Solar PV Sector updates

Is margin squeeze to continue? reaching a low in Q2 for wafers

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to summarize…

- Report of high inventory according to European channels a short-term negative. Yet, demand may not be as weak as some expects
- Continuous talks of oversupply of cells and modules. Supply concerns less adverse for polysilicon and wafers
- European and Taiwanese cells producers suffered a lot compared to Chinese peers - shipment reduction of solar cells since Q1
- We expect sharp falling ASP is partially passed to wafer producers in Q2 and then poly producers in Q3
- Remain positive towards polysilicon and wafer producers; cautious towards cells and modules manufacturers
- Previous target price of HK$4.93 for Comtec Solar (0712 HK) and reference target price at HK$2.63 for Solargiga (0757 HK)

Investors' concerns on shipment triggered by Italy policy. The largest contributor in 2008, Spain, installed near 2,500MW solar plants in 2008. It fell to below 500MW in 2009 and 2010 combined and played almost no part in global solar demand. Beyond 2009, Germany, Italy, Czech Republic, Japan, US and China are major countries for solar PV as shown in Table 1. Italy delayed its announcement of new solar incentive scheme originally scheduled at end of Apr, which largely raised concerns about the strategy in Italy and its European peers. On 5 May, Italy's fourth Conto Energia was finally signed into law, which comes into effect next month. It was reported that tariff cut is up to cumulative 45% by end of 2012. Investors concern about a large cut would impact on the second largest PV market. Although it appears aggressive, the actual outcome is more positive than previously expected, in our view.

Table 1. Major PV markets 2010

MW	2010 installation (F)
Germany	7,740
Italy	3,740
Czech Republic	1,420
Japan	960
US	950
Major 5 total	14,810

Source: Solarbuzz 2010

FIT premium reduction in Italy not as aggressive as it appears. In Italy, 1,200MW cap set by third Conto Energia was fulfilled much earlier than expected, which reflected attractive return on solar farm partly on faster-than-expected fall in solar modules prices. For instance, in Italy, for a system between 200kW and 1MW, actual FIT for BIPV including €0.08/kWh electricity market price is high at €0.415/kWh or RMB3.85/kWh. We expect the new FIT should balance government burden and solar PV promotion. While it is reported there is up to 45% reduction, we do not interpret the degree of reduction that way. We do not compare original target set by third Conto Energia and new target by forth Conto Energia. Here, we calculate cumulative reduction from current value through gradual tariff premium cut each month in 2011 and further cut in 2012. Detail is as follow:

Table 2. FIT cut for PV plants on building by fourth Conto Energia (€0.08/kWh electricity market price included)

Installed capacity	Current	Jun 2011	Dec 2011	1H 2012	2H 2012	Cum. chg
From 1 to 3 kW	0.471	0.467	0.378	0.354	0.332	-29.5%
From 3 to 20kW	0.440	0.436	0.348	0.327	0.307	-30.2%
From 20 to 200kW	0.421	0.418	0.333	0.313	0.294	-30.2%
From 200kW to 1MW	**0.415**	**0.405**	**0.326**	**0.304**	**0.282**	**-32.1%**
From 1 to 5MW	0.407	0.394	0.292	0.262	0.244	-40.1%
Above 5MW	0.391	0.379	0.279	0.251	0.234	-40.2%

Source: Fourth Conto Energia

In the calculation, electric market price of €0.08/kWh is also factored in. For instance, for a system between 200kW and 1MW, actual FIT for BIPV including €0.08/kWh electricity market price at €0.415/kWh would be:

- cumulatively reduced by 2.4% to €0.405/kWh by Jun 2011
- cumulatively reduced by 21.4% to €0.326/kWh by Dec 2011
- cumulatively reduced by 32.1% to €0.282/kWh by 2H 2012

Although 21.4% reduction of year-end and 32.1% reduction by next year look aggressive, we note that the subsidy in Italy is currently high at €0.415/kWh or RMB3.85/kWh. After series of reduction, FIT in Italy would still between €0.234/kWh and €0.332/kWh by 2H 2012. We believe this level is enough to sustain a reasonable demand in Italy market. The cap for forth Conto Energia is set at 1,200MW for 2H 2011 and 1,490MW for 2012, which is in line with market expectation. We believe solar PV demand is not as weak as some expected.

Please refer to important disclosures at the end of this report

Structural change in solar value chain – oversupply of cells and modules; but not polysilicon and wafers. Besides concern on demand side, there are continuous talks of oversupply. Note that, however, oversupply is more on specific part within the value chain and more specific in particular regions, in our view. Table 3 shows comparative strength of different countries within crystalline silicon solar PV sector. Traditionally, EU and US provides equipments, produces polysilicon, buys wafers plus cells, manufactures modules and installs solar systems. Asian solar companies are more focused on ingot, wafer and cell production. In particular, Taiwan and China produces good amount of lower cost wafers, cells and modules. For instance, according to Taiwan's IEK's forecast, global capacity of solar cell has reached 55GW, which is far above forecast demand between 13GW and 20GW. We believe centre shift in cell and module manufacturing towards Asian is increasingly significant, squeezing overall margin and impact on EU, US and Taiwan peers is especially severe.

Table 3. Solar PV panel value chain - comparative strength of global players

	Equipment	Polysilicon	Ingot + wafer	Cell	Module	Sys. Integration
EU	xxx	xxx	x	xxx	xx	xxx
US	xxx	xxx	x	xx	xx	xx
China	**x**	**xx**	**xxx**	**xxx**	**xx**	**x**
Japan	xxx	x	x	xxx	xx	x
Korea	x	x	x	xx	xx	x
Taiwan	x		x	xxx	xx	

Source: SBI E2 Research

A quick comparison of Chinese, Taiwan and EU manufacturers in solar sector. Table 4 shows operational figures for Q1 2011 of 1) polysilicon and wafer producers in China; 2) Cell and module manufacturers in China, Taiwan and Germany. In line with our hypothesis, Q1 shipment by wafer producers was up QoQ and YoY. On the contrary, shipment by cells and modules producers fell substantially on quarter-over-quarter basis, especially for Q-Cells in Q1. While for profit margin, ranking was generally as follow: 1) Chinese wafer producers 2) Chinese cell and module producers 3) Taiwan cell and module producers 4) Q-Cells. There was report that E-Ton Solar in Taiwan cut one-third of its staff this month, which actually fits our observation.

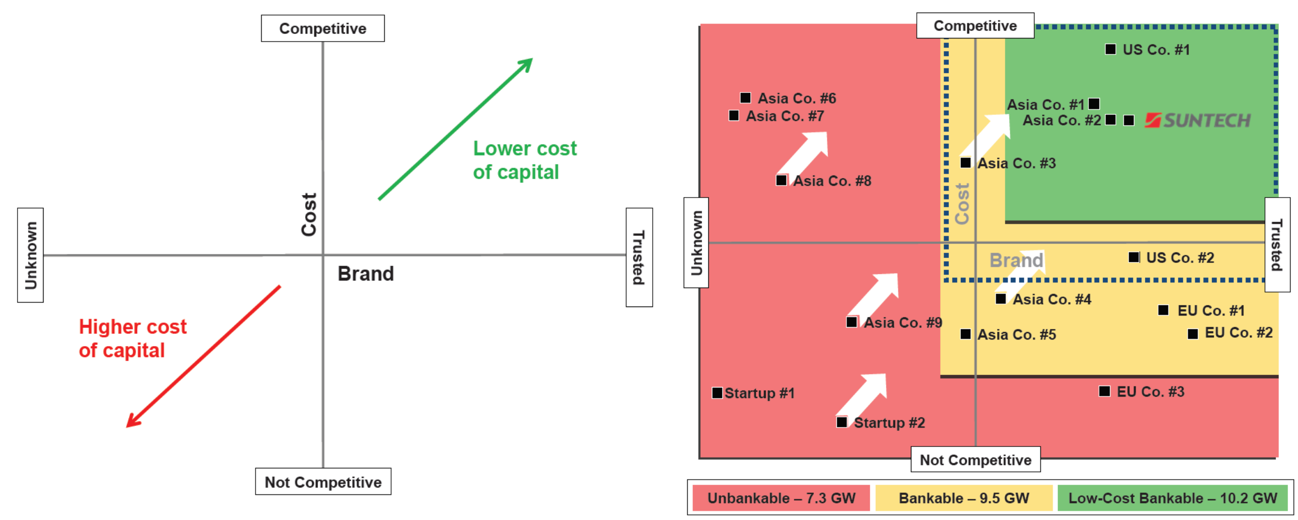
Diagram 1 by Suntech (STP US) also shows that EU cell manufacturers are comparably not price competitive.

Table 4. Operational figures Q1 2011 for the 2 camps

	Q1 shipment	QoQ	YoY	Q1 Gross M.	QoQ	YoY
Polysilicon and Wafer						
GCL-Poly (3800 HK) - China	959 MW	21.7%	n.a.	n.a.	n.a.	n.a.
Comtec Solar (0712 HK) - China	56 MW	28.4%	55.6%	30.5%	-13.7 p.p.	+13.3 p.p.
Solargiga (0757 HK) - China	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Cell and module						
Suntech (STP US) - China	480 MW	-3.1%	59.0%	19.0%	+2.8 p.p.	-0.4 p.p.
JA Solar (JASO US) - China	451 MW	-2.6%	65.8%	17.3%	-1.9 p.p.	-5.7 p.p.
Trina Solar (TSL US) - China	320 MW	-9.0%	66.4%	27.5%	-3.9 p.p.	-3.4 p.p.
Yingli Green (YGE US) - China	305 MW	-12.5%	53.0%	27.3%	+5.6 p.p.	+6.0 p.p.
Motech (6244 TT)	306 MW	-2.9%	98.7%	12.5%	-7.4 p.p.	-2.2 p.p.
Gintech (3514 TT)	226 MW	n.a.	n.a.	9.9%	n.a.	n.a.
Neo Solar (3576 TT)	n.a.	n.a.	n.a.	8.3%	-8.8 p.p.	-7.5 p.p.
E-Ton Solar (3452 TT)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Q-Cells (QCE EU)	108 MW	-56.8% (*1)	-27.5%	8.1% (*2)	-6.0 p.p.	-4.1 p.p.

Source: SBI E2 Research ** Note 1) the figure is an estimate; 2) 8.1% was the EBITDA margin instead of gross margin*

Diagram set 1. Solar module cost competitiveness and brand recognization matrix



Source: Internal Suntech estimates, Greentech Media Research

Difference in technical requirement within crystalline silicon value chain. As we have discussed before, polysilicon and wafer businesses have higher entry barrier, higher process differentiation, longer capacity lead time and higher CAPEX, which lead to oligopoly competitive structure. On the contrary, as the highly fragmented cell and module markets face structural change in supply, there is continuous pressure on prices and shipment. We remain cautious towards cells and modules manufacturers while maintaining our positive view on polysilicon, ingot, wafer manufacturers. For system integrators, we are turning more positive as module prices are falling fast and more companies has structured funds to fuel the construction progress.

To-watch list. While we are generally positive towards solar PV sector, we recommend investors to 1) monitor breaking news of European debt which may affect subsidy policy; 2) pay attention to government attitudes towards new energy especially nuclear, solar and wind energy, such as Germany government's gradual removal of nuclear energy; 3) understand longer-term market expectation of international oil price.

Our position towards various parts within the value chain. We believe current retreat in stock prices have largely contained the stronger-than-expected margin squeeze in Q2. While there is pressure on short-term profit especially in Q2, we recommend accumulation during consolidation. We maintain positive view towards Comtec Solar (0712 HK), Solargiga (0757 HK) and GCL-Poly (3800 HK) and turn positive towards Singyes (0750 HK). While thin film companies are still on the radar screen, we stay neutral towards Trony Solar (2468 HK). We would continue to look for thin film companies with good technical background.

Comtec Solar (0712 HK, BUY, HK$3.44) – gross margin may make a temporal low in Q2 2011

- According to our channel checks, wafer ASP of the company in Apr stayed at US$0.80 per W but fell sharply to US$0.70-0.75 per W, still around US$0.05 above the market.
- While polysilicon price is staying around US$60 per kg, Comtec expects a lower gross margin range for Q2. The larger-than-expected squeeze may pushed gross margin to a temporal low in Q2 and see rebound in Q3.
- Comtec's n-type wafer is apparently approved by SunPower (SPWRA US) as Comtec begins n-type wafer pilot order
- Texas Pacific Group (TPG) sets to invest RMB654.5m zero-coupon 5-year CB at HK$3.90 conversion price convertible to 200m common shares and 95.1m warrants at HK$4.10 per share subscription price.
- With margin squeeze in Q2 and potentially smaller-than-guidance full year shipment, pressure remains in 2011.
- Our target price was set at HK$4.93.

(Please refer to previous report *It takes patience to aim high* issued on 21 Apr for more details)

Solargiga (0757 HK, Not Rated, HK$2.01) – vertical integration model reduces impact of falling ASP

- Due to renewed requirement of Taiwan stock exchange in 2011, Solargiga is required to 1) release Q1 results in full set; or 2) do not release Q1 results. The company chooses not to report Q1 results.
- As a vertical integrated company, Solargiga is expected to be less affected by falling prices. According to our channel checks, long-term customers of Solargiga honors contracted shipment volume and realized prices were higher than spot prices in May.
- The management has no particular access to European inventory level, but they indicated that they are operating at full capacity, unlike some other manufacturers of low utilization.
- The management views current price cut somehow irrational. The company would maintain a reasonable margin. According to our understanding, polysilicon at US$60 per kg, wafer processing cost at US$0.25 per W, cell processing cost at US$0.20 per W and cell ASP at US$0.90 per W still yield a gross margin of 10% for cells manufacturing.
- We would look closely whether the company could deliver a net profit of more than RMB200m for 1H FY12/11A, which would be higher than full year of FY12/10A.
- Our reference target price was set at HK$2.63.

(Please refer to previous report *Strategic alliance taking shape* issued on 15 Apr for more details)

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