

CASE STUDY



solar**edge**

COMPANY

SolarEdge Technologies

INDUSTRY

Smart Energy

COUNTRY

Israel

EMPLOYEES

3,900+

WEBSITE

solaredge.com/us

CHALLENGES

- Accelerated pace of innovation required manufacturing agility to produce 50 different products per quarter
- Unrelenting focus on quality needed for power electronics products with 25-year product warranties
- Massive production volumes necessitate automation and global supply chain intelligence

SOLUTION

- Jabil's energy industry expertise, manufacturing excellence, end-to-end quality tracing and operational efficiency proved essential to high-volume production
- Dual-site strategy, vertical testing facility, along with Value Analysis and Value Engineering (VAE) created optimum manufacturing environment
- Jabil's digital supply chain intelligence minimized supply constraints, raw-material shortages and logistical challenges during pandemic to maintain production levels

BENEFITS

- Industry-leading automation cuts manufacturing time by nearly 50%, enabling production of tens of thousands of products each week
- Seamless collaboration drives constant flow of new product introductions and up to 300 engineering changes each month
- Embedded NPI, engineering and R&D teams ensure superior product reliability and quality of more than 2.5 million inverters and over 60 million power optimizers

SolarEdge Combats Climate Crisis with Smart Energy Technology

Jabil's seamless teamwork, manufacturing excellence, unrelenting quality focus and supply chain intelligence fuel market leadership for green-energy innovator

For decades, solar energy has been heralded for its undisputed potential to save the planet by being one of the fastest growing and most economical sources of new electricity. Now, solar energy is poised to help countries around the world achieve carbon neutrality or “net zero” emissions as pledged during the COP 26 Climate Change Conference in Glasgow.

On the heels of this historic climate conference, world leaders are seeking solutions for rapid scaling of energy efficiency measures to decarbonize energy systems. According to the International Energy Agency (IEA), a step-change in energy efficiency will provide the fighting chance our planet needs to stave off the worst effects of climate change.

Since 2006, SolarEdge has doubled down on its efforts to change the way power is harvested and managed in photovoltaic (PV) systems. The company's intelligent inverter and battery solutions optimize power generation while lowering the cost of energy produced by PV systems. “The core of our solution is a small box that is mounted on every solar panel, called the power optimizer,” explains Zvi Lando, Chief Executive Officer of SolarEdge Technologies. “We produce tens of millions of products every year. High-volume, high-quality, low-cost manufacturing is our lifeline to meeting aggressive growth demands and unrelenting product quality expectations.”

Advancing Smart Energy Technology

SolarEdge's ascent from savvy tech startup to global leader in smart energy technology was a straight path paved with engineering excellence, endless innovation and a time-tested manufacturing collaboration with Jabil. Less than 10 years after its founding, SolarEdge fueled its fast-growth trajectory by going public on NASDAQ and scaling product development to install more than 2.5 million inverters and more than 60 million power optimizers in over 130 countries across five continents.

Company revenue has grown significantly over the past decade, sometimes exceeding 50% year-over-year. “Changing the world and disrupting an entire market like we did is hard work,” explains Uri Bechor, Chief Operating Officer at SolarEdge. “We constantly push ourselves and our partners to deliver on our customer promises, no matter what.”

The result of the company's unwavering customer commitment has propelled SolarEdge to market leadership across its primary markets, comprising residential, commercial, industry and utility sectors. The result is the launch of more than 50 different products for residential and commercial customers per quarter, as well as continuous product modifications to meet emerging regulations around the world. “We release many new products every month, and modify them frequently for quality or cost purposes.” adds Lando. “That is not an easy challenge for any manufacturer, but Jabil has delivered on our expectations during the ups and downs, and most challenging times. Because we are similar in attitude and company culture, we focus on execution and accomplish what we set out to do.”

This pragmatic approach has proven essential when faced with building highly complex power electronics products while also supporting up to 300 engineering change notices each month. “There's a continuous engineering effort on both sides to put out the best performing, lowest priced products,” says Bill Mitchell, Senior Business Unit Director, Power & Storage Sector, Jabil Industrial. “The value that Jabil brings to SolarEdge is excellence in execution of manufacturing and being hyper-focused on quality and cost.”



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ZVI LANDO

Chief Executive Officer, SolarEdge Technologies





Keeping Pace with Accelerated Innovation

When Jabil first engaged with SolarEdge, the company still qualified as a startup. In short order, however, Solar Edge's meteoric rise and quickening pace of innovation created urgent requirements for product development, prototyping and manufacturing. To accommodate such dramatic business growth, Jabil assembled a team of experts to provide the highest levels of manufacturing excellence and efficiency in the face of skyrocketing production volumes.

Overall, SolarEdge's products are more complex to build in the quantities being produced—some of which are made in numbers more commonly associated with mass production of cellphones. "The high reliability we demand requires a different level of attention," adds Bechor. "Jabil has proven to be a great partner to fulfill our quantity, quality, delivery and pricing at the right time. It's been a journey that Jabil has invested in too."

As part of this teamwork, Jabil established best practices spearheaded at one of its largest production sites in China. Working side by side, SolarEdge and Jabil ensure superior product reliability and quality through each high-volume production step. "Early on, our collaboration and focus on design for manufacturing allowed us to get to know each other, providing solid ground to scale in an agile way," recalls Scott Gebicke, President, Industrial Division, Jabil. "On top of everything we do together, design for manufacturing, scalability and agility have been by far the most distinguishing features of the relationship."

To that end, Jabil created a dual-site strategy as volumes escalated by ramping a second manufacturing facility in Vietnam that mirrored the China site. Leadership from China helped streamline the process while handling complete product traceability from start to finish. "The China factory has a very strong infrastructure," adds Lando. "Vietnam also is moving up the learning curve nicely and is pretty close to the performance of the China factory from a productivity and quality point of view."

Respective heads of quality from each organization track and trace every production step to better understand any possible defects or potential future defects, which is critical when building products with 25-year warranties. Jabil also developed a multi-level vertical testing facility to reduce the floor space or resources needed during product curing and testing. Scaling production also means adding available lines, equipment and people to address surges in demand, as needed.



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URI BECHOR
Chief Operating Officer, SolarEdge Technologies



Seamless Team Extension Ensures Success

Close cultural alignment is credited for driving operational success. “Everyone is trying to do the right things for the right reasons,” says Lando. “We understand each other and see eye-to-eye to get issues resolved. I have found that attitude time after time in working with Jabil executives, which is critical and the key to a good relationship.”

Several hundred SolarEdge employees are embedded at Jabil facilities, including the company’s Vice President of Engineering and members of its New Product Introduction (NPI) team. Working together under one roof, SolarEdge, with Jabil’s seamless assistance, can respond to customer and market demands with speed and agility.



Jabil understands our language and culture. If we need a specific component that is shorting, they will do whatever it takes to get it fast, and pass it over to R&D for testing. They are integral to our process to launch products on time and at the right quality levels.



URI BECHOR
Chief Operating Officer, SolarEdge Technologies



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President, Industrial Division, Jabil

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As part of this collaboration, SolarEdge takes advantage of Jabil’s Value Analysis and Value Engineering (VAVE) approach to expedite the transition of proven designs into fully tested and qualified products. “We’ve done tremendous things together to create an optimum manufacturing environment,” says Gebicke. “We deployed an automated solution that enables Jabil to operate in the leanest and most efficient way possible while decreasing manufacturing time by almost 50%. This makes a big difference when you’re making tens of thousands of products each week, if not millions in a month.”



Minimizing Supply Chain & COVID-19 Disruptions

As a testament to the close working relationship between the two organizations, Jabil provides global supply chain support in every region served by SolarEdge. A sophisticated supply chain is needed to address constant change while accommodating large-volume manufacturing. “You need to be meticulous in assessing what type of material and components will be needed and by when,” says Lando. “Our ability to work together, understand what’s needed and communicate has been accomplished with a very cooperative spirit over the years.”

This stellar support was reinforced during major supply chain disruptions resulting from the COVID-19 pandemic, as both companies moved quickly to minimize any impact on production. The Jabil supply chain team waved a lot of red flags as soon as they began encountering supply constraints. With the aid of Jabil’s digital supply chain intelligence, the global team forecasted long-lead items, submitted pre-orders and created buffers with different suppliers to secure component supplies. As component constraints evolved into raw-material shortages, and then logistical challenges, the team continuously sought proactive solutions, including qualifying new components rapidly, modifying product designs as well as moving production into different locations when faced with factory closures. “The actions we took with Jabil’s supply chain leaders at both site and corporate levels helped us navigate this rough sea to reach a much better place today,” adds Bechor.

When teams couldn’t meet face-to-face, Jabil deployed Augmented Reality/Virtual Reality (AR/VR) and live software testing to maintain open lines of communication and keep projects on track. Additionally, when SolarEdge rapidly moved to acquire battery technology, Jabil adjusted its supply chain and manufacturing lines to build inverters that delivered solar power as well as charge batteries. “As SolarEdge has evolved their product roadmap, we have kept stride with each major technology step to help them introduce new products and new technologies every month, or every few months,” Gebicke notes.





Leading the Green Energy Revolution

In transforming from a solar power startup to green energy juggernaut, SolarEdge has expanded its offerings, which now encompass residential, commercial and large-scale PV, energy storage and backup, electric vehicle charging, home energy management, grid services and virtual power plants, as well as batteries and uninterrupted power supply solutions.

As SolarEdge adds more intelligence into its products with modules that enable homeowners to better manage and monitor solar energy production, consumption and backup storage in real time, Jabil is working with SolarEdge to make these products a reality and bring them to market, quickly, efficiently and economically.

“We are sure that Jabil will be with us through our journey to the next era,” concludes Bechor. “They have been with us hand-in-hand for more than 10 years, and they will be with us for the next 10 years, which is very important to us. That’s kind of the magic, the secret sauce that works between our two companies.”

Jabil (NYSE: JBL) is a manufacturing solutions provider with over 260,000 employees across 100 locations in 30 countries. The world’s leading brands rely on Jabil’s unmatched breadth and depth of end-market experience, technical and design capabilities, manufacturing knowhow, supply chain insights and global product management expertise. Driven by a common purpose, Jabil and its people are committed to making a positive impact on their local community and the environment.

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