Levelling up energy storage

Jinko Solar is one of only three manufacturers globally listed as Top Performers seven consecutive times in the PVEL PV Module Reliability Scorecard. It implements a thorough quality check process, with 52 steps and continuous line monitoring for each cell and panel. Keen to learn more, PES sat down with Lucia Dolera, Business Development Manager for Utility Scale Storage.

PES: It's lovely to welcome Jinko back to PES and to talk to you Lucia, for a different stance on the business and where it sits in the solar industry. Perhaps that's a good place to start, with an introduction to your role and a bit of background to the company?

Lucia Dolera: Thank you. Jinko Solar is a global leader in the solar industry, with a huge presence in Europe. We specialise in the design, manufacture, and sale of high-quality solar products including PV modules and storage systems, delivering reliable and efficient solutions to our customers.

PES: The sector as a whole is in a state of rapid growth. How has that impacted your business?

LD: The growth of the sector is the key driver for innovation in the solar industry. Jinko Solar is getting ready to beat records. We have recently launched new PV panel technology that can reach an efficiency of 23.86%, with the TOP CON N-Type technology, and we expect to produce 70 GW of PV modules for this year. We are seriously betting on being a relevant player in storage business solutions too. We are deeply engaged with the sector and work very closely with our customers to provide them with the best solar product and storage solutions to help with demand.

PES: How can you help ensure this demand is met?

LD: We have increased digitisation and automation in our manufacturing processes, which has helped us to reduce costs and improve quality. Thus, we have responded to demand by reducing costs and improving efficiency and are always looking at implementing the latest innovations that come from material science and engineering.

This has led to the industry moving towards higher-quality and more reliable products, as well as the integration of energy storage systems to help customers achieve greater energy independence.

PES: What products and solutions are you able to offer?

LD: With regards to PV panels, we offer TOP CON N-type, solar cell technology, which has higher efficiency and better temperature stability compared to traditional P-type cells. These generate more power, are more efficient and provide better stability compared with other technologies in the market.

For storage systems, we provide smart storage solutions at Residential, Commercial and Industrial (C&I) level and at utility scale. Moreover, we provide SunTera utility scale storage solutions, a powerful resource for auxiliary new energy grid connection, frequency and peak regulation, demand-side response, microgrids, etc., making every effort to support the flexibility and reliability of the grid system.

PES: How is energy storage being levelled up to match power demand?

LD: The electricity grid is a complex system where the power supply and the demand must always be equal. We all know that energy storage systems are becoming progressively more popular in the energy industry, as they allow utilities to manage the demand and supply of electricity more efficiently. Energy storage plays an important role in this balancing act and helps to create a more flexible and reliable grid system.

Grid-level energy storage is an effective strategy for peak demand management, because it allows utilities to store energy during off-peak hours and release it during peak demand periods.

As demand increases, storage in the adjustment services will provide more resources to balance the network and provide economic profit in exchange of modulating the consumption.

We can provide a powerful storage solution, which is our SunTesa liquid cooling utility scale for applications such as matching energy demand and generation.

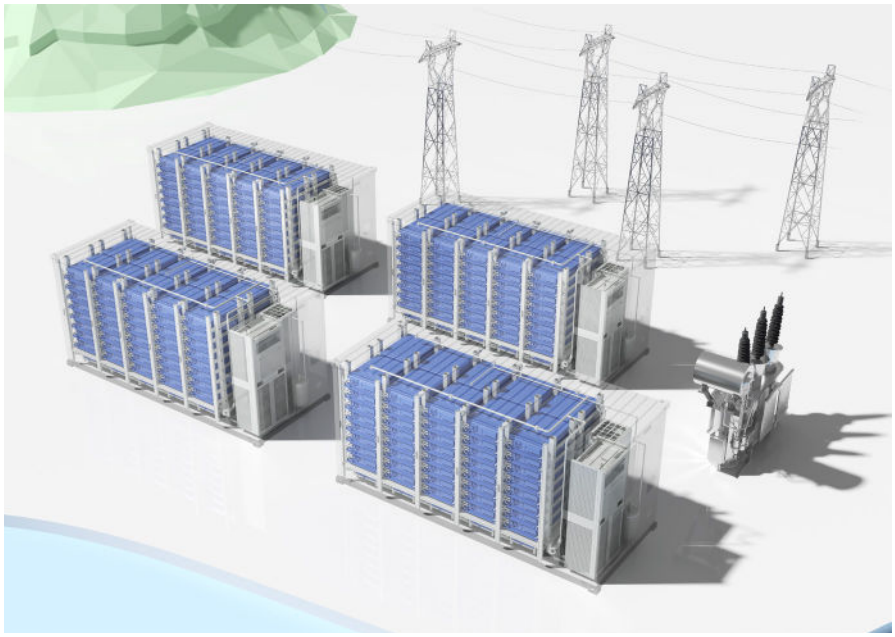
PES: There is much focus around utility-scale storage isn't there?

LD: Yes, without doubt storage affects the structure of the electric system directly, and storage makes the renewable technology business viable. We could say that utility scale projects will be the logical leader, making renewable energy injection a sustainable option. Batteries provide the system with flexibility and stability. Storage technologies contribute to the management of electricity networks, encourage citizen participation in changing the energy model and allow for greater competition and integration in the electricity market.

PES: How does Jinko help meet challenges here?

LD: Jinko Solar offers a comprehensive range of energy storage and PV solutions that help customers achieve their sustainability and energy management goals. For example, our SunTera utility scale battery storage system is a powerful solution for applications including peak-shaving, microgrid and demand management, and aims to overcome the challenges presented by a mismatch between energy demand and generation.

We design and engineer our liquid cooled ESS, which is specifically for utility-scale projects to exceed safety standards level. On top of which is a liquid cooling thermal



Lucia Dolera

management scheme to perfectly ensure temperature uniformity within the cabinet. This storage solution is perfectly suitable for utility scale projects.

PES: What makes your company different from the competition?

LD: Our C&I and utility scale storage system solution main advantages from our competitors include higher safety and reliability. These storage solutions have five-level safety protection of the cell, module, battery pack, battery cluster and battery system and can effectively prevent heat spread and ensure the safety of system operation.

It is also more intelligent because it includes an intelligent control management, efficient debugging, remote operation and maintenance, continuous monitoring the operation of the whole battery system to ensure the safety and controllability of the batteries and the equipment, this makes an important decrease of the operation and maintenance costs.

Our storage systems are also highly flexible, being compatible and electrically ready to operate with other brands.

PES: How important is quality, reliability and efficiency and how do you ensure this?

LD: We make serious efforts to be at the forefront of growth and innovation. We are constantly exploring new technologies and developing new projects to improve the efficiency and effectiveness of its products.

One of our main goals is designing, manufacturing and sales high quality solar products that reduce costs and improve efficiency. We are a global leader in technology innovation, with more than 1,260 authorised patents.

Our R&D team runs to more than 1,395 people involved in improving our solar and storage technologies. Thus, our investment

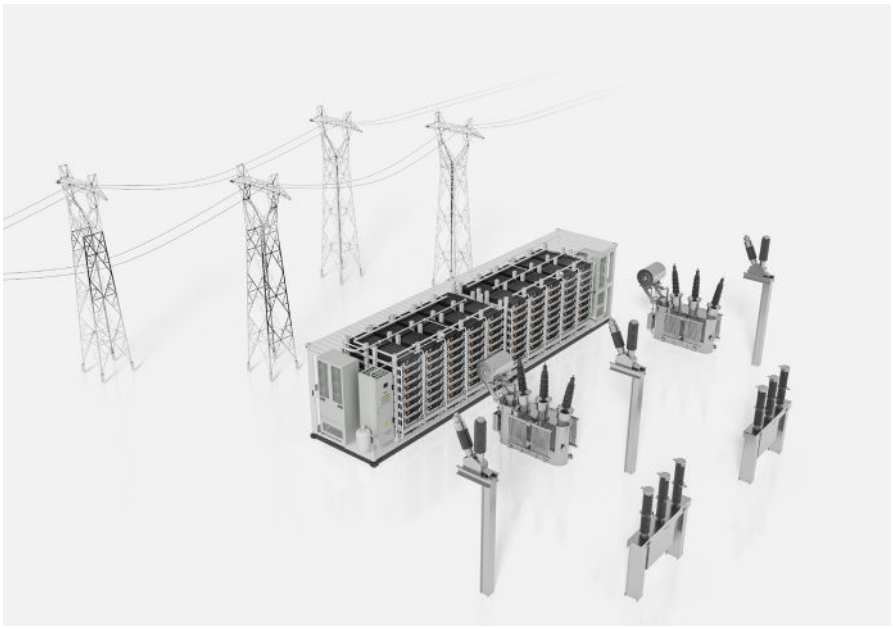
in R&D reaches 2.6 billion (C&Y). So for Jinko Solar, quality, reliability and efficiency are our Premier League way of providing high level products and services to our clients.

PES: What do you think is next for utility scale storage?

LD: Utility scale storage systems are here to stay. As Bloomberg NEF announced in March 2023, 'Energy storage hit another record year in 2022, adding 16 gigawatts/35 gigawatt-hours of capacity, up 68% from 2021.' We can't stop this.

Taking into account that as the installed capacity of renewable generation continues to increase, there are countries where all the renewable energy generation cannot be consumed in the same moment. Consequently, overproduction can have two results. Firstly, production exceeds grid capacity, and the system operator is forced to order large PV plants to shut down the production. The other is that the increase in supply does not match the increase in demand and prices plummet, leading to production at zero cost. These consequences are not good for the system, because it aggravates the performance rate of the installations. for the producers, investors, etc., worsening the performance rate.

The key to avoiding the waste of the electricity already generated is to store it and use it afterwards when it is most suitable. That can be at night in the case of photovoltaic or when there is no wind in the case of wind technology.



Thus, with the possibility of arbitrage, the grid can be regulated according to generation and demand, energy can be bought and stored when production is cheapest and sold when prices are more expensive. No doubt, storage systems will have a prominent role, helping to avoid such waste in the system.

PES: And for Jinko in particular, any product developments that you can reveal to us?

LD: Our strategy in the EU regarding storage and PV is focused on delivering high-quality and reliable products that meet the specific needs of customers in the region. We are committed to expanding our market presence in Europe by leveraging our strong brand reputation, product innovation, and customer-centric approach.

Jinko Solar is focused on offering a comprehensive range of energy storage and PV solutions that help customers achieve their sustainability and energy management goals.

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