system?

**NG:** Manufacturing the cells allows us to optimise system integration from the DC level upwards. Understanding the cell chemistry helps us develop a product that delivers performance while limiting degradation over its lifetime. It also allows closer integration between the cells, battery management system (BMS) and overall storage system, contributing to efficiency, reliability, safety and long-term performance.

This oversight also helps us select cells that meet our quality requirements for use in the complete systems.

**PES:** For the customer, where does manufacturing your own cells make the biggest practical difference, particularly when it comes to safety, consistency, performance and long-term reliability?

**EA:** Beyond the technical advantages mentioned above, manufacturing our own cells demonstrates Jinko's long-term commitment to energy storage. We are following the same vertically integrated approach that has been important to Jinko's development in solar,

giving us greater control over the product from the cell through to the complete system.

For customers, this means greater consistency, traceability and confidence in the technology behind their investment, backed by a manufacturer committed to the storage market for the long term.

**PES:** Safety remains one of the biggest considerations around battery storage. How are safety and thermal management being addressed from the cell through to the complete C&I system?

**NG:** Our battery systems undergo testing at several levels, from individual cells through to the complete energy storage system. This includes battery safety testing against IEC 62619 and IEC 63056, while IEC 62933-5-2 addresses the safety of the complete grid-connected system. We also carry out UL 9540A testing to assess the potential spread of thermal runaway.

Our C&I cabinets incorporate a fire protection system with temperature, carbon monoxide (CO), hydrogen and smoke sensors, alongside other protective components designed to respond to conditions detected inside the cabinet to help prevent, mitigate or suppress fire events.

Safety starts with the quality of the cells themselves, but it also depends on how the battery management and protection systems work together. Each plays an important part in keeping the complete system safe and reliable.

Jinko ESS also confirms that no fire incidents have been recorded involving its C&I or utility-scale energy storage systems worldwide.

**PES:** Jinko ESS has a strong team presence in Europe. How important is having people on the ground who understand the individual

markets, regulations and customer requirements rather than approaching Europe as one region?

**EA:** Having people on the ground who understand the requirements of individual European markets is fundamental for us. Europe is a very varied market, so being close to our customers helps us understand local regulations, grid requirements and specific business needs. It also allows us to provide faster support and build stronger long-term partnerships, from project development through to operation.

**PES:** Once a system is installed, how important are local technical support and ongoing operations & maintenance (O&M) to its performance over its lifetime?

**NG:** Although battery energy storage systems (BESS) do not require intensive maintenance, following the manufacturer's recommendations and carrying out prescribed maintenance activities is important for performance, availability and preventing potential failures. Proper maintenance can also extend equipment life and help maintain safety and reliability over the project's lifetime.

We provide customers with the documentation, procedures and technical guidance needed for these activities. Following the recommendations helps operators reduce the risk of failures and keep equipment performing as designed over the long term.

**PES:** Looking ahead five to ten years, where do you see C&I energy storage in Europe, and what do you think will separate the strongest systems and suppliers from the rest?

**EA:** We expect storage to become a standard part of the energy infrastructure for many European businesses. The strongest suppliers will be those that combine safe and reliable technology with intelligent energy management, strong local service and long-term performance. Customers will look beyond price and focus increasingly on lifetime value and the long-term stability of the supplier they choose.

[jinkoess.com](http://jinkoess.com)

#### About Jinko ESS

Jinko ESS develops energy storage solutions for commercial, industrial and utility-scale applications.

Its vertically integrated approach includes manufacturing its own battery cells, allowing greater control over the development and integration of complete storage systems.

A European team supports customers with local market requirements, project development and technical support.