

Is Quasi-Mono In A Market Decline?

Written by Pierce Lee
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In the past, the crystalline silicon solar cells can be divided into two types based on the wafer used: multi-crystalline and mono-crystalline. Generally speaking, multi-crystalline wafer is cheaper to make but the cells have lower conversion efficiency. Mono-crystalline wafer is more expensive but the cells have higher conversion efficiency, hence carries a price premium. However, there was a third one, called quasi-mono (or mono-like) existed in the lab.



As a technology, quasi-mono has been there for a long time. But costs for mass production had always been a problem until 2011 when Renesola (SOL) announced the shipments of its Virtus quasi-mono wafers in June. It appeared to be a breakthrough: wafers have costs close to multi but carry higher conversion efficiency. Later a slew of other Chinese mainland companies jumped onto the wagon, from wafer makers to cell and module makers. Not wanting to be left behind, Taiwan wafer makers like GET and SAS also entered the game. Now almost all the major module makers have their own high efficiency quasi-mono modules.

Now a year passed since Renesola's Virtus announcement, the momentum of quasi-mono is waning and several companies have abandoned their quasi-mono development or production.

Initially, Renesola's Virtus wafers and modules appeared to be a success. In a July 2011 press release, Renesola said it shipped a total of 54.8 MW wafers and 20 MW modules. Due to the good demand, the company said it planned to convert all its multi wafer production lines into Virtus lines, totaling 1.8 GW by the end of 2011. At Renesola's Q4-2011 conference call, it said it had finished the conversion, with slightly different capacity number from the original plan. The Virtus capacity is 1.6 GW while the mono capacity is 400 MW. In the same conference call, Renesola did not disclose what the Q4 shipment number is for its Virtus line. Earlier there was a Digitimes (Taiwan) report saying the actual production is about 40 MW per month. Obviously, 40 MW/month is a much lower number than the annual capacity of 1.6 GW. When asked about Virtus in the conference call, Renesola CEO Xianshou Li acknowledged that the technology is not fully matured, suggesting there might be issues with its production.

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Fast forward to 2012-Q1, Renesola said it shipped 10 MW of modules out of 91 MW total, a percentage of 11%. Again, no number was given for the Virtus wafer shipment. The company said it targeted to increase the Virtual module shipment to 33% of total by year-end 2012.

Looking elsewhere, JA Solar (JASO) said it shipped 10 MW of quasi-mono modules (Maple) at 2011-Q1, a tiny number in its overall shipment. Industry insiders said JA might wind down its quasi-mono line further. News from GCL (HKG:3800) does not speak well for quasi-mono either: Only 10% of its over 1 GW wafer shipments in 2012-Q1 is quasi-mono despite half of its wafer capacity can produce quasi-mono. In March, Digitimes reported that Taiwan manufactures have shifted away from quasi-mono due to production issues.

So, if quasi-mono is a great technology, why the actual production is so low? Obviously, the demand is not there or up to the expectations. Then why demand is low? Although quasi-mono modules have textures which may not satisfy someone's aesthesis taste, but if the price/conversion efficiency combination shows it is of good value, then the textures should not be a big obstacle for the majority of customers. Since the goal of solar modules is to produce more electricity, quasi-mono modules with only slightly higher price should be more appealing than the mono modules which carry a substantial price premium. The answer is probably the price/conversion efficiency combination is not that a good value and customers think it is priced too high. Then the question would be why do not the manufacturers lower the price to spur the demand? I do not have the answer but according to someone at Jinko Solar (JKS), the yield of quasi-mono wafers is not as high as multi wafers – suggesting its cost may be higher than the common belief.

In the latest SNEC PV power expo at Shanghai, Renesola's booth still featured signs of its Virtus quasi-mono technology and the company said it wanted to see a wide acceptance. So although quasi-mono technology is experiencing some rough patch, it is far from dying. Maybe Renesola can improve the production process more and make it a "mature" technology in the future. We shall wait and see.