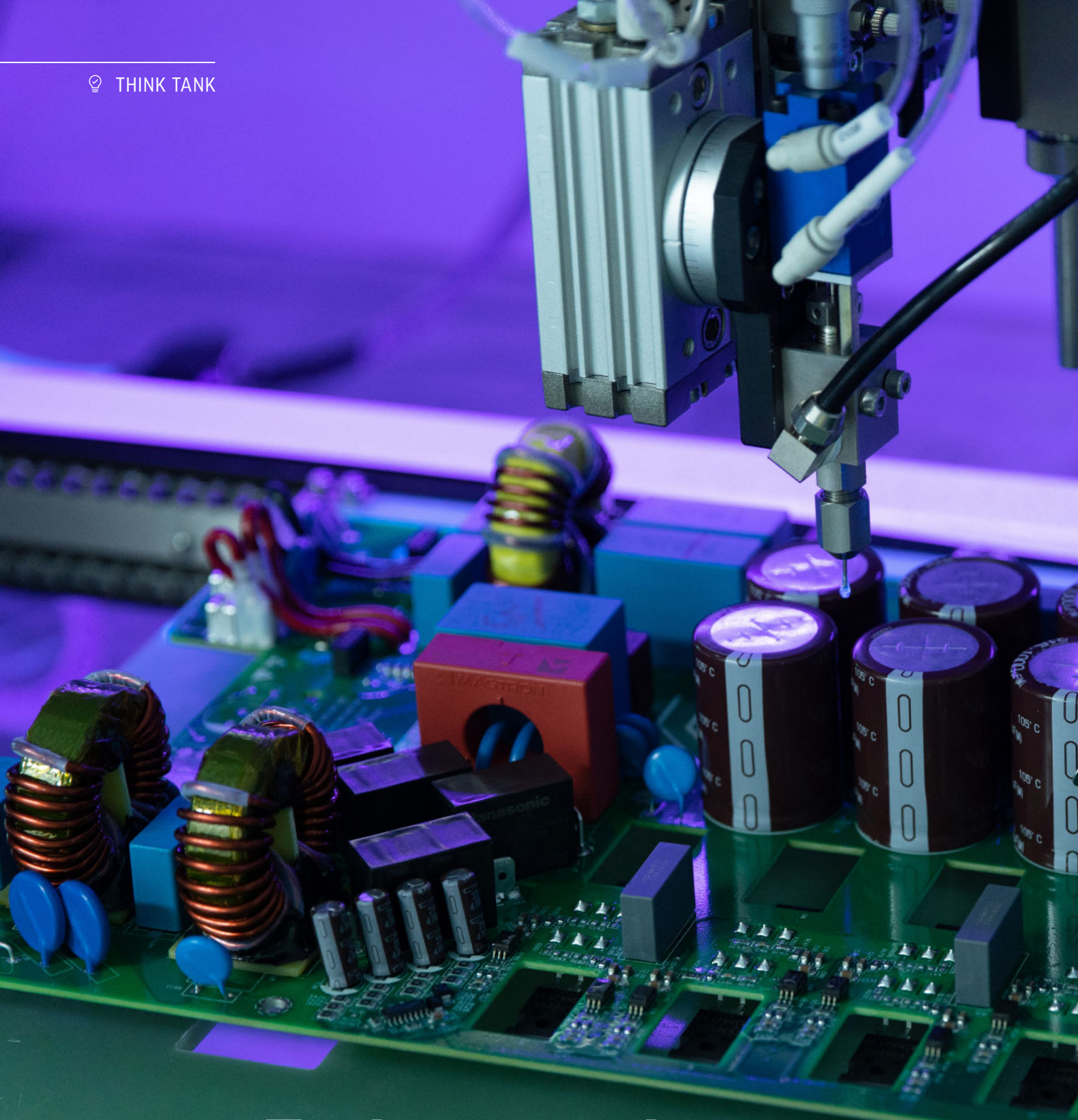


Technology keeps pace with change

Solar power is a crucial element of the energy transition. According to the International Energy Agency (IEA) solar is on track to set a record for new global deployments from 2022. It is on its way to becoming the leading renewable energy due to its rapid development in recent years and the continuing reduction in the cost of its deployment and LCoE. Maintaining focus on the details is critical to keeping pace with this change without negatively impacting product quality or customer satisfaction.

Despite several challenges during the last couple of years, including COVID-19 lockdowns, supply chain and logistics issues, the solar PV market showed resilience and continued to grow. In 2021, PV systems with a combined capacity of 168 GW were installed globally, almost 30 GW more than in 2020.

2022 is expected to be another bumper year in terms of PV installations. Taking into account the renewed focus within Europe to transition towards renewable energies under the REPowerEU plan and strong growth expected in the United States, China and other global markets.

Several projects which were postponed in 2021 due to non-availability of materials and increase in pricing are expected to move forward in 2022. According to EUPD Research, a market research and consulting company headquartered in Bonn, Germany, the global PV market is expected to install more than 200 GW in 2022. As additional global production capacities across the value chain come online and the supply chain issues are addressed, PV installations are expected to grow even further in the medium term.

Technology fuels growth

Not so many years ago, Solar PV was a fairly basic stand-alone technology, simply generating and exporting energy. In as little as 10 years, solar now integrates with many other technology platforms such as EV chargers, battery storage and communities able to become 'micro grids'. The key to all this development is inverter technology, the brains and core component within any solar system regardless of its size and complexity. Rapid global expansion, as well as seismic shifts in technology to allow for integration with these other technologies has meant inverters need to keep pace with this technological demand.

Solis has worked in the field of string inverters for over 17 years, a period during which the pure play string inverter firm has used its focus to deliver performance across global markets and sectors, building on strong product quality and service. If the forecasts for global solar deployment are to be achieved, it is critical to adapt to changing market needs.

'Since its launch in 2005, Solis has been driven by innovation and development. Continuously improving its ability to respond to global market demands and now offering sixth generation technology,' comments Kun Zhang, Chief Product Manager at Solis Global HQ.

Design, intelligent manufacture and testing key to reliability

Reliability and service life of an inverter are closely related to the quality of its components. The use of high-quality components directly affects the performance of the inverter. At its new 40GW capacity site in Ningbo, Solis maintains its strong and long-established relationships with world-renowned component suppliers to ensure stable supply and consistent product reliability. These relationships ensure tight control of quality as well as the ability to navigate supply shocks, as recently seen globally, more efficiently and with less disruption to product supply.

Equipped with fully automated and real-time production lines for logistics, production and testing, the new factory is designed for the future. This includes SMT lines, triple anti-coating lines, automatic assembly lines, ageing inspection, and packaging integrated production lines. The implementation of an intelligent material transport system, automatic palletizing system, three-dimensional warehouse, and other logistics engineering, enables automatic movement of materials in and out of storage and into production.

Research & Development, production, testing, sales and service form a complete and vertically integrated product supply chain. Comprehensive product quality

control through the flow and exchange of information at each stage effectively ensures the reliability of the inverter is guaranteed. World class design and a recently expanded manufacturing facility with automated digitalised product lines further advance and ensure ultimate customer satisfaction.

Adaptable to complex environments

Variation in temperature will affect the efficient working of an inverter and can be caused by regional differences, day to night and seasonal change etc. The internal components of the inverter itself will also cause temperature variation which can all affect the long term safe and efficient operation of the inverter.

Solis product design considers the impact of temperature changes and adopts various measures such as coating protection and internal fan cooling to protect the inverter. Design engineers verify the performance of the entire machine through thermal cycling, damp heat, humidity, freezing, thermal cycling, high temperature and rain tests to identify any defects in the inverter's internal electronic components.

Other factors brought about by external exposure in the field, such as UV, salt spray, humidity and sand can have a huge impact on inverter efficiency and life. Strong environmental adaptability is crucial to the reliable operation of the inverter.

Every single Solis inverter is powered on and runs for more than 180 days in an exclusive test area prior to release from the factory. The status of the inverter is monitored daily via SolisCloud to observe the main parameters of its power generation and internal temperature.

Stress testing equipment, which simulates extreme environments ensures the reliability of the inverters, can be evaluated and improved for ongoing product optimization. All brand new sixth generation inverters have been upgraded to IP66 protection, which is a more reliable feature for inverters installed and operating outdoors for long periods of time.

Energy storage and micro grids form a new growth platform

Community mini grids and energy trading made possible via networks of residential energy storage systems is what most industry experts see as the future of power grids. Solis believes that a modular system is a good solution for energy storage applications and micro-grid construction. It promotes energy storage system expansion technology, which can form a large-capacity energy storage system with smaller capacity hybrid inverters at the systems heart.

In this way, we can use simple and effective strategies to provide customers with larger capacity systems. For example, multiple single-phase/three-phase energy storage inverters can be connected in parallel to form a system with a storage capacity of up to 100kW. This approach covers all residential and smaller commercial scale energy storage scenarios.

It's also expected that energy storage inverters will become the 'energy housekeeper'. with integrated network control technology, for whole-house intelligent switching and control.

Focus on customer service and in market support

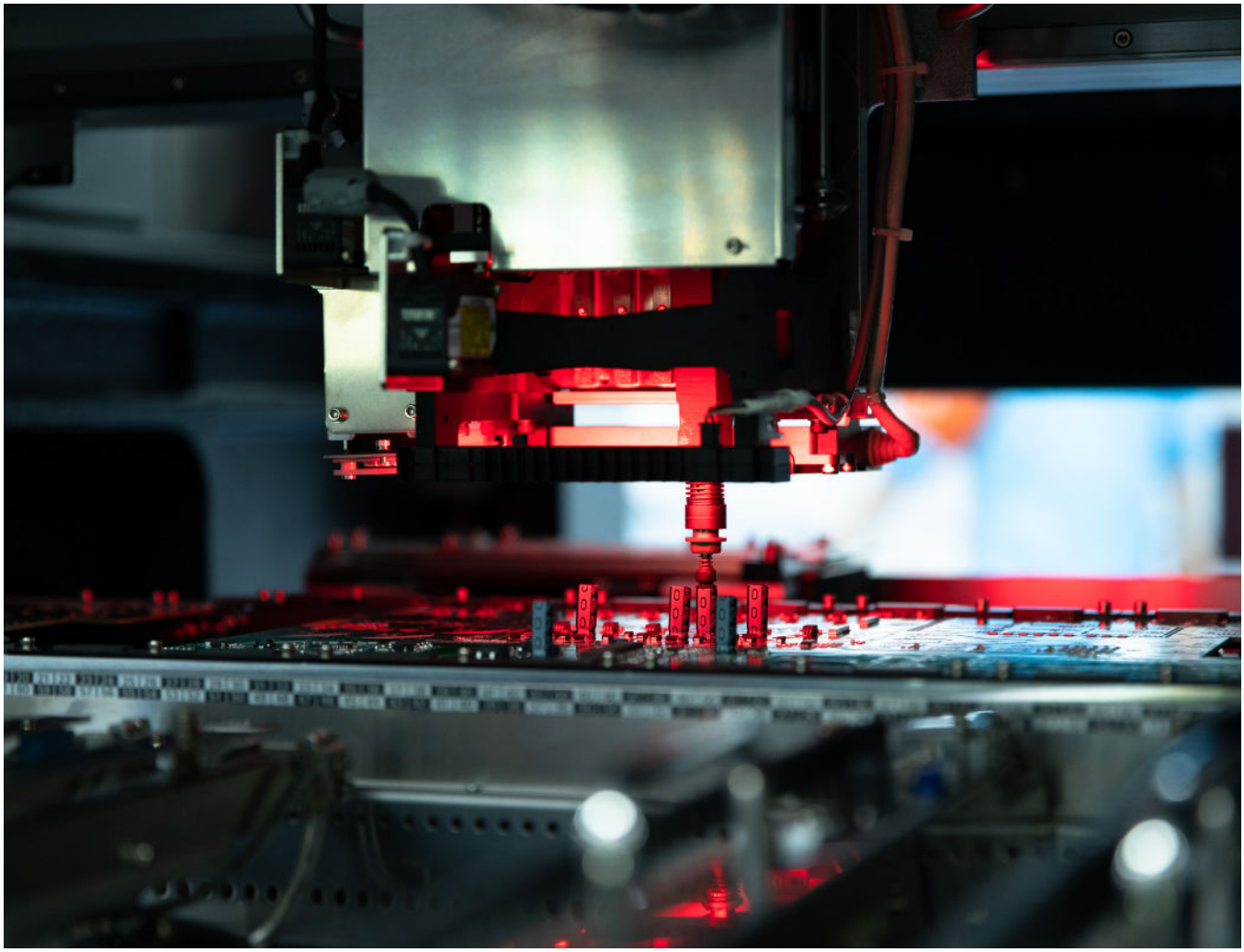
Vital to success in any market is to have local technical support. Within all its markets, Solis employs local teams to fulfil the needs of customers in those markets. Not everything goes right every time, so customers need to know there is someone who speaks their language on the end of the phone if necessary.

Sustainable development of the future

As well as its dedication to product quality and customer service, Solis continues to fulfil its corporate social responsibility commitments, actively contributing to society and devoting itself to public welfare projects and environmental emergency actions. The company actively gives back to society, helping those less fortunate, supporting the fight against COVID-19 and participating in solar PV poverty alleviation projects. In early 2020, the company donated $155,000 to help fund the fight against COVID-19, as well as donating medical supplies to support frontline medical staff. Over $465,000 has been donated in scholarships to colleges and universities, and inverters given to several non-profit solar projects

Solis commits to operating ethically and responsibly both from a people and environmental perspective and expects all

State of the art 40GW+ capacity factory designed and built for the needs of the future



Intelligent robotics optimise production efficiency and product quality

its suppliers to do the same. Every Solis supplier must sign and commit to an environmental protection agreement which ensures all products meet the requirements of the RoHS directive and do not violate any environmental protection conditions.

Important too is the attention to detail during the product design process which has led to several technical changes to reduce the weight and amount of material required per product, whilst maintaining product quality. Solis employs a dedicated in-house energy management team which is responsible for energy conservation and reducing the consumption of energy during the production process.

Of course, no one can predict the future, but what is clear is that growth of renewable energy is inevitable if climate change is to be addressed. This we can already see from the global deployment of solar. Utilising intelligent technology to develop new products as well as to optimise current products and processes to be more protective of the environment is the way to deliver future energy requirements.

www.solisinverters.com

Solis 6th generation hybrid energy storage inverter for solar systems up to 100kW