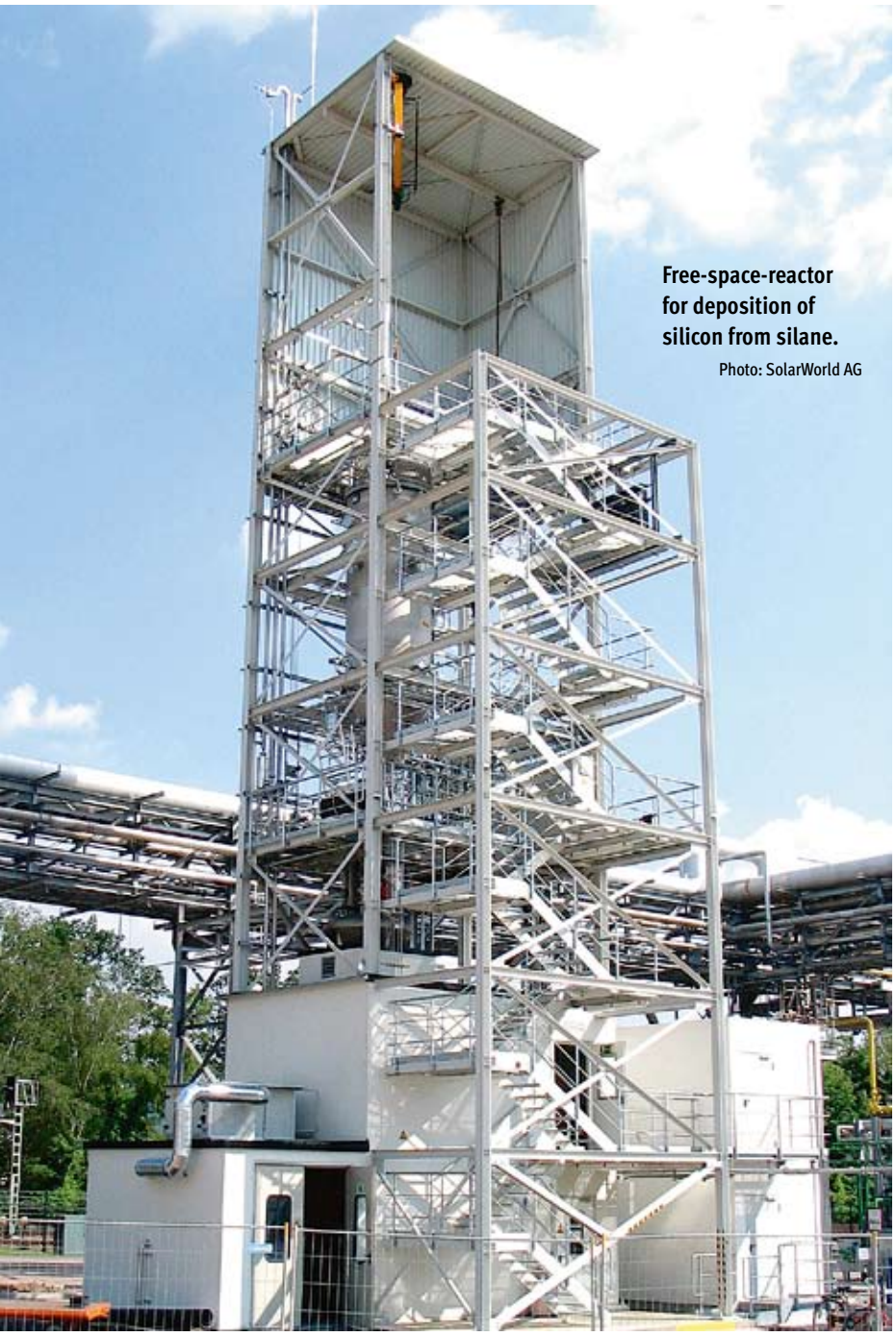
Silicon market facing future change

S&WE author Johannes Bernreuter has just published a study on the silicon market. It contains well-founded and comprehensive information on the subject and is a must-have publication for all decision-makers in the sector.



Free-space-reactor for deposition of silicon from silane.
Photo: SolarWorld AG

Was the 14th April 2008 the turning point in the history of solar silicon? Anyone asking that must have a story to tell, and this is how the author Johannes Bernreuter starts his work: the "Who's Who of Silicon Production". Bernreuter does indeed tell a story: the story of extreme scarcity, the tipping point of a market for the future and the subsequent consolidation within an entire sector. Bernreuter, who has made a name for himself as an expert writer in the field of photovoltaics in the last ten years, presented this ground-breaking report on the international silicon market in mid-April.

Abandoned plans

So, was the 14th April 2008 really a turning point? Yes and no, says Bernreuter. Yes, because the Chinese company Trina Solar decided on that day to abandon plans for its own factory with an annual capacity of 10,000 tons of solar silicon. "The decision was a clear sign that the silicon bottleneck which had been around since 2004 was about to disappear and that prices would fall sharply," remarks Bernreuter. He was obviously not the only one to see things this way; the list of companies which postponed or gave up their often inflated plans for their own silicon manufacturing during 2008 and 2009 is long.

On the other hand, the 14th April 2008 was not a turning point because many and especially Chinese companies didn't give a jot about the Trina Solar decision and merrily continued to expand their own silicon capacities – even after the spot market price of 550 US$/kg in the first quarter of 2008 had fallen to US$ 70 a good year later.

The consequences of this bit of "flying blind" will hit many silicon manufacturers by next year at the latest, forecasts the author: "The polysilicon industry must expect a large market adjustment in 2011." The consolidation seems quite unavoidable. According to the analysis, some 20 smaller manufacturers with an annual available capacity of 1,500 tons or fewer in 2009 will be the victims of this market adjustment.

Overcapacity will remain an issue

But back to the story: Bernreuter says the better dates to use to characterise the "turning point" are the 15th and 28th September 2008. The first date marks the collapse of the US investment bank Lehman Brothers and thus the transition from an American to a global financial crisis. The second date marks the end of the Spanish PV miracle. The PV world market lost two gigawatts of pipelined PV installation capacity at a

stroke, and we know the consequences this had especially – but not exclusively – on module prices.

Among the "big losers" of 2009 Bernreuter also counts those companies which have tried Upgraded Metallurgical Grade (UMG) silicon. Many have more or less halted their activities. However, "UMG isn't dead," concludes Bernreuter. The material deserves a second chance and anyway, Elkem Material have achieved good performance in their labs. But there are also winners in the crisis; Hemlock and Wacker have been able to secure uptake of polysilicon through long-term supply contracts, although they have adjusted their expansion plans to the changed market conditions just as other large manufacturers have done: i.e. reduced them.

In his study Bernreuter looked in detail at how the silicon market will develop in the next few years. On the delivery side he reckons with a supply of 250,000 tons in the year 2012 if the manufacturers run their production as they have announced. Bernreuter has also taken delays and market adjustments into account in this scenario. China will have increased its market share from 8 to 32 % by then. At the same time, the market share of the traditional manufacturers will have more than halved. Bernreuter estimates demand in the semiconductor and photovoltaic industries at just 138,000 tons. The overproduction will thus lead to a further reduction in prices.

In a table covering several pages Bernreuter lists all (!) production values, including capacities, of all the companies which have ever been involved with solar silicon. The table also includes estimates for the years 2010 to 2012. This reviewer knows of no other overview comparable to the one by Bernreuter.

The presentation of 96 silicon companies in the report is also probably unique, and contains a one-page profile of each, sorted according to world regions. These include not only a short potted history of each company, but also the most important figures and the outlook for the future. And Bernreuter does not hesitate to evaluate things: more than once he expresses his doubts about some of the plans announced.

The company profiles also come with 54 project descriptions. Here Bernreuter describes the approaches currently being undertaken by those companies that are trying to enter the PV silicon business from other sectors. The study can be an important aid also for those looking less at the markets and more at the technologies. Bernreuter comprehensively describes ten different methods of manufacturing solar silicon and discusses the advantages and disadvantages of using them.

Impartial and detailed

Conclusion: Johannes Bernreuter and his co-author Frank Haugwitz have made a clear mark here on what quality a PV study should have. The "Who's Who of Solar Silicon Production" rises above the usual publications in this sector through detailed research and attention to detail when describing the market. Bernreuter's journalistic approach leads to a refreshingly neutral impartiality towards his study subject. Bernreuter and Haugwitz deal with company figures, announcements and external forecasts in a critical and clear-headed manner – something which cannot be said of all PV studies. The easy-to-read text is accompanied by a number of tables and diagrams. In short: it is well worth the price of € 950 plus VAT.

Jörn Iken

Further information:
BERNREUTER RESEARCH
Johannes Bernreuter
Huttenstr. 10
97072 Würzburg, Germany
Tel. + 49/931/784 77 81
Fax + 49/931/784 77 82
johannes@bernreuter.com
www.bernreuter.com