



## 中国：可再生能源

### 上游乌云笼罩，下游更加光明 - 上调兴业太阳能至买入（摘要）

#### 2017年供应过剩可能会持续；硅料面临最大风险

中国需求放缓和2016年第三季度的产能扩张带动组件、电池、硅片和硅料等光伏部件价格自7月份以来大幅下跌。此外，我们认为供应过剩局面直到2017年下半年或2018年才有可能主要通过供给端整合而开始得以缓解，这与2011-13年下行周期时中国和日本的刺激政策推动需求回升的情形有所不同。特别是，我们预计多晶硅产能将进一步增长，因此在2017年可能会比其它光伏部件面临更大的价格压力。

#### 未来十年太阳能将成为非常具有成本竞争优势的电力来源

虽然当前主要光伏部件的供需状况略有错配，但我们预计由此导致的价格下跌将鼓励企业通过技术创新来削减成本从而令太阳能的能源均化成本较其它电力来源更具竞争力。我们在本文中探索了光伏产业链上的主要成本削减方式，包括采用多晶硅流化床反应器技术、金刚线切割硅片、使用高效电池以及开发新组件材料以延长使用寿命等。我们预计太阳能的能源均化成本将维持过去十年的下行趋势，2016-2026年每年降幅将达到3%，太阳能将成为排名紧随水电、火电和核电的中国第四大最具成本优势的电力来源。我们的分析显示，光伏电站运营商实现8%-12%的内部股权收益率所需的2016年上网电价为人民币0.55-0.60元/千瓦时，远低于政府当前人民币0.80-0.98元/千瓦时的水平。

#### 看好EPC解决方案提供商；买入阳光电源；将兴业太阳能上调至买入

我们将研究范围内企业2016-2018年盈利预测调整了+44%至-79%，以主要反映更新后的部件价格假设。我们看好轻资产型EPC（工程、采购和建设）解决方案提供商，因为这些企业目前正受益于系统集成成本的下降而且我们预计从今年下半年开始将面临利润率扩张机会。我们将兴业太阳能的评级从中性上调至买入，因为近期公司后备订单强劲、利润率有望扩张、新疆和甘肃自营项目陆续处置后再融资风险大幅下降。我们维持对阳光电源的买入评级，因为公司可凭借其光伏逆变器和光伏EPC业务的雄厚实力经受住下行周期的考验。我们维持对隆基股份的卖出评级，因其产能大幅扩张而且售价持续承压。

\* 全文翻译随后提供

#### 评级和12个月目标价格

Companies	Ticker	Currency	Ratings		Target price			Current price	Potential +/-
			Old	New	Old	New	Change		
Sungrow	300274.SZ	RMB	Buy	Buy	15.22	15.30	1%	12.51	22%
Singyes	0750.HK	HKD	Neutral	Buy	3.09	5.00	62%	4.23	18%
Clou	002121.SZ	RMB	Neutral	Neutral	10.40	10.50	1%	10.10	4%
Xinyi Solar	0968.HK	HKD	Neutral	Neutral	3.40	3.40	1%	3.31	3%
Jinko	JKS	USD	Neutral	Neutral	20.00	14.90	-26%	14.82	1%
GCL-Poly	3800.HK	HKD	Neutral	Neutral	1.20	1.00	-17%	1.12	-11%
Trina	TSL	USD	Neutral	Neutral	9.00	8.40	-7%	10.30	-18%
Longi	601012.SS	RMB	Sell	Sell	11.00	10.50	-5%	14.11	-26%

Source: Datastream, Gao Hua Securities Research.  
\* Priced as of Sep 20, 2016

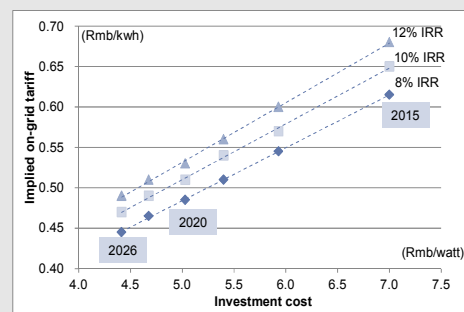
#### 估值概要

Ticker	Company	Currency	P/E (X)		P/B (X)		ROE (%)	
			2016E	2017E	2016E	2017E	2016E	2017E
Sungrow	300274.SZ	CNY	24.2	19.3	2.9	2.5	16.2%	13.9%
Singyes	0750.HK	HKD	7.1	7.5	0.9	0.8	13.0%	11.3%
Clou	002121.SZ	CNY	40.2	30.6	4.6	4.1	12.1%	14.2%
Xinyi Solar	0968.HK	HKD	12.3	12.0	3.3	2.9	29.0%	25.6%
Jinko	JKS	USD	4.2	9.7	0.6	0.6	15.4%	6.1%
GCL-Poly	3800.HK	HKD	7.4	11.2	0.8	0.7	12.5%	6.8%
Trina	TSL	USD	7.6	15.3	0.7	0.7	10.1%	4.8%
Longi	601012.SS	CNY	22.2	31.8	3.7	3.2	18.1%	10.7%
Average			15.7	17.2	2.2	1.9	15.8%	11.7%

资料来源：Datastream、高华证券研究

\* 股价截至2016年9月20日

我们预计，未来十年所需的太阳能上网电价将随着投资成本的下降而下行



资料来源：高华证券研究

## Table of Contents

Investment thesis in charts	3
Solar faces challenges in 2H16/2017, supply-side consolidation may drive supply/demand balance	4
Component price assumptions driving earning and TP changes, Singyes up to Buy	13
Singyes (0750.HK, Buy): Visible order backlog; margin expansion	19
Appendix: Summary financials	23
Disclosure Appendix	30

Prices in this report are as of the September 20, 2016 market close, unless otherwise stated.

### Exhibit 1: Solar sector valuation

Companies	Ticker	Rating	Price 20-Sep	Pricing Currency	Target Price	Market cap (US\$m)	P/E (X)		P/B (X)		EV/EBITDA (X)		ROE (%)		Net debt/ equity (%)		ROIC (%)	
							2016E	2017E	2016E	2017E	2016E	2017E	2016E	2017E	2016E	2017E		
<b>China offshore-listed</b>																		
Singyes Solar	0750.HK	Buy	4.23	HKD	5.00	459	7.1	7.5	0.6	0.6	6.4	5.6	13%	11%	65%	7%		
GCL-Poly	3800.HK	Neutral	1.12	HKD	1.00	2,708	7.4	11.2	0.8	0.7	6.5	7.8	13%	7%	140%	4%		
Jinko Solar	JKS	Neutral	14.82	USD	14.90	491	4.2	9.7	0.6	0.5	7.0	7.3	15%	6%	170%	11%		
Trina	TSL	Neutral	10.30	USD	8.40	950	7.8	15.3	0.7	0.7	7.2	8.3	10%	5%	180%	4%		
Yingli	YGE	NC	3.60	USD	N/A	65	N/A	N/A	N/A	N/A	11.3	17.2	7%	8%	N/A	N/A		
JA Solar	JASO	NC	5.68	USD	N/A	270	7.6	N/M	0.3	0.3	3.9	6.4	7%	N/A	N/A	N/A		
ReneSola	SOL	NC	0.95	USD	N/A	97	N/A	N/A	1.2	N/A	10.6	19.0	N/A	N/A	N/A	N/A		
DAQO	DQ	NC	19.93	USD	N/A	208	4.2	4.8	0.8	0.7	4.4	4.5	20%	15%	N/A	N/A		
GCL New Energy	0451.HK	NC	0.50	HKD	N/A	1,229	23.8	11.6	N/A	N/A	12.0	7.2	N/A	N/A	N/A	N/A		
United PV	0886.HK	NC	0.73	HKD	N/A	455	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Shunfeng Int'l Clean Energy	1165.HK	NC	1.00	HKD	N/A	556	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Xinyi Solar	0968.HK	Neutral	3.31	HKD	3.40	2,836	12.3	12.0	3.3	2.9	11.2	9.3	29%	26%	63%	13%		
<b>Offshore-listed average</b>							<b>9.3</b>	<b>10.3</b>	<b>1.0</b>	<b>0.9</b>	<b>8.0</b>	<b>9.3</b>	<b>14%</b>	<b>11%</b>	<b>124%</b>	<b>8%</b>		
<b>China onshore-listed</b>																		
Longi	601012.SS	Sell	14.11	CNY	10.50	3,557	22.2	31.8	3.7	3.2	14	16	18%	11%	27%	13%		
Zhonghuan*	002129.SZ	NC	8.29	CNY	N/A	3,370	47.6	30.3	2.1	1.9	20.7	15.3	4%	7%	N/A	N/A		
Akcome	002610.SZ	NC	16.93	CNY	N/A	2,850	52.8	40.7	3.6	3.3	20.1	16.7	10%	10%	N/A	N/A		
Sungrow	300274.SZ	Buy	12.51	CNY	15.30	2,807	24.2	19.3	2.9	2.5	15.5	12.6	16%	14%	-51%	28%		
Clou	002121.SZ	Neutral	10.10	CNY	10.50	1,805	40.2	30.6	4.6	4.1	25.7	19.0	12%	14%	154%	6%		
Hangtian (SAAE)	600151.SS	NC	10.93	CNY	N/A	2,350	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Risen	300118.SZ	NC	16.42	CNY	N/A	1,661	17.2	14.5	3.3	2.8	11.7	9.3	18%	18%	N/A	N/A		
Jing Gong	002006.SZ	NC	12.61	CNY	N/A	861	39.2	23.5	3.5	3.3	18.6	12.1	11%	18%	N/A	N/A		
Jingsheng	300316.SZ	NC	12.34	CNY	N/A	1,638	61.1	42.4	5.0	4.6	41.5	29.1	9%	12%	N/A	N/A		
Almaden	002623.SZ	NC	35.93	CNY	N/A	862	51.9	26.1	2.5	2.3	28.7	19.8	5%	8%	N/A	N/A		
TBEA	600089.SS	NC	8.82	CNY	N/A	4,289	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Nan Bo (CSG Holding)	000012.SZ	NC	11.31	CNY	N/A	2,882	27.3	22.1	2.8	2.6	11.6	9.7	10%	11%	N/A	N/A		
Hareon	600401.SS	NC	2.32	CNY	N/A	1,644	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Zhongli Science	002309.SZ	NC	16.12	CNY	N/A	1,550	18.7	14.5	1.8	1.6	10.6	9.4	11%	12%	N/A	N/A		
Linyang	601222.SS	NC	38.25	CNY	N/A	2,855	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
<b>Onshore-listed average</b>							<b>36.6</b>	<b>26.9</b>	<b>3.3</b>	<b>2.9</b>	<b>19.9</b>	<b>15.3</b>	<b>11%</b>	<b>12%</b>	<b>43%</b>	<b>16%</b>		
<b>US</b>																		
SolarCity	SCTY	Neutral	18.35	USD	25.00	1,840	N/A	N/A	N/A	N/A	N/A	N/A	14%	14%	143%	-9%		
First Solar	FSLR	Buy	34.00	USD	58.00	3,480	10.0	10.2	0.6	0.6	5.0	3.2	5%	6%	-21%	5%		
SunPower	SPWR	Neutral	8.17	USD	11.00	1,129	N/M	N/M	0.8	0.9	8.8	5.8	-1%	-1%	100%	-2%		
<b>US average</b>							<b>10.0</b>	<b>10.2</b>	<b>0.7</b>	<b>0.7</b>	<b>6.9</b>	<b>4.5</b>	<b>2%</b>	<b>3%</b>	<b>74%</b>	<b>-2%</b>		
<b>Asia non-China</b>																		
OCI	010060.KS	Sell	80.600	KRW	66,000	1,720	N/A	N/A	0.6	0.7	8.4	9.9	14%	-2%	65%	5%		
<b>Asia non-China average</b>							<b>N/A</b>	<b>N/A</b>	<b>0.6</b>	<b>0.7</b>	<b>8.4</b>	<b>9.9</b>	<b>14%</b>	<b>-2%</b>	<b>65%</b>	<b>5%</b>		
<b>EU</b>																		
REC Silicon	RECO	NC	1.10	NOK	N/A	337	N/A	N/A	0.4	0.4	25.7	4.4	N/A	N/A	N/A	N/A		
<b>EU average</b>							<b>NA</b>	<b>NA</b>	<b>0.4</b>	<b>0.4</b>	<b>25.7</b>	<b>4.4</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>		
<b>Global average</b>							<b>18.6</b>	<b>15.8</b>	<b>1.2</b>	<b>1.1</b>	<b>13.8</b>	<b>8.7</b>	<b>10%</b>	<b>6%</b>	<b>76%</b>	<b>6%</b>		

Notes: NC = Not Covered. N/A = Not available. All target prices are based on a 12-month timeframe. Estimates for NC companies are from Bloomberg/Wind consensus. \*Zhonghuan is currently trading halted, price as of April 22, 2016.

Source: Bloomberg, Wind, Goldman Sachs Global Investment Research, Gao Hua Securities Research.

## Investment thesis in charts

**Exhibit 2: While we see over-supply risk in China's PV component segment in the next 12 months, we believe EPC solution providers and downstream solar farm operators will benefit from fast declining installation costs**  
Investment framework along the solar value chain

Investment framework	Upstream						Midstream	Downstream
	Polysilicon	Wafer	Cell	Module	PV Glass	Inverter	EPC	Project operation
<b>Demand/supply dynamics</b>	Oversupply emerges in 2017 on new supply from East Hope and REC	Oversupply due to Mono wafer suppliers' capacity expansion	D/S will be balanced in 2H17	D/S will be balanced in 2018	Oversupply emerges in 4Q16 due to rapid capacity expansion	Balanced, growing industry concentration	Non-western provinces enjoy high demand	Private companies may exit the market due to cash flow pressure, State-Owned Enterprise (SOE) may gain market share
<b>Key industry focus/catalysts</b>	<b>Changes in China poly import policies</b>	<b>Adoption of diamond wire; mono vs. multi competition</b>	Adoption of Passivated Emitter Rear Cell (PERC), black silicon technology	Margin trend on overseas capacity expansion and Anti-dumping and Countervailing duties (AD/CVD) policy changes	Adoption of double glass PV module	Competition between central & string product	<b>Margin outlook on installation cost decline</b>	<b>Settlement of subsidy payment; curtailment; impact on return from system cost and Feed-in Tariff (FIT) decline</b>
<b>Entry barrier</b>	High	High	High	Medium	Low	High	Medium	Medium
<b>Investment outlook</b>	<b>Negative</b>	<b>Negative</b>	<b>Balanced</b>	<b>Negative</b>	<b>Negative</b>	<b>Balanced</b>	<b>Positive</b>	<b>Balanced</b>
<b>Related stocks under coverage</b>	GCL-Poly (N)	GCL-Poly (N) Longi (S)	Trina (N) Jinko (N) Longi(S)	Trina (N) Jinko (N) Longi(S)	Xinyi (N)	Sungrow (B)	Singyes (B) Sungrow (B)	GCL-Poly (N) Xinyi (N) Jinko (N) Trina (N)

Notes: B = Buy, N = Neutral, S = Sell.

Source: Gao Hua Securities Research

**Exhibit 3: We believe Sungrow and Singyes (both Buy-rated) are relatively better positioned in the current cycle due to their strong EPC business exposure**  
Breakdown of 2017E gross profit

Company	Upstream component manufacturing						Mid-stream	Downstream	Others	Total
	Poly	Wafer	Cell	Module	PV glass	Inverter				
GCL	5%	57%						35%	3%	100%
Trina				72%			2%	26%		100%
Jinko		1%	1%	73%				24%		100%
Longi		20%	3%	70%			1%	2%	4%	100%
Xingyi Solar					51%		2%	47%		100%
Singyes							64%	1%	35%	100%
Sungrow						42%	32%	2%	24%	100%
Clou								23%	77%	100%

Source: Gao Hua Securities Research

# Solar faces challenges in 2H16/2017, supply-side consolidation may drive supply/demand balance

## Prices likely to remain under pressure in 2H16 and 2017

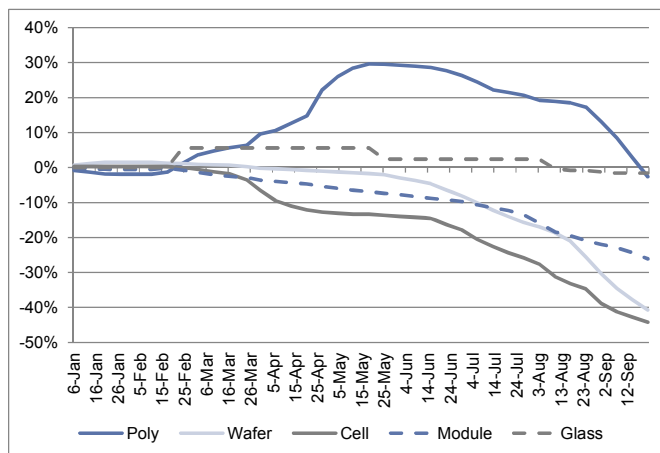
Photovoltaic (PV) component prices, such as module, cell, wafer and polysilicon, have generally posted accelerated declines since July 2016. We mainly attribute this price correction to: (1) weaker demand in China due to rush installation to meet the government's tariff cut deadline of June 30, (2) capacity addition from major component makers, and (3) prolonged delay in subsidy payments for solar due to a fiscal deficit in the renewable fund managed by the Ministry of Finance (the National Energy Administration indicates the total outstanding renewable subsidy deficit currently exceeds Rmb50bn).

**We see relatively higher downside risk for polysilicon prices ahead.** On the supply side, due to piling up of inventory over the last two months, PV component makers have been selling their product at aggressive prices, as long as it is above or close to the variable cash cost to maintain daily operation. We estimate the blended variable cash cost for tier-one module makers was around US\$0.42-0.43/watt in 2Q16, which is quite close to the current global average spot module price of US\$0.41/watt. We also believe wafer makers' cash cost is close to the current spot selling price of US\$0.12/watt. However, we estimate the variable cash cost for polysilicon makers at US\$7.6-11/kg, which is below the current global average spot price of US\$12.8/kg.

From a demand perspective, PV module buyers no longer appear to be in a rush to place orders since the tariff cut deadline has passed (June 30) and we believe they are likely to wait for prices to bottom. We expect China's new solar installation to peak in 2016 at 20GW and that it will decline sequentially in 2017-2020 (to 15GW per year), mainly due to oversupply of power, unsettled subsidy payment delays, and government targets to tackle curtailment instead of pursuing scale.

**Exhibit 4: Global PV component price held up well in 1Q and 2Q but has shown an accelerated decline so far in 3Q16**

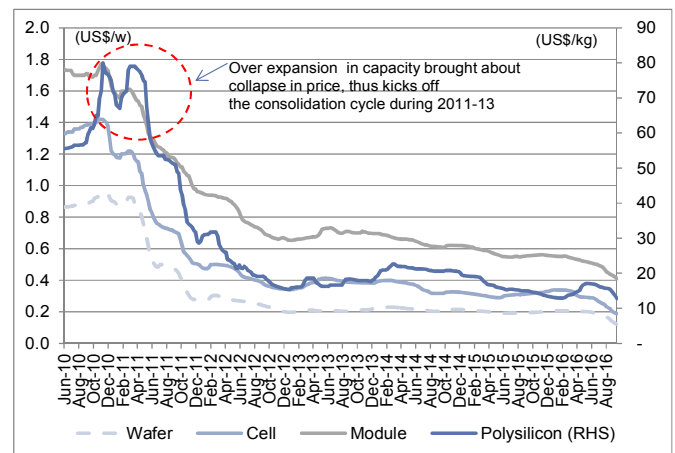
Ytd selling price change for major PV components



Source: PV Insight

**Exhibit 5: In the last cycle it took around two years for the PV components industry to recover from the oversupply to a balanced level**

Major PV components historical price trend



Source: Company data, PV Insight, Gao Hua Securities Research

## How long could the down cycle last?

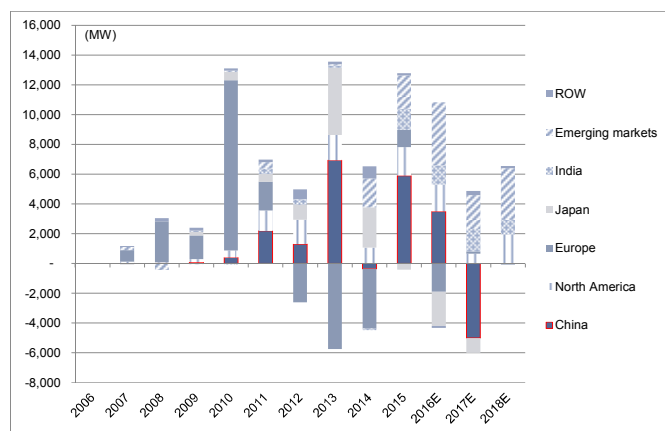
**A demand pick-up ended the past down cycle.** With reference to the past down cycle during 2011-13, after Europe (mainly Germany and Spain) cut the Feed-in-Tariff (FiT) in 2010, over

expansion in PV component capacity led to drastic price falls from early 2011 until mid-2013, when China started to stimulate solar installations by rolling out a FiT mechanism and Japan kicked off its aggressive solar investment plan post the Fukushima nuclear disaster in 2012. We also note that capacity for module, cell, wafer and polysilicon consolidated in 2012-13 (Exhibit 7), thus tightening the demand/supply balance.

**In the current down cycle, we believe a balanced demand/supply will mainly be achieved through supply side consolidation and that demand will not provide a meaningful contribution, which may lead to a longer time frame to reach balance than was seen in 2010-13.** We forecast global solar installation reaching 59.3/58.1/64.6 GW in 2016/17/18, indicating muted growth, with strong growth in India, the US and emerging markets mainly offset by a slowdown in China and Japan (Exhibit 6). On the supply side, we note that Canadian Solar has cut its module capacity expansion plan from the original 6.2GW to 5.8GW by end-2016, while other tier-one suppliers have to date stuck to their original expansion plans. We believe lower-tier suppliers with less competitive cost structures are likely to face capacity shutdowns in module and cell soon, as they currently generate relatively slim margins. Without much from the demand side support, capacity rationalization will likely take some time to be achieved. Therefore, **we expect demand/supply in the solar components industry will reach a new balance in 2H17 or 2018, based on our current estimates of capacity changes and utilization recovery** (Exhibits 7-8).

**Exhibit 6: We expect incremental solar installation in 2017-18 to mainly be driven by India, US and emerging markets**

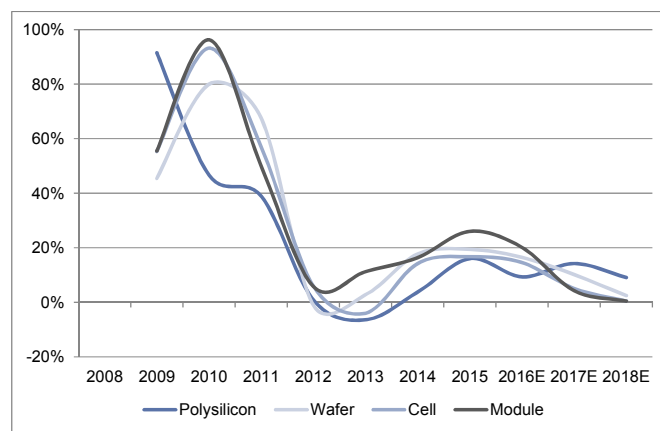
Yoy changes in global solar installation



Source: European Photovoltaic Industry Association (EPIA), Goldman Sachs Global Investment Research

**Exhibit 7: We saw capacity contraction in 2012-13 for major PV components and expect capacity rationalization will take place in 2017-18**

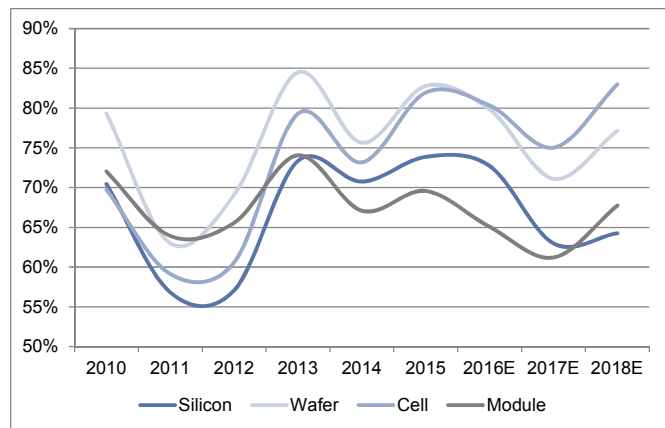
Capacity yoy changes for major PV components



Source: Company data, Gao Hua Securities Research

**Exhibit 8: We expect capacity utilization rate to decline in 2017 and recover in 2018**

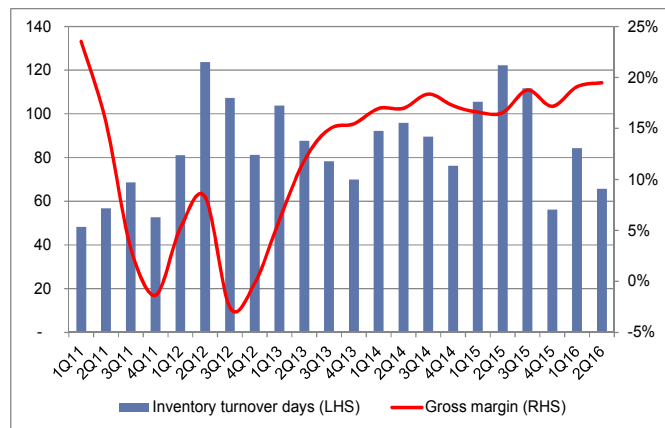
Capacity utilization rate for major components



Source: Company data, Gao Hua Securities Research

**Exhibit 9: We have seen gross margin for module makers moving in the opposite way to inventory turnover days**

Inventory turnover days vs. gross margin for module makers



Source: Company data, Gao Hua Securities Research

### Ample cost reduction potential

Major PV component prices such as polysilicon, wafer, cell and module, have declined by 73%-85% since mid-2010. In terms of the learnings rate, which is defined as the percentage price decline on every doubling of cumulative PV module shipment, this was around 21.5% during 1976-2015.

We believe cost reduction plays a critical role in defending margins against a backdrop of declining selling prices. In the following section, we assess cost reduction potential along the solar value chain.

### Adoption of new technology in manufacturing

#### Polysilicon

- To improve energy efficiency by using the FBR method.** The FBR (fluidized bed reactor) process requires only 20%-30% energy compared to the conventional Siemens method. International Technology Roadmap for Photovoltaic (ITRPV) estimates FBR only accounted for 10% of total polysilicon production in 2015, and that this will increase to over 20% by 2026. We estimate GCL-Poly's current polysilicon cash cost is US\$10-11/kg, while its stated FBR cost target is US\$8.0/kg.
- To increase the throughput per equipment piece by using larger ingots.** Higher throughput per tool improves the efficiency and reduces unit capital cost. ITRPV forecast ingot mass for polysilicon to increase from over 700kg currently to 1,100kg in 2020 and 1,200kg in 2026. For mono-crystalline silicon that uses the Continuous Czochralski (CCZ) method, it expects the ingot size to increase from 200kg currently to 300kg in 2020 and 450kg in 2026. Moreover, blending FBR and recycled materials with Siemens multi-crystalline (mc) polysilicon is also an approach to lower cost.

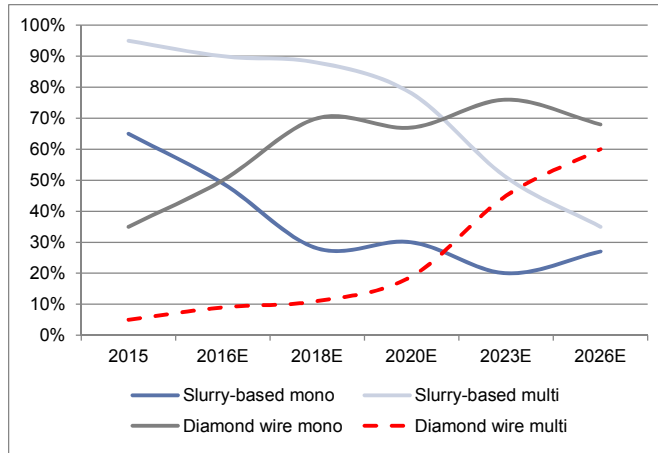
- **Oversupply in 2017-18 could lead to profit pool reallocation.** Polysilicon makers are currently generating excessive return, as reflected in the over 41% gross margin in 2Q16 for Daqo New Energy Corp. (DAQO), a polysilicon manufacturer based in China. The resilient polysilicon price ytd has mainly been driven by the heavy import duty imposed on US importers and also limited new capacity addition in 2016. However, we believe this high margin/strong price dynamic is unlikely to last in 2017 due to the planned new capacity rollout from East Hope Group, REC Silicon, and DAQO. East Hope Group is planning to build 120,000 tonnes of polysilicon capacity in Xinjiang, with the first phase of 30,000 tonnes to be ready in 1H17. Moreover, 19,000 tonnes of FBR based capacity from REC in Shaanxi Yulin is planned to commence operation in 2017. DAQO's 6,000 tonnes phase 3A is also targeted to start operation in 2017. Overall for the industry, we expect global polysilicon capacity to increase by 14% yoy in 2017 and by 9% in 2018, with utilization declining from 73% in 2016 to 63% in 2017 and then rising slightly to 64% in 2018.

### Wafer

- **Adoption of diamond wire sawing technology.** Diamond wire sawing is currently widely used in mono crystalline wafer processing, but not multi wafer. 100% of Longi's slurry based capacity has been replaced by diamond wire over the last two years. This is mainly because diamond wire can produce thinner wafers, reduce kerf loss, increase the output and recycling rating, and requires less consumable materials. For example, diamond wire based wafer output per kg of ingot is 62 pieces, vs. 48 for the slurry based method, and the sawing speed for diamond wire is 1,000-1,500m/min, vs. 580-900m/min for slurry based. Mono wafer thickness is currently 180 micro meters and ITRPV forecasts this reducing by 12% to 160 micro meters by 2020 and by 22% to 140 micro meters by 2026.
- **Penetration of diamond wire in multi-wafer production sets to increase.** The penetration for diamond wire in multi-crystalline wafer processing is still low (10% market share) compared to mono wafer (50% market share), according to ITRPV, mainly due to technical issues in texturing process for cell manufacturing (highly reflective surface and visible saw marks). However, the development of black silicon etching technology could solve the technical barrier and improve the conversion efficiency by approximately 0.4%-0.6%, according to Solarzoom.

**We estimate diamond wire can reduce multi-wafer production cost by Rmb0.54/piece or US\$0.018/watt, implying 15% and 11% downside from the current prevailing production cost and spot price. Also, as the wafer will become thinner, we expect silicon material usage per piece of wafer will also decline by over 20% in the next 10 years.**

**Exhibit 10: Diamond wire technology set to gain market share in multi-wafer production in the coming years**  
Market share of wafer sawing technology



Source: ITRPV

**Exhibit 11: Diamond wire could reduce overall wafer production cost by Rmb0.54/piece, based on the current polysilicon price**

Technology comparison between slurry and diamond wire

	Slurry-based	Diamond wire
Kerf loss (um)	170	90
Wafer thickness (um)	180	180
Output (pieces per 1kg ingot)	48	62
Annual production capacity (MW)	7	29
Silicon usage per piece (g)	21.9	17.0
Polysilicon price (Rmb/kg)	110	
Cost reduction per piece (Rmb)	0	0.54
Cost reduction per watt (US\$/watt)	0	0.018
Spot multi-wafer price (US\$/watt)	0.159	0.159
<b>Percentage cost reduction</b>		<b>11%</b>

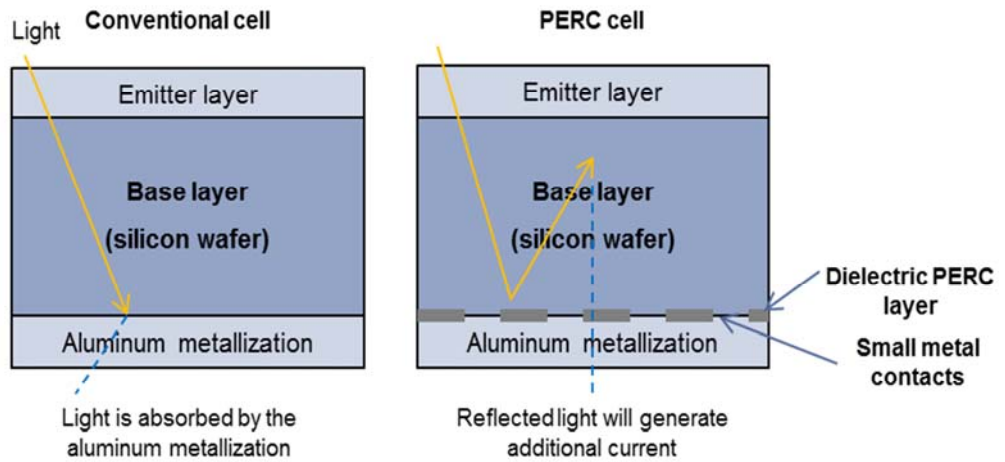
Source: Solrzoom

## Cell

- To reduce silver paste usage.** Silver is a critical component of cell that is used as a conductor in the cell metallization process. High performance silver paste offers features such as good printability, high efficiency and reliability. ITRPV indicates that the medium level of silver usage per cell ( $156 \times 156 \text{mm}^2$ ) is currently around 95 milligrams (mg), and that this will reduce to 40mg by 2026, with improving know-how. Given the current selling price of silver of US\$703/kg, **we estimate the silver cost per watt will drop by 58% from Rmb0.015/watt now to Rmb0.006/watt by 2026.** Moreover, replacing silver with highly conductive cooper is also an alternative solution to lower cell cost. The technical barrier for adopting cooper lies in the diffusion loss currently.
- To improve conversion efficiency using Passivated Emitter Rear Cell (PERC) Technology.** PERC increases cell efficiency through the dielectric layer that reflects light back into the cell. Those lights may have passed through the rear without generating electrons under the conventional cell structure (Exhibit 12). Also, PERC technology enables capture of the light at longer wavelengths and reduces the temperature of the cell. We note the cell efficiency powered by PERC technology is generally above 19% currently, vs. over 18% for a conventional P-type multi-crystalline cell (Exhibit 13). Energy Trend estimates PERC-based modules will increase from 8GW in 2015 to 14GW in 2016, accounting for 24% of global module demand (vs. 15% in 2015).
- Proliferation of mono crystalline cell.** Mono wafer is gaining share nowadays, thanks to the promotion of China's 'Top Runner Program', launched by the Chinese government in 2015, which requires the efficiency of a multi-module and mono module to be over 16.5% and 17% respectively. This makes mono more feasible to meet the criteria while only 20%-30% of the multi capacity can qualify. Longi indicates that as long as mono module is priced within a US\$1.5 cent/watt premium against multi-module, its leveled cost of energy (LCOE) will be more competitive than multi. The rapid cost reduction of mono wafer that has been driven by the adoption of diamond wire over the last two years also helps. We estimate mono captured 25% market share in China's PV installation in 1H16.

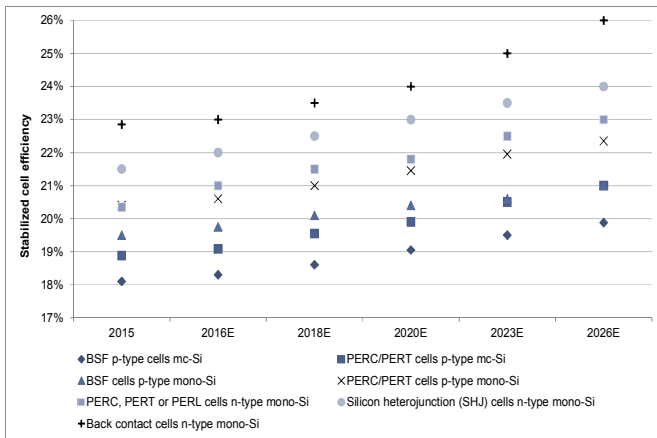


**Exhibit 12: PERC technology increases cell efficiency by reflecting light that is absorbed by aluminum metallization in a conventional cell**  
Technology comparison between PERC and conventional cell



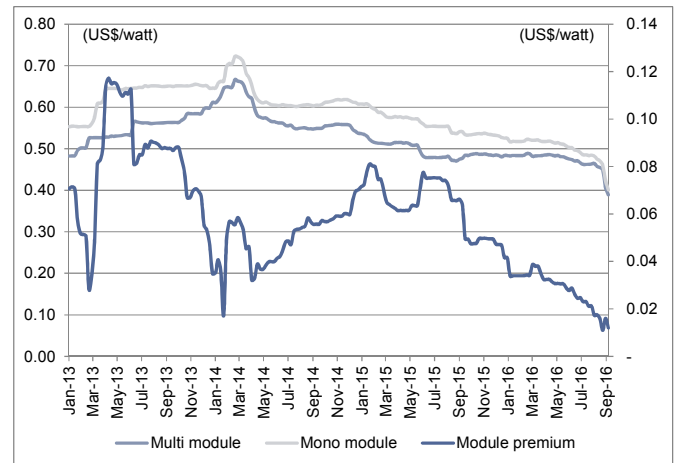
Source: REC, Gao Hua Securities Research

**Exhibit 13: Adoption of PERC enables ongoing improvement in cell efficiency**  
Average efficiency for silicon solar cells



Source: ITRPV

**Exhibit 14: The price difference between mono and multi module has narrowed to US\$0.01/watt recently**  
Mono and multi module price difference



Source: PV News, Gao Hua Securities Research

### Module

- **To increase the cell to module power ratio.** This ratio, which refers to the module power output divided by the cell power, is currently 98-99% and is expected to increase to 100%-102% by 2020 and 102%-104% by 2026, according to ITRPV. This is achieved through light management within the module by redirecting light from inactive modules areas to active cell areas. Also, new interconnection and encapsulation technologies should help.
- **To develop advanced materials.** Encapsulating material and backsheet are the major cost components in module manufacturing. To develop new materials that offer a high cost/performance ratio is the key focus for module manufacturers. For example, we expect aluminum frames will be gradually replaced by plastic frames and that ethylene-vinyl acetate (EVA) material will lose market share against polyolefin for encapsulations over time. The cost reductions could come through material cost cuts, as well as an increase in duration.

### Acceleration of the decline in power generation cost ahead

We note the industry installation cost of solar power in China was around Rmb7.0/watt in 2015 and 1H16, with module cost of around Rmb4.0/watt and balance of system (BOS) cost at Rmb3.0/watt. With the rapid decline in module price, we believe overall installation cost and unit power generation cost (measured as LCOE) will achieve a faster decline in the coming decade than the market currently expects. Continuing the downward trend seen over the past decade, we expect LCOE for solar to post a 3% annual decline in 2016-2026, from Rmb0.59/kwh in 2015 to Rmb0.37/kwh in 2026, which would make it the 4<sup>th</sup> most cost competitive power source globally, following hydro, coal and nuclear.

We believe a fast decline in the installation cost may lead to the potential for future tariff reductions from regulators. As illustrated in Exhibit 17, our sensitivity analysis shows **solar farm operators can generate 8%-12% equity IRR based on an on-grid tariff of Rmb0.55-0.60/kwh in 2016, which is far below the government's current feed-in-tariff range of Rmb0.80-0.98/kwh. By 2026, we expect the implied on-grid tariff to reach Rmb0.45-0.49/kwh.** We believe that this may explain why GCL-New Energy was recently willing to offer an Rmb0.61/kwh tariff on a 100MW Top Runner Project in Shanxi.

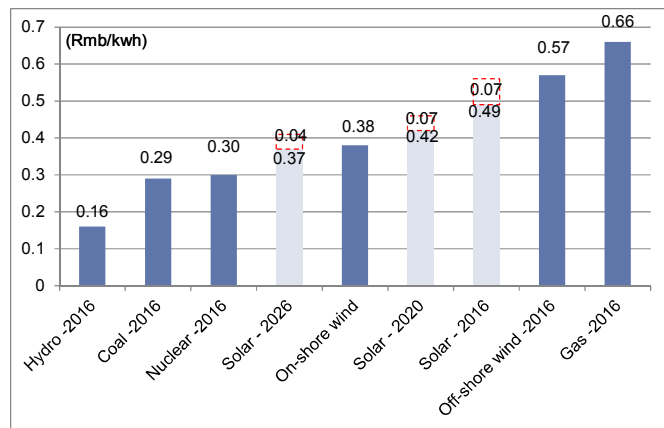
**Exhibit 15: We revise our solar installation and LCOE forecasts for China down by 8-12% and 8-13% for 2016-2026, reflecting the recent faster cost module selling price decline**  
Installation cost and LCOE revisions

	2015	2016E	2018E	2020E	2023E	2026E	CAGR
<b>Installation cost (Rmb/kwh)</b>							<b>2016-26</b>
Previous estimates	7.0	6.7	5.9	5.5	5.2	4.9	-3%
<b>New estimates</b>	<b>7.0</b>	<b>5.9</b>	<b>5.4</b>	<b>5.0</b>	<b>4.7</b>	<b>4.4</b>	<b>-3%</b>
Module	4.1	3.2	2.9	2.6	2.4	2.3	-3%
Balance of system	2.9	2.7	2.5	2.4	2.2	2.1	-3%
Changes	0%	-12%	-8%	-9%	-10%	-10%	
<b>LCOE (Rmb/kwh)</b>							
Previous estimates	0.59	0.56	0.49	0.46	0.44	0.41	-3%
<b>New estimates</b>	<b>0.59</b>	<b>0.49</b>	<b>0.45</b>	<b>0.42</b>	<b>0.39</b>	<b>0.37</b>	<b>-3%</b>
Changes	0%	-13%	-8%	-9%	-11%	-10%	

Source: Gao Hua Securities Research

**Exhibit 16: We expect solar LCOE to decline by 3% per annum during 2016-2026**

LCOE cost comparison by fuel type

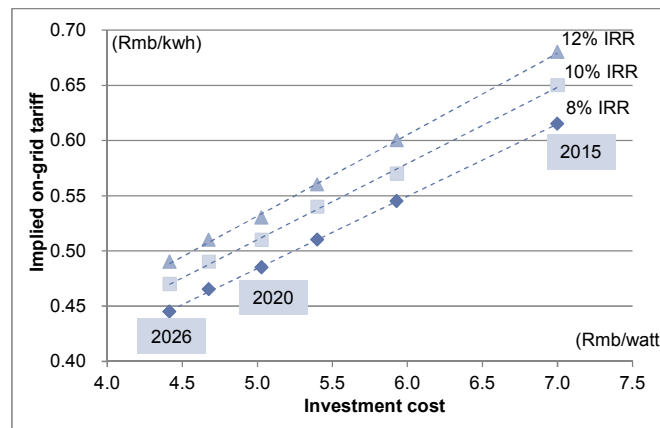


Note: Red box refers to the LCOE reduction from our new estimates vs. previous estimates.

Source: Company data, Gao Hua Securities Research

**Exhibit 17: We believe there is ample room for reductions in the on-grid tariff to maintain an 8%-12% levered IRR**

Scenario analysis on tariff/investment cost for 8-12% IRR



Source: Gao Hua Securities Research

### Additional measures for module manufacturers to manage margin pressure

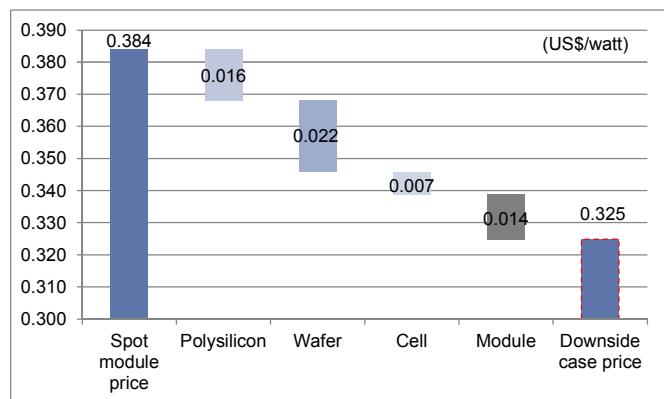
Most suppliers are benefiting from declining wafer/cell prices as they adopt a partially vertically integrated model, thus procurement costs should be dropping. (2) As leading module makers, such as Trina and Jinko (with 11% and 9% respective market share in 2015), have established offshore manufacturing facilities in Southeast Asia, this could effectively mean they avoid paying anti-dumping and countervailing tariffs for shipments to the US. US shipments accounted for 43% and 26% of Jinko and Trina’s module shipment in 2Q16. We estimate the location of their facilities could save US\$0.02-0.03/watt on cost from 2H16 for the two companies.

### Downside scenario analysis

In our downside scenario analysis we look at PV component prices based on the current cost structure of tier-one makers. We estimate the current cash cost for polysilicon, wafer, cell and module at around US\$8-11/kg, US\$0.12/watt, US\$0.19/watt and US\$0.37/watt, respectively. We then compare the difference between selling price and cash cost to determine the potential price downside risk for each part of the value chain. Accordingly, our analysis implies a downside scenario module price of US\$0.325/watt, 15% below the current spot module price (Exhibit 18).

**Exhibit 18: We see wafer and polysilicon as having more room to cut selling prices**

Downside scenario analysis in module price

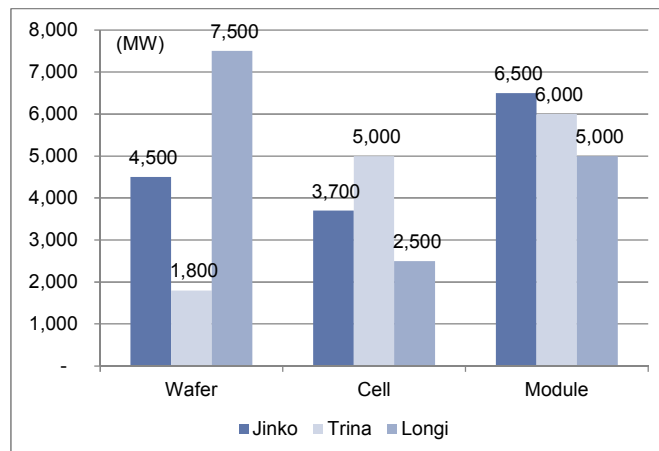


Note: Spot price as of September 21, 2016.

Source: Company data, PV News, PV Insight, Gao Hua Securities Research

**Exhibit 19: Jinko and Trina have higher capacity in module than cell and wafer**

Planned production capacity by segment, end-2016



Source: Company data

**EPC and downstream operators relatively better positioned**

We believe downstream EPC solution providers and solar farm operators are well-positioned along the value chain, as they can benefit from the declining system installation cost. For example, Singyes indicated that its solar EPC gross margin is set to expand 2ppt in 2H16 on lower costs and resilient selling prices as it delayed part of its planned installation to 2H16 in anticipation of a weaker module price post June 30. Lower investment costs should bring about higher return for solar farm operators and incentivize higher investment demand for solar by shifting some capital allocation from wind, thermal, nuclear, etc. Compared to solar farm operators, we believe EPC solution providers currently have less accounts receivable risk than solar farm operators.

**We have a preference for stocks with strong balance sheets to weather the solar components down cycle.** We note that Sungrow and Singyes (both Buy rated) generally have lower gearing and less solvency risk than our covered regional peers, as shown in Exhibits 20-21.

**Exhibit 20: Sungrow, Singyes and Longi have relatively lower gearing versus peers**

Net debt to equity ratio comparison

Company	Ticker	Net debt to Equity		
		2016E	2017E	2018E
Sungrow	300274.SZ	-51%	-45%	-40%
Singyes	0750.HK	66%	68%	66%
Xinyi	0968.HK	63%	69%	65%
Clou	002121.SZ	162%	150%	146%
Jinko	JKS	148%	134%	97%
GCL	3800.HK	139%	133%	102%
Trina	TSL	153%	137%	117%
Longi	601012.SS	31%	67%	40%
<b>Average</b>		<b>89%</b>	<b>89%</b>	<b>74%</b>

Source: Gao Hua Securities Research

**Exhibit 21: Sungrow, Xinyi and Longi have relatively lower solvency risk versus peers**

Total debt to EBITDA ratio comparison

Company	Ticker	Total Debt to EBITDA		
		2016E	2017E	2018E
Sungrow	300274.SZ	0.1	0.1	0.1
Singyes	0750.HK	4.5	3.7	3.6
Xinyi	0968.HK	2.8	2.7	2.6
Clou	002121.SZ	7.6	6.0	5.1
Jinko	JKS	5.4	6.0	5.5
GCL	3800.HK	5.0	5.5	5.4
Trina	TSL	6.1	7.1	6.9
Longi	601012.SS	2.0	3.2	2.3
<b>Average</b>		<b>4.2</b>	<b>4.3</b>	<b>3.9</b>

Source: Gao Hua Securities Research

## Component price assumptions driving earning and TP changes, Singyes up to Buy

### New price assumptions

Major PV component prices have seen an accelerated decline since July 2016, mainly due to rush installation (pre the June 30 tariff cut deadline) and capacity expansion. Since then, spot prices for polysilicon/wafer/cell/module have declined 17%/34%/34%/18%. With reference to the current cost structure, selling prices, and demand/supply dynamics, we update our price estimates for PV components (Exhibit 22). As we expect supply side consolidation will continue in 2017 and end in 2H17 or 2018, we forecast the selling price decline in 2018 will be moderate.

**Exhibit 22: Our PV component price forecasts reflect recent demand/supply dynamics**  
Price assumptions for PV components

	2015	Spot price	1Q16	2Q16	3Q16E	4Q16E	2016E	2017E	2018E	2016E	2017E
	Average	21-Sep	Current estimates							Previous estimates	
<b>Poly</b> (US\$/kg)	16.0	12.83	13.39	16.37	<b>15.42</b>	<b>13.58</b>	<b>14.74</b>	<b>12.5</b>	<b>12.0</b>	<b>15.5</b>	<b>14.5</b>
Yoy / changes							-8%	-15%	-4%	-5%	-14%
<b>Wafer</b> (US\$/watt)	0.199	0.121	0.207	0.199	<b>0.161</b>	<b>0.127</b>	<b>0.174</b>	<b>0.125</b>	<b>0.120</b>	<b>0.198</b>	<b>0.188</b>
Yoy / changes							-13%	-28%	-4%	-12%	-34%
<b>Cell</b> (US\$/watt)	0.31	0.188	0.334	0.291	<b>0.232</b>	<b>0.192</b>	<b>0.263</b>	<b>0.196</b>	<b>0.190</b>	<b>0.295</b>	<b>0.285</b>
Yoy / changes							-15%	-25%	-3%	-11%	-31%
<b>Module</b> (US\$/watt)	0.569	0.41	0.548	0.517	<b>0.458</b>	<b>0.415</b>	<b>0.486</b>	<b>0.400</b>	<b>0.380</b>	<b>0.540</b>	<b>0.520</b>
Yoy / changes							-15%	-18%	-5%	-10%	-23%
<b>Glass</b> (Rmb/m <sup>2</sup> )	32.37	30.75	32.06	32.54	<b>31.41</b>	<b>28.29</b>	<b>31.09</b>	<b>28.50</b>	<b>27.00</b>	<b>32.00</b>	<b>31.00</b>
Yoy / changes							-4%	-8%	-5%	-3%	-8%

Source: PV Insight, Gao Hua Securities Research

### Earnings revisions

We revise earnings estimates for our solar stock coverage by between -79% and +44% for 2016-18, primarily driven by our latest component price assumptions.

We raise our **Singyes** 2016-18 earnings by 20%-44% after factoring in: 1) higher EPC and curtain wall sales on a robust order backlog, and 2) a lift in margin outlook on lower procurement cost. With 18% potential upside to our 12-m target price, improved earnings visibility, and a reduction in refinancing risk, we upgrade to Buy (from Neutral).

Our **Sungrow** earnings remain unchanged, but with 22% potential upside to our 12-m target price and strong positioning in the solar inverter and solar EPC business which should enable the company to weather the down cycle well, we maintain our Buy.

We revise our **Longi** earnings by between -24% and +34% but maintain our Sell given its aggressive capacity expansion and ongoing selling price pressure in addition to 26% potential downside to the 12-m target price.

Across the rest of our coverage we revise earnings as shown in Exhibit 23, mainly related to price and cost structure assumption changes.

**Exhibit 23: Earnings revisions mainly reflect changes in our solar component price assumptions**

Summary of net income revisions

Companies	Ticker	Currency (mn)	Previous estimated earnings			Current estimated earnings			% change from previous			YoY growth (%)		
			2016E	2017E	2018E	2016E	2017E	2018E	2016E	2017E	2018E	2016E	2017E	2018E
Sungrow	300274.SZ	Rmb	728	910	1,024	728	910	1,024	0%	0%	0%	71%	25%	13%
Singyes	0750.HK	Rmb	350	413	437	503	516	526	44%	25%	20%	41%	3%	2%
Clou	002121.SZ	Rmb	349	426	563	299	393	528	-14%	-8%	-6%	52%	31%	34%
Xinyi Solar	0968.HK	HK\$	1,846	1,937	2,118	1,811	1,854	2,038	-2%	-4%	-4%	50%	2%	10%
Jinko	JKS	US\$	124	146	167	111	49	84	-10%	-67%	-50%	6%	-56%	73%
GCL-Poly	3800.HK	HK\$	3,104	3,417	3,851	2,849	1,857	1,524	-8%	-46%	-60%	-5%	-35%	-18%
Trina	TSL	US\$	142	175	206	112	57	43	-22%	-67%	-79%	46%	-49%	-25%
Longi	601012.SS	Rmb	838	974	1,181	1,126	786	903	34%	-19%	-24%	116%	-30%	15%

Source: Gao Hua Securities Research

**Exhibit 24: EPS revisions also reflect our changes solar component price assumptions**

Summary of EPS revisions

	Currency (mn)	Previous estimated EPS			Current estimated EPS			% change from previous			YoY growth (%)		
		2016E	2017E	2018E	2016E	2017E	2018E	2016E	2017E	2018E	2016E	2017E	2018E
Sungrow	Rmb	0.52	0.65	0.73	0.52	0.65	0.73	0%	0%	0%	45%	25%	13%
Singyes	Rmb	0.45	0.53	0.56	0.59	0.56	0.57	33%	6%	3%	16%	-5%	2%
Clou	Rmb	0.29	0.36	0.47	0.25	0.33	0.44	-14%	-8%	-6%	52%	31%	34%
Xinyi Solar	HK\$	0.27	0.29	0.31	0.27	0.27	0.30	-2%	-4%	-4%	53%	2%	10%
Jinko	US\$	3.90	4.56	5.23	3.49	1.52	2.64	-10%	-67%	-50%	3%	-56%	73%
GCL-Poly	HK\$	0.17	0.18	0.21	0.15	0.10	0.08	-8%	-46%	-60%	-1%	-34%	-18%
Trina	US\$	1.68	2.07	2.43	1.32	0.67	0.50	-22%	-67%	-79%	46%	-49%	-25%
Longi	Rmb	0.47	0.55	0.67	0.63	0.44	0.51	34%	-19%	-24%	116%	-30%	15%

Source: Gao Hua Securities Research

**Exhibit 25: Potential downside for cash returns due to solar components price decline since July**

CROCI rankings of covered solar stocks

CROCI	2011	2012	2013	2014	2015	2016E	2017E	2018E
GCL-Poly	15.6%	9.0%	12.7%	10.4%	13.8%	11.0%	8.8%	8.5%
Singyes Solar	23.1%	20.1%	19.8%	19.2%	11.9%	11.5%	10.2%	9.5%
Xinyi Solar	35.6%	18.5%	24.7%	18.7%	21.0%	21.5%	17.3%	16.5%
Trina Solar	5.4%	-7.6%	4.9%	9.8%	9.6%	10.4%	8.4%	7.8%
Jinko Solar	14.2%	-17.3%	13.2%	16.6%	14.8%	12.4%	10.1%	11.3%
Longi	15.6%	7.1%	-8.1%	16.9%	25.6%	22.4%	14.0%	17.4%
Sungrow	65.5%	11.0%	24.5%	37.4%	35.8%	35.9%	31.7%	29.2%
Clou	13.2%	15.7%	14.5%	16.6%	18.2%	13.7%	13.2%	13.7%
<b>Average</b>	<b>23.5%</b>	<b>7.0%</b>	<b>13.3%</b>	<b>18.2%</b>	<b>18.8%</b>	<b>17.3%</b>	<b>14.2%</b>	<b>14.2%</b>

CROCI ranking	2011	2012	2013	2014	2015	2016E	2017E	2018E
GCL-Poly	2	3	3	4	3	4	4	4
Singyes Solar	2	1	2	1	4	3	3	3
Xinyi Solar	1	1	1	2	2	2	1	2
Trina Solar	4	4	4	4	4	4	4	4
Jinko Solar	3	4	3	3	3	3	3	3
Longi	3	3	4	2	1	1	2	1
Sungrow	1	2	1	1	1	1	1	1
Clou	4	2	2	3	2	2	2	2

1	First Quartile
2	Second Quartile
3	Third Quartile
4	Fourth Quartile

Source: Company data, Gao Hua Securities Research

### 12-month target price methodology and revisions

We revise 12-month target prices across our solar coverage by between -5% and +62%, mainly due to the aforementioned earnings changes and also updated sector multiples within our relative valuation framework (EV/GCI vs. CROCI/WACC and P/B vs. ROE).

**Exhibit 26: Solar sector – summary of rating and 12-m target price changes**

Company	Rating		Current price	New Target price	Previous target price	Upside/downside	TP changes	Valuation Method
	New	Previous						
Sungrow	Buy	Buy	CNY 12.51	15.30	15.22	22%	1%	P/B vs. ROE
Singyes	Buy	Neutral	HKD 4.23	5.00	3.09	18%	62%	EV/GCI vs. CROCI/WACC
Clou	Neutral	Neutral	CNY 10.10	10.50	10.44	4%	1%	P/B vs. ROE
Xinyi	Neutral	Neutral	HKD 3.31	3.40	3.40	3%	0%	P/B vs. ROE
Jinko	Neutral	Neutral	USD 14.82	14.90	20.00	1%	-26%	EV/GCI vs. CROCI/WACC
GCL-Poly	Neutral	Neutral	HKD 1.12	1.00	1.20	-11%	-17%	EV/GCI vs. CROCI/WACC
Trina	Neutral	Neutral	USD 10.30	8.40	9.00	-18%	-7%	EV/GCI vs. CROCI/WACC + M&A
Longi	Sell	Sell	CNY 14.11	10.50	11.00	-26%	-5%	P/B vs. ROE

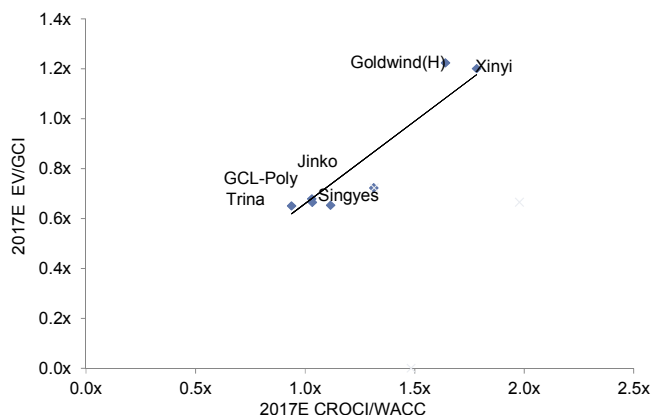
\*Current price as of Sep 20, 2016

Source: Datastream, Gao Hua Securities Research

We adopt a **2017E EV/GCI vs. CROCI/WACC-based valuation for our offshore solar stocks**, while for Xinyi Solar we use the historical average P/B vs. ROE methodology (12.5X 2017E P/B vs. ROE) due to its trading premium vs. peers (average P/B of 3.6x for Xinyi Solar vs. 1.5x for other offshore stocks since January 2014). Trina’s 12-m target price of US\$8.40 (from US\$9.00) is based on a 50% weighting for our unchanged US\$11.0 M&A value (based on 7.6X FY16E EV/EVITDA) and a 50% weighting for our revised fundamental value of US\$5.7 (derived using FY17E EV/GCI vs. CROCI/WACC, from FY16E previously).

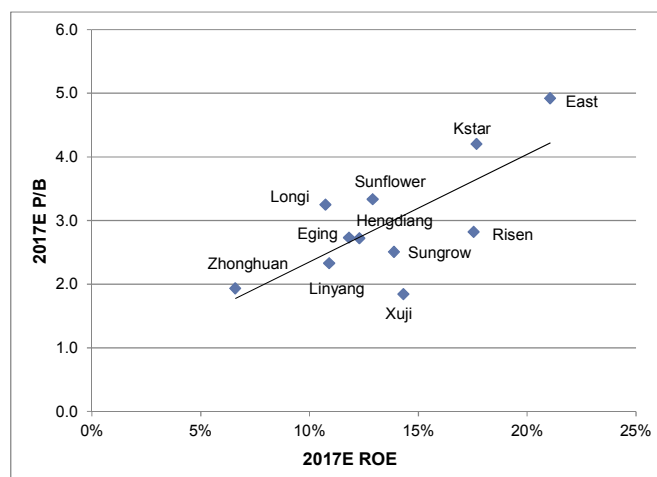
We use P/B vs. ROE methodology for onshore listed solar stocks, including Longi, Sungrow and Clou. We revise the 2017E sector cash return multiple from 0.61X to 0.76X for offshore solar stocks and the 2017E P/B vs. ROE from 23.3X to 22.4X for onshore solar stocks (Clou from 32.8X to 30.0X), reflecting recent market volatility.

**Exhibit 27: EV/GCI vs. CROCI/WACC valuation methodology for offshore solar stocks**



Source: Bloomberg, Gao Hua Securities Research

**Exhibit 28: P/B vs. ROE valuation framework for A-share solar sector**



Note: Data for Longi and Sungrow is based on GHe, all others are based on Wind consensus.

Source: Wind, Gao Hua Securities Research

## Key stock recommendations

**Upgrade Singyes to Buy (from Neutral).** We believe the company's EPC business will benefit from a declining module price and expect it to see margin expansion in 2H16 and through 2017. In addition, a robust order backlog (420MW in 2016 and 260MW for 2017) ensures higher earnings visibility in 2016-18 and we see potential refinancing risk as having reduced due to the ongoing disposal of its self-operated projects in Xinjiang and Gansu.

**Maintain Buy on Sungrow.** We continue to believe its strong positioning in the solar inverter and solar EPC business positions the company well during any down cycle.

**Maintain Sell on Longi Silicon.** We remain concerned about its aggressive capacity expansion in mono-module and also the ongoing decline in selling price pressure.

### Exhibit 29: Valuation, TP methodology, and company-specific risks

Company	Ticker	Rating	12m TP	TP Method	Company-specific risks
<b>Solar</b>					
Sungrow	300274.SZ	Buy	Rmb15.3	P/B vs ROE	Margin pressure in solar EPC on competition and solar tariff cut; delay in solar EPC receivable payment due to feed-in-tariff delay for solar farm operators; price competition and margin pressure for solar inverter and energy storage products (downside).
Singyes	0750.HK	Buy	HK\$5.0	EV/GCI vs CROCI/WACC	Lower price benefiting EPC provider (upside). Longer accounts receivables and lower solar installation beyond 2017 (downside).
Xinyi Solar	0968.HK	Neutral	HK\$3.4	P/B vs ROE	Higher solar installation (upside). Weaker price (downside).
Clou	002121.SZ	Neutral	Rmb10.5	P/B vs ROE	Solar curtailment issues resolved, JV progress (upside). Smart meter slowdown, EV charging delays or competition, lack of strategic focus (downside).
Jinko	JKS	Neutral	US\$14.9	EV/GCI vs CROCI/WACC	Lower production cost (upside). Deterioration in selling price (downside).
GCL-Poly	3800.HK	Neutral	HK\$1.0	EV/GCI vs CROCI/WACC	Faster cost reduction (upside). Lower poly selling price (downside).
Trina	TSL	Neutral	US\$8.4	50% M&A + 50% EV/GCI vs CROCI/WACC	Supportive policies in tackling curtailment and stimulating installation (upside). Lower than expected module selling price (downside).
Longi	601012.SS	Sell	Rmb10.5	P/B vs ROE	Pickup in distributed generation solar projects (upside). Lower mono price continue to take market share (upside).

Source: Gao Hua Securities Research



**Exhibit 30: EV/GCI vs. CROCI/WACC based valuation for solar stocks suggests 18% potential upside for Singyes, while the others appear relatively overvalued**

EV/GCI vs. CROCI/WACC-based 12m TP calculation

EV/GCI vs CROCI/WACC				
	HK\$	HK\$	US\$	US\$
	GCL-Poly 3800.HK	Singyes 0750.HK	Trina TSL	Jinko JKS
CROCI (2017E)	8.8%	10.2%	8.4%	10.1%
WACC	10%	10%	10%	10%
CROCI/WACC (X)	0.88x	1.02x	0.84x	1.01x
Sector cash return multiple (Y)	0.76x	0.76x	0.76x	0.76x
Target EV/GCI (=X*Y)	0.67x	0.78x	0.63x	0.77x
GCI (pricing currency mn, 2017E)	102,203	10,466	4,604	3,363
Target EV (pricing currency mn)	68,221	8,122	2,922	3,189
Less: Net debt (2017E)	(45,837)	(3,471)	(2,396)	(1,844)
Less: Off-balance sheet debt (2017E)	-	-	-	-
Less: Minority interest (2017E)	(4,086)	(89)	(44)	(253)
Implied equity value (pricing currency mn)	18,298	4,562	482	478
Number of shares (mn)	18,587	918	85	32
12-m TP	HKD 1.00	HKD 5.00	USD 5.70	USD 14.90
Potential takeover value			USD 11.00	
Adjusted TP (50% takeover + 50% EV/GCI)			8.40	
Previous TP	HKD 1.20	HKD 3.09	USD 9.00	USD 20.00
TP Change	-17%	62%	-7%	-26%
Ratings	Neutral	Buy	Neutral	Neutral
Previous ratings	Neutral	Neutral	Neutral	Neutral
Current price	HKD 1.12	HKD 4.23	USD 10.30	USD 14.80
Up/downside - new	-11%	18%	-18%	1%

\*Current price as of Sep 20, 2016

Source: Datastream, Gao Hua Securities Research

**Exhibit 31: P/B vs. ROE based valuation framework suggests Xinyi Solar is fairly valued at current levels**

12-month target price based on historical average P/B vs. ROE valuation framework

PB vs. ROE	
	HK\$
	Xinyi 0968.HK
2017E ROE	23.9%
Adjusted sector P/B vs. ROE	12.50
Target P/B (x)	2.99
Book value per share (2017E)	1.15
12-m TP	3.40
Previous TP	3.40
TP change (%)	0%
Current price	3.31
Implied upside / downside (%)	3%
Rating	Neutral

\*Current price as of Sep 20, 2016

Source: Bloomberg, Gao Hua Securities Research.

**Exhibit 32: P/B vs. ROE valuation framework suggests 22% potential upside for Sungrow, while Longi appears overvalued and Clou fairly valued at current levels**

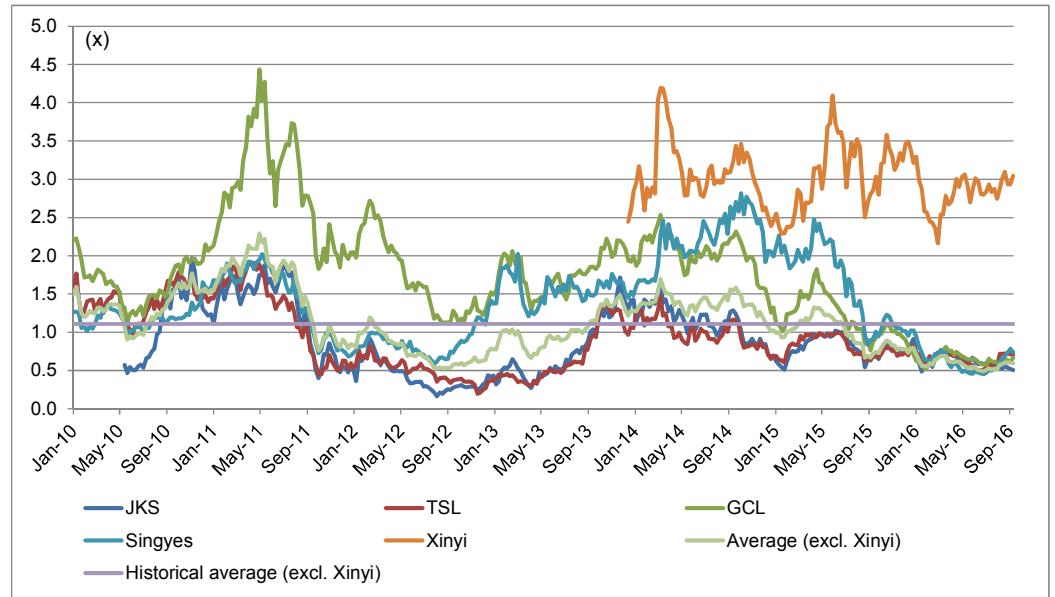
12-month target price based on historical average P/B vs. ROE valuation framework

PB vs. ROE			
	Rmb	Rmb	Rmb
	Longi(A) 601012.SS	Sungrow(A) 300274.SZ	Clou(A) 002121.SZ
2017E ROE	10.7%	13.9%	14.2%
Adjusted sector P/B vs. ROE	22.3	22.3	30.0
Target P/B (x)	2.39	3.11	4.25
Book value per share (2017E)	4.39	4.94	2.48
12-m TP	10.5	15.3	10.5
Previous TP	11.0	15.2	10.4
TP change (%)	-5%	1%	1%
Current price	14.11	12.50	10.10
Implied upside / downside (%)	-26%	22%	4%
Rating	Sell	Buy	Neutral

\*Current price as of Sep 20, 2016

Source: Bloomberg, WIND, Gao Hua Securities Research.

**Exhibit 33: Offshore solar sector is currently trading at 0.6x P/B, vs. the mid-cycle of 1.1x**  
Historical forward P/B valuation for offshore solar stocks



Source: Company data, Gao Hua Securities Research

## Singyes (0750.HK, Buy): Visible order backlog; margin expansion

### Source of opportunity

Following a number of recent positive developments, we upgrade Singyes from Neutral to Buy with our new 12-m TP of HK\$5.00 implying 18% potential upside, among the highest in our solar coverage. We believe: (1) **Its solar EPC business is benefiting from a declining module price and we expect margin expansion for the segment in 2H16 and 2017.** Singyes locked in some projects' selling price in 1H16 at close to Rmb7.5/watt, vs. its current investment cost of around Rmb5.0/watt. We forecast its Solar EPC gross margin increasing from 26.2% in 1H16 to 28.6% in 2H16 and 27.1% in 2017.

(2) **Its robust order backlog ensures higher earnings visibility.** Singyes completed 170MW EPC project sales in 1H16 and it had 270MW under construction as at June 30 (o/w 200MW due to complete by end-2016). It has also secured an additional 240MW of new orders that should gradually start construction in 2H16, with 50MW to be completed in 2016. That said, it has 'locked in' 420MW of EPC bookings in 2016 and 260MW for 2017. It also has 398MW self-operated projects that could be monetized in due course. We forecast 2016/17/18 EPC sales reaching 400MW/500MW/500MW and believe Singyes differentiates from its peers given sizable exposure to high-quality projects in Guangdong, which are not facing subsidy payment delays. This ensures its pipeline is in high demand and thus it is able to sell at a premium price and margin.

(3) **Default risk appears largely removed.** Investor concern in recent quarters has focused on the refinancing risk for Rmb1.4bn of convertible bonds and senior notes. However, with the disposal of the 50MW Golden Sun project for Rmb200mn on June 29, growing order visibility, and Rmb357mn of net proceeds from recent rights issues, we believe the default risk has now largely been removed.

### Catalyst

**Monetization of self-operated solar farms in Gansu and Xinjiang.** On 4 September 2016, Singyes entered an agreement with China Solar Energy (0155.HK, NC) to sell an 81% stake in its solar farm project companies in Wuwei (Gansu) and Xinjiang for a consideration of HK\$861mn (total installed capacity of over 100MW). With the buyer currently undergoing restructuring, Singyes has indicated the sales will complete by end-2016 (at which point we incorporate it into our model).

### Valuation

We revise up our net profit estimates by 44%/25%/20% for 2016/17/18, after factoring in higher EPC and curtain wall sales given the robust order backlog and a lift in our margin outlook on lower procurement cost. Incorporating our revised estimates and an increase in the 2017E sector cash return multiple to 0.76x (from 0.61x) leads to a new EV/GCI vs. CROCI/WACC-based 12m TP of HK\$5.00 (from HK\$3.09).

### Key risks

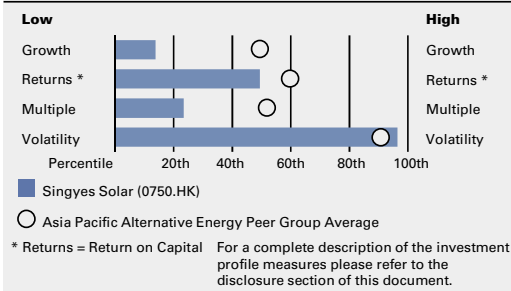
Longer accounts receivables and lower solar installation beyond 2017.

### INVESTMENT LIST MEMBERSHIP

Asia Pacific Buy list

Coverage View: Neutral

### Investment Profile



Key data	Current
Price (HK\$)	4.22
12 month price target (HK\$)	5.00
Market cap (HK\$ mn / US\$ mn)	3,582.2 / 461.9
Foreign ownership (%)	--

	12/15	12/16E	12/17E	12/18E
EPS (Rmb)	0.46	0.59	0.56	0.57
EPS growth (%)	(42.4)	29.7	(5.2)	2.0
EPS (diluted) (Rmb)	0.46	0.59	0.56	0.57
EPS (basic pre-ex) (Rmb)	0.51	0.66	0.62	0.63
P/E (X)	15.4	6.1	6.5	6.3
P/B (X)	1.6	0.8	0.7	0.6
EV/EBITDA (X)	14.6	6.4	5.6	5.2
Dividend yield (%)	0.3	0.8	0.8	0.8
ROE (%)	10.9	13.0	11.3	10.3
CROCI (%)	11.9	11.5	10.2	9.5

### Price performance chart



Share price performance (%)	3 month	6 month	12 month
Absolute	58.6	0.2	(20.8)
Rel. to Hang Seng China Ent. Index	40.2	(9.2)	(20.4)

Source: Company data, Goldman Sachs Research estimates, FactSet. Price as of 9/21/2016 close.

## Singyes Solar: Summary financials

Profit model (Rmb mn)	12/15	12/16E	12/17E	12/18E	Balance sheet (Rmb mn)	12/15	12/16E	12/17E	12/18E
<b>Total revenue</b>	<b>4,182.0</b>	<b>5,725.8</b>	<b>6,809.7</b>	<b>6,959.2</b>	Cash & equivalents	1,265.3	1,185.7	1,042.5	1,240.0
Cost of goods sold	(3,297.7)	(4,469.5)	(5,323.9)	(5,462.9)	Accounts receivable	2,944.6	3,451.1	4,104.5	4,194.6
SG&A	(494.3)	(515.3)	(578.8)	(556.7)	Inventory	93.2	122.5	145.9	149.7
R&D	--	--	--	--	Other current assets	1,303.6	1,433.9	1,577.3	1,735.0
Other operating profit/(expense)	0.0	0.0	0.0	0.0	<b>Total current assets</b>	<b>5,606.6</b>	<b>6,193.2</b>	<b>6,870.2</b>	<b>7,319.3</b>
<b>EBITDA</b>	<b>527.9</b>	<b>893.5</b>	<b>1,091.7</b>	<b>1,128.1</b>	Net PP&E	3,835.2	4,660.0	4,758.2	4,858.5
Depreciation & amortization	(137.8)	(152.6)	(184.7)	(188.5)	Net intangibles	3.5	3.5	3.5	3.5
<b>EBIT</b>	<b>390.1</b>	<b>741.0</b>	<b>907.0</b>	<b>939.6</b>	Total investments	0.0	0.0	0.0	0.0
Interest income	31.5	44.3	41.5	36.5	Other long-term assets	206.6	245.5	292.2	340.1
Interest expense	(348.5)	(406.7)	(403.9)	(398.9)	<b>Total assets</b>	<b>9,652.0</b>	<b>11,102.2</b>	<b>11,924.1</b>	<b>12,521.4</b>
Income/(loss) from uncons. subs.	(5.9)	0.0	0.0	0.0	Accounts payable	903.5	1,469.4	1,750.3	1,796.0
Others	380.1	250.0	100.0	80.0	Short-term debt	1,040.8	1,040.8	1,040.8	1,040.8
<b>Pretax profits</b>	<b>447.4</b>	<b>628.5</b>	<b>644.6</b>	<b>657.2</b>	Other current liabilities	595.7	595.7	595.7	595.7
Income tax	(89.9)	(125.7)	(128.9)	(131.4)	<b>Total current liabilities</b>	<b>2,540.0</b>	<b>3,105.9</b>	<b>3,386.8</b>	<b>3,432.5</b>
Minorities	(1.5)	0.0	0.0	0.0	Long-term debt	2,986.2	2,986.2	2,986.2	2,986.2
<b>Net income pre-preferred dividends</b>	<b>356.0</b>	<b>502.8</b>	<b>515.7</b>	<b>525.8</b>	Other long-term liabilities	624.7	624.7	624.7	624.7
Preferred dividends	0.0	0.0	0.0	0.0	Total long-term liabilities	3,610.8	3,610.8	3,610.8	3,610.8
<b>Net income (pre-exceptionals)</b>	<b>356.0</b>	<b>502.8</b>	<b>515.7</b>	<b>525.8</b>	<b>Total liabilities</b>	<b>6,150.8</b>	<b>6,716.8</b>	<b>6,997.7</b>	<b>7,043.4</b>
Post-tax exceptionals	0.0	0.0	0.0	0.0	<b>Preferred shares</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Net income</b>	<b>356.0</b>	<b>502.8</b>	<b>515.7</b>	<b>525.8</b>	<b>Total common equity</b>	<b>3,424.6</b>	<b>4,309.0</b>	<b>4,849.9</b>	<b>5,401.5</b>
EPS (basic, pre-exception) (Rmb)	0.51	0.66	0.62	0.63	Minority interest	76.5	76.5	76.5	76.5
EPS (basic, post-exception) (Rmb)	0.51	0.66	0.62	0.63	<b>Total liabilities &amp; equity</b>	<b>9,652.0</b>	<b>11,102.2</b>	<b>11,924.1</b>	<b>12,521.4</b>
EPS (diluted, post-exception) (Rmb)	0.46	0.59	0.56	0.57	<b>BVPS (Rmb)</b>	<b>4.39</b>	<b>4.69</b>	<b>5.28</b>	<b>5.88</b>
DPS (Rmb)	0.02	0.03	0.03	0.03					
Dividend payout ratio (%)	4.4	4.4	4.5	4.5					
Free cash flow yield (%)	(22.7)	(14.7)	(3.8)	7.2					
<b>Growth &amp; margins (%)</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>Ratios</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>
Sales growth	(16.5)	36.9	18.9	2.2	CROCI (%)	11.9	11.5	10.2	9.5
EBITDA growth	(34.3)	69.3	22.2	3.3	ROE (%)	10.9	13.0	11.3	10.3
EBIT growth	(43.4)	89.9	22.4	3.6	ROA (%)	4.0	4.8	4.5	4.3
Net income growth	(39.1)	41.3	2.6	2.0	ROACE (%)	10.9	11.8	10.6	10.1
EPS growth	(39.2)	28.4	(6.0)	2.0	Inventory days	11.5	8.8	9.2	9.9
Gross margin	21.1	21.9	21.8	21.5	Receivables days	242.6	203.9	202.5	217.6
EBITDA margin	12.6	15.6	16.0	16.2	Payable days	121.1	96.9	110.4	118.5
EBIT margin	9.3	12.9	13.3	13.5	Net debt/equity (%)	78.9	64.8	60.6	50.9
					Interest cover - EBIT (X)	1.2	2.0	2.5	2.6
<b>Cash flow statement (Rmb mn)</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>Valuation</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>
Net income pre-preferred dividends	356.0	502.8	515.7	525.8	P/E (analyst) (X)	15.4	6.1	6.5	6.3
D&A add-back	137.8	152.6	184.7	188.5	P/B (X)	1.6	0.8	0.7	0.6
Minorities interests add-back	(1.5)	0.0	0.0	0.0	EV/EBITDA (X)	14.6	6.4	5.6	5.2
Net (inc)/dec working capital	(486.0)	30.1	(395.8)	(48.2)	EV/GCI (X)	1.1	0.7	0.7	0.6
Other operating cash flow	(700.2)	(130.4)	(143.4)	(157.7)	Dividend yield (%)	0.3	0.8	0.8	0.8
<b>Cash flow from operations</b>	<b>(693.9)</b>	<b>555.1</b>	<b>161.1</b>	<b>508.3</b>					
Capital expenditures	(436.7)	(974.1)	(279.6)	(285.5)					
Acquisitions	(42.9)	0.0	0.0	0.0					
Divestitures	0.0	0.0	0.0	0.0					
Others	335.8	0.0	0.0	0.0					
<b>Cash flow from investments</b>	<b>(143.8)</b>	<b>(974.1)</b>	<b>(279.6)</b>	<b>(285.5)</b>					
Dividends paid (common & pref)	(49.4)	(17.5)	(24.7)	(25.3)					
Inc/(dec) in debt	1,288.7	0.0	0.0	0.0					
Common stock issuance (repurchase)	(5.1)	356.8	0.0	0.0					
Other financing cash flows	(32.6)	0.0	0.0	0.0					
<b>Cash flow from financing</b>	<b>1,201.6</b>	<b>339.4</b>	<b>(24.7)</b>	<b>(25.3)</b>					
<b>Total cash flow</b>	<b>363.9</b>	<b>(79.6)</b>	<b>(143.2)</b>	<b>197.5</b>					

Note: Last actual year may include reported and estimated data.  
Source: Company data, Goldman Sachs Research estimates.

**Exhibit 34: Singyes currently has 270MW of projects under construction and it secured 240MW of additional orders in 1H16**

Singyes – solar EPC and self-operated projects order breakdown

Self-operated projects (MW)	Pending		In-progress	Total
	On-grid	grid-connection		
Guangdong province	42	-	108	150
North-west China (Xinjiang, Gansu)	110	62	-	172
Hebei	-	-	20	20
Golden Sun/DG	44	13	-	56
<b>Total</b>	<b>196</b>	<b>74</b>	<b>128</b>	<b>398</b>

<b>Projects completed in 1H16</b>	<b>170</b>
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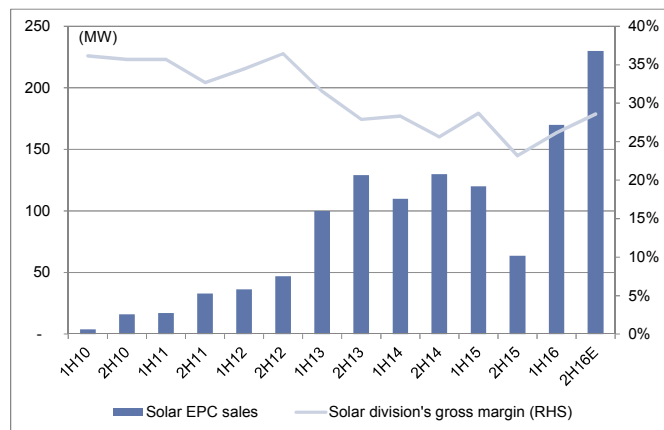
Projects under construction	270
Projects to be completed in 2H16	200

<b>New EPC project secured</b>	<b>240</b>
Guangdong	100
Hainan	50
Hunan	40
Shaanxi	50

Source: Company data

**Exhibit 35: Based on company guidance, Singyes is set to reach record high EPC sales in 2016, and we expect gross margin to recover in 2H16**

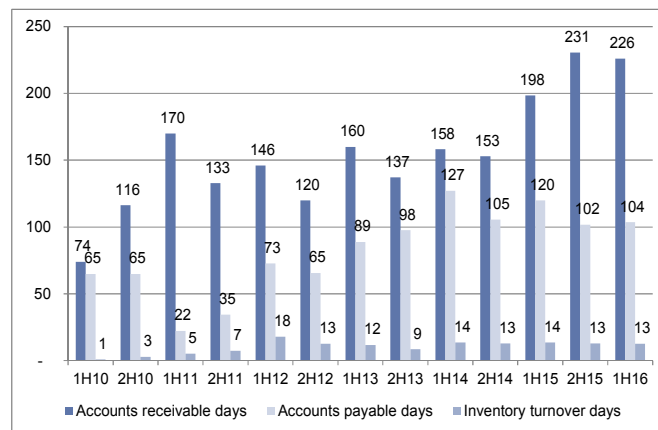
Solar EPC sales and solar division gross margin



Source: Company data, Gao Hua Securities Research

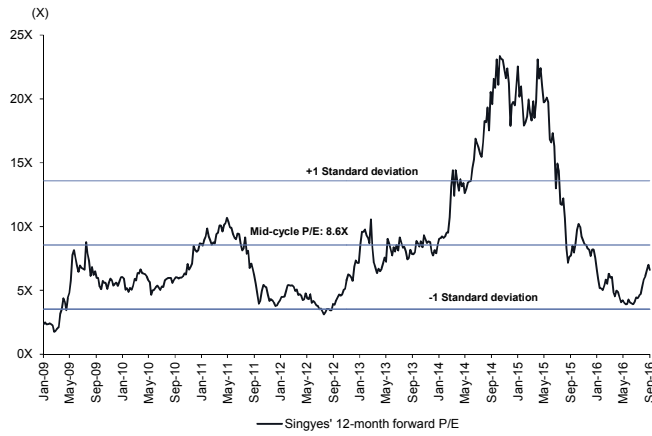
**Exhibit 36: Accounts receivable days for Singyes declined slightly in 1H16, better than the downstream solar farm operators**

Working capital cycle analysis



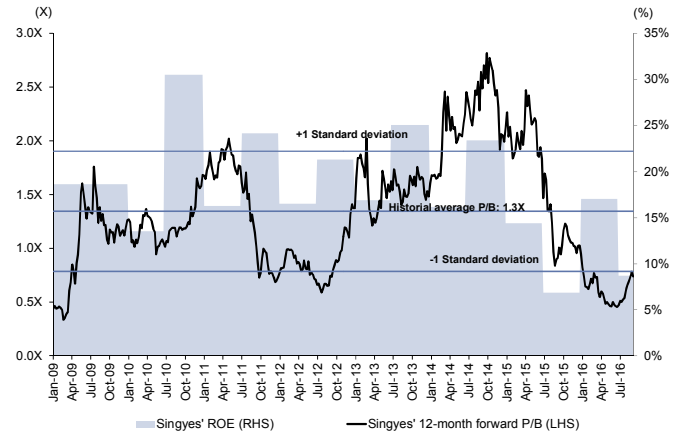
Source: Company data

**Exhibit 37: Singyes is currently trading below the mid-cycle P/E of 8.6x**  
Historical forward P/E



Source: Company data, Datastream, Gao Hua Securities Research

**Exhibit 38: Singyes P/B is at one standard deviation below mid-cycle**  
Historical forward P/B vs. ROE



Source: Company data, Datastream, Gao Hua Securities Research

## Appendix: Summary financials

**Exhibit 39: Summary financials for Sungrow (300274.SZ)**

Profit model (Rmb mn)	12/15	12/16E	12/17E	12/18E	Balance sheet (Rmb mn)	12/15	12/16E	12/17E	12/18E
<b>Total revenue</b>	<b>4,569.2</b>	<b>6,097.7</b>	<b>7,612.8</b>	<b>9,611.0</b>	Cash & equivalents	702.5	3,290.3	3,274.3	3,353.7
Cost of goods sold	(3,486.4)	(4,600.1)	(5,750.1)	(7,369.1)	Accounts receivable	3,304.7	4,176.5	5,214.2	6,582.9
SG&A	(496.6)	(609.8)	(761.3)	(922.7)	Inventory	1,321.7	1,512.3	1,890.5	2,422.7
R&D	--	--	--	--	Other current assets	298.0	298.0	298.0	298.0
Other operating profit/(expense)	(18.5)	(19.5)	(20.4)	(21.5)	<b>Total current assets</b>	<b>5,626.9</b>	<b>9,277.2</b>	<b>10,677.0</b>	<b>12,657.4</b>
<b>EBITDA</b>	<b>606.6</b>	<b>921.8</b>	<b>1,142.2</b>	<b>1,384.6</b>	Net PP&E	285.7	728.1	1,148.9	1,531.6
Depreciation & amortization	(38.8)	(53.4)	(61.3)	(86.8)	Net intangibles	86.1	82.3	78.4	74.4
<b>EBIT</b>	<b>567.8</b>	<b>868.4</b>	<b>1,080.9</b>	<b>1,297.8</b>	Total investments	50.0	50.0	50.0	50.0
Interest income	11.9	10.5	49.4	49.1	Other long-term assets	734.4	734.4	734.4	734.4
Interest expense	(5.2)	(6.5)	(6.5)	(6.5)	<b>Total assets</b>	<b>6,783.1</b>	<b>10,871.9</b>	<b>12,688.7</b>	<b>15,047.8</b>
Income/(loss) from uncons. subs.	0.0	0.0	0.0	0.0	Accounts payable	3,066.9	3,780.9	4,726.1	6,056.8
Others	(82.0)	30.0	30.0	30.0	Short-term debt	106.9	106.9	106.9	106.9
<b>Pretax profits</b>	<b>492.5</b>	<b>902.4</b>	<b>1,153.7</b>	<b>1,370.4</b>	Other current liabilities	712.3	712.3	712.3	712.3
Income tax	(66.4)	(135.4)	(173.1)	(205.6)	<b>Total current liabilities</b>	<b>3,886.1</b>	<b>4,600.1</b>	<b>5,545.3</b>	<b>6,876.0</b>
Minorities	(0.7)	(39.4)	(70.9)	(140.3)	Long-term debt	2.2	2.2	2.2	2.2
<b>Net income pre-preferred dividends</b>	<b>425.4</b>	<b>727.7</b>	<b>909.8</b>	<b>1,024.5</b>	Other long-term liabilities	59.1	59.1	59.1	59.1
Preferred dividends	0.0	0.0	0.0	0.0	Total long-term liabilities	61.3	61.3	61.3	61.3
<b>Net income (pre-exceptionals)</b>	<b>425.4</b>	<b>727.7</b>	<b>909.8</b>	<b>1,024.5</b>	<b>Total liabilities</b>	<b>3,947.3</b>	<b>4,661.3</b>	<b>5,606.6</b>	<b>6,937.3</b>
Post-tax exceptionals	0.0	0.0	0.0	0.0	<b>Preferred shares</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Net income</b>	<b>425.4</b>	<b>727.7</b>	<b>909.8</b>	<b>1,024.5</b>	<b>Total common equity</b>	<b>2,814.1</b>	<b>6,149.5</b>	<b>6,950.2</b>	<b>7,838.2</b>
EPS (basic, pre-exception) (Rmb)	0.36	0.52	0.65	0.73	Minority interest	21.7	61.1	132.0	272.3
EPS (basic, post-exception) (Rmb)	0.36	0.52	0.65	0.73	<b>Total liabilities &amp; equity</b>	<b>6,783.1</b>	<b>10,871.9</b>	<b>12,688.7</b>	<b>15,047.8</b>
EPS (diluted, post-exception) (Rmb)	0.36	0.52	0.65	0.73	<b>BVPS (Rmb)</b>	<b>2.37</b>	<b>4.37</b>	<b>4.94</b>	<b>5.57</b>
DPS (Rmb)	0.00	0.08	0.10	0.11					
Dividend payout ratio (%)	0.0	15.0	15.0	15.0					
Free cash flow yield (%)	(3.1)	(0.1)	0.5	1.2					
<b>Growth &amp; margins (%)</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>Ratios</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>
Sales growth	49.2	33.5	24.8	26.2	CROCI (%)	35.8	35.9	31.7	29.2
EBITDA growth	40.1	52.0	23.9	21.2	ROE (%)	16.4	16.2	13.9	13.9
EBIT growth	42.5	53.0	24.5	20.1	ROA (%)	7.3	8.2	7.7	7.4
Net income growth	50.2	71.1	25.0	12.6	ROACE (%)	23.8	29.0	27.2	25.7
EPS growth	49.6	44.7	25.0	12.6	Inventory days	111.7	112.4	108.0	106.8
Gross margin	23.7	24.6	24.5	23.3	Receivables days	223.3	223.9	225.1	224.0
EBITDA margin	13.3	15.1	15.0	14.4	Payable days	270.7	271.7	270.0	267.0
EBIT margin	12.4	14.2	14.2	13.5	Net debt/equity (%)	(20.9)	(51.2)	(44.7)	(40.0)
					Interest cover - EBIT (X)	NM	NM	NM	NM
<b>Cash flow statement (Rmb mn)</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>Valuation</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>
Net income pre-preferred dividends	425.4	727.7	909.8	1,024.5	P/E (analyst) (X)	43.9	24.0	19.2	17.0
D&A add-back	38.8	53.4	61.3	86.8	P/B (X)	6.6	2.8	2.5	2.2
Minorities interests add-back	0.7	39.4	70.9	140.3	EV/EBITDA (X)	29.8	15.5	12.6	10.4
Net (inc)/dec working capital	(906.1)	(348.4)	(470.6)	(570.3)	EV/GCI (X)	9.7	5.3	3.9	3.1
Other operating cash flow	113.3	0.0	0.0	0.0	Dividend yield (%)	0.0	0.6	0.8	0.9
<b>Cash flow from operations</b>	<b>(327.8)</b>	<b>472.0</b>	<b>571.4</b>	<b>681.3</b>					
Capital expenditures	(252.1)	(492.0)	(478.2)	(465.5)					
Acquisitions	0.0	0.0	0.0	0.0					
Divestitures	0.0	0.0	0.0	0.0					
Others	(93.2)	0.0	0.0	0.0					
<b>Cash flow from investments</b>	<b>(345.4)</b>	<b>(492.0)</b>	<b>(478.2)</b>	<b>(465.5)</b>					
Dividends paid (common & pref)	(34.7)	0.0	(109.2)	(136.5)					
Inc/(dec) in debt	10.4	0.0	0.0	0.0					
Common stock issuance (repurchase)	94.2	2,607.8	0.0	0.0					
Other financing cash flows	126.0	0.0	0.0	0.0					
<b>Cash flow from financing</b>	<b>195.9</b>	<b>2,607.8</b>	<b>(109.2)</b>	<b>(136.5)</b>					
<b>Total cash flow</b>	<b>(477.2)</b>	<b>2,587.8</b>	<b>(15.9)</b>	<b>79.4</b>					

Note: Last actual year may include reported and estimated data.

Source: Company data, Goldman Sachs Research estimates.

Source: Company data, Gao Hua Securities Research.

## Exhibit 40: Summary financials for Shenzhen Clou Electronics (002121.SZ)

Profit model (Rmb mn)	12/15	12/16E	12/17E	12/18E	Balance sheet (Rmb mn)	12/15	12/16E	12/17E	12/18E
<b>Total revenue</b>	<b>2,261.4</b>	<b>3,168.9</b>	<b>4,030.4</b>	<b>4,989.3</b>	Cash & equivalents	903.7	617.8	808.6	635.4
Cost of goods sold	(1,531.3)	(2,076.1)	(2,619.6)	(3,230.4)	Accounts receivable	2,191.9	2,604.6	2,760.5	3,417.3
SG&A	(489.0)	(665.5)	(806.1)	(948.0)	Inventory	730.1	910.1	1,148.3	1,416.1
R&D	--	--	--	--	Other current assets	643.7	643.7	643.7	643.7
Other operating profit/(expense)	(14.0)	(14.7)	(15.4)	(16.2)	<b>Total current assets</b>	<b>4,469.3</b>	<b>4,776.0</b>	<b>5,361.1</b>	<b>6,112.4</b>
<b>EBITDA</b>	<b>366.1</b>	<b>634.3</b>	<b>878.2</b>	<b>1,132.6</b>	Net PP&E	3,041.5	4,211.3	4,894.6	5,604.0
Depreciation & amortization	(139.0)	(221.6)	(288.9)	(337.9)	Net intangibles	184.7	169.3	153.5	137.2
<b>EBIT</b>	<b>227.1</b>	<b>412.7</b>	<b>589.3</b>	<b>794.7</b>	Total investments	160.6	160.6	160.6	160.6
Interest income	8.5	9.9	6.8	8.9	Other long-term assets	2,456.8	2,456.8	2,456.8	2,456.8
Interest expense	(122.6)	(189.8)	(252.3)	(277.3)	<b>Total assets</b>	<b>10,313.0</b>	<b>11,774.1</b>	<b>13,026.7</b>	<b>14,471.1</b>
Income/(loss) from uncons. subs.	0.0	0.0	0.0	0.0	Accounts payable	3,100.6	2,275.1	2,655.4	3,097.7
Others	64.0	120.0	120.0	120.0	Short-term debt	955.0	955.0	955.0	955.0
<b>Pretax profits</b>	<b>177.1</b>	<b>352.8</b>	<b>463.8</b>	<b>646.3</b>	Other current liabilities	1,255.1	1,255.1	1,255.1	1,255.1
Income tax	25.0	(42.3)	(55.7)	(96.9)	<b>Total current liabilities</b>	<b>5,310.7</b>	<b>4,485.2</b>	<b>4,865.5</b>	<b>5,307.7</b>
Minorities	(5.8)	(11.6)	(15.3)	(21.3)	Long-term debt	1,841.1	3,841.1	4,341.1	4,841.1
<b>Net income pre-preferred dividends</b>	<b>196.2</b>	<b>298.8</b>	<b>392.9</b>	<b>528.0</b>	Other long-term liabilities	725.6	725.6	725.6	725.6
Preferred dividends	0.0	0.0	0.0	0.0	Total long-term liabilities	2,566.8	4,566.8	5,066.8	5,566.8
<b>Net income (pre-exceptionals)</b>	<b>196.2</b>	<b>298.8</b>	<b>392.9</b>	<b>528.0</b>	<b>Total liabilities</b>	<b>7,877.4</b>	<b>9,051.9</b>	<b>9,932.2</b>	<b>10,874.5</b>
Post-tax exceptionals	0.0	0.0	0.0	0.0	Preferred shares	0.0	0.0	0.0	0.0
<b>Net income</b>	<b>196.2</b>	<b>298.8</b>	<b>392.9</b>	<b>528.0</b>	<b>Total common equity</b>	<b>2,322.8</b>	<b>2,597.8</b>	<b>2,954.8</b>	<b>3,435.7</b>
EPS (basic, pre-except) (Rmb)	0.16	0.25	0.33	0.44	Minority interest	112.7	124.4	139.7	161.0
EPS (basic, post-except) (Rmb)	0.16	0.25	0.33	0.44	<b>Total liabilities &amp; equity</b>	<b>10,313.0</b>	<b>11,774.1</b>	<b>13,026.7</b>	<b>14,471.1</b>
EPS (diluted, post-except) (Rmb)	0.16	0.25	0.33	0.44	<b>BVPS (Rmb)</b>	<b>1.95</b>	<b>2.18</b>	<b>2.48</b>	<b>2.89</b>
DPS (Rmb)	0.02	0.03	0.04	0.05					
Dividend payout ratio (%)	12.1	12.0	12.0	12.0					
Free cash flow yield (%)	(15.4)	(18.6)	(2.2)	(5.1)					
<b>Growth &amp; margins (%)</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>Ratios</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>
Sales growth	15.7	40.1	27.2	23.8	CROCI (%)	18.2	13.7	13.2	13.7
EBITDA growth	36.3	73.3	38.5	29.0	ROE (%)	10.4	12.1	14.2	16.5
EBIT growth	12.8	81.7	42.8	34.8	ROA (%)	2.6	2.7	3.2	3.8
Net income growth	56.1	52.3	31.5	34.4	ROACE (%)	9.3	8.3	8.6	9.5
EPS growth	31.0	52.3	31.5	34.4	Inventory days	137.2	144.2	143.4	144.9
Gross margin	32.3	34.5	35.0	35.3	Receivables days	282.8	276.2	242.9	226.0
EBITDA margin	16.2	20.0	21.8	22.7	Payable days	536.4	472.6	343.5	325.0
EBIT margin	10.0	13.0	14.6	15.9	Net debt/equity (%)	77.7	153.5	145.0	143.5
					Interest cover - EBIT (X)	2.0	2.3	2.4	3.0
<b>Cash flow statement (Rmb mn)</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>Valuation</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>
Net income pre-preferred dividends	196.2	298.8	392.9	528.0	P/E (analyst) (X)	59.9	40.2	30.6	22.8
D&A add-back	139.0	221.6	288.9	337.9	P/B (X)	5.1	4.6	4.1	3.5
Minorities interests add-back	5.8	11.6	15.3	21.3	EV/EBITDA (X)	37.6	25.7	19.0	15.3
Net (inc)/dec working capital	(747.1)	(1,418.1)	(13.9)	(482.3)	EV/GCI (X)	3.8	2.5	2.3	1.9
Other operating cash flow	108.1	0.0	0.0	0.0	Dividend yield (%)	0.2	0.3	0.4	0.5
<b>Cash flow from operations</b>	<b>(298.0)</b>	<b>(886.0)</b>	<b>683.1</b>	<b>404.9</b>					
Capital expenditures	(1,530.6)	(1,376.0)	(956.4)	(1,031.0)					
Acquisitions	0.0	0.0	0.0	0.0					
Divestitures	0.0	0.0	0.0	0.0					
Others	(543.3)	0.0	0.0	0.0					
<b>Cash flow from investments</b>	<b>(2,073.9)</b>	<b>(1,376.0)</b>	<b>(956.4)</b>	<b>(1,031.0)</b>					
Dividends paid (common & pref)	(121.0)	(23.8)	(35.9)	(47.1)					
Inc/(dec) in debt	1,348.8	2,000.0	500.0	500.0					
Common stock issuance (repurchase)	728.9	0.0	0.0	0.0					
Other financing cash flows	862.9	0.0	0.0	0.0					
<b>Cash flow from financing</b>	<b>2,819.7</b>	<b>1,976.2</b>	<b>464.1</b>	<b>452.9</b>					
<b>Total cash flow</b>	<b>447.8</b>	<b>(285.9)</b>	<b>190.9</b>	<b>(173.2)</b>					

Note: Last actual year may include reported and estimated data.

Source: Company data, Goldman Sachs Research estimates.

Source: Company data, Gao Hua Securities Research.



## Exhibit 41: Summary financials for Xinyi Solar (0968.HK)

Profit model (HK\$ mn)	12/15	12/16E	12/17E	12/18E	Balance sheet (HK\$ mn)	12/15	12/16E	12/17E	12/18E
<b>Total revenue</b>	<b>4,750.4</b>	<b>6,183.1</b>	<b>6,760.8</b>	<b>7,380.8</b>	Cash & equivalents	2,868.7	1,983.8	2,105.6	2,617.5
Cost of goods sold	(3,040.2)	(3,429.6)	(3,546.7)	(3,777.4)	Accounts receivable	1,633.7	1,694.0	1,852.3	2,022.1
SG&A	(504.1)	(649.2)	(709.9)	(775.0)	Inventory	199.1	375.8	388.7	414.0
R&D	--	--	--	--	Other current assets	191.5	191.5	191.5	191.5
Other operating profit/(expense)	0.0	0.0	0.0	0.0	<b>Total current assets</b>	<b>4,893.0</b>	<b>4,245.2</b>	<b>4,538.1</b>	<b>5,245.1</b>
<b>EBITDA</b>	<b>1,431.8</b>	<b>2,552.4</b>	<b>3,237.1</b>	<b>3,704.6</b>	Net PP&E	7,104.1	11,660.1	13,955.3	15,544.8
Depreciation & amortization	(225.6)	(448.1)	(732.8)	(876.3)	Net intangibles	180.4	180.4	180.4	180.4
<b>EBIT</b>	<b>1,206.2</b>	<b>2,104.3</b>	<b>2,504.2</b>	<b>2,828.3</b>	Total investments	0.0	0.0	0.0	0.0
Interest income	4.6	15.0	15.8	16.5	Other long-term assets	557.2	492.4	519.7	573.8
Interest expense	(21.1)	(76.1)	(105.5)	(120.6)	<b>Total assets</b>	<b>12,734.6</b>	<b>16,578.1</b>	<b>19,193.4</b>	<b>21,544.0</b>
Income/(loss) from uncons. subs.	0.0	0.0	0.0	0.0	Accounts payable	2,156.4	1,315.4	1,360.4	1,448.9
Others	141.8	190.0	190.0	190.0	Short-term debt	474.2	474.2	474.2	474.2
<b>Pretax profits</b>	<b>1,331.5</b>	<b>2,233.2</b>	<b>2,604.5</b>	<b>2,914.3</b>	Other current liabilities	79.3	79.3	79.3	79.3
Income tax	(188.4)	(312.6)	(520.9)	(582.9)	<b>Total current liabilities</b>	<b>2,709.9</b>	<b>1,868.9</b>	<b>1,913.9</b>	<b>2,002.4</b>
Minorities	0.0	(109.5)	(229.5)	(293.1)	Long-term debt	3,116.1	6,616.1	8,116.1	9,116.1
<b>Net income pre-preferred dividends</b>	<b>1,143.1</b>	<b>1,811.1</b>	<b>1,854.1</b>	<b>2,038.3</b>	Other long-term liabilities	17.3	17.3	17.3	17.3
Preferred dividends	0.0	0.0	0.0	0.0	Total long-term liabilities	3,133.4	6,633.4	8,133.4	9,133.4
<b>Net income (pre-exceptionals)</b>	<b>1,143.1</b>	<b>1,811.1</b>	<b>1,854.1</b>	<b>2,038.3</b>	<b>Total liabilities</b>	<b>5,843.3</b>	<b>8,502.3</b>	<b>10,047.2</b>	<b>11,135.7</b>
Post-tax exceptionals	62.5	0.0	0.0	0.0	Preferred shares	0.0	0.0	0.0	0.0
<b>Net income</b>	<b>1,205.6</b>	<b>1,811.1</b>	<b>1,854.1</b>	<b>2,038.3</b>	<b>Total common equity</b>	<b>5,745.0</b>	<b>6,741.1</b>	<b>7,760.8</b>	<b>8,881.9</b>
EPS (basic, pre-except) (HK\$)	0.18	0.27	0.27	0.30	Minority interest	1,146.4	1,334.7	1,385.3	1,526.4
EPS (basic, post-except) (HK\$)	0.19	0.27	0.27	0.30	<b>Total liabilities &amp; equity</b>	<b>12,734.6</b>	<b>16,578.1</b>	<b>19,193.4</b>	<b>21,544.0</b>
EPS (diluted, post-except) (HK\$)	0.19	0.27	0.27	0.30	<b>BVPS (HK\$)</b>	<b>0.88</b>	<b>1.00</b>	<b>1.15</b>	<b>1.32</b>
DPS (HK\$)	0.09	0.12	0.12	0.14					
Dividend payout ratio (%)	47.0	45.0	45.0	45.0					
Free cash flow yield (%)	(13.5)	(16.3)	(2.4)	1.5					
<b>Growth &amp; margins (%)</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>Ratios</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>
Sales growth	97.1	30.2	9.3	9.2	CROCI (%)	21.0	21.5	17.3	16.5
EBITDA growth	139.9	78.3	26.8	14.4	ROE (%)	26.6	29.0	25.6	24.5
EBIT growth	140.1	74.5	19.0	12.9	ROA (%)	13.0	12.4	10.4	10.0
Net income growth	144.6	50.2	2.4	9.9	ROACE (%)	19.8	19.0	15.0	14.6
EPS growth	120.0	44.8	2.4	9.9	Inventory days	29.9	30.6	39.3	38.8
Gross margin	36.0	44.5	47.5	48.8	Receivables days	92.0	98.2	95.7	95.8
EBITDA margin	30.1	41.3	47.9	50.2	Payable days	196.7	184.8	137.7	135.7
EBIT margin	25.4	34.0	37.0	38.3	Net debt/equity (%)	10.5	63.2	70.9	67.0
					Interest cover - EBIT (X)	73.1	34.4	27.9	27.2
<b>Cash flow statement (HK\$ mn)</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>Valuation</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>
Net income pre-preferred dividends	1,143.1	1,811.1	1,854.1	2,038.3	P/E (analyst) (X)	15.5	12.2	11.9	10.9
D&A add-back	225.6	448.1	732.8	876.3	P/B (X)	3.3	3.3	2.9	2.5
Minorities interests add-back	0.0	(109.5)	(229.5)	(293.1)	EV/EBITDA (X)	14.4	11.2	9.3	8.3
Net (inc)/dec working capital	(381.8)	(1,078.0)	(126.2)	(106.6)	EV/GCI (X)	2.7	2.1	1.8	1.6
Other operating cash flow	(135.7)	109.5	229.5	293.1	Dividend yield (%)	3.0	3.7	3.8	4.1
<b>Cash flow from operations</b>	<b>851.1</b>	<b>1,181.2</b>	<b>2,460.8</b>	<b>2,807.9</b>					
Capital expenditures	(3,531.7)	(5,000.0)	(3,024.0)	(2,461.8)					
Acquisitions	0.0	0.0	0.0	0.0					
Divestitures	0.0	0.0	0.0	0.0					
Others	(81.2)	0.0	0.0	0.0					
<b>Cash flow from investments</b>	<b>(3,612.9)</b>	<b>(5,000.0)</b>	<b>(3,024.0)</b>	<b>(2,461.8)</b>					
Dividends paid (common & pref)	(434.3)	(566.1)	(815.0)	(834.3)					
Inc/(dec) in debt	2,290.3	3,500.0	1,500.0	1,000.0					
Common stock issuance (repurchase)	1,674.5	0.0	0.0	0.0					
Other financing cash flows	1,557.3	0.0	0.0	0.0					
<b>Cash flow from financing</b>	<b>5,087.7</b>	<b>2,933.9</b>	<b>685.0</b>	<b>165.7</b>					
<b>Total cash flow</b>	<b>2,326.0</b>	<b>(884.9)</b>	<b>121.8</b>	<b>511.8</b>					

Note: Last actual year may include reported and estimated data.

Source: Company data, Goldman Sachs Research estimates.

Source: Company data, Gao Hua Securities Research.

## Exhibit 42: Summary financials for Jinko Solar (JKS)

Profit model (\$ mn)	12/15	12/16E	12/17E	12/18E	Balance sheet (\$ mn)	12/15	12/16E	12/17E	12/18E
<b>Total revenue</b>	<b>2,481.8</b>	<b>3,143.4</b>	<b>2,985.4</b>	<b>2,977.1</b>	Cash & equivalents	568.7	138.6	244.9	642.8
Cost of goods sold	(1,977.0)	(2,515.0)	(2,404.2)	(2,336.0)	Accounts receivable	613.1	861.2	817.9	815.7
SG&A	(276.7)	(361.5)	(346.3)	(345.3)	Inventory	494.5	328.6	309.6	299.7
R&D	--	--	--	--	Other current assets	576.7	485.8	485.8	485.8
Other operating profit/(expense)	(22.2)	(31.4)	(29.9)	(29.8)	<b>Total current assets</b>	<b>2,253.0</b>	<b>1,814.2</b>	<b>1,858.3</b>	<b>2,243.9</b>
<b>EBITDA</b>	<b>303.2</b>	<b>351.3</b>	<b>348.9</b>	<b>414.4</b>	Net PP&E	582.2	996.6	903.7	801.7
Depreciation & amortization	(97.4)	(115.9)	(143.8)	(148.4)	Net intangibles	57.3	57.3	57.3	57.3
<b>EBIT</b>	<b>205.9</b>	<b>235.5</b>	<b>205.1</b>	<b>266.0</b>	Total investments	18.0	18.0	18.0	18.0
Interest income	0.0	0.0	0.0	0.0	Other long-term assets	1,279.8	2,029.1	2,219.1	2,198.0
Interest expense	(59.6)	(100.8)	(139.2)	(153.2)	<b>Total assets</b>	<b>4,190.4</b>	<b>4,915.3</b>	<b>5,056.5</b>	<b>5,318.9</b>
Income/(loss) from uncons. subs.	2.1	0.0	0.0	0.0	Accounts payable	584.3	788.7	681.2	659.3
Others	1.7	20.0	15.0	10.0	Short-term debt	742.2	842.2	942.2	1,042.2
<b>Pretax profits</b>	<b>150.1</b>	<b>154.6</b>	<b>80.8</b>	<b>122.8</b>	Other current liabilities	1,025.4	1,116.3	1,116.3	1,116.3
Income tax	(17.3)	(23.2)	(12.1)	(18.4)	<b>Total current liabilities</b>	<b>2,351.9</b>	<b>2,747.3</b>	<b>2,739.7</b>	<b>2,817.8</b>
Minorities	(27.3)	(20.0)	(20.0)	(20.0)	Long-term debt	846.6	1,046.6	1,146.6	1,246.6
<b>Net income pre-preferred dividends</b>	<b>105.6</b>	<b>111.4</b>	<b>48.7</b>	<b>84.4</b>	Other long-term liabilities	71.9	90.0	90.0	90.0
Preferred dividends	0.0	0.0	0.0	0.0	Total long-term liabilities	918.5	1,136.6	1,236.6	1,336.6
<b>Net income (pre-exceptionals)</b>	<b>105.6</b>	<b>111.4</b>	<b>48.7</b>	<b>84.4</b>	<b>Total liabilities</b>	<b>3,270.4</b>	<b>3,883.8</b>	<b>3,976.3</b>	<b>4,154.4</b>
Post-tax exceptionals	0.0	0.0	0.0	0.0	Preferred shares	0.0	0.0	0.0	0.0
<b>Net income</b>	<b>105.6</b>	<b>111.4</b>	<b>48.7</b>	<b>84.4</b>	<b>Total common equity</b>	<b>667.2</b>	<b>778.6</b>	<b>827.3</b>	<b>911.7</b>
EPS (basic, pre-exception) (\$)	3.39	3.58	1.57	2.71	Minority interest	252.8	252.8	252.8	252.8
EPS (basic, post-exception) (\$)	3.39	3.58	1.57	2.71	<b>Total liabilities &amp; equity</b>	<b>4,190.4</b>	<b>4,915.3</b>	<b>5,056.5</b>	<b>5,318.9</b>
EPS (diluted, post-exception) (\$)	3.30	3.49	1.52	2.64	<b>BVPS (\$)</b>	<b>20.88</b>	<b>24.37</b>	<b>25.89</b>	<b>28.53</b>
DPS (\$)	0.00	0.00	0.00	0.00					
Dividend payout ratio (%)	0.0	0.0	0.0	0.0					
Free cash flow yield (%)	(25.0)	(103.5)	(13.3)	28.1					
<b>Growth &amp; margins (%)</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>Ratios</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>
Sales growth	54.3	26.7	(5.0)	(0.3)	CROCI (%)	14.8	12.4	10.1	11.3
EBITDA growth	37.0	15.9	(0.7)	18.8	ROE (%)	17.1	15.4	6.1	9.7
EBIT growth	37.1	14.4	(12.9)	29.7	ROA (%)	2.9	2.4	1.0	1.6
Net income growth	(2.7)	5.6	(56.3)	73.2	ROACE (%)	10.9	9.2	6.6	8.2
EPS growth	(4.0)	5.8	(56.3)	73.2	Inventory days	73.8	59.7	48.5	47.6
Gross margin	20.3	20.0	19.5	21.5	Receivables days	85.0	85.6	102.6	100.1
EBITDA margin	12.2	11.2	11.7	13.9	Payable days	100.8	99.6	111.6	104.7
EBIT margin	8.3	7.5	6.9	8.9	Net debt/equity (%)	110.9	169.7	170.7	141.3
					Interest cover - EBIT (X)	3.5	2.3	1.5	1.7
<b>Cash flow statement (\$ mn)</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>Valuation</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>
Net income pre-preferred dividends	105.6	111.4	48.7	84.4	P/E (analyst) (X)	7.5	4.2	9.5	5.5
D&A add-back	97.4	115.9	143.8	148.4	P/B (X)	1.2	0.6	0.6	0.5
Minorities interests add-back	(27.3)	(20.0)	(20.0)	(20.0)	EV/EBITDA (X)	6.7	7.0	7.3	5.7
Net (inc)/dec working capital	(183.7)	122.3	(45.3)	(9.7)	EV/GCI (X)	0.9	0.8	0.8	0.7
Other operating cash flow	214.7	130.9	40.0	40.0	Dividend yield (%)	NM	NM	NM	NM
<b>Cash flow from operations</b>	<b>206.7</b>	<b>460.5</b>	<b>167.3</b>	<b>243.1</b>					
Capital expenditures	(462.1)	(1,190.5)	(260.9)	(45.2)					
Acquisitions	0.0	0.0	0.0	0.0					
Divestitures	0.0	0.0	0.0	0.0					
Others	(49.6)	0.0	0.0	0.0					
<b>Cash flow from investments</b>	<b>(511.7)</b>	<b>(1,190.5)</b>	<b>(260.9)</b>	<b>(45.2)</b>					
Dividends paid (common & pref)	0.0	0.0	0.0	0.0					
Inc/(dec) in debt	626.5	300.0	200.0	200.0					
Common stock issuance (repurchase)	0.0	0.0	0.0	0.0					
Other financing cash flows	(39.1)	0.0	0.0	0.0					
<b>Cash flow from financing</b>	<b>587.4</b>	<b>300.0</b>	<b>200.0</b>	<b>200.0</b>					
<b>Total cash flow</b>	<b>282.5</b>	<b>(430.0)</b>	<b>106.3</b>	<b>397.9</b>					

Note: Last actual year may include reported and estimated data.

Source: Company data, Goldman Sachs Research estimates.

Source: Company data, Gao Hua Securities Research.

## Exhibit 43: Summary financials for GCL-Poly (3800.HK)

Profit model (HK\$ mn)	12/15	12/16E	12/17E	12/18E	Balance sheet (HK\$ mn)	12/15	12/16E	12/17E	12/18E
<b>Total revenue</b>	<b>27,013.0</b>	<b>28,326.3</b>	<b>26,555.9</b>	<b>25,735.7</b>	Cash & equivalents	12,407.4	8,639.2	3,905.8	9,015.5
Cost of goods sold	(19,844.8)	(20,147.4)	(19,726.5)	(19,259.2)	Accounts receivable	17,374.9	18,625.5	17,461.4	16,922.1
SG&A	(2,060.6)	(2,227.4)	(2,088.2)	(2,023.7)	Inventory	1,676.8	2,759.9	2,702.3	2,638.2
R&D	--	--	--	--	Other current assets	8,514.5	10,452.5	12,561.8	12,994.3
Other operating profit/(expense)	0.0	0.0	0.0	0.0	<b>Total current assets</b>	<b>39,973.6</b>	<b>40,477.2</b>	<b>36,631.4</b>	<b>41,570.1</b>
<b>EBITDA</b>	<b>8,715.5</b>	<b>9,897.5</b>	<b>8,984.0</b>	<b>9,154.6</b>	Net PP&E	50,367.3	58,396.0	64,822.3	61,248.7
Depreciation & amortization	(3,607.9)	(3,946.0)	(4,242.8)	(4,701.8)	Net intangibles	278.9	207.2	135.6	64.0
<b>EBIT</b>	<b>5,107.6</b>	<b>5,951.5</b>	<b>4,741.2</b>	<b>4,452.8</b>	Total investments	191.1	191.1	191.1	191.1
Interest income	389.5	604.0	420.6	190.1	Other long-term assets	5,560.2	5,560.2	5,560.2	5,560.2
Interest expense	(2,741.2)	(3,382.5)	(3,332.8)	(3,283.0)	<b>Total assets</b>	<b>96,371.1</b>	<b>104,831.8</b>	<b>107,340.6</b>	<b>108,634.1</b>
Income/(loss) from uncons. subs.	0.0	0.0	0.0	0.0	Accounts payable	18,983.8	19,273.3	18,870.7	18,423.6
Others	677.8	791.3	791.3	791.3	Short-term debt	28,205.4	28,205.4	28,205.4	28,205.4
<b>Pretax profits</b>	<b>3,433.8</b>	<b>3,964.3</b>	<b>2,620.3</b>	<b>2,151.2</b>	Other current liabilities	2,446.1	2,446.1	2,446.1	2,446.1
Income tax	(657.2)	(758.7)	(501.5)	(411.7)	<b>Total current liabilities</b>	<b>49,635.3</b>	<b>49,924.8</b>	<b>49,522.2</b>	<b>49,075.1</b>
Minorities	(374.2)	(356.8)	(262.0)	(215.1)	Long-term debt	21,537.4	21,537.4	21,537.4	21,537.4
<b>Net income pre-preferred dividends</b>	<b>2,402.4</b>	<b>2,848.8</b>	<b>1,856.8</b>	<b>1,524.4</b>	Other long-term liabilities	3,963.7	3,963.7	3,963.7	3,963.7
Preferred dividends	0.0	0.0	0.0	0.0	Total long-term liabilities	25,501.1	25,501.1	25,501.1	25,501.1
<b>Net income (pre-exceptionals)</b>	<b>2,402.4</b>	<b>2,848.8</b>	<b>1,856.8</b>	<b>1,524.4</b>	<b>Total liabilities</b>	<b>75,136.4</b>	<b>75,425.9</b>	<b>75,023.3</b>	<b>74,576.2</b>
Post-tax exceptionals	606.4	0.0	0.0	0.0	Preferred shares	0.0	0.0	0.0	0.0
<b>Net income</b>	<b>3,008.8</b>	<b>2,848.8</b>	<b>1,856.8</b>	<b>1,524.4</b>	<b>Total common equity</b>	<b>19,172.5</b>	<b>26,374.7</b>	<b>28,231.4</b>	<b>29,755.8</b>
EPS (basic, pre-except) (HK\$)	0.15	0.15	0.10	0.08	Minority interest	2,062.2	3,031.2	4,085.9	4,302.1
EPS (basic, post-except) (HK\$)	0.19	0.15	0.10	0.08	<b>Total liabilities &amp; equity</b>	<b>96,371.1</b>	<b>104,831.8</b>	<b>107,340.6</b>	<b>108,634.1</b>
EPS (diluted, post-except) (HK\$)	0.19	0.15	0.10	0.08	<b>BVPS (HK\$)</b>	<b>1.20</b>	<b>1.42</b>	<b>1.52</b>	<b>1.60</b>
DPS (HK\$)	0.09	0.00	0.00	0.00					
Dividend payout ratio (%)	44.8	0.0	0.0	0.0					
Free cash flow yield (%)	(26.8)	11.7	23.6	21.5					
<b>Growth &amp; margins (%)</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>Ratios</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>
Sales growth	(0.9)	4.9	(6.2)	(3.1)	CROCI (%)	13.8	11.0	8.8	8.5
EBITDA growth	13.7	13.6	(9.2)	1.9	ROE (%)	16.0	12.5	6.8	5.3
EBIT growth	16.3	16.5	(20.3)	(6.1)	ROA (%)	3.2	2.8	1.8	1.4
Net income growth	53.5	(5.3)	(34.8)	(17.9)	ROACE (%)	8.0	8.4	6.0	5.5
EPS growth	53.5	(20.4)	(34.8)	(17.9)	Inventory days	44.2	40.2	50.5	50.6
Gross margin	26.5	28.9	25.7	25.2	Receivables days	210.2	231.9	248.0	243.8
EBITDA margin	32.3	34.9	33.8	35.6	Payable days	367.3	346.5	352.9	353.4
EBIT margin	18.9	21.0	17.9	17.3	Net debt/equity (%)	175.8	139.8	141.8	119.6
					Interest cover - EBIT (X)	2.2	2.1	1.6	1.4
<b>Cash flow statement (HK\$ mn)</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>Valuation</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>
Net income pre-preferred dividends	2,402.4	2,848.8	1,856.8	1,524.4	P/E (analyst) (X)	8.6	7.3	11.0	13.4
D&A add-back	3,607.9	3,946.0	4,242.8	4,701.8	P/B (X)	1.3	0.8	0.7	0.7
Minorities interests add-back	374.2	356.8	262.0	215.1	EV/EBITDA (X)	7.4	6.5	7.8	7.2
Net (inc)/dec working capital	(4,160.4)	(2,044.3)	819.1	156.3	EV/GCI (X)	0.9	0.7	0.7	0.6
Other operating cash flow	1,163.7	(356.8)	(262.0)	(215.1)	Dividend yield (%)	5.3	0.0	0.0	0.0
<b>Cash flow from operations</b>	<b>3,994.2</b>	<b>4,750.6</b>	<b>6,918.7</b>	<b>6,382.4</b>					
Capital expenditures	(11,348.0)	(2,000.0)	(1,126.7)	(1,056.6)					
Acquisitions	1,636.9	0.0	0.0	0.0					
Divestitures	0.0	0.0	0.0	0.0					
Others	520.8	(9,903.1)	(9,470.7)	0.0					
<b>Cash flow from investments</b>	<b>(9,190.3)</b>	<b>(11,903.1)</b>	<b>(10,597.4)</b>	<b>(1,056.6)</b>					
Dividends paid (common & pref)	0.0	(1,346.6)	0.0	0.0					
Inc/(dec) in debt	7,684.1	0.0	0.0	0.0					
Common stock issuance (repurchase)	0.0	5,700.0	0.0	0.0					
Other financing cash flows	4,360.4	(969.0)	(1,054.7)	(216.2)					
<b>Cash flow from financing</b>	<b>12,044.4</b>	<b>3,384.4</b>	<b>(1,054.7)</b>	<b>(216.2)</b>					
<b>Total cash flow</b>	<b>6,848.3</b>	<b>(3,768.2)</b>	<b>(4,733.4)</b>	<b>5,109.7</b>					

Note: Last actual year may include reported and estimated data.

Source: Company data, Goldman Sachs Research estimates.

Source: Company data, Gao Hua Securities Research.

## Exhibit 44: Summary financials for Trina Solar (TSL)

Profit model (\$ mn)	12/15	12/16E	12/17E	12/18E	Balance sheet (\$ mn)	12/15	12/16E	12/17E	12/18E
<b>Total revenue</b>	<b>3,035.5</b>	<b>3,461.2</b>	<b>3,236.6</b>	<b>3,330.5</b>	Cash & equivalents	465.4	405.1	429.9	326.8
Cost of goods sold	(2,468.9)	(2,873.3)	(2,735.7)	(2,824.9)	Accounts receivable	672.3	806.0	709.4	730.0
SG&A	(310.6)	(333.4)	(329.0)	(341.9)	Inventory	432.0	472.3	449.7	464.4
R&D	--	--	--	--	Other current assets	1,019.2	1,021.2	1,023.3	1,025.5
Other operating profit/(expense)	(79.1)	(30.0)	(30.0)	(30.0)	<b>Total current assets</b>	<b>2,588.9</b>	<b>2,704.6</b>	<b>2,612.3</b>	<b>2,546.6</b>
<b>EBITDA</b>	<b>312.0</b>	<b>424.6</b>	<b>381.6</b>	<b>392.4</b>	Net PP&E	1,862.1	2,483.1	2,653.0	2,720.4
Depreciation & amortization	(135.0)	(200.1)	(239.7)	(258.8)	Net intangibles	0.0	0.0	0.0	0.0
<b>EBIT</b>	<b>177.0</b>	<b>224.5</b>	<b>141.9</b>	<b>133.7</b>	Total investments	0.0	0.0	0.0	0.0
Interest income	2.9	3.4	3.0	3.1	Other long-term assets	242.9	242.9	242.9	242.9
Interest expense	(52.3)	(77.4)	(92.8)	(95.4)	<b>Total assets</b>	<b>4,694.0</b>	<b>5,430.6</b>	<b>5,508.2</b>	<b>5,509.9</b>
Income/(loss) from uncons. subs.	0.0	0.0	0.0	0.0	Accounts payable	1,407.7	1,180.8	1,049.3	1,006.1
Others	(11.8)	10.0	30.0	20.0	Short-term debt	916.6	1,166.6	1,166.6	1,166.6
<b>Pretax profits</b>	<b>115.8</b>	<b>160.5</b>	<b>82.1</b>	<b>61.4</b>	Other current liabilities	278.3	278.3	278.3	278.3
Income tax	(29.4)	(35.3)	(18.1)	(13.5)	<b>Total current liabilities</b>	<b>2,602.6</b>	<b>2,625.7</b>	<b>2,494.2</b>	<b>2,451.0</b>
Minorities	(9.8)	(13.6)	(7.0)	(5.2)	Long-term debt	809.5	1,409.5	1,559.5	1,559.5
<b>Net income pre-preferred dividends</b>	<b>76.5</b>	<b>111.5</b>	<b>57.0</b>	<b>42.7</b>	Other long-term liabilities	191.4	191.4	191.4	191.4
Preferred dividends	0.0	0.0	0.0	0.0	Total long-term liabilities	1,000.8	1,600.8	1,750.8	1,750.8
<b>Net income (pre-exceptionals)</b>	<b>76.5</b>	<b>111.5</b>	<b>57.0</b>	<b>42.7</b>	<b>Total liabilities</b>	<b>3,603.4</b>	<b>4,226.5</b>	<b>4,245.0</b>	<b>4,201.8</b>
Post-tax exceptionals	0.0	0.0	0.0	0.0	Preferred shares	0.0	0.0	0.0	0.0
<b>Net income</b>	<b>76.5</b>	<b>111.5</b>	<b>57.0</b>	<b>42.7</b>	<b>Total common equity</b>	<b>1,050.7</b>	<b>1,162.3</b>	<b>1,219.3</b>	<b>1,262.0</b>
EPS (basic, pre-except) (\$)	0.91	1.32	0.67	0.50	Minority interest	39.8	41.8	43.9	46.1
EPS (basic, post-except) (\$)	0.91	1.32	0.67	0.50	<b>Total liabilities &amp; equity</b>	<b>4,694.0</b>	<b>5,430.6</b>	<b>5,508.2</b>	<b>5,509.9</b>
EPS (diluted, post-except) (\$)	0.72	1.06	0.54	0.40	<b>BVPS (\$)</b>	<b>12.43</b>	<b>13.75</b>	<b>14.42</b>	<b>14.93</b>
DPS (\$)	0.00	0.00	0.00	0.00					
Dividend payout ratio (%)	0.0	0.0	0.0	0.0					
Free cash flow yield (%)	(51.8)	(103.6)	(14.2)	(11.7)					
<b>Growth &amp; margins (%)</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>Ratios</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>
Sales growth	32.8	14.0	(6.5)	2.9	CROCI (%)	9.6	10.4	8.4	7.8
EBITDA growth	36.6	36.1	(10.1)	2.8	ROE (%)	7.6	10.1	4.8	3.4
EBIT growth	47.4	26.9	(36.8)	(5.8)	ROA (%)	1.9	2.2	1.0	0.8
Net income growth	28.9	45.8	(48.9)	(25.2)	ROACE (%)	6.0	6.4	3.9	3.3
EPS growth	18.4	45.8	(48.9)	(25.2)	Inventory days	57.9	57.4	61.5	59.1
Gross margin	18.7	17.0	15.5	15.2	Receivables days	77.8	77.9	85.4	78.9
EBITDA margin	10.3	12.3	11.8	11.8	Payable days	159.5	164.4	148.8	132.8
EBIT margin	5.8	6.5	4.4	4.0	Net debt/equity (%)	115.6	180.3	181.8	183.4
					Interest cover - EBIT (X)	3.6	3.0	1.6	1.4
<b>Cash flow statement (\$ mn)</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>Valuation</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>
Net income pre-preferred dividends	76.5	111.5	57.0	42.7	P/E (analyst) (X)	11.7	7.9	15.4	20.6
D&A add-back	135.0	200.1	239.7	258.8	P/B (X)	0.9	0.8	0.7	0.7
Minorities interests add-back	0.0	0.0	0.0	0.0	EV/EBITDA (X)	6.9	7.2	8.3	8.4
Net (inc)/dec working capital	485.8	(400.9)	(12.2)	(78.4)	EV/GCI (X)	0.7	0.7	0.7	0.7
Other operating cash flow	(509.1)	0.0	0.0	0.0	Dividend yield (%)	0.0	0.0	0.0	0.0
<b>Cash flow from operations</b>	<b>188.2</b>	<b>(89.3)</b>	<b>284.5</b>	<b>223.0</b>					
Capital expenditures	(652.4)	(821.0)	(409.7)	(326.2)					
Acquisitions	4.1	0.0	0.0	0.0					
Divestitures	0.0	0.0	0.0	0.0					
Others	(54.4)	0.0	0.0	0.0					
<b>Cash flow from investments</b>	<b>(702.7)</b>	<b>(821.0)</b>	<b>(409.7)</b>	<b>(326.2)</b>					
Dividends paid (common & pref)	0.0	0.0	0.0	0.0					
Inc/(dec) in debt	595.9	850.0	150.0	0.0					
Common stock issuance (repurchase)	8.5	0.0	0.0	0.0					
Other financing cash flows	(17.4)	0.0	0.0	0.0					
<b>Cash flow from financing</b>	<b>587.0</b>	<b>850.0</b>	<b>150.0</b>	<b>0.0</b>					
<b>Total cash flow</b>	<b>72.5</b>	<b>(60.3)</b>	<b>24.9</b>	<b>(103.1)</b>					

Note: Last actual year may include reported and estimated data.

Source: Company data, Goldman Sachs Research estimates.

Source: Company data, Gao Hua Securities Research.

## Exhibit 45: Summary financials for Longi Silicon (601012.SS)

Profit model (Rmb mn)	12/15	12/16E	12/17E	12/18E	Balance sheet (Rmb mn)	12/15	12/16E	12/17E	12/18E
<b>Total revenue</b>	<b>5,947.0</b>	<b>12,271.0</b>	<b>14,050.6</b>	<b>17,094.2</b>	Cash & equivalents	2,245.9	1,848.9	1,190.0	2,052.8
Cost of goods sold	(4,735.7)	(9,594.6)	(11,631.9)	(14,227.4)	Accounts receivable	2,081.0	2,689.5	3,079.6	3,746.7
SG&A	(408.2)	(1,043.0)	(1,152.2)	(1,401.7)	Inventory	1,534.2	3,154.4	3,824.2	4,677.5
R&D	--	--	--	--	Other current assets	578.4	400.0	400.0	100.0
Other operating profit/(expense)	(9.9)	(50.0)	(50.0)	(50.0)	<b>Total current assets</b>	<b>6,439.5</b>	<b>8,092.9</b>	<b>8,493.8</b>	<b>10,577.0</b>
<b>EBITDA</b>	<b>1,075.3</b>	<b>1,878.8</b>	<b>1,920.6</b>	<b>2,500.9</b>	Net PP&E	2,621.0	6,332.6	9,801.8	8,955.1
Depreciation & amortization	(282.1)	(295.5)	(704.0)	(1,085.9)	Net intangibles	133.8	126.8	119.7	112.7
<b>EBIT</b>	<b>793.2</b>	<b>1,583.3</b>	<b>1,216.6</b>	<b>1,415.0</b>	Total investments	131.1	131.1	131.1	131.1
Interest income	11.4	11.4	9.4	6.0	Other long-term assets	883.3	1,042.9	1,380.8	1,616.8
Interest expense	(90.9)	(116.7)	(262.5)	(315.5)	<b>Total assets</b>	<b>10,208.7</b>	<b>15,726.3</b>	<b>19,927.3</b>	<b>21,392.7</b>
Income/(loss) from uncons. subs.	0.0	0.0	0.0	0.0	Accounts payable	2,125.9	3,417.3	4,142.9	5,067.3
Others	(121.1)	(80.0)	20.0	20.0	Short-term debt	504.3	504.3	504.3	504.3
<b>Pretax profits</b>	<b>592.6</b>	<b>1,398.0</b>	<b>983.5</b>	<b>1,125.6</b>	Other current liabilities	1,151.1	1,151.1	1,151.1	1,151.1
Income tax	(71.8)	(251.6)	(177.0)	(202.6)	<b>Total current liabilities</b>	<b>3,781.3</b>	<b>5,072.7</b>	<b>5,798.3</b>	<b>6,722.7</b>
Minorities	(0.4)	(20.0)	(20.0)	(20.0)	Long-term debt	198.0	3,198.0	5,698.0	5,198.0
<b>Net income pre-preferred dividends</b>	<b>520.3</b>	<b>1,126.3</b>	<b>786.5</b>	<b>903.0</b>	Other long-term liabilities	575.7	575.7	575.7	575.7
Preferred dividends	0.0	0.0	0.0	0.0	Total long-term liabilities	773.7	3,773.7	6,273.7	5,773.7
<b>Net income (pre-exceptionals)</b>	<b>520.3</b>	<b>1,126.3</b>	<b>786.5</b>	<b>903.0</b>	<b>Total liabilities</b>	<b>4,555.0</b>	<b>8,846.4</b>	<b>12,072.0</b>	<b>12,496.4</b>
Post-tax exceptionals	0.0	0.0	0.0	0.0	Preferred shares	0.0	0.0	0.0	0.0
<b>Net income</b>	<b>520.3</b>	<b>1,126.3</b>	<b>786.5</b>	<b>903.0</b>	<b>Total common equity</b>	<b>5,634.3</b>	<b>6,840.4</b>	<b>7,795.9</b>	<b>8,816.8</b>
EPS (basic, pre-except) (Rmb)	0.29	0.63	0.44	0.51	Minority interest	19.5	39.5	59.5	79.5
EPS (basic, post-except) (Rmb)	0.29	0.63	0.44	0.51	<b>Total liabilities &amp; equity</b>	<b>10,208.7</b>	<b>15,726.3</b>	<b>19,927.3</b>	<b>21,392.7</b>
EPS (diluted, post-except) (Rmb)	0.29	0.63	0.44	0.51	<b>BVPS (Rmb)</b>	<b>3.18</b>	<b>3.86</b>	<b>4.39</b>	<b>4.97</b>
DPS (Rmb)	0.05	0.10	0.07	0.08					
Dividend payout ratio (%)	15.3	15.0	15.0	15.0					
Free cash flow yield (%)	(2.6)	(13.2)	(11.9)	5.9					
<b>Growth &amp; margins (%)</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>Ratios</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>
Sales growth	61.6	106.3	14.5	21.7	CROCI (%)	25.6	22.4	14.0	17.4
EBITDA growth	56.2	74.7	2.2	30.2	ROE (%)	11.8	18.1	10.7	10.9
EBIT growth	94.4	99.6	(23.2)	16.3	ROA (%)	6.2	8.7	4.4	4.4
Net income growth	77.3	116.5	(30.2)	14.8	ROACE (%)	16.4	19.2	9.4	9.3
EPS growth	64.2	116.5	(30.2)	14.8	Inventory days	102.0	89.2	109.5	109.1
Gross margin	20.4	21.8	17.2	16.8	Receivables days	84.3	71.0	74.9	72.9
EBITDA margin	18.1	15.3	13.7	14.6	Payable days	123.4	105.4	118.6	118.1
EBIT margin	13.3	12.9	8.7	8.3	Net debt/equity (%)	(27.3)	26.9	63.8	41.0
					Interest cover - EBIT (X)	10.0	15.0	4.8	4.6
<b>Cash flow statement (Rmb mn)</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>Valuation</b>	<b>12/15</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>
Net income pre-preferred dividends	520.3	1,126.3	786.5	903.0	P/E (analyst) (X)	46.0	22.2	31.9	27.7
D&A add-back	282.1	295.5	704.0	1,085.9	P/B (X)	4.2	3.7	3.2	2.8
Minorities interests add-back	0.4	20.0	20.0	20.0	EV/EBITDA (X)	20.8	14.3	15.7	11.5
Net (inc)/dec working capital	(786.2)	(937.3)	(334.3)	(596.0)	EV/GCI (X)	4.3	2.7	2.1	1.9
Other operating cash flow	347.9	178.4	0.0	300.0	Dividend yield (%)	0.3	0.7	0.5	0.5
<b>Cash flow from operations</b>	<b>364.6</b>	<b>682.9</b>	<b>1,176.3</b>	<b>1,712.9</b>					
Capital expenditures	(980.0)	(4,000.0)	(4,166.3)	(232.1)					
Acquisitions	0.0	0.0	0.0	0.0					
Divestitures	0.0	0.0	0.0	0.0					
Others	(235.7)	0.0	0.0	0.0					
<b>Cash flow from investments</b>	<b>(1,215.8)</b>	<b>(4,000.0)</b>	<b>(4,166.3)</b>	<b>(232.1)</b>					
Dividends paid (common & pref)	(71.2)	(79.8)	(168.9)	(118.0)					
Inc/(dec) in debt	(303.7)	3,000.0	2,500.0	(500.0)					
Common stock issuance (repurchase)	2,275.4	0.0	0.0	0.0					
Other financing cash flows	24.4	0.0	0.0	0.0					
<b>Cash flow from financing</b>	<b>1,924.8</b>	<b>2,920.2</b>	<b>2,331.1</b>	<b>(618.0)</b>					
<b>Total cash flow</b>	<b>1,073.6</b>	<b>(397.0)</b>	<b>(659.0)</b>	<b>862.8</b>					

Note: Last actual year may include reported and estimated data.

Source: Company data, Goldman Sachs Research estimates.

Source: Company data, Gao Hua Securities Research.