Increasing the energy yield

Ellen Xue, TSUN Sales VP, discusses a breakthrough in microinverter technology with PES and explains the benefits, before taking a look at what the future may bring.

PES: I'm looking forward to hearing more about TSUN today. Could we begin with a brief history of the company, for readers who might not be familiar with the name?

Ellen Xue: Our story began with a deep passion for the solar industry and a commitment to global carbon neutrality. Since its establishment in 2019, the company has been dedicated to advancing solar technology, focusing on microinverters and energy storage solutions to offer secure and efficient solar solutions for a low-carbon lifestyle.

Our product portfolio includes the Gen3, Gen3 Plus, and TITAN series microinverters, ranging from 300 W to 3,000 W, alongside the innovative Easy Solar Kit for versatile installations. The company's success is driven by a skilled team, strong research capabilities, and effective global marketing strategies.

With cutting-edge technologies like microinverter topology and soft-switching, TSUN has become a leader in power density and conversion efficiency. Our energy storage products, featuring intelligent control and wireless temperature measurement, have also earned recognition for reliability and flexibility.

By putting customers first and establishing a global presence, we have solidified our position in markets across Europe, Southeast Asia, and South America. The company's vision of 'more safety, more power' fuels our commitment to creating sustainable value and driving the global shift towards green energy solutions.

PES: With several years of solar inverter design and manufacturing experience under your belts, how much has the sector changed over the years do you think?

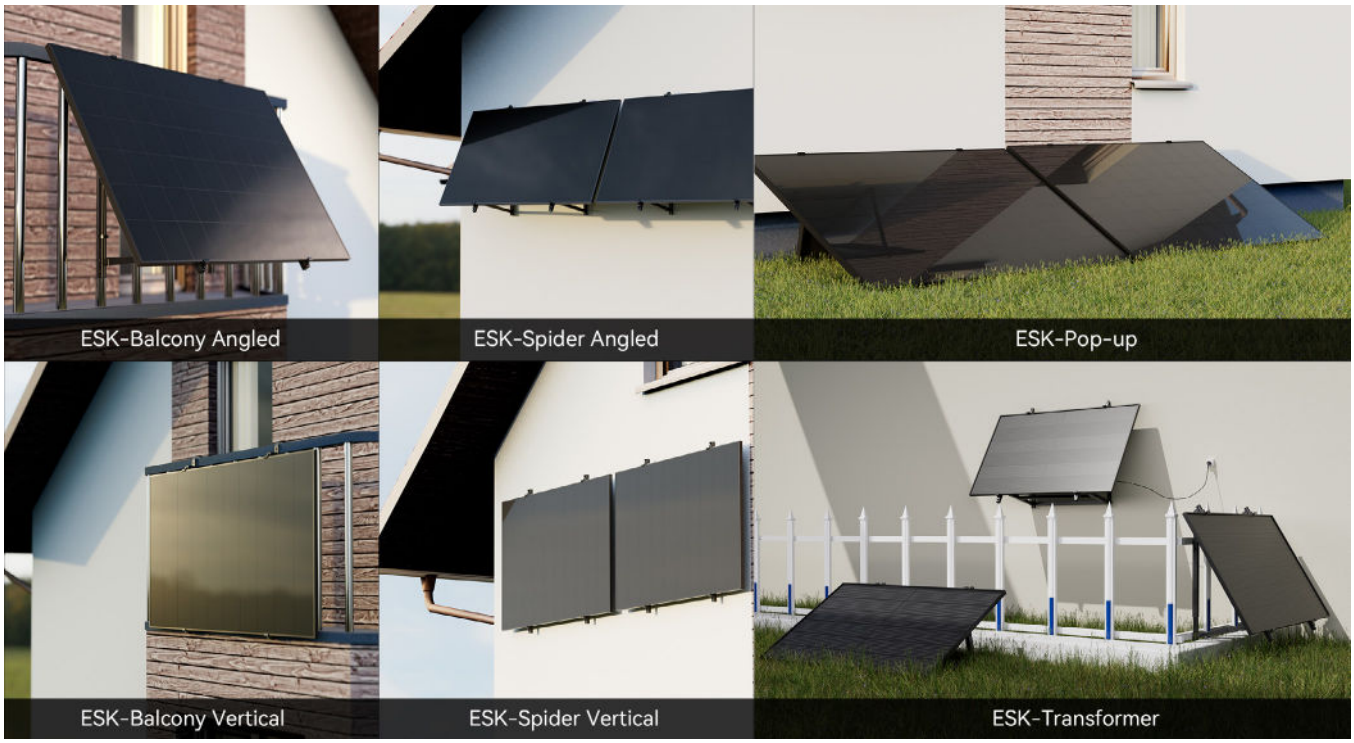
EX: One of the most significant changes in the sector has been the rapid progression in technology. Solar inverters have become more efficient, reliable, and intelligent. We have witnessed substantial improvements in power conversion efficiency, allowing solar systems to generate more electricity from the same amount of sunlight. This enhanced performance has led to increased energy yields and quicker return on investments for solar adopters.

Moreover, the integration of cutting-edge features such as Maximum Power Point Tracking (MPPT), advanced monitoring and protection level has become commonplace. These innovations enable solar systems to optimise energy production, and adapt to varying weather conditions, fostering greater energy independence and stability.

Another noteworthy change is the trend towards miniaturisation and modularisation. Microinverters, like our Gen3 and TITAN series, have gained popularity, offering advantages such as individual module-level optimisation, increased system reliability, and simplified installation processes. This shift towards smaller, decentralised inverters has allowed for greater design flexibility and system scalability, making solar installations more accessible and adaptable to various environments and customer needs.

Ellen Xue

Additionally, the regulatory landscape and government policies have played a crucial role in shaping the sector. Supportive feed-in tariffs, incentives, and mandates for renewable energy integration have provided a strong impetus for the adoption of solar power worldwide, fostering a more sustainable energy mix.



PES: A core part of your service is the TITAN series microinverters, correct?

EX: Yes, that's correct. We provide the world's most complete range of microinverters with output power from 300 W to 3000 W. They are the world's most powerful microinverters for the residential market.

The power of traditional string inverters continues to increase, but safety remains a persistent concern. While microinverters can prevent the fire hazards caused by DC arcing, the high cost per watt has deterred many households. We sought a balance between safety, affordability, and efficiency, leading to the creation of TITAN.

It marks a significant breakthrough for us in the field of microinverters. With a brand-new topology, it is the first 3,000 W high-power single-phase microinverter in the industry, bridging the market gap between traditional micro inverters with power above 2,000 W and string inverters below 6,000 W.

PES: Tell us more about these.

EX: We have always been committed to pushing the boundaries of clean energy technology and the latest series of microinverters have been meticulously designed and engineered to offer exceptional performance, reliability, and scalability. The R&D team has tirelessly challenged the limits by optimising circuit topology, control algorithms and power electronics to increase the output power of single-phase microinverters and reduce the cost per watt. This empowers our customers to optimise their energy usage, reduce costs, and contribute to a greener future.

PES: What are the advantages of TITAN, over and above the competition?

EX: The microinverters have an input current of up to 18.5 A, perfectly compatible PV modules of various sizes and power ranges, especially the mainstream 182 mm and 210 mm large-sized modules. It can also meet the demands of module development trends for the next three to five years. The product features a 6 MPPT design and achieves a peak efficiency of up to 97.2%, making it suitable for complex installation environments.

In terms of user-friendliness, the microinverters are IP67 certified with high level of waterproof and dustproof and are able to operate normally even accidentally submerged in water. Furthermore, the product is equipped with built-in WiFi and enables module-level monitoring, which makes the operation and maintenance easier and more cost-effective. Installers and end users can remotely diagnose and analyse faults, perform software and power upgrades, and monitor real-time system generation information through the accompanying Talent monitoring platform.

PES: These are plug-and-play devices, aren't they? Is this a popular technology?

EX: Yes. We have been at the forefront of pioneering balcony solar systems since 2019 with the introduction of the innovative Easy Solar Kit. This integrated PV system comprises a solar panel, microinverter, bracket, and cables, providing a user-friendly and plug-and-play design that eliminates the need for professional installation. This breakthrough has made solar power more accessible to a wider range of residents, enabling them to enjoy the benefits of renewable energy without hassle.

The increased popularity of balcony solar systems can also be attributed to supportive policies and financial incentives from governments. Notably, in Germany, solar installations below 600 W are exempt from registration with local energy departments, with plans to potentially raise the limit to 800 W. Moreover, the country is exploring the possibility of making solar panel installation mandatory during construction and renovation projects, further promoting the adoption of solar energy.

To accommodate diverse customer needs, we now offer a range of mounting options, including railings, walls, and ground installations. This flexibility allows for customisation based on the available space, ensuring that customers can maximise solar energy generation regardless of their living or working environment.

PES: TSUN is headquartered in China, a driving force in the solar industry. Do you have global plans too, to bring your microinverters to a wider market?

EX: Indeed, we have recognised the global potential of the solar industry and has been actively pursuing a globalisation strategy since its establishment in 2019. While headquartered in China, we have expanded our reach to various regions around the world, including Europe, South America, and the Asia-Pacific market.

To ensure seamless access to our microinverters and solar solutions, we have strategically established distribution channels in key international markets. We have set up a branch in Germany and opened offices in Brazil, the United Kingdom, Poland, and other locations. Meanwhile, we provide localized technical support and after-sales service. By understanding the unique requirements and preferences of each market, we can better serve our customers and build stronger relationships. Our commitment to delivering exceptional customer experience extends beyond just selling products, but also providing reliable and efficient service at the local level.

PES: What do the next 10 years look like for TSUN do you think?

EX: Over the next 10 years, the business is poised for remarkable growth and innovation in the solar industry. Our focus will be on advancing solar inverter technology, expanding our global market presence, and solidifying our reputation for exceptional customer service. We will continue investing in research and development, aiming to providing user-friendly solar products and creating safe, efficient, and cost-effective solar solutions.

By setting up an R&D centre in Europe, we are dedicated to bring even more value to the local market and users. By conducting research and development closer to our European customers, we can tailor our products and solutions to better meet their specific needs and requirements. And in this way, we will enhance our global presence and contribute to the solar industry's growth worldwide.

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