

From furniture to foil-laminate: firm branches out to embrace new PV business

German laminate company **Bürkle** is well-known in the laminates and pressing industry for its work in the wood, plastic card and circuit board industries. Now, it has gained a foothold in the **photovoltaic industry** and is determined to use the expertise it already has to be a **major-league player** among solar product manufacturers. In an interview for PES, Bürkle Managing Director **Hans-Joachim Bender** describes how the company diversified into PV and what its ambitions are for the sector.



Hans-Joachim
Bender
Managing
Director, Bürkle

PES: To start, could you please give us an overview of Bürkle as a company, its history and the type of work it does?

Hans-Joachim Bender: The headquarters of the plant manufacturer Robert Bürkle GmbH are in Freudenstadt / Baden-Württemberg. The company is represented in Germany by a branch in Mastholte / North Rhine-Westphalia as well as by a branch in Paderborn. There are also subsidiaries in the USA, in China, Taiwan and in Slovakia. The range of products for the derived timer product and furniture industry varies from presses and lacquering lines to

thermoforming plants and foil laminating plants. Bürkle manufactures multi-daylight presses for the plastic card and circuit board industry. The latest field of activity is system solutions for the lamination of photovoltaic modules. Bürkle has more than 700 staff members worldwide – approximately 465 staff members in Freudenstadt and in the branch in Mastholte. Last year the turnover of both production companies was 105 million Euros. Approximately 85 per cent of the turnover comes from the lines based on the woodworking industry, and around 15 per cent comes from the electronic industry. A major customer is

Swedwood, the furniture manufacturer for Ikea.

The first photovoltaic customer was the Canadian company Day4Energy. By the end of 2008, Bürkle will supply photovoltaic lines amounting to 2.5 million Euros to this customer and around 25 million Euros to other customers.

PES: Bürkle creates laminating systems and coating lines for the manufacture of solar elements. Can you describe how the company diversified into this area?

H-J B: Bürkle specialises in everything that is laminated or pressed. And so this long-term competence from the wood, electronic and plastic card sector was transferred to the lines with which solar companies manufacture photovoltaic modules. This new mainstay enables the company to act more resolutely in the basic markets of wood and electronics. The overhead costs are distributed between three large sectors in the future: wood, electronics and now photovoltaics. Moreover, the product cycles are shortened by the turnover gain coming from the laminators. A crucial factor for entering the solar market was the forecast of a Swiss bank, the so-called Sarasin study. This forecasted a growing demand for photovoltaic modules by 2003. The requirement for corresponding lines calculated by Bürkle was three to four lines per year. This demand was too low for investing fundamentally. Two years later the requirement rose drastically. This was the starting point for entering the solar business for Bürkle. Bürkle has been supplying liquid coating systems to module manufacturers for many years now.

PES: How important is the photovoltaic industry to Bürkle's overall business, and what new innovations has Bürkle taken on board to incorporate photovoltaics into its core activities?

H-J B: Photovoltaics is the third largest mainstay of the company. In 2008, Bürkle will create a total turnover of 124 million Euros. This is a gain of more than a quarter than in 2007. This rise comes almost exclusively from the photovoltaic sector. Today, the company has an export ratio of 85 per cent and thus generally focuses on the world market. The photovoltaic sector of Bürkle initially targets the European market – but also on Asia and then on the rest of the world. The latest innovation is a multi-opening laminator. Moreover, Bürkle supplies the entire back end for the manufacture of thin film modules and also develops new core technologies.

PES: Could you tell us more about the Ypsator, what it does, how it was developed, what it has brought to Bürkle?

H-J B: The Ypsator is used for laminating photovoltaic modules. As Bürkle wishes to be first in the minds of the solar module manufacturers in the booming solar energy market, they use a strategy

that is otherwise only known from the automobile industry: the Freudenstadt company emotionalises the high-tech production line. In order to advance this strategy, the Managing Director, Hans-Joachim Bender, recruited the industrial designer Jürgen Schmid. He designed the covering of the Ypsator. The covering not only shines in each production hall due to its yellow signal colour, but it also shines thanks to its process. The eight multi-opening lines of Bürkle that will be delivered until the end of the year are the first worldwide that produce photovoltaic modules on several openings, whereas only 50 per cent of the cycle time of the normal processes is required. On a surface of, for example, 3.5 square meters per level and 5 openings, customers of the solar sector can produce ten photovoltaic modules per batch at the same time. The annual total capacity of the €2m laminating lines (depending on their equipment) is around 500,000 modules. This corresponds to an annual power capacity of 40 megawatts.

The advantages of the Ypsator to conventional single-opening laminators are clearly in process guiding and process reproducibility. Its structure, and the homogeneous temperature distribution that can be reached through the heating of the heating platens via thermal oil, means that process times are essentially reduced.

The technology is also new: the lamination process is divided in order to configure the processes more flexibly, to increase the same and to reduce the cycle time. In a first step, the modules are prelaminated. This means that humidity and air pockets are removed from the sandwich in the vacuum and that a vacuum-tight compound is created. Then the process is interrupted and in a second step, the lamination is finished in a subsequent press. The third step is the "cooling". The Ypsator cools down the solar module from 150°C to hand-hot temperatures.

In order to push the marketing, Bender has also recruited the name developer Manfred Gotta - the father of the made-up words Twingo and Cayenne, and the term Ypsator sets Bürkle on first place within the lines for producing solar modules in the solar sector.

PES: Bürkle recently held a 'Lamination Day'. Could you tell us more about that?

H-J B: Seventy engineers from leading companies including Ersol, Oerlikon, Schott-Solar and many more, came to Freudenstadt in order to test the first Ypsator live. And as the development of the foils is very important for the photovoltaic industry, the manufacturers Kuraray and DuPont gave an idea of their development: A representative of Kuraray said the company wishes to modify hygroscopic properties in order to give the foils a longer life, and similar information was also given by the head of European Activities from the research

laboratory of DuPont. The main focus is on the "good flow of the material in the lamination process".

PES: How are your efforts being directed into producing solar products with minimal impact on the environment?

H-J B: The Ypsator saves resources as it requires a smaller base area as the single-opening laminator.

PES: How do you view the rising price of oil in relation to the acquisition of raw materials, and what can Bürkle do as a company to minimise its effects?

H-J B: The rising oil price influences the whole economy and society. Being a plant manufacturer, Bürkle also requires power and heating capacities for the factory halls. These additional expenses are getting more and more important. We also must think of the freight costs. We deliver our machines and lines worldwide.

PES: How important is the issue of Corporate Social Responsibility to Bürkle?

H-J B: This is very important. Bürkle is aware of its social responsibility in its home region of Freudenstadt. Being a large employer, there are school twinings, an higher-than-average training rate of more than 10 per cent and different sponsorship activities for cultural events or sports. There are different agreements on working hours with the staff members, enabling them to engage themselves voluntarily, too. Bürkle wishes its staff members to identify themselves with the brand and the philosophy and also wants to be seen as an attractive employer. Bürkle finally needs staff members who are hungry for knowledge in the future.

PES: How does Bürkle see the PV industry developing over the next ten years, and where does it see its position in it?

H-J B: In the long run Bürkle orientates itself on the known forecasts for developments in the Photovoltaic industry. This has resulted in a strategy valid until the year 2012. During this time the turnover will be more than doubled. Investments of approximately 35 million Euros will be required. Bürkle's target is to become the world leader for lamination lines for the Photovoltaic industry. Moreover, the company will shortly be in the position to supply the entire back-end for thin film modules and it will develop new lines. The company will also handle the crystalline sector. Bürkle will turn into a player well-known in the photovoltaic industry worldwide within the next years. ▀

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