



Shaping the future: taking a role in Europe's energy transition

As new solar cell innovations emerge in 2024, including the TOPCon panel series from Solarwatt Technologies, its Managing Director Pol Spronck explains why 30 years of European manufacturing enable it to lead the charge in quality, cutting-edge solutions.



PES: A warm welcome to this edition of PES Solar Pol. How's business for Solarwatt?

Pol Spronck: Despite the challenges within our sector, we have started the year with a positive outlook and remain committed to providing quality solar solutions throughout Europe.

Solarwatt has supported the energy transition for 30 years and has helped over 650,000 owners of photovoltaic systems to become more energy independent. Not just as a solar module manufacturer, we have been producing electricity storage and energy management systems for over a decade.

Through close technical cooperation with BMW and Stiebel Eltron, we are now able to offer an entire portfolio; solar power, heating, and car charging solutions, from a single source.

We continue to drive forward innovations in products and services with our R&D and product management teams rooted firmly in Dresden, Germany, and a strong network of subsidiaries throughout Europe.

This year, we will introduce TOPCon cell technology to our panel portfolio which produces higher power output per square metre and higher yields than PERC cell technology which has until now been dominant. Market trends tell us that TOPCon will rapidly become the industry standard.

Last year was a ground-breaking year for rooftop solar in the UK, the largest since the government phased out its subsidy scheme in 2011, with a reported 190,000 systems implemented in the UK, as well as record numbers of heat pump and battery storage solutions working with solar systems to ensure optimum savings and reduction of CO₂ emissions.

The outlook is encouraging as the rooftop revolution continues, as more and more businesses and households recognise the huge potential of solar. In short, the future is bright.

PES: Solar technology is in a transition stage, as growth continues along with our greater reliance on green energy. What changes are you seeing as a business and why do you think that is?

PS: As pioneers of the solar industry, we are at the very heart of the development of solar technologies. In an ever-changing landscape with each new technological advancement, Solarwatt has led the way in innovations in materials, manufacturing processes and design to improve the efficiency and cost-effectiveness of solar panels.

We recognise an increased demand for high-quality products that ensure long-lasting reliability, exceptional performance, and that deliver higher yields, backed by solid warranties.

The shift towards a sustainable and low-carbon, energy system is the driving force behind the transition fuelled by greater environmental awareness the growing demand for clean energy sources, and the continued cost-of-energy crisis. We have seen an industry wide effort to increase the efficiency of solar cells, allowing them to convert more sunlight into electricity.

Solar energy is a cheap and abundant form of energy, that is widely accessible and solar solutions are versatile and can be used for variety of applications, including domestic and commercial rooftops, canopies, facades, ground mounted, floating and agrivoltaics, which makes solar competitive with traditional energy sources.

Governments around the world are implementing policies and regulations to encourage the adoption of renewable energy, including solar power. Incentives, and targets for renewable energy deployment in pursuit of net zero play a crucial role in driving the transition.

Central to our vision is our evolution from a module producer to a supplier of complete energy systems, for solar sector coupling. Sector coupling involves the increased integration of energy end-use and supply sectors with one another. This improves the efficiency and flexibility of the energy system as well as its reliability. When they are interconnected and the components of energy generation from renewable energies are combined, CO₂ emissions can be significantly reduced.

Alongside our product portfolio designed and tested in Germany, our range of battery storage solutions and with our approved suppliers across each market that we serve, we are committed to helping as many people as possible increase their use of clean energy.

PES: With 30 years of experience, do you feel best placed to lead the charge in new, innovative solutions?

PS: Yes, our experience has enabled us to continue to grow and tackle challenges along the way head-on. Currently, European solar manufacturers face tough distortions of competition in the face of Chinese competition resulting in global overcapacity. Our industry insight means

we are able to anticipate such challenges remaining resilient and responsive to unexpected trends.

At the heart of our operations our R&D and product management teams continue develop, design, and test our products at our accredited VDE laboratory in Dresden to the German quality standards our customers expect. Here, we will continue to ensure that production methods that have been refined and mastered over decades remain, from determining the exact Bill Of Materials, the cells that are employed and by maintaining control of the selection of raw materials.

What our customers value most is the quality, reliability and performance of our panels, our industry-leading warranties, our office network and logistical hubs, and our expert customer service, knowledge that comes with experience.

While German manufacturers seek answers that will create a level playing field, the strategic differentiation in our product portfolio, diversification in production and sales channels, coupled with a strong leadership empower us for the future.

PES: How has your experience helped you overcome the challenges of early iterations of the new cell technology, particularly in relation to degradation challenges?

PS: It has been instrumental in addressing challenges associated with early iterations of the technology, particularly in mitigating degradation concerns and early product failure.

In the industry landscape, we observed instances where competitors swiftly adopt new technologies, aiming to establish themselves as leaders with a specific new cell technology.

Unfortunately, these expedited approaches often result in premature product releases, leading to issues that only come to light after extensive testing and performing accelerated aging tests and other matters such as premature breakages.

Our TOPCon testing began in early 2023 and revealed vital refinement was required to meet Solarwatt's quality standards. Before launch a deep quality analysis was carried out on all components both in-house and at external institutes such as TÜV and IP Berlin.

As with all emerging cell technologies, we don't leave quality and performance to chance. Our teams have worked tirelessly to optimise the BOM, and their dedication has resulted in a new generation of Solarwatt modules that we are proud of.

PES: R&D is presumably of the utmost importance. Would you agree and can you elaborate on your business's emphasis in this area?

PS: Yes, it is of utmost importance. The indispensable role our R&D teams in Dresden play ensures that our products are designed and engineered with unparalleled quality that is the very essence of the market position we have today. Their expertise and dedication are paramount in shaping our products from the ground up, reflecting a commitment to excellence that defines our reputation. The significance of our 30 years' experience cannot be overstated.

It is this knowledge and experience that have secured our market-leading position in Glass-Glass technology over the last few decades. Our R&D professionals have been instrumental in driving innovation and ensuring that our products consistently meet and exceed the highest standards



Pol Spronck

of quality. It means all the products in our portfolio, and solutions in energy storage and management carry the Solarwatt German quality guarantee.

PES: You have recently transitioned to Topcon technology. Can you explain what this is and the reason for the shift?

PS: TOPCon or, Tunnel Oxide Passivated Contact, describes the specific structure of a solar cell. The TopCon concept is that the metal of the connection contacts does not come into contact with the silicon layer. This prevents charge carrier recombination, which typically causes performance losses at the rear of the cell.

For many years, p-type cells dominated the solar industry because they are easier to manufacture. Photovoltaic manufacturers are now relying on n-cells because they





promise higher efficiencies and are less susceptible to power losses. TopCon is rapidly gaining market share and in comparison, to PERC or HJT (Heterojunction) cell technology has emerged as the frontrunner to be the dominant cell technology in the evolution of photovoltaics.

The International Technology Roadmap for Photovoltaics (ITRPV) predicts that glass will become the dominant back cover material within the next few years, due to its durability. Foils as a back cover material will reduce their market share to about 40% within the next 10 years. Seventy per cent of all modules manufactured by 2033 will be bifacial. One hundred per cent of our Glass-Glass panels are bifacial and TopCon cells greatly improve this.

Our motivation in the shift to TopCon cell technology is so we can stay ahead of the curve and continue to deliver sustainably better modules that offer the highest stability, best service life and highest yields.

PES: What benefits does this technology bring to your customers and why is this important now?

PS: There are many benefits that TopCon technology brings and that our modules will offer customers. TOPCon cells offer higher efficiency than PERC and have a lower annual degradation rate, are lower temperature coefficient, so better power performance in hot weather, and have a higher bifacial performance resulting in more energy yield.

Our TOPCon Glass-Glass series are more durable and with a flexibility that makes them more resistant to microcracks with all component parts rigorously tested for quality starting with an output from 420 Wp.

They provide higher power output per square metre which will make a significant difference on residential and commercial rooftops with space limitations leading to overall higher efficiency of the entire solar system.

With Solarwatt's TopCon Panel vision Glass-Glass series, we offer a 30 year product and performance warranty which guarantees 90% left in the panel at year 30 and come with all-risk Full Coverage insurance.

As the energy crisis continues and we seek less reliance on traditional fossil fuels in pursuit of cleaner renewable energy sources, it is more important to us than ever that we offer robust and reliable solar panels that deliver sustainably better performance for decades to come.

PES: Are efficiency and durability the biggest drivers? Are there others that are also shaping customer purchasing decisions?

PS: Solarwatt customers demand high-performance, high-quality products that come with the European quality stamp that offer them peace of mind. However, there are many other important factors that are also shaping buying decisions. As a European manufacturer we not only adhere to the highest standards when it comes to panel production and testing, but as company, we act according to the maximum sustainability standards as a driver of the future viability of our planet, from how we treat our employees to following European laws and regulatory compliance and transparency throughout the entire supply chain.

With a 30-year lifespan the sustainability of a Solarwatt panel means we deliver the best value per kWh. Our customers tell us

they value purchasing from a reliable European company with a robust ownership structure who have an exemplary tenure in the industry. Our deep roots and network throughout Europe ensure a local point of contact in every market with accessible customer service contributing to a closer customer journey. Solarwatt are more than a panel manufacturer and our customers invest in a partnership with us founded on trust, quality, and commitment to excellence.

PES: Have you set out a roadmap ahead? What do the next 30 years look like, for the industry and for your business?

PS: The outlook for Solarwatt as a company is really positive and for us the roadmap ahead is clear. As the longest standing European solar manufacturer our hope is to continue to reinforce our own European manufacturing base and supply chain. We move forward with our purpose driven strategy of differentiation in our product portfolio, diversification in production and sales channels and are energised by what comes next.

This year alone, we aim to open several new locations, process more customer orders than ever before, launch strategic campaigns to raise our brand awareness and introduce significant innovations to the market in several product segments. Innovation is in our DNA, and we will continue to adapt to ensure product continuity, whilst leading the charge with new solutions in cell technologies, battery storage and energy management long into the future.

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