



About Oerlikon Solar

Oerlikon Solar offers field proven equipment and end-to-end manufacturing lines for the mass production of thin film silicon solar modules. Engineered to reduce device cost and maximize productivity, its end-to-end solutions are fully automated, high yield, high uptime, and low maintenance. The production lines are complete systems, yet modular and upgradeable in both throughput and process technology. As a global leader in thin film PV technology, the company provides its customers with extensive experience in both amorphous and high-efficiency Micromorph® tandem technology. Oerlikon Solar is ranked "global number one solar turnkey line supplier" by VLSI and has been named winner of the 2009 CELL AWARD for the "best technical product for thin film module manufacturing". Oerlikon Solar is headquartered in Switzerland, has over 750 employees in 13 locations worldwide and maintains sales and service centres in the USA, Europe and China, Taiwan, Korea, Singapore and Japan.

Oerlikon Solar's core technology

As the world's first manufacturer of automated production lines for thin film solar modules, Oerlikon Solar has extensive experience in integrating production technologies and processes to create end-to-end solar factories. The fully automated FAB 1200 is the latest generation in solar module manufacturing lines.

Oerlikon Solar's FAB 1200 applied proprietary technologies for the mass production of thin film silicon solar modules include three key components:

1. TCO 1200 for depositing transparent conductive oxide (TCO) layers in a low pressure chemical vapor deposition (LPCVD) process for front and back contacts with haze on demand
2. KAI 1200 for plasma enhanced chemical vapor deposition (PECVD) to build the amorphous and microcrystalline photosensitive layers and
3. LSS 1200 for laser patterning to produce serially connected cells.



Jeannine Sargent became Oerlikon Solar's first chief executive officer in September 2007. She has more than 20 years of international experience in management and executive positions in the integrated circuit, capital equipment, software, communications, and nano-biotech markets. Ms. Sargent is an experienced leader of both public and private companies. She has a proven track record of building and sustaining productive and motivated teams, identifying emerging markets, and executing successful business strategies. Prior to joining Oerlikon Solar in 2007, Ms. Sargent led the Metrology & Instrumentation business for Veeco Instruments which delivers measurement solutions to industry leaders in the nanotechnology, nanobiology, semiconductor, data storage and scientific/research markets.

What does Oerlikon Solar do?

Oerlikon Solar is the world's leading manufacturer of proven end-to-end thin film silicon PV solutions. The company provides solar panel manufacturers a quick path from concept to revenue with its "end-to-end" solutions. Oerlikon Solar thin film PV equipment and factories provide customers with the lowest cost of ownership, fastest time to deployment, highest reliability and superior technology advantages with full service end-to-end solutions that are predictable and reliable. Furthermore, Oerlikon provides customers with the capability to scale up rapidly to meet fast-growing demand for solar PV, demand that will accelerate as the cost of PV energy approaches grid parity. Oerlikon Solar's progress towards reaching grid parity by end of 2010 is driving market expansion for its customers' end products. Oerlikon customers have the dual advantage of the industry's most advanced thin film PV technology that is also the most tested, proven and reliable. Because of this, customers have the fastest time to market with Oerlikon Solar.



Oerlikon Solar manufactures stand alone equipment and end-to-end manufacturing lines include full ramp up support and maintenance support. Oerlikon Solar has developed and proven advanced thin film processes including amorphiHIGH PERFORMANCE and Micromorph® technology for the mass production of thin film solar modules. These technological breakthroughs from Oerlikon Solar provide significant power and efficiency gains, which drive up efficiency and drive down cost moving solar closer to grid parity.

What makes Oerlikon Solar different from others in the solar energy business?

Like the semiconductor industry, the rapidly growing solar-energy industry is comprised of several key sectors that make up a well-developed supply chain: from materials makers to equipment suppliers to OEMs and device makers. Serving a rapidly growing global base of customers, Oerlikon Solar is a leading supplier of equipment and technology for large-scale production of solar modules.

By offering an end-to-end solution to multiple manufacturing partners, Oerlikon's business strategy allows large-scale energy producers and project managers to diversify their sourcing without sacrificing quality and consistency. Oerlikon Solar's business model ensures replicability and scalability across its growing customer base around the world so utilities can lock into a standard design. For large-scale projects Oerlikon Solar's flexible end-to-end business model also provides new business options for utilities or utility-scale developers who choose to vertically integrate into module manufacturing to deliver least cost solar energy.

Oerlikon Solar has the strongest track record in solar equipment and factories in terms of the speed with which customers ramp up and start production. It also has the most customers in production to date. The company has delivered on or before schedule and has met guaranteed performance levels for every project. Customers can go from move in to production in eight months or less with Oerlikon Solar so they can quickly ramp up and start selling products to meet the demand for thin film solar panels.

The company provides the industry's most complete line of equipment, technology and services enabling automated mass production of large-area, thin film silicon solar modules. Its high performance production lines for manufacturing cost-effective solar modules feature an innovative Micromorph® tandem technology, invented by Oerlikon Solar's Dr. Johannes Meier, that combines two different silicon materials — amorph and microcrystalline. This proprietary combination boosts energy conversion efficiency levels up to 50 percent higher than traditional amorphous single junction cells.

Oerlikon Solar is the world's leading supplier of proven, fully automated end-to-end solutions encompassing metrology and the entire production process — from glass cleaning to testing of the finished modules. This technology is backed by an industry-leading, full-service package for commissioning the equipment, integration of the company's proprietary process technology and assuring an efficient and timely production ramp-up. The environmentally friendly and highly effective Micromorph® tandem modules offer customers many advantages, including the potential to achieve efficiencies of 10 percent and more in the near future.