

Ramp-up Delays to Stabilize Polysilicon Price

Bernreuter Research predicts short-term increase followed by downtrend

Würzburg (Germany), July 10, 2014 – Rising demand in China and the delayed ramp-up of new production capacities will drive up the polysilicon price in the third quarter, according to the latest analysis made by polysilicon market research firm Bernreuter Research. “We expect the spot price to climb up to US\$23/kg from the current \$21/kg before it will drop to a range of \$18 to \$20/kg by the end of 2014,” predicts Johannes Bernreuter, head of Bernreuter Research and author of the polysilicon market report *The 2014 Who’s Who of Solar Silicon Production*.

Originally, polysilicon projects with a total capacity of 66,000 metric tons (MT) were scheduled to come on stream in 2014 or even earlier. All of them have experienced delays:

- ▶ The new plant of **Hanwha Chemical** in South Korea started operation with an annual capacity of 10,000 MT in late 2013, but is facing difficulties in ramping up capacity.
- ▶ The first 6,200 MT phase of **Tokuyama Corporation’s** new facility in Malaysia, which is designed to produce electronic-grade polysilicon for the semiconductor industry, has encountered problems with equipment and consequently suspended trial operation. While the second 13,800 MT phase only needs to meet the less demanding specifications for solar grade, it remains to be seen whether it will start up production in the third quarter as announced.
- ▶ **SMP**, a joint venture of SunEdison with Samsung Fine Chemicals in South Korea, has postponed the start-up of its 10,000 MT plant, which uses fluidized bed reactor (FBR) technology, to the second half of 2014; the same happened to the first 10,000 MT phase of the 25,000 MT FBR plant of Chinese market leader **GCL-Poly Energy Holdings**. As both companies are introducing new technology generations for the FBR process, which is difficult to control anyway, further delays during ramp-up are likely.
- ▶ Although Chinese producer **Daqo New Energy** is planning to complete its expansion from 6,150 to 12,150 MT by the end of 2014, ramp-up will only begin in 2015.
- ▶ The 10,000 MT debottlenecking project of **OCI** in South Korea will come on line as late as the third quarter of 2015.

“We assume that only 10,000 to 15,000 MT of the new capacities will become effective by the end of 2014,” says Bernreuter. “Hence, oversupply will not be an issue this year, but return in 2015.”

Development of the polysilicon price will depend on demand from the photovoltaics (PV) industry. The bottom-up scenario of Bernreuter Research for new PV installations in 2014 currently stands at 47 GW (see table), assuming a strong hike in China in the second half of the year. While this would mean an increase of 22% over 38.5 GW in 2013, leading solar module suppliers project an average shipment growth of 30%, which would result in new installations of even 50 GW. In the lower case, the polysilicon spot price would drop to approx. \$18/kg by the end of the year whereas it would come closer to \$20/kg in the higher case. “Beginning in late 2014, prices will be on the downtrend again,” concludes Bernreuter.

More details on the polysilicon, solar and semiconductor markets are provided in *The 2014 Who's Who of Solar Silicon Production*. The 124-page report contains forecasts on supply, demand, prices and manufacturing costs of polysilicon through 2017 as well as the latest company and technology developments. For more information on the report, please go to:
<http://www.bernreuter.com/en/shop/polysilicon-market-reports/2014-edition/report-details.html>

Top Ten PV Markets in 2014

Country	GW
China	14
Japan	9.5
USA	7
United Kingdom	3
Germany	2.2
France	1.1
Canada	1.0
Italy	0.9
South Africa	0.8
India	0.7
Rest of World	6.8
Total	47

Bottom-up scenario from Bernreuter Research

Source: Bernreuter Research

About Bernreuter Research

Bernreuter Research was founded in 2008 by Johannes Bernreuter, one of the most reputable photovoltaic journalists in Germany, to publish global polysilicon market reports. As early as 2001, Bernreuter authored his first analysis of an upcoming polysilicon bottleneck and new production processes. Since the premiere edition in 2010, the *Who's Who of Solar Silicon Production* series has gained a reputation of providing the most comprehensive and accurate polysilicon reports on the market.

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