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A Ray OF Sunshine

Solar energy is a clean, safe, and lucrative investment in the future, according to the German-based company aleo solar GmbH, which produces and markets premium modules.

Images courtesy of aleo solar GmbH

Founded in 2001 as Solar-Manufaktur Deutschland before it changed its name four years later, aleo solar is a well-known brand in the European marketplace. The business produces and markets monocrystalline premium solar modules and is a systems provider to the global photovoltaic market. Photovoltaics is a method of creating electrical power by converting sunlight into direct-current electricity using solar cells.

CEO Günter Schulze joined the company in May 2012 and has extensive experience in production and process development. He studied mechanical engineering in

Wolfenbüttel, Germany, and immediately after graduating secured a position with the multinational engineering and electronics company Bosch.

Günter was initially an engineer in production process development at the Bosch Hildesheim plant before becoming a team leader in Salzgitter. Next he was appointed to department manager for technical functions in wiper-system production in Eisenach and later worked in a management capacity as the business director for Poland, Hungary, and China.

Günter's first role at aleo solar was as the plant manager for the facility in Prenzlau, Germany. For

11 months he was responsible for overseeing the photovoltaic operations, improving the efficiency of processes, aligning the product profile to market needs, and guiding the successful development of new products. He was then appointed as chief technical officer and looked after all production, engineering, and technical functions at aleo solar before coming into his current role as CEO.

In 2014, the business made an alliance with solar-cell producers Sunrise Global Solar Energy that enabled it to become a highly capable, integrated solar enterprise. Sunrise high-efficiency solar cells generate significantly >

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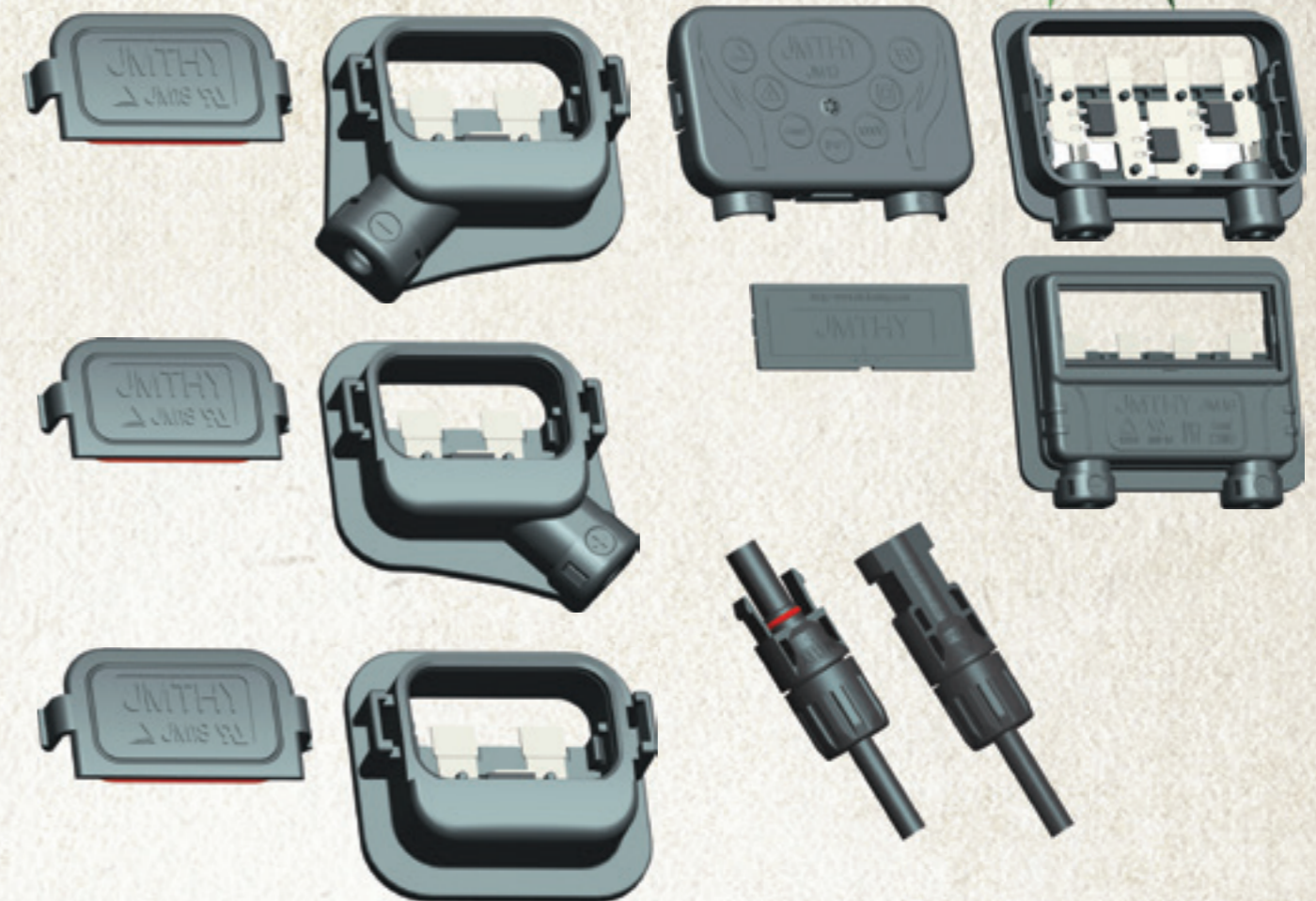
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more power than conventional solar technologies. Its main production plant is located in Yilan, Taiwan, with a capacity of 350 megawatts.

Günter says professional collaboration and good relationships with key suppliers are a vital part of any successful business. “It is only possible to do sustainable innovation if you have partners who are every part of your product. This is important. You need to find companies who you are able to work really well with.

“Let me tell you an example. We make a specification and the supplier has to deliver according to that specification. Yes, he will do it, but he does not have any guidance to be able to make the best possible product. If you want to make the best product, you have to work closely with your supplier to get that specification which you have invested in right. You can then adjust this to best suit what you really need.”

aleo solar is defined by a number of key values which Günter says are an integral part of the company’s operations. “The main one is responsibility—the

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responsibility in all we are doing, the responsibility for the environment, for the people, and for what we are doing. And then there is quality. Quality is in a wider sense, not only with the quality of the product, but in all we are doing.

“We try to avoid mistakes and make processes work without mistakes. Innovation is also important when working in the solar industry. It is still a relatively new industry of only 10 or 12 years. To take part in the growth of the future means that we have to be innovative in all that we do, not just in product, but also in the services we are providing.”

The business prides itself on developing top-quality products which are extensively tested. A comprehensive management system safeguards this, making sure that every single solar module meets aleo solar’s demanding standards. Thanks to the first-class workmanship and high-grade components, the modules achieve great yields over decades of use. The components—modules, inverters, and mounting systems—are perfectly configured and can withstand all weather conditions.

At aleo solar GmbH, quality assurance starts long before the actual production process. The business procures its materials exclusively from certified suppliers and thus ensures the greatest possible quality of all the components to be processed—from the cell and solar glass to the films and frame materials.

Its qualified employees inspect the solar cells for their quality and potential defects. Any cells which do not meet the high standards are identified using a specialised testing device that uses a high-resolution electroluminescence camera, which recognises even the finest of micro-cracks, while an infra-red camera makes it possible to see leakage currents, which could lead to so-called hot spots. The device also provides important data on the cells’ output, appearance, and functionality in just one and a half seconds, thus ensuring consistent high quality in all modules. In addition, aleo solar has installed optical and electronic test stations along the entire production line to inspect every step of production.

During manufacturing, state-of-the-art technologies are used

including string machines, lay-up systems, laminators, and light simulators. These are constantly kept up to date in a close working partnership with suppliers. Since its first year of production, aleo solar has been certified in accordance with DIN EN ISO 9001 for quality management and DIN EN ISO 14001 for environmental management. All modules are VDE-inspected, fulfil protection class II and are certified according to international standards. They meet the essential requirements for performance, load capacity, and durability. aleo continuously runs external verifications at different test conditions and uses only material combination modules that are proven to be PID-free. aleo solar stays competitive in its sector by strongly believing in its processes and finished product. “Our products are long term,” says Günter.

“We have extensively tested our modules and analysed hundreds of possible material combinations to be matched with the cells we use. That’s why we can now commit to a best-in-class linear guarantee for the performance of our modules.” This linear power guarantee is applicable to every module that is sold and is a significant point of difference for the business. aleo solar is confident its products will deliver at least 98 per cent of its original output in the first two years. The company has a 10-year product guarantee—this is eight years longer than the legal requirement for solar panels—and reimburses replacement costs for any guarantee cases.

Solar energy and photovoltaic plants have many benefits for the consumer and the environment. The sun provides free and inexhaustible potential. Arithmetically speaking, less than a minute of the sun’s power is enough to cover the worldwide need for energy. It is clean and sustainable and contributes to climate protection. A single solar module from aleo solar can prevent about three tons of CO2 from being released in 25 years.



That is roughly the equivalent to what a small car produces in 15,000 kilometres. Solar is good for the household budget too. After initial installation and set-up fees, users can enjoy reduced electricity bills.

aleo solar has a staff of 200 people who are highly trained. “We have continuous training programs for our people,” Günter says. “Everyone in the company has a kind of connection to the product and they get where we are going and they understand our impact that we have on our environment.”

When aleo solar modules reach the end of their life cycle, which is upwards of 25 years, the components are recycled. The glass, aluminium, and semiconductor materials are all responsibly handled. aleo solar is a member of the PV Cycle Association, which means it has voluntarily committed to financing the entire recycling process. All of the necessary steps are provided for, from collecting the modules at regionally distributed collection points right through to transporting them and then the actual re-use.

While Günter has embraced his role with aleo solar over the past couple of years, he says it hasn’t come without challenges. “At the end of 2012, the prices in photovoltaics were dropping strongly for energy systems. We basically had to change the company, the production, and the engineering. It came on the back of a time where the customer bought everything it could get. We

had to have another look at reducing the cost, and the way the company was profiting. That was really challenging.”

Solar energy is still relatively young, having existed for just over a decade. Günter says it will continue to be a viable power source in the future. “Solar has the greatest possibility to be used in existing regions but we are also looking to a whole new market—the African community, Indonesia, the middle of America. This is where we start practically from the beginning and are looking for strong partners that are experts in the selling and installation of PV.

“The world is so big and everybody is crying for energy. What that means for the solar industry is that we are still at the beginning because it will eventually be the most-used energy system in the future. It is easy to install a panel, it makes no noise, nothing is moving, it just stands there and if it gets light it makes energy. There is still much more discussion going on about it and what we should connect together to provide other independent solutions in the global grid.

“Solar is a mega trend which we are driving and we want to be the one which is, at least, leading in technology over the other companies. If we have the technology we will have efficient turnover to have an energy company for the future. That is the way we want to go. We will always be a part of the solar industry and we will always be trying to stay in the front position.”

