

China Solar Sector

OVERWEIGHT

(New)

Solar farms - a sunrise industry

- China developing solar power would 'kill two birds with one stone', ie, reduce air pollution while drive domestic solar components demand, helping to cushion manufacturers from the decline in exports to the US due to trade embargoes.
- Favourable policies could boost investment returns, luring downstream solar power investment.
- We prefer downstream solar farm players directly benefiting from favourable policies, followed by upstream polysilicon makers with more cost-reduction potential, compared to cell and module manufacturing. Top BUYs Xinyi Solar (968 HK) and GCL-New Energy (451 HK).

Solar - the best of both worlds

Solar power would not only help China to reduce air pollution but the development of solar farms would generate domestic demand for components. This in turn would provide an offset for domestic solar components makers faced with US anti-dumping restrictions.

Favourable policies to boost returns

To create domestic solar power demand and to fulfill the government target of 100GW by 2020E (27% CAGR from 2014 to 2020F), the government has implemented favourable policies, including high feed-in tariffs, to boost the attractiveness of equity IRR to around 17%.

Investment ideas: prefer downstream

We prefer downstream solar operators due to easier project financing and attractive IRR. We forecast newly installed capacity could grow ~70% in 2015 to reach the government target of 17.8GW. We believe the downstream sector is under-researched and fragmented but offers high upside potential, similar to the city gas distributor sector four years ago. Our second most preferred are the upstream polysilicon makers. We expect possible mild ASP rebounds in China in 2H15 and cost cutting potential will help margin expansion. Our least preferred is the mid-stream cell and module producers.

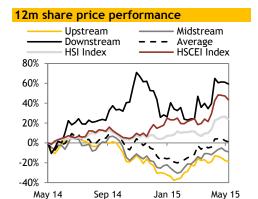
Top Picks: Xinyi Solar and GCL-New Energy

We initiate with BUYs on Xinyi Solar (968 HK, BUY, HKD3.60) and GCL-New Energy (451 HK, BUY, TP:HKD1.60). We forecast Xinyi and GCLNE's FY16F EPS to grow by 31% and 121% YoY (fully diluted for GCLNE). Xinyi and GCLNE are trading at only 12x and 10.4x FY16E PER (fully diluted PER for GCLNE) but offer high EPS growth potential, making them attractive, in our view.

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Source: Bloomberg, Maybank KE, Note: Upstream includes polysilicon and wafer manufacturers, midstream includes cell and module manufacturers, downstream is solar farm operators.

	Stock	Mkt cap		Price	TP	Upside	P/E	(x)	P/B	(x)	Dividen	d yld (%)
Stock	code	(USDm)	Rating	(LC)	(LC)	(%)	15E	16E	15E	16E	15E	16E
Downstream												
Xinyi Solar	968 HK	2,427.6	Buy	2.86	3.60	26	15.8	12.0	3.7	3.2	3.0	3.9
GCL New Energy	451 HK	1,592.6	Buy	0.89	1.60	80	22.1	9.9	3.6	2.6	0.0	0.0
Singyes Solar	750 HK	1,045.6	Hold	11.64	12.20	5	10.1	8.8	1.7	1.5	1.1	1.2
United PV*	686 HK	868.5	Not-Rated	1.42	Not-Rated	na	19.5	16.7	1.6	1.4	na	1.1
Upstream												
GCL-Poly	3800 HK	4,375.8	Buy	2.19	2.80	28	12.6	8.6	1.6	1.4	1.6	2.3
Midstream												
Trina Solar	TSL US	1,134.7	Not-Rated	12.32	Not-Rated	na	12.1	8.9	0.9	0.8	0.0	0.0
Yingli Green	YGE US	312.6	Not-Rated	1.72	Not-Rated	na	na	na	na	na	0.0	0.0

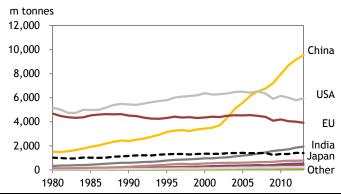
Note: For not-rated companies, we use Bloomberg consensus estimates. Closing price as of 12 May 2015.*United PV was suspended trading from 1pm on 12 May.

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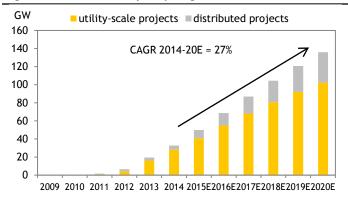
Charts to note

Figure 1: China carbon dioxide emission



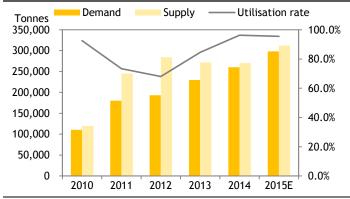
Source: Bloomberg, Maybank Kim Eng

Figure 2: China solar capacity to grow at 27% CAGR to 2020



Source: National Energy Administration, Maybank Kim Eng

Figure 4: Demand/supply forecasts for polysilicon



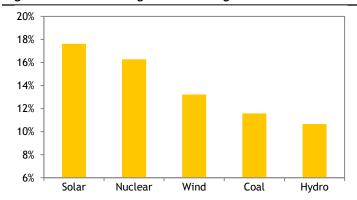
Source: Bloomberg, Maybank Kim Eng

In the alternative energy space, we prefer the downstream solar sector, followed by nuclear and then wind power.

We believe polysilicon prices in China could mildly rebound in 2H15 as we forecast much less imports starting from mid-2015.

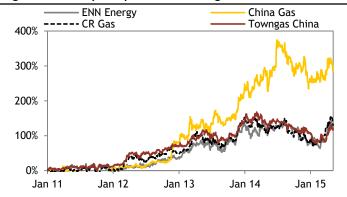
We believe solar farm operators are quite similar to city gas distributors four years ago. The share prices of gas distributors have increased 166% on average since 2011.

Figure 3: Solar offers highest IRR among sources in China



Source: Maybank Kim Eng

Figure 5: Share price performance of gas distributors



Source: Bloomberg, Maybank Kim Eng

Figure 6: Our target price valuation

Company	Ticker	Rating	MKE Preference Rank	Target price (HKD)	Valution method	Assumptions
Downstream						
Xinyi Solar	968 HK	BUY	1	3.60	DCF-based	8% WACC and 4% terminal growth rate
GCLNE	451 HK	BUY	2	1.60	DCF-based	9.7% WACC and 4% terminal growth rate
Singyes	750 HK	HOLD	4	12.20	Price multiple	using 10.5x FY15 PER
United PV	686 HK	NR	NR	NR	NR	NR
Upstream						
GCL Poly	3800 HK	BUY	3	2.80	Price multiple	using 2.1x FY15 P/BV
Midstream						
Trina Solar	TSL US	NR	NR	NR	NR	NR
Yingli Green	YGE US	NR	NR	NR	NR	NR

Source: Maybank Kim Eng; Note: preference: downstream>upstream>midstream

Investment summary

We initiate at OVERWEIGHT on China's solar sector. Our Top Picks are Xinyi Solar and GCL New Energy as we think downstream solar farm developers will directly benefit from the solar boom in China. We believe the downstream solar sector is under-covered and fragmented but offers growth potential, similar to the China city gas distributor sector four years ago. Solar components makers in the upstream and midstream may also benefit from end demand but may still suffer from oversupply, in our view.

Why Solar? 'Kill two birds with one stone'

<u>Bird #1: Air pollution caused by coal-fired generation</u>: The density of PM2.5 in Beijing is the highest among the various Asian cities. Carbon dioxide emission has doubled in the past 10 years in China and China accounted for half of the world's coal consumption in 2013.

<u>Bird #2: Solar trade disputes</u>: The US and Europe have imposed antidumping and anti-subsidy tariffs on Chinese solar cells since 2012. The trade disputes have increased the cost of importing Chinese solar modules and have significantly reduced demand in those markets.

<u>The Stone: Solar power</u> could reduce air pollution in China and it could also stimulate domestic solar components demand, easing the pressure Chinese manufacturers are facing from the export restrictions.

How to implement? Favourable policies to boost return

We forecast a robust 27% CAGR in solar capacity in China for 2014-20, driven by favourable policies, aggressive government targets and high investment returns. With its 17.8GW solar target by 2015E, we expect China will become the largest solar market in the world. Our calculation suggests investment in solar projects in China could achieve an IRR of 17% given falling costs of solar panels and high feed-in tariffs guaranteed by the Chinese government.

Investment ideas: prefer downstream>upstream>midstream

We prefer downstream solar farm businesses due to attractive IRRs, favourable policies, and more available financing. We expect new business models such as 'Yield Co' could be developed in China. In fact, we think solar farm operators are quite similar to city gas distributors four years ago.

Our next preference is upstream polysilicon manufacturers due to more cost-cutting potential and less intense competition amid a concentrated market. We expect polysilicon spot price to mildly pick up in 2H15 to around USD20/kg based on the supply cost curve. We least prefer the midstream cell and module manufacturers as margins may have peaked due to oversupply and intense competition.

Top Picks: Xinyi Solar (968 HK) and GCL New Energy (451 HK)

We initiate with BUYs on Xinyi Solar (968 HK, TP HKD3.6) and GCL New Energy (451 HK, TP HKD1.60) due to their strong exposure to the solar farm business. In addition, we like Xinyi Solar's increasing market share in solar glass products as well as potential margin growth. We like GCLNE as we believe there are synergies for GCLNE with support from its parent and we expect possible Yield Co business model could help boost capacity growth.

We forecast Xinyi and GCLNE's FY16E EPS to grow by 31% and 121% (fully diluted for GCLNE), while Xinyi and GCLNE are trading at only 12x and 11x FY16E PER (fully diluted PER for GCLNE), making them appear very attractive, in our view.

Solar power could reduce air pollution in China and also stimulate domestic solar components demand, easing the pressure Chinese manufacturers are facing from the export restrictions.

We estimate the equity IRR of solar projects could reach 17%.

We prefer downstream solar farm operators>upstream>midstream.

Our Top Picks are Xinyi Solar with TP of HKD3.60 and GCL New Energy with TP of HKD1.60.



Why Solar? 'Kill two birds with one stone'

Solar power is one of the answers to China's growing pollution problems. With growing environmental concerns, China is making a transition to renewable power from coal. Developing the domestic solar market not only fits the long-term theme of pollution reduction, but it could also help absorb excess inventory in the upstream manufacturing sector to cushion the fall in demand due to trade disputes on solar panel exports. Therefore for China, solar power may 'kill two birds with one stone', in our view.

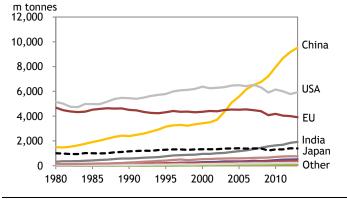
Bird #1: Air pollution

The Chinese government is facing environmental challenges to its PM2.5 pollution problem across the country. The density of PM2.5 in Beijing is the highest among the various Asian cities. Its carbon dioxide emission doubled in the past 10 years because of its excessive use of coal as its main power source. China alone accounted for half of the world's coal consumption in 2013.

China is making tremendous efforts to transition to clean energy from coal. To shift away from coal, China is focusing on non-fossil fuel energy such as hydro, nuclear and renewable energy. While nuclear power can be used as a base load to replace coal (see details in our last report), solar power also has an advantage as it can be used closer to the demand centres.

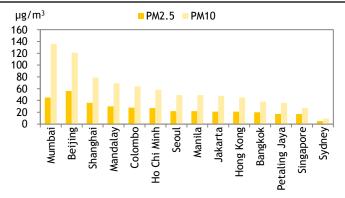
The density of PM2.5 in Beijing is the highest among the various Asian cities.

Figure 7: China carbon emissions doubled in last 10 years



Source: Bloomberg, Maybank Kim Eng

Figure 8: Air pollution in Beijing compared with other cities



Source: WHO, Maybank Kim Eng

Bird #2: Counter solar trade disputes

Thanks to the improvement in technology, Chinese companies have managed to produce low-cost PV modules and they currently supply around 70% of the global demand. The US and Europe have imposed anti-dumping and anti-subsidy tariffs on Chinese solar cells since 2012. The trade disputes have increased the cost of importing Chinese solar modules and have significantly reduced demand in those markets. We believe the Chinese government has been creating its own demand to help the Chinese manufacturers.

The trade disputes have increased the cost of importing Chinese solar modules and have significantly reduced demand in those markets.



Favourable policies to create domestic demand

Technology breakthrough and an oversupply of PV modules have driven down PV module prices by 30% since 2012. And as the solar panels cannot be sold abroad to the US and Europe, China could make use of these cheap solar panels in its domestic market. After all these years of waiting, we think solar is now about to take off. The Chinese government has spent the past two years to create a favourable environment for solar investment.

- Aggressive solar targets 100GW of capacity by 2020
- High investment returns 16.9% IRR (highest among all power sources).

Figure 9: China solar capacity to grow by 27% CAGR to 2020

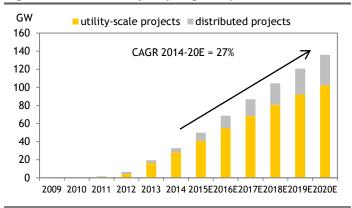
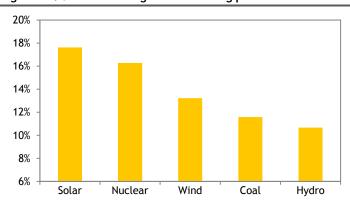


Figure 10: Solar offers highest IRR among power sources



Source: National Energy Administration, Maybank Kim Eng

Source: Maybank Kim Eng

Based on the equity IRR calculation, in the alternative energy space, our first preference is the solar downstream sector given the highest IRR among other energy sources, followed by nuclear and then wind power, which could also enjoy decent IRRs amid high industry growth.

Government targets: 100GW of solar capacity by 2020

China has set ambitious targets to develop solar power generation. The State Council released an 'Energy Development Action Plan (2014-20)' in Nov 2014. It said China aims to have 100GW of solar capacity and 200GW of wind by 2020. The action plan also suggests the government will speed up the construction of distributed PV projects, promote solar thermal generation and strengthen the grid infrastructure to ensure grid connection.

China is targeting 100GW cumulative installation of solar power by 2020.

Figure 11: Solar made up <1% of China's power gen in 2014

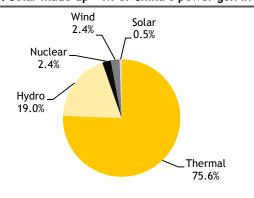
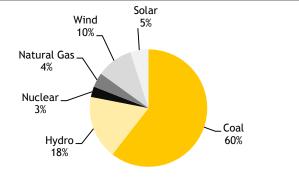


Figure 12: China power capacity target (2020)



Source: CEC, NBS, Maybank Kim Eng

Source: NDRC, Maybank Kim Eng

Accelerating growth in 2015 with 17.8GW NEA target

In 2014, the total solar cumulative installation in China was 32.8GW vs 19.4GW in 2013. We forecast the cumulative installation in 2015E will increase to 50GW with around 17.2GW of new installation this year.

China's National Energy Administration (NEA) has set the goal of adding 17.8GW of capacity in 2015, which is 19% higher than the draft of 15GW proposed in Jan 2015. The NEA had previously set a 15GW target for 2015 - 7GW for distributed PV projects and 8GW for utility-scale projects. However, the final version (17.8GW) did not specify the quota for distributed projects. We believe this means the government will promote distributed projects without ceilings. The government will also support distributed PV projects in less-developed areas such as Hebei, Shanxi, Anhui, Ningxia, Qinghai and Gansu with a total capacity of 1.5GW in 2015E.

We forecast the total cumulative capacity will reach 50GW by 2015, of which 40.8GW will be from the utility-scale projects, up 45% YoY and 9.2GW will be from distributed projects, up 96% YoY. Under the new definition in Sept 2014, more companies can obtain project approval to build distributed PV projects (<20MW) and enjoy the CNY0.9-1/kWh of tariff - same as the utility-scale projects.

Figure 13: NEA 2015 PV installation target by province (MW)

J	20131 V 1113tatt		, ,		Allocate
					specifically
	Utility-scale	Distributed		Final version	for less-
	targets in	targets in		announced in	developed
Province	draft proposal d	raft proposal	Total	March 2014	areas
Xinjiang	1,300	400	1,700	1,800	
Hebei	400	600	1,000	1,200	300
Jiangsu	300	700	1,000	1,000	
Zhejiang	300	700	1,000	1,000	
Anhui	150	350	500	1,000	400
Qinghai	800	200	1,000	1,000	150
Ningxia	600	200	800	1,000	200
Guangdong	200	600	800	900	
Inner Mongolia	600	200	800	800	
Shandong	200	600	800	800	
Shaanxi	350	150	500	800	
Shanxi	300	200	500	650	200
Jiangxi	150	250	400	600	
Henan	200	200	400	600	
Sichuan	200	100	300	600	
Yunnan	300	100	400	600	
Hubei	150	250	400	500	
Gansu	400	100	500	500	250
Fujian	100	200	300	400	
Hunan	200	200	400	400	
Guangxi	100	100	200	350	
Liaoning	150	150	300	300	
Jilin	150	150	300	300	
Heilongjiang	150	150	300	300	
Hainan	100	100	200	200	
Guizhou	150	50	200	200	
Total	8,000	7,000	15,000	17,800	1,500

Source: NEA, Maybank Kim Eng Note: Distributed projects include rooftop projects. These projects are all grid-connected capacity.*Minimum installation target for Beijing Tianjin and Shanghai is 50MW.

Local governments are also supportive by setting local targets

Following the national plan, provincial governments also announced their own solar development plans, including Gansu, Shandong, Shanghai, Hefei, Wuxi, Shanxi, Guangdong and Zhejiang. We expect more local governments will follow suit.

NEA has set the goal of adding 17.8GW of solar power in 2015.

Figure 14: Summaries of local governments' targets and subsidies for solar

Announcement date	Province	Target/Subsidy
Sep 2014	Shandong	- Targets 1.8GW of solar capacity by 2015
		- Provide CNY 1.2/kWh to utility-scale projects
Apr 2014	Jiangxi	- Targets to build 1.8GW of solar by 2017
Mar 2014	Shanxi	- Targets 2GW by 2015 and 5GW by 2020
Mar 2014	Guangdong	- Targets 1GW by 2015 and 4GW by 2020
Dec 2013	Gansu	- Targets 500MW of capacity by 2015
Nov 2013	Shanghai	- Targets 250MW by 2015
Nov 2013	Jiangsu - Wuxi City	- Targets 100MW by 2015
Jun 2013	Anhui - Hefei City	 Additional subsidy of CNY 0.25/kWh if using solar modules and inverters from Hebei-based manufacturers
Sep 2013	Zhejiang	- Targets 2.5GW by 2015 - Additional subsidy of CNY 0.1/kWh

Source: Local government websites, Maybank Kim Eng

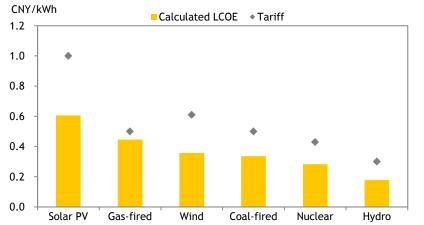
Attractive IRR: 16.9% IRR highest among all power sources

Investment in solar power plants appears to be attractive. This is supported by: (1) decreasing cost of solar power; and (2) government's high feed-in tariffs.

Solar LCOE drops ~30% since 2012

Due to the technology improvements and increased economies of scale, the module price dropped by around 33% from USD0.87/W in 2012 to the recent USD0.58/W, and the Levelized Cost of Electricity (LCOE) of solar power in China has declined by ~30% from CNY0.87/kWh to CNY0.61/kWh. In short, solar power has become more competitive than three years ago.

Figure 16: LCOE in China by different sources of energy



Source: Maybank Kim Eng Note: Tariff used here is the highest end of the range.

LCOE of solar power in China has dropped by around 30% since 2012.

Figure 15: LCOE formula

$$LCOE = \frac{\sum_{t=1}^{n} \frac{I_{t} + M_{t} + F_{t}}{(1+r)^{t}}}{\sum_{t=1}^{n} \frac{E_{t}}{(1+r)^{t}}}$$

Source: Wikipedia, Maybank Kim Eng Note: This formula calculate the average lifetime levelised cost of electricity generation. I_t is the investment expenditures in the year t. M_t is operations and maintenance expenditures in the year t. F_t is fuel expenditures in the year t. F_t is the electricity generation in the year t. r is discount rate. N is life of the system.

High solar feed-in tariffs

The Chinese government set a fixed feed-in tariff (FiT) of CNY0.9-1/kWh for solar power plants. According to our IRR model, we calculate that the IRR of a 20MW utility-scale solar project is 16.9% - the highest among the various sources of power generation.

If we ignore the subsidies, we calculated that the equity IRR is reduced to only 0.5%. Therefore, stability of FiT is the key to this high 17% return. However, as the FiT is guaranteed by the government for 20 years and future subsidy cuts will NOT affect existing projects, the 17% investment return is stable throughout the lifetime of the solar farms, in our view.

The feed-in tariff of solar power in China is CNY0.9-1/kWh, which is guaranteed by the government for 20 years. The 17% IRR is stable as future subsidy cuts will not impact existing projects.

China Solar Sector



We summarized our IRR calculations in the following table.

Figure 17: Solar projects IRR summary (please see appendix for detailed calculations)

	Utility-scale		Distributed PV		
		Scenario 1	Scenario 2	Scenario 3	
Description	Utility-scale projects	Project is developed and owned by individual users (residential)	Industrial park - the electricity produced are used by factories and surplus electricity are sold to the grid		
Equity-debt ratio	20-80	30-70	30-70	30-70	
Project size (MW)	20	5	10	20	
Utilisation hours	1,500	1,200	1,200	1,200	
Self-consumption	n/a	All consumed	90% consumed and sell 10% to the grid	100% sold to the grid	
Subsidy (CNY/kWh)	n/a	0.42	0.42	0	
Revenue components	National feed-in tariff	cose savings from recard power	Earn CNY0.4/kWh by selling to the grid and cost savings from retail power tariffs	CNY1/kWh but no distributed PV	
Tariff (CNY/kWh)	0.9-1	0.7* (tariff saved)	Tariff saved: 90%*0.7=0.63	1 (tariff gain)	
		U.7 (tailif saved)	Tariff gain: 10%*0.4=0.04	i (tariii gaiii)	
Equity IRR	16.90%	16.50%	13.40%	9.60%	

Source: Maybank Kim Eng Note: Assume desulphurised coal tariff is CNY0.4/kWh, *Retail tariff of CNY0.7/kWh.

(1) Utility-scale projects could achieve 16.9% IRR

In the IRR model, we have assumed average sunshine hours of 1,500. North western provinces can reach as high as 1,900 hours (Tibet). Sunshine hours for Gansu are around 1,400 and Qinghai is 1,600.

The investment cost for a solar power plant is CNY8-8.5/W (including module cost of CNY4/W). Some companies have a higher unit investment cost (ie CNY9/W) as they purchase existing projects from Engineering, Procurement and Construction (EPC) companies. This price also includes the cost of "Lutiao" (a form of government approval) - which is around CNY0.3-0.5/W, in our estimate. We assume the unit cost is the same for utility-scale projects and distributed PV projects for IRR calculations.

(2) Distributed PV projects could earn 9.6%-16.5% IRR

For projects in residential areas and industrial areas, the scale is different and therefore we used three scenarios for distributed PV.

Scenario 1 illustrates a typical rooftop project developed by individual users. Residential users can install solar panels on their rooftop and generate solar electricity for their own use. Distributed PV is more difficult to secure project financing for, therefore we assume a lower debt ratio of 70% compared with 80% used in utility-scale projects. Project owners will receive not only CNY0.42/KWh in subsidy, but also enjoy the electricity cost savings. Average residential electricity tariff is CNY0.7/kWh. All of the electricity produced is consumed by individuals.

For higher electricity demand such as installing solar panels on the rooftop of an industrial park, situations are different. Project owners can also sell the surplus power to the grid and earn the desulphurised coal tariff of CNY0.4/kWh. If 100% of the electricity is sold to the grid, it will receive the national feed-in tariff of CNY1/kWh. So we run two more scenarios to illustrate the difference between these two.

Scenario 2 demonstrates an industrial park that uses solar panels to produce electricity for factories. Project owners are either an administrative committee member of the industrial park or a third-party company. 10% of the electricity produced is sold back to the grid, earning

We calculate the utility-scale solar projects could achieve 17% equity IRR.

CNY0.4/kWh of the desulphurised coal tariff. This gives a reasonable equity IRR of 13.4%.

Scenario 3 is that project owners sell all the electricity produced to the grid. It will receive CNY1/kWh in feed-in tariff but they cannot enjoy the CNY0.42/kWh of subsidy. However, it requires submitting an application to the grid companies for approval. This results in a lower equity IRR of 9.6% compared with 16.9% of that of utility-scale projects due to lower utilisation hours of 1,200 instead of 1,500 and lower debt ratio for project financing.

Sensitivity analysis

Our detailed IRR models are listed in the appendix.

Figure 18: Utility-scale projects could have 16.9% IRR

Equity IR	R for utili	ty-scale proj	jects								
	Utilization hours										
₽Š		1,300	1,400	1,500	1,600	1,700					
ē≥	7.5	15.5%	19.1%	23.2%	27.8%	32.7%					
stment (CNY/W)	8.0	13.1%	16.2%	19.7%	23.6%	27.9%					
Investment ost (CNY/W	8.5	11.1%	13.9%	16.9%	20.2%	23.9%					
Inve	9.0	9.5%	11.9%	14.6%	17.5%	20.7%					
•	9.5	8.1%	10.3%	12.7%	15.2%	18.0%					
_	Utilization hours										
د ک		1,300	1,400	1,500	1,600	1,700					
Feed-in tariff (CNY/kWh	0.90	9.5%	12.0%	14.6%	17.6%	20.8%					
ee tar ⊀	0.95	11.1%	13.9%	16.9%	20.2%	23.9%					
<u>ر</u> ٦	1.00	12.9%	15.9%	19.3%	23.1%	27.3%					
	1.20	20.8%	25.5%	30.7%	36.3%	42.3%					
_			Utiliz	ation hour	s						
ate		1,300	1,400	1,500	1,600	1,700					
ri C	6.5%	12.3%	15.2%	18.5%	22.1%	26.1%					
est (%)	7.0%	11.7%	14.5%	17.7%	21.1%	25.0%					
Interest rate (%)	7.5%	11.1%	13.9%	16.9%	20.2%	23.9%					
<u>=</u>	8.0%	10.6%	13.2%	16.1%	19.4%	22.9%					
	8.5%	10.1%	12.7%	15.5%	18.5%	22.0%					

Source: Maybank Kim Eng

Figure 20: Distributed PV (Scenario 2) could have 13.4% IRR

Equity II	RR for di	stributed PV	(Scenario 2	2)		
			Utiliz	ation hour	s	
stment (CNY/W)		1,000	1,100	1,200	1,300	1,400
ē≥	7.5	11.1%	14.2%	17.6%	21.3%	25.2%
Investment ost (CNY/W	8.0	9.5%	12.3%	15.3%	18.6%	22.0%
st e	8.5	8.1%	10.7%	13.4%	16.3%	19.4%
Inve	9.0	6.9%	9.3%	11.8%	14.4%	17.2%
· ·	9.5	5.9%	8.1%	10.4%	12.8%	15.3%
-						
> =				ation hours		
rit. Mh		1,000	1,100	1,200	1,300	1,400
ri K	0.8	6.3%	8.6%	11.0%	13.5%	16.2%
Electricity tariff (CNY/kWh	0.9	8.1%	10.7%	13.4%	16.3%	19.4%
Electricity tariff (CNY/kWh)	1.0	10.0%	12.9%	15.9%	19.2%	22.8%
	1.1	11.9%	15.1%	18.6%	22.3%	26.3%
			Utiliz	ation hours	<u> </u>	
Interest rate (%)		1,000	1,100	1,200	1,300	1,400
. L	6.5%	8.8%	11.5%	14.3%	17.4%	20.6%
est (%)	7.0%	8.4%	11.1%	13.9%	16.8%	20.0%
er	7.5%	8.1%	10.7%	13.4%	16.3%	19.4%
<u>=</u>	8.0%	7.8%	10.3%	13.0%	15.8%	18.9%
	8.5%	7.5%	9.9%	12.5%	15.3%	18.3%
Source: M	lavbank Ki	m Ena				

Source: Maybank Kim Eng

Figure 19: Distributed PV (Scenario 1) could have 16.5% IRR

Equity IF	RR for di	stributed PV	(Scenario	1)							
_	Utilization hours										
Investment cost (CNY/W)		1,000	1,100	1,200	1,300	1,400					
Investment ost (CNY/W	7.5	14.3%	17.8%	21.6%	25.7%	30.0%					
S th	8.0	12.3%	15.5%	18.8%	22.5%	26.3%					
ve it	8.5	10.7%	13.5%	16.5%	19.8%	23.2%					
₽ö	9.0	9.3%	11.8%	14.6%	17.5%	20.6%					
	9.5	8.1%	10.4%	12.9%	15.5%	18.4%					
	Utilization hours										
Electricity tariff (CNY/kWh)		1,000	1,100	1,200	1,300	1,400					
ectrici tariff NY/kW	0.5	6.5%	8.7%	10.9%	13.3%	15.9%					
ect Y	0.6	8.5%	11.0%	13.6%	16.4%	19.4%					
C E	0.7	10.7%	13.5%	16.5%	19.8%	23.2%					
	0.8	12.9%	16.1%	19.6%	23.3%	27.2%					
4.				zation hour							
ate		1,000	1,100	1,200	1,300	1,400					
ר ה	6.5%	11.5%	14.4%	17.6%	21.0%	24.6%					
est (%)	7.0%	11.1%	14.0%	17.1%	20.4%	23.9%					
Interest rate (%)	7.5%	10.7%	13.5%	16.5%	19.8%	23.2%					
<u>=</u>	8.0%	10.3%	13.1%	16.0%	19.2%	22.6%					
	8.5%	9.9%	12.6%	15.5%	18.6%	21.9%					

Source: Maybank Kim Eng

Figure 21: Distributed PV (Scenario 3) could have 9.6% IRR

Equity II	RR for d	istributed PV	(Scenario 3	3)					
_	Utilization hours								
Investment cost (CNY/W)		1,000	1,100	1,200	1,300	1,400			
Investment ost (CNY/W	7.5	7.7%	10.2%	12.8%	15.6%	18.6%			
Ç şt	8.0	6.4%	8.7%	11.1%	13.6%	16.2%			
st.	8.5	5.3%	7.4%	9.6%	11.8%	14.2%			
Ξő	9.0	4.3%	6.3%	8.3%	10.4%	12.5%			
	9.5	3.5%	5.3%	7.1%	9.1%	11.1%			
			Utiliz	ation hours	i				
ڇَ ي ڀ		1,000	1,100	1,200	1,300	1,400			
Feed-in tariff CNY/kWh	0.90	3.3%	5.2%	7.1%	9.1%	11.1%			
ee ≺X	0.95	4.3%	6.3%	8.3%	10.4%	12.6%			
<u>ت</u> ق	1.00	5.3%	7.4%	9.6%	11.8%	14.2%			
	1.05	6.3%	8.5%	10.8%	13.3%	15.9%			
			Utiliz	ation hours	i				
ıte		1,000	1,100	1,200	1,300	1,400			
Interest rate (%)	6.5%	5.9%	8.0%	10.3%	12.7%	15.2%			
est (%)	7.0%	5.6%	7.7%	9.9%	12.3%	14.7%			
ē	7.5%	5.3%	7.4%	9.6%	11.8%	14.2%			
<u>1</u>	8.0%	5.0%	7.1%	9.2%	11.4%	13.8%			
	8.5%	4.8%	6.8%	8.9%	11.0%	13.4%			
Source: M	laybank K	im Eng							

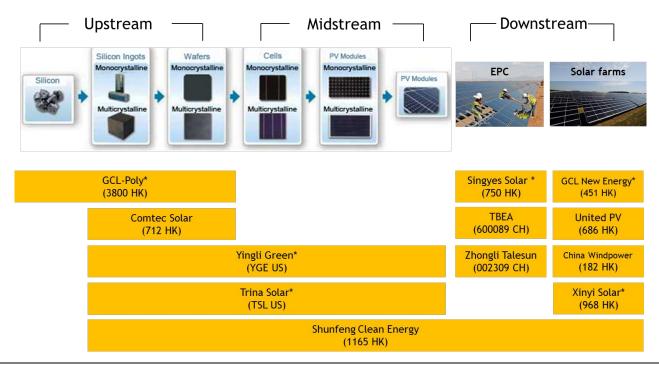
Prefer: downstream>upstream>midstream

Within the China solar sector, we prefer downstream players over upstream and midstream companies due to attractive IRR and aggressive government targets. Our second most preferred would be upstream polysilicon manufacturing given higher financial and technology entry barriers, and possible technology breakthroughs resulting in cost reductions. We least prefer the fragmented cell and modules segment.

We prefer downstream most due to high feed-in tariff, favourable subsidies and more available financing.

- Prefer downstream solar farms... we expect China will become the world's largest solar market in 2015, driven by high tariffs, favourable subsidies and available financing. New business models may evolve to lower the cost of capital.
- ...followed by upstream polysilicon: given a more concentrated market, we expect polysilicon price could rebound in 2H15 and there is room for cost-cutting.
- 3) Least prefer is midstream cells and modules: capacity expansion is growing more quickly than incremental demand globally, trade disputes in the US/Europe, margins may have peaked with intense competition and limited room for cost reductions.

Figure 22: Solar value chain overview: prefer downstream>upstream>midstream



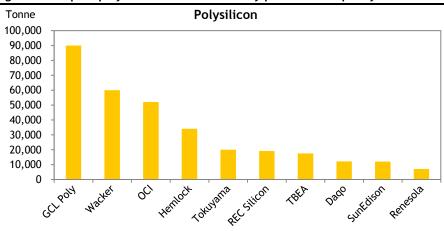
Source: Maybank Kim Eng Note: Xinyi Solar also produces solar glass that used in solar modules. Trina and Yingli also develop solar farms for sale purpose. *Mentioned in this report.

Upstream: Polysilicon

Polysilicon demand could grow 15% YoY in 2015

We forecast the global PV additions in 2015E will be 54.6GW. After accounting for conversion losses, we forecast polysilicon demand will be 298,000 tonnes. If compare with last year's demand of 260,000 tonnes the incremental demand this year would be 38,000 tonnes. However, we think capacity expansion will outpace the growth in demand. We expect new capacity in 2015 of 25,000 tonnes from GCL, 10,000 tonnes from OCI and 7,000 tonnes from Wacker.

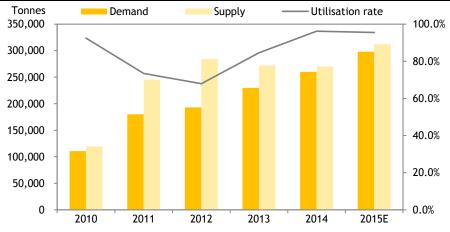
Figure 23: Top 10 polysilicon manufacturers by production capacity



Source: Bloomberg, Company presentation, Maybank Kim Eng

In terms of utilisation rates, most polysilicon producers reached nearly full production capacity in 2014 on a relatively balanced demand/supply situation. We expect the utilisation rates for the top-tier producers will remain at a high level of around 95% in 2015 as the market has become more concentrated.

Figure 24: Demand/supply forecasts for polysilicon



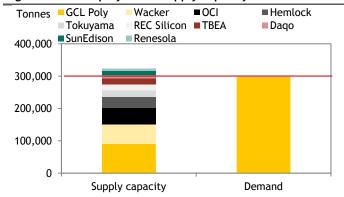
Source: Bloomberg, Maybank Kim Eng Note: Utilisation rates for top five producers only.

Compared to cell and modules manufacturing, the entry barriers for polysilicon making is relatively high due to a higher technology requirement and higher capital expenditure. Generally, the top eight players can already fulfill more than 80% of the global polysilicon demand. We believe consolidation of the upstream industry is already completed.

We forecast the polysilicon demand growth will reach 15% YoY in 2015.

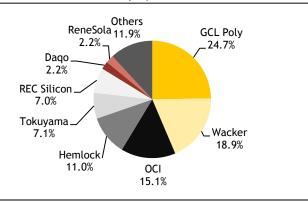
China Solar Sector

Figure 25: Total polysilicon supply capacity in 2015E



Source: Bloomberg, Company presentation, Maybank Kim Eng (from largest capacity companies)

Figure 26: Market share of polysilicon makers in 2014



Source: Bloomberg, Company presentation, Maybank Kim Eng

We believe the subsidy cut in other countries could lead to a rush of orders and boost the short-term demand. In the US, the 30% Investment Tax Credit (ITC) will expire at end 2016 and the ITC will drop to 10% for commercial and zero for residential. In Japan, as the feed-in tariff scheme should be under review at least every three years, we expect there will be changes to FiT this year as the scheme started in 2012. The scheme could undergo a significant review by FY20.

Figure 27: Supportive policies in other major solar markets

Country	Supportive Programme	Laws/Regulations /Ministry	Details	Note
US	Investment Tax Credit	Energy Policy Act of 2005, Tax Relief and Health Care Act of 2006, Emergency Economic Stabilisation Act of 2008	30% federal tax credit on costs of a solar system	Effective through 31 December 2016 and after that drop to 10% for commercial and zero for residential
Japan	Rnewable feed-in tariff scheme	Ministry of Economy, Trade and Industry (METI)	Less than 10kW, FIT: JPY29/kWh (Apr- Jun 2015) and JPY27/kWh (after Jul 2015) More than 10kW, FIT: 33-35 yen/kWh	Feed in tariff cut in the last three years in a range between 10% and 16%; The scheme shall be reviewed at least every three years. In addition if the Basic Energy Plan is changed, the scheme shall be reviewed on the basis of the contents of the plan after change. The scheme could be drastically reviewed by FY2020.

Source: Solar Energy Industries Association, Japan's Ministry of Economy, Trade and Industry (METI), PV Tech, Wikipedia, Maybank Kim Eng

Polysilicon price could pick up in China in 2H15 as imports decline

Based on the cash cost curve below, we forecast the average polysilicon spot price will be USD20/kg in 2015 (USD21/kg in 2014) as some low-cost producers are expanding capacity this year. We believe the polysilicon ASP in China in 1Q15 dropped because of the outstanding 100,000-tonne contracted volume signed in Aug 2014. However, we expect the downward pressure will cease when the contract expires and prices in China will rebound in 2H15 as we forecast much less imports starting from mid-2015. Chinese polysilicon makers will benefit from the restrictions on polysilicon imports into China, in our view.

We forecast the polysilicon ASP in China will mildly rebound in 2H15.

Figure 28: Polysilicon supply cash cost curve 2015E

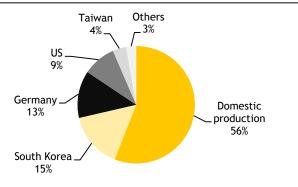
Source: Company presentations, Maybank Kim Eng Note: We forecast global solar demand would be 55GW in 2015. Assuming 10% will be from thin-film and polysilicon consumption of 5.2g/W.

High tariff for polysilicon imports into China - lower risks from overseas supply

We expect polysilicon imports into China will be reduced in 2H15 with the stricter policy announced by China's Ministry of Commerce to suspend applications for polysilicon imports from processed trade starting from 1 Sep 2014. This is in response to the increase in imports from the US, South Korea and Germany. The new policy means that foreign companies are no longer able to bypass the import tariff on polysilicon via trade process.

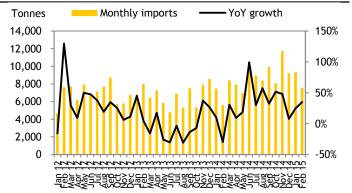
However, local media reports said there were around 100,000 tonnes of polysilicon contracts signed during the last two weeks of August, just before the official deadline of 1 Sep. Then in November a record 11,729 tonnes were shipped into China. This is compared with the monthly average of 8,000 tonnes in the previous 12 months.





Source: Bloomberg, China Customs, Maybank Kim Eng

Figure 30: Monthly polysilicon imports to China



Source: Bloomberg, Maybank Kim Eng

Although the policy was implemented on 1 Sep and supposedly no more "processed-trade" polysilicon should be imported after 31 Dec 2014, we think there was a grey area as some companies could still import "processed-trade" polysilicon between Jan-Feb 2015 as they are not classified as "Inter-connected Supervised Processing Companies". We believe this should also be part of the 100,000 tonnes of contracts signed in the last two weeks of Aug 2014. We calculate 56% of this 100,000-tonne volume had been imported from Sep 2014 to Feb 2015. We expect it will take five more months for the remaining 44% to be imported into China. Hence we expect polysilicon imports into China would be reduced after Jul 2015.

China imported polysilicon mostly from South Korea (15% in 2014), Germany (13%), and the US (9%). China imposed anti-dumping and anti-subsidy duties for solar-grade polysilicon - 57% for Norwegian manufacturer REC Silicon (for its manufacturing plants based in the US), 53.3% for US-based Hemlock and 2.4% for South Korea's OCI in Jan 2014. We expect the major impact is to block US polysilicon with the highest tariff but limited impacts on imports from South Korea and Germany due to smaller import tariffs. We expect GCL Poly and other Chinese polysilicon manufacturers will be the main beneficiaries.

China has imposed import tariff to overseas polysilicon imports.

Cost-cutting driven

Going forward, the market will keep focusing on the pace of cost cutting. There are mainly two ways to reduce cost: (1) lowering electricity cost; and (2) develop a new method called Fluidized Bed Reactor (FBR).

- Lowering electricity cost. One way is to relocate the production plant or build the manufacturing facilities in provinces with lower power prices, such as Daqo's facilities in Xinjiang province. Another way to reduce electricity cost is for polysilicon manufacturers to build their own power plants. GCL's captive power plant has not yet commenced operation but we believe it could help slash electricity cost by around 50% once it starts operation.
- FBR method. FBR could help to reduce production cost substantially (we estimate 30% cost reduction on average). Owing to a larger total surface area of silicon crystals than rods adopted in the Siemens process, it could produce more silicon per cubic metre of reactor space. It also has less downtime due to a continuous process. We estimate the cash cost by using the FBR method could drop to USD9-10/kg.

Cost cutting potential could be the driver of the upstream manufacturing industry.

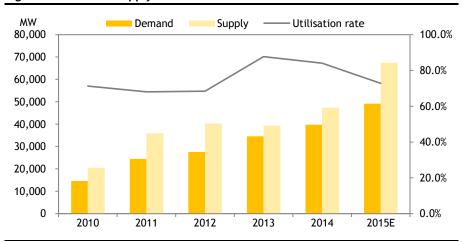
Midstream: cells and modules

Oversupply could happen again in 2015E

We estimate PV module demand in 2015E of 54.5GW globally, up 23% YoY. In 2014, we calculate Chinese module manufacturers supply 70% of the global PV demand and the utilization rate of tier-1 players was quite high at 84%. However, we expect it to drop to 73% as after several years of consolidation, solar companies are likely to start expanding. Trina could increase its cell and module capacity from 3GW and 4GW respectively in 2014 to 3.5GW and 4.8GW in 2015. Jinko Solar could add 450MW of module capacity to 3.65GW, and JA Solar could increase its module capacity by 20% in 2015.

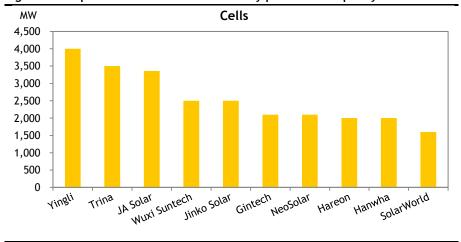
We estimate tier-1 companies to account for 59% of the demand in 2015E. And incremental supply from tier-1 companies alone would be 11.8GW - already exceeding the incremental demand of 9.3GW in 2015, in our forecast.

Figure 31: Demand/supply forecasts for PV modules



 ${\it Source: Bloomberg, Company presentation, Maybank ~\it Kim~Eng}$

Figure 32: Top 10 solar cell manufacturers by production capacity

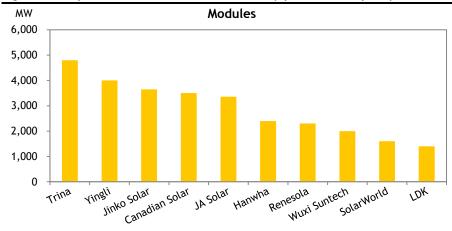


Source: Bloomberg, Company presentation, Maybank Kim Eng

Midstream sector, cell and modules manufacturing, is more fragmented compared to upstream.

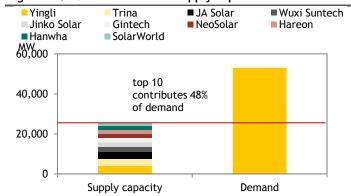
China Solar Sector

Figure 33: Top 10 solar module manufacturers by production capacity



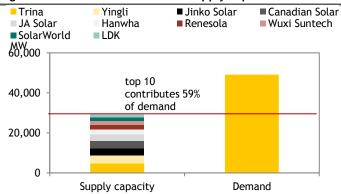
Source: Bloomberg, Company presentation, Maybank Kim Eng

Figure 34: PV cell cumulative supply capacities in 2015E



Source: Bloomberg, Company presentation, Maybank Kim Eng (from largest capacity companies)

Figure 35: PV module cumulative supply capacities in 2015E



Source: Bloomberg, Company presentation, Maybank Kim Eng (from largest capacity companies)

Trade disputes with Chinese module makers

We believe the growth potential for Chinese manufacturers in the US/EU markets is limited given local countervailing import tariffs. Chinese module makers are bypassing the tariffs by: (1) switching from traditional European markets to other emerging markets such as Japan and domestic market; and (2) setting up manufacturing plants in other countries. Some companies have set up plants overseas to bypass the trade restrictions, such as Canadian Solar's 500MW module plants in Canada, and Jinko's 120MW module plant in South Africa.

The US has implemented import tariffs on solar cells made by Chinese manufacturers since 2012. Many Chinese companies are therefore bypassing the tariff by assembling PV modules using solar cells made in Taiwan. However to close the loophole, the US Department of Commerce in June 2014 (ie the second case) filed a second case on Chinese solar products. On 21 Jan 2015, the US International Trade Commission finalised the ruling and the tariff will start to be implemented (figure 37).

The EU set a minimum selling price for Chinese manufacturers of EUR0.56/W with an annual import quota of 7GW from China. This covers most of the Chinese module makers, including Yingli, Suntech and Trina.

The US has implemented import tariffs on solar cells from China.

Figure 36: US anti-dumping and countervailing duties on China solar products

			Fir	st case			Secon	d case	
			(For China cells only)			(All China solar products with third-party cells)			
		Anti-					Anti-		
		dumping	Anti-	Countervailing		Countervailing	dumping	Anti-	
		duty	dumping	duty	Countervailing	,	duty	dumping	Countervailing
		preliminary	duty final	preliminary	duty final	preliminary	preliminary	duty final	duty final
		17 May 2012	10 Oct 2012	20 Mar 2012	10 Oct 2012	03 Jun 2014	25 Jul 2014	16 Dec 2014	16 Dec 2014
	Trina	31.14%	18.32%	4.73%	15.97%	18.56%	26.33%	26.71%	49.79%
	Suntech	31.22%	31.73%	2.90%	14.78%	35.21%	42.33%	52.13%	27.64%
China	Renesola/Jinko Solar	-	-	-	-	-	58.87%	78.42%	38.72%
	59 exporters	31.18%	25.96%	3.61%	15.24%	26.89%	42.33%	52.13%	38.72%
	Remaining exporters	249.96%	249.96%	3.61%	15.24%	26.89%	165.04%	165.04%	38.72%
	Gintech Energy	n/a	n/a	n/a	n/a	n/a	27.59%	27.55%	n/a
Taiwan	Motech Industries	n/a	n/a	n/a	n/a	n/a	44.18%	11.45%	n/a
	All others	n/a	n/a	n/a	n/a	n/a	35.89%	19.50%	n/a

Source: US Department of Commerce, Maybank Kim Eng

Trina successfully changed its customer mix in 2014. The US was an important market for Trina. In fact, Trina was in a better position than peers as the US government had imposed a relatively low import tariff on the company compared with other Chinese players. Going forward, we expect Trina may gain more exposure to Asian markets such as Japan and China.

Figure 37: Trina's module shipment breakdown (2013)

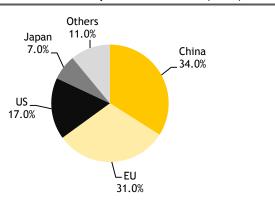
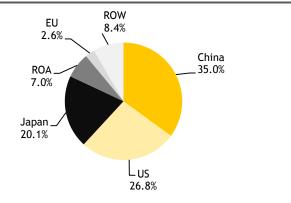


Figure 38: Trina's module shipment breakdown (2014)



Source: Company presentation, Maybank Kim Eng

Source: Company presentation, Maybank Kim Eng

Margins may have peaked; room for cost cutting looks small

We believe the margins of PV module makers have peaked because of increasing industry competition again. Gross margin will stay at the 15-20% level in 2015E, although the domestic market demand is increasing, in our view.

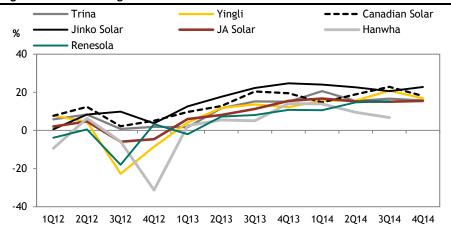
Unlike polysilicon, we think non-silicon cost reduction can only be driven by improving the operating process. Room for cost reduction in non-silicon production is limited, in our view. We believe Chinese companies' total production cost is around USD0.46-0.57/W.

We think the room for reduction of non-silicon cost is relative small.

China Solar Sector



Figure 39: Gross margin of module makers



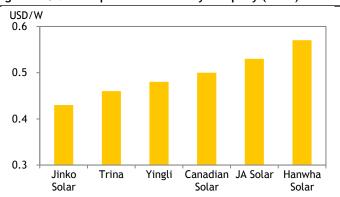
Source: Bloomberg, Maybank Kim Eng

Figure 40: Estimated cost breakdown of PV module



Source: CREIA, Maybank Kim Eng $\,$ Note: Production costs include processing cost and depreciation.

Figure 41: Module production cost by company (2014)



Source: Company presentation, Maybank Kim Eng Note: Include polysilicon procurement costs and processing costs.



Downstream: solar farms

We expect downstream players will benefit the most from the growing Chinese solar market. In 2015, we expect China will become the world's largest market in terms of total installed solar capacity, surpassing Germany and Japan. We believe the growth is being driven by: (1) fixed FiT; and (2) available bank financing.

We expect China will become the world's largest market in terms of total installed solar capacity.

Besides supportive policies, potential new business models, such as 'Yield Co', could provide low-cost financing to speed up solar installations.

Figure 42: Global solar capacity by country (2015E)

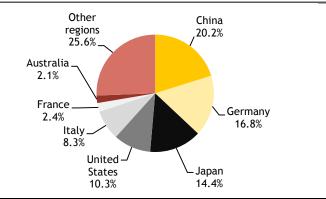
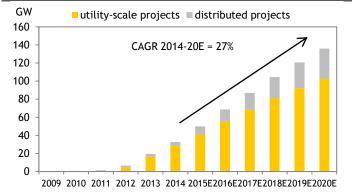


Figure 43: China solar capacity grow at 27% CAGR to 2020



Source: NEA, Maybank Kim Eng

Source: Bloomberg, Maybank Kim Eng

Fixed tariffs and distributed PV subsidies

China has two different subsidy schemes for utility-scale projects and distributed PV projects. The fixed national power tariff is guaranteed for 25 years and any further tariff cuts will only impact new projects. And as there are no fuel costs for solar farms, the projects will generate stable cash flows once they commence operation.

Subsidies for distributed PV projects are CNY0.42/kWh (for self-consumption and on top of on-grid coal tariff if electricity is sold to the grid). However, the NEA announced in Sep 2014 to further implement distributed PV power generation in China. It has defined distributed projects as projects with less than 20MW capacity and connected to the 35kV and below substation. The new policy gives more flexibility to the distributed projects and could enhance profitability.

The tariff payment is made up of two parts: (1) desulphurised coal tariff; and (2) solar subsidy. Project developers can receive the desulphursied coal tariff portion from the grid companies every month and collect the additional subsidy from the government every quarter.

In China, renewable energy subsidies come from the surcharge collected from electricity end-users. Since 2012, the Ministry of Finance has been in charge of collecting surcharges and helping to distribute the required subsidies to power grid operators. Currently the surcharge is set at CNYO.015/kWh.



Figure 44: Subsidy programmes for solar in China

Date	Programme	Government agency	Type of projects	Details
02 Sep 2014	Distributed PV	NEA	Distributed PV projects	For distributed projects that sell all the power to the grid, project owners can also receive the national FiT of CNY1/kWh
26 Aug 2013	Distributed PV subsidy	NDRC	Distributed PV projects	CNY0.42/kWh and project owner could receive local desulphurised coal tariff if selling surplus power to the grid
26 Aug 2013	National feed-in tariff	NDRC	Ground-mounted projects	National tariff has been cut to CNY0.9-1/kWh (depending on project locations) for projects approved after 1 Sep 2013 and projects approved before 1 Sep 2013 and commissioned after 1 Jan 2014
24 Jul 2011	National feed-in tariff	NDRC	Ground-mounted projects	CNY1.15/kWh for projects approved before 1 July 2011 and start operation before 31 Dec 2011, CNY1/kWh for all projects commissioned since 1 Jan 2012
16 Jul 2009	Golden Sun prograr (abandoned since June 2013)	nMinistry of Finance	Rooftop BIPV and ground-mounted systems	Provide 50% of total investment costs for on-grid systems and 70% of total investment for off-grid systems
26 Mar 2009	BIPV	Ministry of Finance	Rooftop and BIPV systems	CNY15/W for rooftop and CNY20/W for BIPV systems

Source: NDRC, NEA, Ministry of Finance, Maybank Kim Eng

Figure 45: Solar national feed-in tariffs for utility-scale projects

Resources	Solar tariff (CNY/kWh)	Regions
Category I	0.9	Ningxia, Qinghai (Haixi), Gansu (Jiayuguan, Wuwei, Zhangye, Jiuquan, Dunhuang, Jinchang), Xinjiang (Hami, Tacheng, Alatai, Kelamayi), Inner Mongolia (except Chifeng, Tongliao, Hinggan, Hulun Buir)
Category II	0.95	Beijing, Tianjin, Heilongjiang, Jilin, Sichuan, Yunnan, Inner Mongolia (except Chifeng, Tongliao, Hinggan, Hulun Buir), Hebei (Chengde, Zhangjiakou, Tangshan, Qinhuangdao), Shanxi (Datong, Suzhou, Xinzhou), Shaanxii (Yulin, Yanan), and other regions in Qinghai, Gansu and Xinjiang
Category III	1.00	Other regions

Source: NDRC, Maybank Kim Eng Note: the rates are guaranteed for 20 years.

Figure 46: Comparison of different sources of energy

	Construction	Unit fuel costs	Project life	Average ⁻	Tariff/subsidy
	cost (CNY/kW)	(CNY/kWh)	(years)	utilisation hours	(CNY/kWh)
Solar	8,500	n/a	20	1,500	1.00
Nuclear (Gen II)	12,500	0.05	40	7,800	0.43
Nuclear (Gen III)	16,000	0.05	60	7,800	0.5*
Wind	7,800	n/a	20	2,000	0.51-0.61
Coal	4,000	0.2	20	5,500	0.3-0.5
Hydro	5,500	n/a	30	3,400	0.2-0.35

Source: Maybank Kim Eng Note:* Our estimates only.

Curtailment could be the risk

As solar projects are expanding rapidly in China and most of the projects are located in northwestern provinces, we expect the curtailment of solar could be a risk. This could happen when the solar installed capacity grows faster than the development of grid transmission capacity.

We believe it could only be solved in two ways: (1) introduce RPS (Renewable Portfolio Standard) to regulate local grid companies to consume more solar power in the province; and (2) invest in grid transmission capacity to help export the excess capacity to coastal regions. For details, please see our wind report published in August 2014.

Curtailment could be the risk to the sector.

May 13, 2015 2⁻

Bank borrowings becoming more available

We think whoever can secure cheap financing in this industry will be the ultimate winners. China Development Bank remains supportive of the solar industry. Other commercial banks in China such as China Merchant Banks and Industrial and Commercial Bank of China (ICBC) will offer more loans to downstream projects as well. The sentiment among the Chinese banks is more optimistic than before.

Solar projects are normally financed by 20% equity and 80% debt. Chinese companies rely on bank loans for financing. Chinese banks were cautious on solar project developments but their attitude seems to be changing.

In an announcement, "NEA to further strengthen the construction and operation of PV power plants" in Oct 2014, the Chinese government said it is encouraging banks, insurance companies and investment banks to provide favourable loans, simplify their application procedures, adopt flexible loans guarantee and use cash flow generation as collateral.

Recently some Chinese commercial banks started to offer loans to support downstream development. China Merchants Bank, for example, published a loans guide for the PV generation industry in Oct 2014, particularly supporting distributed projects. In Jan 2015, ICBC also published loan guidelines to support the solar industry. The state-owned China Development Bank also provided CNY70m of loans to a distributed project (9.6MW) in Hebei province in Oct 2014.

Project financing seems easier than before for the downstream project development.

Figure 47: Bank loans facilities to Chinese solar companies over the past 12 months

Date	Company	Providers	Туре	Purpose	Amount (CNYm)
Mar 2015	Jinko Solar	China Minsheng Bank	Credit lines	Solar power plant development	3000
Dec 2014	GCL New Energy	BOCI Leveraged and Structured Finance	Credit lines	Construction loans	496
Oct 2014	Baoding New Energy	China Development Bank	Loans	9.6MW distributed PV project	70
Aug 2014	United PV	Qinghai branch of China Development Bank	Loans	Solar power plant development	150
Jul 2014	Shunfeng PV	China Minsheng Bank	Credit lines	Solar power plant development	20,000
Jul 2014	Shunfeng PV	China Merchants Bank	Credit lines	Solar power plant development	2,000
Mar 2014	GCL-Poly	China Development Bank	Credit lines	Solar power plant development	5,000
Feb 2014	United PV	Shenzhen branch of China Development Bank	Credit lines	1GW of solar power plant development	n/a
Jan 2014	China Windpower	Qinghai branch of China Development Bank	Credit lines	800MW of solar power plant development	5,700
Sep 2013	Shunfeng PV	China Development Bank	Loans	30MW Xinjiang project	200

Source: Company announcements, Maybank Kim Eng

Besides policy, potential new business models may evolve

We believe China can develop new business models to help speed up development of solar projects. Potential business models include 'Yield Co' and SolarCity, which was developed in the US. Module makers have expanded into the downstream sector and potentially can spin-off downstream arms to form a Yield Co to secure lower cost of financing. This provides a near-term catalyst for project owners, in our view.

'Yield Co': low-cost capital

One of the bottlenecks to the rapid development of the solar market is the difficulty to fund a green-field project as the investment cost is high and the execution risk is also high. During the construction period, the borrowing cost is always high as banks will categorize the development as an EPC business. However, after the construction and the solar farm starts operation, banks will treat it as a utility project with low risks. So, how can a company leverage the low-risk business nature of an operating solar farm?



We think the concept of 'Yield co' can help resolve the high funding cost issue during the construction stage. After a solar developer has completed several projects with a certain scale of installed capacity, the company can spin off the operating solar farms through a listing. The cost of equity and the debt of this vehicle (which we dubbed as a 'Yield Co') are low as it is a utility. It could also provide a decent yield to shareholders and to the EPC entity as the 'Yield co' should remain the subsidiary of the EPC entity. Anyhow, the most important thing is that a 'Yield co' is a cash cow and every time the parent's EPC works are finished, the completed solar farm will be sold to a 'Yield co' and the 'Yield co' will provide cash flow, which will be at a low cost of capital to the parent's EPC entity.

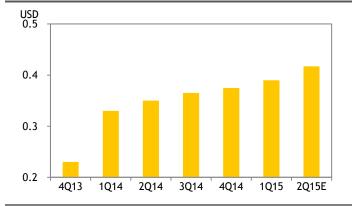
We think the business nature of Yield Cos is very similar to property REITs. Yield Cos own a large portfolio of renewable energy projects that could provide stable returns. This could attract investors to participate in solar power assets without exposing them to the risks during the development stage. By diversifying the risks and generating stable cash flow, 'Yield co' could obtain relative low cost of capital and provide stable returns to support high dividend payouts.

This is already an established model in the US. SunEdison (SUNE US, Not Rated) spun off its downstream business in Jul 2014 and raised capital by selling its solar projects to the 'Yield co'. The separate entity, TerraForm Power (TERP US, Not Rated), pays high dividends based on cash generated from its solar power projects. Another company NRG Yield Inc (NYLD US, Not Rated) was also spun off from NRG Energy Inc. The company has paid quarterly dividends since 4Q13 and the dividends are expected to grow at 10% CAGR from 4Q13-2Q15E, according to Bloomberg estimates.

We believe the concept of 'Yield Co' can be replicated in China to create opportunities for players that do both EPC and operate solar farms.

We expect "Yield Co" could be the new business model to boost the solar power installation growth in China.

Figure 48: NRG Yield quarterly dividends



Source: Bloomberg, Maybank Kim Eng

Figure 49: Share price performance of NRG Yield



Source: Bloomberg, Maybank Kim Eng

SolarCity - successful story in residential market

SolarCity is very successful in the US in providing solar installation services across the country. The company is expanding very quickly and had over 190,000 customers as of end-2014, up 204% YoY. It offers two operating models for solar customers: 1) solar PPA; 2) and solar lease.

(1) Solar PPA (commercial customers)

This is very simple structure. Instead of paying the coal-fired electricity tariff, customers pay the power bills for solar power generated from a system on the rooftop. Customers sign a power purchase agreement (PPA) with SolarCity. SolarCity does all the installation and maintenance of the system and customers pay little or zero upfront costs to use solar power. Customers can also reduce electricity bills as SolarCity normally charges 15% less compared with coal tariff.

(2) Solar lease (more common for residential users)

In a solar lease, residential users can have their own solar panels with no upfront costs but pay a fixed monthly lease to SolarCity - just like making home or car mortgages but solar panels. Same as solar PPA, SolarCity does all the installation, maintenance, repair and monitoring. Customers could purchase the panels any time after five years. The contract terms also include "performance guarantee" - i.e. customers can get refunds if the solar panels produce less kWh than the amount guaranteed by SolarCity. The systems are grid-connected so surplus power can also be sold to the grid.

In terms of profitability, SolarCity reported that its return on investments reached 11-13% for unlevered residential projects in 4Q14 due to the solar subsidy scheme in the US. It also secured project financing from tax-equity investors in the US, which could reduce its initial investment from USD2.74/W to USD0.99/W.

Figure 50: Examples of solar leases

Example of a solar lease (USD)	
System size	4.25kW
Monthly payment for first year	68.83
Annual increase on monthly payment	2.90%
Total lease payments	21,967.1
Estimated tax	2,031.95
Total of payment including tax	23,999.0
Minimum output guaranteed	5,701kWh

Source: SolarCity website

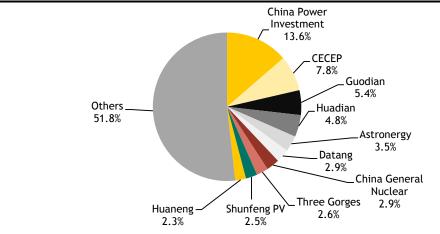
Fragmented market: lots of growth potential

We think with the supportive policies in place, this is the time for the industry to take off in 2015E. This fragmented market could create a lot of growth potential. We believe the downstream segment is under-covered, similar to China's city gas distributors four years ago.

Unlike wind power, there are no big players that develop solar power. Among the Big Five power companies, only China Power Investment (2.2GW) is actively developing solar projects. Other players such as Huadian, Guodian, Huaneng, Three Gorges developed <1GW of projects as of 2013.

We believe the downstream solar segment is under-covered, similar to China's city gas distributors four years ago.

Figure 51: Market share of solar project developers in 2013



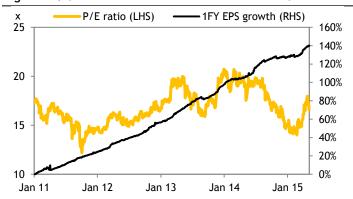
Source: CREIA, Maybank Kim Eng

Similar to city gas distributors in four years ago

We believe solar farm operators are quite similar to city gas distributors four years ago. The share prices of gas distributors have increased by 166% on average since 2011. The similarities include:

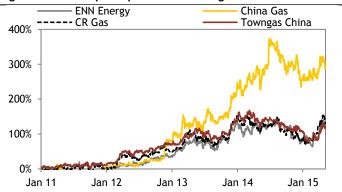
- Solar and natural gas are both clean energy encouraged by the government.
- A fragmented industry in the early stages.
- Drivers are similar: funding availability and local track record is important for expansion.
- Very stable return after commencing operation of the farms.
- We expect more M&As in future.

Figure 52: Gas distributors PER vs 12m forward EPS



Source: Bloomberg, Maybank Kim Eng Note: average of ENN Energy, China Gas, CR Gas and Towngas China

Figure 53: Share price performance of gas distributors



Source: Bloomberg, Maybank Kim Eng

Capital structure: debt, equity and convertible bonds

From the capital structure perspective, we think more debt could help lower the overall WACC of the company to boost the intrinsic value as higher level of debt could enjoy the benefit of tax shield and cost of debt is always lower than cost of equity. However, as companies at early stage of development without strong balance sheets, the cost of debt could increase fast which could limit the advantage of debt financing, in our view.

For downstream solar farm developers, if it is funded by straight debt or bond, the cost of debt could be 7.5% or even higher. If it is funded by equity, the EPS dilution impact could be large. In order to balance both, we think convertible bonds (CBs) could help to fund the development. The coupon rate of CBs is generally lower than the straight bond interest rate. For example, GCLNE (451 HK, BUY) has proposed a CB with a coupon rate of 6% which should be cheaper than the straight bond interest rate. However, it will involve possible EPS dilution impact. We have listed the fully diluted EPS and PER of companies under our coverage as below. We expect GCLNE (451 HK, BUY), Xinyi Solar (968 HK, BUY) and United PV (686 HK, not rated) may actively pursue the CB strategy.

Generally, CBs could help lower the overall WACC of a company, especially for some start-up companies with high cost of equity and not cheap debt financing. The cost of CBs should be between cost of straight debt and cost of equity. For example, we have calculated GCLNE's CB cost to be

around 9.5%. (The proposed one issued to China Orient Asset Management and Ivyrock, announcement on 30 April 2015).

The cost CBs should be divided into cost of debt part and cost of warrant part. The cost of warrant part will increase if the share price increases which will also induce a higher overall cost of CB.

Figure 54: Comparisons of P/E vs FDP/E based on our forecast

			P/E		F	D P/E		FDEPS (HKD)		
Company	Ticker	2015	2016	2017	2015	2016	2017	2015	2016	2017
Xinyi Solar	968 HK	15.8	12.0	11.1	15.8	12.0	11.1	0.18	0.24	0.26
GCL New Energy	451 HK	22.1	9.9	7.7	23.1	10.4	8.2	0.04	0.09	0.11
GCL Poly	3800 HK	12.6	8.6	6.7	12.6	8.6	6.7	0.17	0.25	0.32
Singyes Solar	750 HK	10.1	8.8	8.5	11.3	9.9	9.5	1.03	1.17	1.23

Source: Maybank Kim Eng Note: EPS based on MKE forecasts.

Figure 55: Our forecast to capital structure in 2015E

	GCLNE	Singyes	GCL Poly	Xinyi Solar	United PV*
Long-term debt	70%	21%	35%	50%	37%
Short-term debt	2%	14%	30%	1%	11%
Convertible bonds	9%	12%	2%	0%	19%
Equity	19%	54%	33%	49%	33%
	100%	100%	100%	100%	100%

Source: Maybank Kim Eng, *United PV one is FY14 historical data

Figure 56: List of convertible bonds

3								
Company	Mty Type	Curr	Amt Issued (in million)	Coupon (%)	Announce Date	Issue Date	Maturity	Conversion price (HKD/share*)
GCL-Poly Energy Holdings Ltd	CONV/PUT	USD	200	0.75	15/11/2013	29/11/2013	29/11/2018	3.12
China Singyes Solar	CONV/PUT	CNY	930	5	16/07/2014	08/08/2014	08/08/2019	16.13
United PV	CONVERTIBLE	USD	120	5	29/09/2013	08/10/2013	08/10/2016	1.60
United PV	CONVERTIBLE	HKD	529	7.5	23/01/2015	20/04/2015	20/04/2018	1.03
United PV	CONVERTIBLE	USD	30	7.5	04/03/2015	29/04/2015	29/04/2018	1.03
United PV	CONVERTIBLE	HKD	848	0	22/11/2012	10/06/2013	11/06/2018	1.00
United PV	CONV/CALL	HKD	233	0	13/09/2013	27/12/2013	27/12/2018	1.60
United PV	CONVERTIBLE	HKD	1260	7.5	17/04/2015	N/A	31/12/2018	1.03
United PV	CONVERTIBLE	USD	15	7.5	20/04/2015	N/A	31/12/2018	1.03
GCL New Energy Holdings Ltd	CONVERTIBLE	HKD	975	0	30/04/2015	N/A	31/12/2018	N/A
Trina Solar Ltd	CONV/PUT	USD	173	3.5	06/06/2014	11/06/2014	15/06/2019	14.30
Trina Solar Ltd	CONV/PUT	USD	115	4	01/10/2014	06/10/2014	15/10/2019	14.69

Source: Bloomberg, Maybank Kim Eng *Note: Conversion price for Trina is USD per share.

Potential sector catalysts

- More favourable government policies, such as the RPS (renewable portfolio standard or quota system) for different provinces.
- Potential M&As or asset injections.
- Possible share placements.
- Other countries import duties policies
- Technological breakthroughs to reduce solar cost.
- Infrastructure development for grid connections.
- New business models to accelerate the pace of solar power installation.
- Could become a new popular type of asset for infrastructure funds.

How we may be different from consensus view

- Solar farm developers are still not widely covered by analysts as most of the companies are still at the start-up stage. However, we initiate GCL-New Energy (451 HK) with a BUY and TP of HKD1.60 as we are positive on the growth potential of downstream players.
- We think the market has overlooked the potential development of new solar business models, such as 'Yield Co' and solar leasing. These models could help speed up solar power demand.
- The market may think the financing availability for solar projects remains tight but we believe it is improving.
- The market may be bearish on polysilicon prices, but we think it could rebound in 2H15 after the 100,000-tonne potential processing trade imports have been absorbed.
- The market appears to be highly positive on the distributed PV EPC contractors, such as Singyes. However, we are relatively conservative on the execution and coordination capabilities as well as the pace of growth in economies of scale.

BUY Xinyi Solar and GCL New Energy

We expect downstream players will benefit the most. Our Top Picks are Xinyi Solar (968 HK) and GCL New Energy (451 HK) due to their exposure on solar farms. We also think that GCL New Energy will have the highest capacity growth in 2015-16E.

Xinyi Solar (968 HK, BUY, TP:HKD3.60)

- Largest solar glass manufacturer in China
- We expect margin improvement in FY15E
- Sweet spot from solar farm business
- Initiate at BUY on Xinvi Solar with DCF-based TP of HKD3.60;
- Our TP is based on the assumption of 8% WACC and 4% terminal growth rate. Our TP implies 20x FY15E PER and 4.7x FY15E P/BV.
 We think it is justified given the high ROE of 29% in 2015E.

GCL New Energy (451 HK, BUY, TP:HKD1.60)

- "GCL Yield Holding" issues Zero-Coupon CB to Goldman Sachs Investment.
- Possible "Yield Co" business model could help.
- Rapidly increasing installation capacity.
- Synergies with the parent.
- Good relationship with banks to secure loans.
- Initiate at BUY on GCL-New Energy with DCF-based TP of HKD1.60;
- Our TP is based on the assumption of 9.7% WACC and 4% terminal growth rate. Our TP implies 23x FY15E fully diluted PER on the back of 121% fully diluted EPS growth in FY16F or 48% fully diluted EPS CAGR from FY15F to FY18F. We think this is justified given the high capacity growth.

GCL-Poly (3800 HK, BUY, TP:HKD2.80)

- We believe the driver of the stock is the pace of cost reduction.
- We expect cost reduction will be mainly driven by the use of FBR method and the low-cost FBR capacity could reach 25,000MT by end of 2015. We believe another cost-reduction driver could be development of the captive power plants.
- Maintain BUY and TP of HKD2.80 based on 2.1x FY15 P/BV. We expect the update regarding the commission date of the captive power plant will be the catalyst to the stock.

Singyes Solar (750 HK, HOLD, TP:HKD12.20)

- We expect margins to decline for solar EPC.
- Limited local resources to catch up with rapid industry growth.
- Downside risks: Singyes may miss BOT plan in 2015.
- Initiate at HOLD on Singyes Solar. We used a target 10.5x FY15E PER to derive a TP of HKD12.20. We applied 10.5x as this is the mid-point of its 2014 PER band since the promotion of distributed PV in China.

Figure 57: Our valuations

Company	Ticker	Target price (HKD)	Valution method	Assumptions
Downstrea	am			
Xinyi Solar	968 HK	3.60	DCF-based	8% WACC and 4% terminal growth rate
GCL New Energy	451 HK	1.60	DCF-based	9.7% WACC and 4% terminal growth rate
Singyes	750 HK	12.20	Price multiple	using 10.5x FY15 PER
Upstream				
GCL Poly	3800 HK	2.80	Price multiple	using 2.1x FY15 P/BV

Source: Maybank Kim Eng

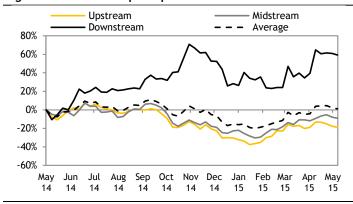


Figure 58: Share price performance (%)

	1M	3M	6M	1YR
Downstream				
Xinyi Solar	2.5	35.5	16.3	50.5
GCL New Energy	-23.9	23.6	-29.8	120.0
Singyes Solar	-7.6	16.6	-13.8	10.3
United PV	21.4	40.6	46.4	178.4
Upstream				
GCL Poly	-11.0	29.6	-1.4	-6.0
Midstream				
Trina Solar	4.1	15.6	27.1	5.9
Yingli Green	-10.9	-22.9	-36.8	-44.5

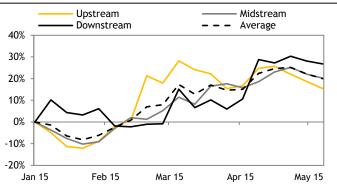
Source: Bloomberg, Maybank Kim Eng

Figure 59: 12m share price performance



Source: Bloomberg, Maybank Kim Eng Note: Upstream includes polysilicon and wafer manufacturers, midstream includes cell and module manufacturers, downstream is solar farm operators.

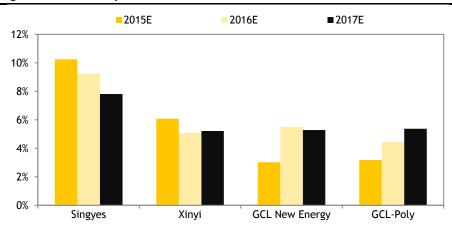
Figure 60: YTD share price performance



Source: Bloomberg, Maybank Kim Eng Note: Upstream includes polysilicon and wafer manufacturers, midstream includes cell and module manufacturers, downstream is solar farm operators.

Company comparisons

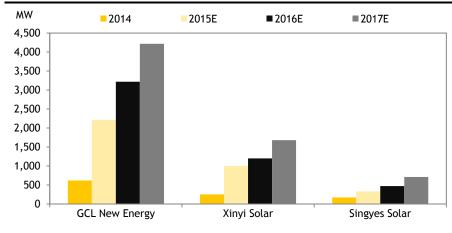
Figure 61: ROIC comparisons



ROIC of GCL New Energy and Xinyi Solar are low in the early years of operation due to high investment capital for the solar farm development. We expect ROIC will increase when stable revenue come in the later years. Singyes has the highest ROIC due to its EPC business models with low invested capital required.

Source: Maybank Kim Eng

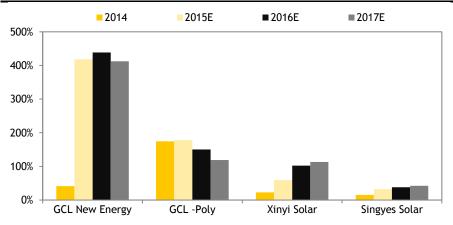
Figure 62: Capacity installation comparisons



We expect GCL New Energy will experience highest capacity growth, reaching 2.2GW in 2015E and 3.2GW in 2016E.

Source: Maybank Kim Eng

Figure 63: Net gearing ratio comparisons

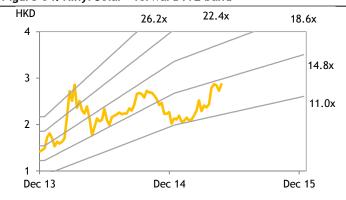


Downstream players often have higher net debt to equity ratio than upstream players given the need to fund its solar project developments from bank loans.

Source: Maybank Kim Eng

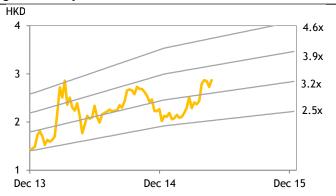
P/E and P/B band

Figure 64: Xinyi Solar - forward P/E band



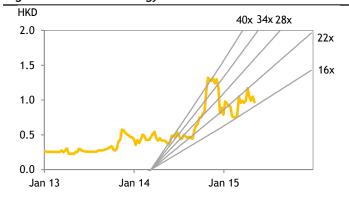
Source: Bloomberg, Maybank Kim Eng Note: Maybank KE EPS estimates.

Figure 65: Xinyi Solar - forward P/B band



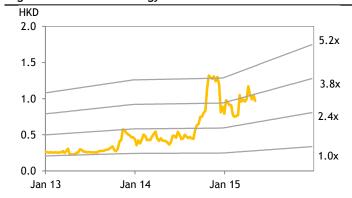
Source: Bloomberg, Maybank Kim Eng Note: Maybank KE EPS estimates.

Figure 66: GCL New Energy - forward P/E band



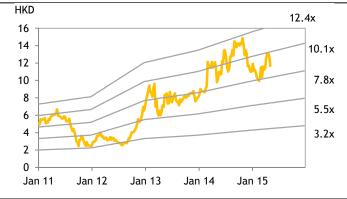
Source: Bloomberg, Maybank Kim Eng Note: Maybank KE EPS estimates.

Figure 67: GCL New Energy - forward P/B band



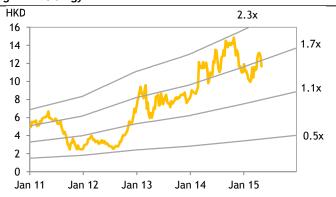
Source: Bloomberg, Maybank Kim Eng Note: Maybank KE EPS estimates.

Figure 68: Singyes - forward P/E band



 $Source: Bloomberg, \, \textit{Maybank Kim Eng} \ \ \textit{Note: Maybank KE EPS estimates}.$

Figure 69: Singyes - forward P/B band

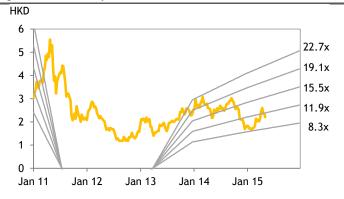


Source: Bloomberg, Maybank Kim Eng Note: Maybank KE EPS estimates.

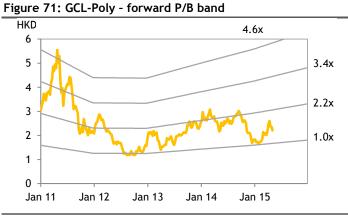
China Solar Sector

Kim Eng

Figure 70: GCL-Poly - forward P/E band

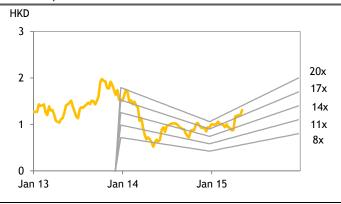


Source: Bloomberg, Maybank Kim Eng Note: Maybank KE EPS estimates.



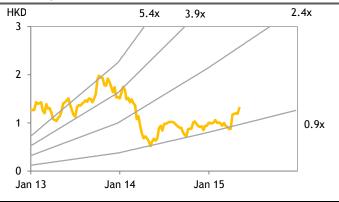
Source: Bloomberg, Maybank Kim Eng Note: Maybank KE EPS estimates.

Figure 72: United PV - forward P/E band (Bloomberg consensus)



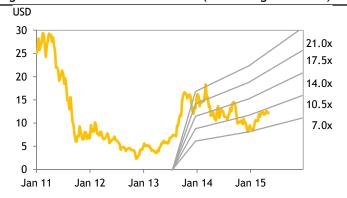
Source: Bloomberg, Maybank Kim Eng

Figure 73: United PV - forward P/B band (Bloomberg consensus)



Source: Bloomberg, Maybank Kim Eng

Figure 74: Trina - forward P/E band (Bloomberg consensus)



Source: Bloomberg, Maybank Kim Eng

Figure 75: Trina - forward P/B band (Bloomberg consensus)



Source: Bloomberg, Maybank Kim Eng

Peers valuation

Figure 76: Peer comparisons (Solar companies mentioned in this report)

	Bloomberg	Mkt Cap	Closing		Target	PER (x)		P/BV (x)		DY (%)		ROE	(%)
Company	code	(USDm)	Price	Rating	Price	FY15E	FY16E	FY15E	FY16E	FY15E	FY16E	FY15E	FY16E
Xinyi Solar	968 HK	2,428	2.86	Buy	3.60	15.8	12.0	3.7	3.2	3.0	3.9	28.5	28.5
GCL New Energy	451 HK	1,593	0.89	Buy	1.60	22.1	9.9	3.6	2.6	0.0	0.0	17.6	30.6
Singyes Solar	750 HK	1,046	11.64	Hold	12.20	10.1	8.8	1.7	1.5	1.1	1.2	18.7	18.0
GCL-Poly	3800 HK	4,376	2.19	Buy	2.80	12.6	8.6	1.6	1.4	1.6	2.3	13.8	17.8
United PV	686 HK	868	1.42	NR	NR	19.5	16.7	1.6	1.4	N/A	1.1	13.2	10.4
Trina Solar	TSL US	1,135	12.32	NR	NR	12.1	8.9	0.9	0.8	0.0	0.0	9.1	11.1
Yingli Green	YGE US	313	1.72	NR	NR	N/A	N/A	N/A	N/A	0.0	0.0	-21.8	117.1
Average						15.4	10.8	2.2	1.8	0.9	1.2	11.3	33.4

Note: *Covered by Kim Eng. Using Maybank KE estimates. NR=not-rated. (Closing price on 12 May 2015)

Source: Bloomberg, Maybank Kim Eng

Figure 77: Peer comparisons (Solar sector)

	Bloomberg	Mkt Cap	Closing	Cur	Cur PER (x)		P/B\	/ (x)	DY	(%)	ROE	(%)
Company	code	(USDm)	Price				FY15E	FY16E	FY15E	FY16E	FY15E	FY16E
Polysilicon and wafer												
SunEdison	SUNE US	7,892	28.75	USD	N/A	N/A	11.1	3.7	0.0	0.0	-55.6	-112.8
Wacker	WCH GR	6,370	108.50	EUR	37.2	20.2	2.6	2.4	1.1	1.6	7.1	12.5
GCL-Poly*	3800 HK	4,376	2.19	HKD	12.6	8.6	1.6	1.4	1.6	2.3	13.8	17.8
OCI	010060 KS	2,229	102,500	KRW	50.8	17.5	0.9	0.8	0.3	0.4	2.1	5.5
Tokuyama	4043 JP	801	275.00	JPY	N/A	10.9	0.6	0.6	0.0	0.0	-40.0	5.7
REC	REC NO	553	1.79	NOK	N/A	N/A	0.5	0.5	0.0	0.0	-0.6	1.0
Dago	DQ US	255	24.34	USD	8.4	5.7	0.8	0.7	N/A	N/A	13.6	16.3
LDK Solar	LDKYQ US	32	0.14	USD	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Average					27.2	12.6	2.6	1.4	0.5	0.7	-8.5	-7.7
Cell and module												
Kyocera	6971 JP	20,502	6,515	JPY	24.8	22.6	1.2	1.1	1.2	1.4	4.8	4.9
First Solar	FSLR US	5,684	56.38	USD	22.6	16.2	1.1	1.0	0.0	0.0	6.1	6.0
SunPower	SPWR US	4,381	32.87	USD	35.1	21.5	2.6	2.4	0.0	0.0	8.6	11.5
Sharp	6753 JP	2,991	211.00	JPY	N/A	44.2	1.9	1.9	0.0	0.0	-12.7	6.6
Canadian Solar	CSIQ US	2,146	39.09	USD	12.5	9.1	2.5	1.9	0.0	0.0	25.1	28.2
Hanwha Solarone	HQCL US	1,813	2.18	USD	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Trina Solar	TSL US	1,135	12.32	USD	12.1	8.9	0.9	0.8	0.0	0.0	9.1	11.1
JA Solar	JASO US	523	10.36	USD	11.7	8.4	0.5	0.5	N/A	N/A	7.6	8.4
Yingli Green	YGE US	313	1.72	USD	N/A	N/A	N/A	N/A	0.0	0.0	-21.8	117.1
Solarworld	SWVK GR	263	15.70	EUR	N/A	22.1	1.0	0.9	0.0	0.0	-5.0	4.3
Comtec Solar	712 HK	246	1.37	HKD	19.6	16.4	0.9	0.9	1.5	N/A	4.3	5.3
Gintech Corp	3514 TT	243	18.30	TWD	N/A	N/A	0.6	0.7	N/A	N/A	-7.8	-5.5
Green Energy	3519 TT	216	17.50	TWD	N/A	N/A	1.2	N/A	N/A	N/A	N/A	N/A
Average					19.8	18.8	1.3	1.2	0.3	0.2	1.7	18.0
Solar farm operators												
Xinyi Solar*	968 HK	2,428	2.86	HKD	15.8	12.0	3.7	3.2	3.0	3.9	28.5	28.5
GCL New Energy*	451 HK	1,593	0.89	HKD	22.1	9.9	3.6	2.6	0.0	0.0	17.6	30.6
Singyes Solar*	750 HK	1,046	11.64	HKD	10.1	8.8	1.7	1.5	1.1	1.2	18.7	18.0
United PV	686 HK	868	1.42	HKD	19.5	16.7	1.6	1.4	N/A	. 1.1	13.2	10.4
China Wind Power	182 HK	692	0.60	HKD	10.0	9.2	0.9	0.8	0.7	1.0	8.1	8.8
Average					15.5	11.3	2.3	1.9	1.2	1.4	17.2	19.3

Note: *Covered by Kim Eng. Using Maybank KE estimates. NR=not-rated and based on Bloomberg consensus. (Closing price on 12 May 2015)

Source: Bloomberg, Maybank Kim Eng

China Solar Sector

Figure 78: Peer comparisons (comparing with other sub-sectors) (all based on Bloomberg consensus forecasts)

	Bloomberg	Mkt Can	Closing	, ,	Target	PER (x)		P/BV (x)		DY (%)		ROE (%)		
Company	code	(USDm)	Price	Rating								FY15E		
Chinese IPPs		(000)												
Huaneng Power*	902 HK	25,193	10.86	Hold	9.50	9.5	9.6	1.6	1.5	5.2	5.1	17.7	16.1	
China Resources Power*	836 HK	13,960	22.55	Buy	25.00	8.9	8.6		1.2		4.0		14.4	
Datang Power*	991 HK	14,777	4.48	Hold	4.50	9.7	8.3		0.9		5.1	9.0	12.3	
Huadian Power*	1071 HK	12,126	8.40	Hold	7.70	9.7	9.6		1.5		3.9		15.1	
China Power International*	2380 HK	4,504	4.84	Buy	4.60	9.0	8.8		1.1	4.5	4.8		12.2	
Average	2300 TIK	4,304	4.04	buy	4.00	9.4	9.0		1.2		4.6		14.0	
Nuclear Power						7.7	7.0	1.3	1.2	7.3	7.0	17.5	14.0	
CGN Power*	1816 HK	25,210	4.30	Buy	4.00	24.8	20.7	2.7	2.4	1.3	1.5	11.3	12.2	
City gas distributors	101011K	23,210	4.30	buy	4.00	24.0	20.7	2.7	2.4	1.3	1.3	11.3	12.2	
HK & China Gas	3 HK	25,141	18.54	NR	NR	25.3	23.6	3.4	3.2	2.1	2.2	13.9	14.0	
Beijing Enterprise	392 HK	11,863	71.60	NR	NR NR	15.6	13.4		1.4		2.0		10.2	
China Gas*	384 HK	8,672	13.44		16.50	20.6	16.8		3.1	1.1	1.4		19.0	
China Resources Gas*	1193 HK	7,230	25.20	Buy	22.00	18.7	16.1		2.6		1.4		16.6	
ENN Energy*	2688 HK	7,230	56.80	Hold Hold	51.00	19.2	16.1		3.0		1.8		19.8	
	1083 HK		8.53	Hold	7.80	16.8	14.6		1.4		1.5		10.0	
Towngas China*	1003 HK	2,908	0.33	пош	7.60				2.4		1.7			
Average HK power utilities						19.4	16.8	2.7	2.4	1.5	1.7	14.0	14.9	
CLP	2 HK	22,178	68.05	NR	NR	15.9	15.1	1.8	1.7	4.0	4.1	11.7	11.8	
	6 HK	21,419	77.80		87.00	18.6	18.9		1.7		3.6		6.9	
Power Assets* CKI*	1038 HK	20,899	64.30	Buy	75.00	15.2	14.8		1.5		3.5		10.2	
HKE Trust	2638 HK		5.25	Buy NR	75.00 NR	14.5	14.4		0.9		3.3 7.7		6.4	
	2030 FIN	5,984	5.25	INK	INK		15.8				4.7		8.8	
Average						16.1	15.6	1.4	1.4	4.0	4.7	0.9	0.0	
Solar Power	2000 111/	4 27/	2.19	D	2 00	12.5	9.2	4.7	4.4	0.7	4.0	42.2	45.4	
GCL-Poly*	3800 HK	4,376		Buy	2.80				1.4		1.0		15.1	
Xinyi Solar*	968 HK	2,428	2.86	Buy	3.60	15.9 N/A	11.9		3.0		2.8		27.8 -13.4	
GCL New Energy*	451 HK	1,593	0.89	Buy	1.60	8.2	N/A		N/A		N/A			
Singyes Solar*	750 HK 686 HK	1,046	11.64	Hold	12.20 NR	19.5	7.1		1.3		1.4	22.1 13.2	20.8 10.4	
United PV		868	1.42	NR	NR NR		16.7		1.4 0.9		1.1 N/A		5.3	
Comtec Solar	712 HK	246	1.37	NR	INK	19.6 15.1	16.4 12.3		1.6		1.6		11.0	
Average Wind Power						15.1	12.3	1.7	1.0	1.3	1.0	17.3	11.0	
	916 HK	9,848	9.50	Dine	12.00	17.0	14.5	1.7	1.6	1 1	1 1	10.3	10.9	
Longyuan Power* Goldwind	2208 HK	8,679	17.62	Buy NR	12.00 NR	17.0	15.1		2.2		1.4 3.2		14.7	
Huadian Fuxin	816 HK	4,252	3.92	NR	NR NR	10.4	8.5		1.3		2.4		15.8	
Huaneng Renewables*	958 HK	4,317	3.44	Buy	3.50	16.0	12.5		1.4		1.6		11.2	
_	579 HK		3.53	NR	NR	9.1	7.9		1.2		2.8		15.4	
Beijing Jineng Clean Energy	658 HK	3,129	7.48	NR	NR NR	14.4	13.0		0.9		0.6		7.9	
China High Speed Transmission Datang Renewable*	1798 HK	1,578	1.22	Hold	1.10	23.8	14.4		0.9		1.0		4.2	
China Wind Power	1796 FIK	1,145 692	0.60	NR	NR	10.0	9.2		0.7		1.0		8.8	
	102 116	072	0.00	INIX	INIX	14.7	11.9		1.3	1.4	1.7		11,1	
Average Environmental protection and						14.7	11.9	1.4	1.3	1.4	1.7	10.4	11.1	
water utilities China Everbright Int'l	257 HK	8,745	15.12	NR	NR	28.6	22.1	3.8	3.4	0.9	1.1	14.1	16.2	
Guangdong Investment	270 HK	8,940	11.08	NR	NR		15.4		2.0		2.7		12.7	
Beijing Water Enterprise	371 HK	7,407	6.59	NR	NR		20.5		3.0		1.8		15.7	
Guodian Science and Technology	1296 HK	1,064	1.36	NR	NR		16.8		0.7		0.6		3.2	
Tianjin Capital Environment	1065 HK	2,885	7.84	NR	NR		27.0		1.9		1.2		7.7	
CT Environmental	1363 HK	2,142	10.86	NR	NR NR	28.4	21.3		5.0		0.8		24.8	
Average	1303 116	۷,۱٦۷	10.00	IVIX	1417	23.3	20.5		2.7		1.4		13.4	
Power equipment						د2	20.3	ا .5	2.7	1.2	1.4	13.0	13.7	
Shanghai Electric	2727 HK	35,162	8.04	NR	NR	33.7	31.3	2.3	2.2	1.0	1.1	7.1	7.3	
Dongfang Electric	1072 HK		17.42	NR	NR NR		22.0		1.3		0.8		6.9	
Harbin Electric	1072 HK 1133 HK	1,103		NR NR	NR NR		32.9		0.5		0.6		2.3	
Average	1133 FIK	1,103	6.21	INK	INK	39.2	28.7		1.3		0.8		5.5	
Note: *Covered by Vim Eng. ND not yet	and (Clasina na					J7. Z	20.7	1,4	1.3	0.7	0.8	J.Z	٥,٥	

Note: *Covered by Kim Eng. NR=not-rated. (Closing price on 12 May)

Source: Bloomberg, Maybank Kim Eng



Risks

- Possible target miss for solar power in China.
- Potential tariff or subsidy cuts.
- Share placement risks to stocks.
- Curtailment problems in western provinces.
- Raw material price increases.
- Cost reduction lower than expectation.
- Corporate governance risks.
- Potential interest rate hike.



Appendix 1: IRR model calculations

Figure 79: 20MW solar plant IRR model

Solar power plant economic assumptions		
Capacity	20	MW
Utilisation hours	1500	hours
System conversion efficiency	80%	
Tariff	0.95	CNY/kWh
VAT rate	17%	
annual module degradation	0.8%	
Investment cost	8.5	CNY/W
Total investment	170	million
Capex	153	million
VAT offset for capex	22.2	million
Equity (20%)	34	million
Bank Loan (80%)	136	million
Interest rate	7.5%	
Construction period	12	months

Project income statemen	+ (CNV~	A															
Project income statemen	t (CNTIII)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	25
Power generation (GWh)			Ū	30.0	29.8	29.5	29.3	29.0	28.8	28.6	28.3	28.1	27.8	27.6	27.4	27.1	24.2
Revenue (exclude 17% VAT)				24.4	24.2	24.0	23.8	23.6	23.4	23.2	23.0	22.8	22.6	22.4	22.2		19.7
VAT Refund (8.5%)				(0.0)			-	1.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.1
Total revenue				24.4	24.2	24.0	23.8	25.0	25.8	25.6	25.4	25.2	25.0	24.8	24.5	24.3	21.7
Depreciation (a)	20	153		7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	-
Maintenance costs	0.040	/kWh		1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Maintenance material costs	0.3			-	-	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.6
insurance	0.3%of	capex		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
land cost	2			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Total				11.2	11.2	11.5	11.5	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	4.2
Gross profit				13.1	12.9	12.4	12.2	13.5	14.3	14.0	13.8	13.6	13.4	13.1	12.9	12.7	17.6
Operating expense				0.9	0.9	0.9	0.9	1.0	14.3	1.0	1.0	1.1	1.1	1.1	1.2	1.2	17.0
Operating profit				12.3	12.1	11.5	11.3	12.5	13.3	13.0	12.8	12.5	12.3	12.0	11.7		15.9
Loan balance at end of the				12.3	12.1	11.5	11.3	12.3	13.3	13.0	12.0	12.5	12.5	12.0	11.7	11.5	13.7
vear			136.0	124.7	113.3	102.0	90.7	79.3	68.0	56.7	45.3	34.0	22.7	11.3	0.0	0.0	0.0
Interest expense	12.0	7.50%	150.0	9.4	8.5	7.7	6.8	6.0	5.1	4.3	3.4	2.6	1.7	0.9	0.0	0.0	0.0
Profit before tax				2.9	3.6	3.9	4.5	6.5	8.2	8.8	9.4	10.0	10.6	11.1	11.7	11.5	15.9
Tax	25.0%			-	-	-	(0.6)	(0.8)	(1.0)	(2.2)	(2.3)	(2.5)	(2.6)	(2.8)			(4.0)
Profit after tax (b)				2.9	3.6	3.9	`3.9	`5.Ź	`7.Ź	6.6	7.Ó	7.Ś	`7.9	8.4	8.8	8.6	11.9
Capital			34.0														
VAT offset (c)		22.2		5.1	5.1	5.0	5.0	2.1	-	-	-	-	-	-	-	-	-
Loan repayment (d)	12			(11.3)		(11.3)	(11.3)	(11.3)		(11.3)				(11.3)			
Cash Flow $(a)+(b)+(c)+(d)$			(34.0)	4.3	4.9	5.2	5.2	4.1	3.5	2.9	3.3	3.8	4.2	4.7	5.1	16.3	11.9
Equity IRR	16.9%																
Equity IKK	10.7/0																
Profit after tax				2.9	3.6	3.9	3.9	5.7	7.2	6.6	7.0	7.5	7.9	8.4	8.8	8.6	11.9
Depreciation				7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	-
VAT offset				5.1	5.1	5.0	5.0	2.1	-	-	-	-	-	-	-	-	-
interest expense				9.4	8.5	7.7	6.8	6.0	5.1	4.3	3.4	2.6	1.7	0.9	0.0	0.0	0.0
			(170.0)	25.0	24.8	24.2	23.4	21.4	19.9	18.5	18.1	17.7	17.3	16.9	16.5	16.3	11.9
Project IRR	10.8%																
·																	

Source: Maybank Kim Eng



Figure 80: Distributed project IRR model (Scenario 1)

Solar Power Plant Economics Assumptions:		
Capacity	5	MW
Utilisation hours	1200	hours
System conversion efficiency	80%	
Distributed subsidy	0.42	CNY/kWh
Desulphurised tariff	0.4	CNY/kWh
Retail power tariff	0.7	CNY/kWh
VAT rate	17%	
annual module degradation	0.8%	
Investment cost	8.5	CNY/W
Total investment	42.5	million
Capex	38.25	million
VAT offset for capex	5.6	million
Equity (30%)	12.75	million
Bank Loan (70%)	29.75	million
Interest rate	7.5%	
Construction period	6	months
Self consumption ratio	100%	

Power generation (GWh)	Project income statement (CNY	m)								_		_							
Subsidy 0.42 2.5 2.5 2.5 2.5 2.6 2.4 2.4 2.4 2.4 2.4 2.4 2.3 2.3 2.3 2.3 2.0 Tariff 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7					0	1	2	3	4	5	6	7	8	9	10	11	12		
Tariff 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7																			
Revenue (exclude 17% VAT) 3.6 3.6 3.5 3.5 3.5 3.5 3.4 3.4 3.4 3.4 3.3 3.3 3.3 3.2 2.9 VAT Refund 0.0 (0.0) - 0.0 - 0.2 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	Subsidy																		
VAT Refund Total revenue 6.1 0.0 (0.0) - 0.0 0.0 5.9 0.2 0.2 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	Tariff	0.7				0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Total revenue 6.1 6.1 6.0 6.0 5.9 6.1 6.3 6.2 6.2 6.1 6.1 6.0 6.0 5.3 Depreciation (a) 20 38 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9	Revenue (exclude 17% VAT)					3.6	3.6	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.2	2.9
Depreciation (a) 20 38 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9	VAT Refund					0.0	(0.0)	-	0.0	-	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4
Maintenance costs	Total revenue					6.1	6.1	6.0	6.0	5.9	6.1	6.3	6.2	6.2	6.1	6.1	6.0	6.0	5.3
Maintenance costs																			
Maintenance material costs 0.3				38															-
insurance	Maintenance costs		/kWh			0.2	0.2												
land cost Total 2.2 2.2 2.5 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6	Maintenance material costs					-													
Total 2.2 2.2 2.5 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6	insurance	0.3%	of capex			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Gross profit 3.9 3.8 3.5 3.4 3.3 3.5 3.7 3.7 3.6 3.5 3.5 3.4 3.3 4.4 Operating expense 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	land cost					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating expense 0.2 0.3 0.6 0.0 0.9 7.0 0.0 <td>Total</td> <td></td> <td></td> <td></td> <td></td> <td>2.2</td> <td>2.2</td> <td>2.5</td> <td>2.6</td> <td>2.6</td> <td>2.6</td> <td>2.6</td> <td>2.6</td> <td>2.6</td> <td>2.6</td> <td>2.6</td> <td>2.6</td> <td>2.7</td> <td>0.9</td>	Total					2.2	2.2	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.7	0.9
Operating expense 0.2 0.3 0.6 0.0 0.9 7.0 0.0 <td>Gross profit</td> <td></td> <td></td> <td></td> <td></td> <td>3 0</td> <td>3 8</td> <td>3.5</td> <td>3 /</td> <td>2 2</td> <td>2.5</td> <td>3.7</td> <td>3.7</td> <td>3.6</td> <td>2.5</td> <td>2.5</td> <td>3.4</td> <td>2.2</td> <td>11</td>	Gross profit					3 0	3 8	3.5	3 /	2 2	2.5	3.7	3.7	3.6	2.5	2.5	3.4	2.2	11
Operating profit 29.8 27.3 24.8 22.7 2.6 2.8 3.0 2.9 2.9 2.8 2.7 2.7 2.6 3.6 Loan balance at end of the year 12.0 7.50% 20. 1.9 1.7 1.5 1.3 1.1 0.9 0.7 0.6 0.4 0.2 (0.0) (0.0) (0.0) Profit before tax 25.0% 1.6 1.7 1.6 1.7 1.6 1.5 1.6 1.9 1.9 2.0 2.1 2.2 2.2 2.3 2.3 3.0 Capital VAT offset 1.0 1.0 1.0 1.0 1.0 1.0 1.0 0.5																			
Loan balance at end of the year 29.8 27.3 24.8 22.3 19.8 17.4 14.9 12.4 9.9 7.4 5.0 2.5 (0.0) (0.0) (0.0)																			
Interest expense 12.0 7.50% 2.0 1.9 1.7 1.5 1.3 1.1 0.9 0.7 0.6 0.4 0.2 (0.0) (0.0) (0.0) Profit before tax 1.6 1.7 1.6 1.7 1.8 2.1 2.5 2.6 2.8 2.9 3.0 3.1 3.0 4.0 Tax 25.0% (0.2) (0.2) (0.3) (0.6) (0.7) (0.7) (0.7) (0.7) (0.7) (0.8) (0.8) (1.0) Profit after tax (b) 1.6 1.7 1.6 1.5 1.6 1.9 1.9 2.0 2.1 2.2 2.2 2.3 2.3 3.0 Capital 12.8 VAT offset 1.0 1.0 1.0 1.0 1.0 1.0 1.0 0.5					20.0														
Profit before tax 1.6 1.7 1.6 1.7 1.8 2.1 2.5 2.6 2.8 2.9 3.0 3.1 3.0 4.0 Tax 25.0% (0.2) (0.2) (0.3) (0.6) (0.7) (0.7) (0.7) (0.7) (0.8) (0.8) (1.0) Profit after tax (b) 12.8 VAT offset Loan repayment (d) 12 (2.5) (2.5) (2.5) (2.5) (2.5) (2.5) (2.5) (2.5) (2.5) (2.5) (2.5) (2.5) Cash Flow (a)+(b)+(c)+(d) 16.5% Profit after tax 1.6 1.7 1.6 1.5 1.6 1.9 1.9 2.0 2.1 2.2 2.2 2.3 2.3 3.0 Equity IRR 16.5% Profit after tax 1.6 1.7 1.6 1.5 1.6 1.9 1.9 2.0 2.1 2.2 2.2 2.3 2.3 3.0 Equity IRR 16.5% Profit after tax 1.6 1.7 1.6 1.5 1.6 1.9 1.9 2.0 2.1 2.2 2.2 2.3 2.3 3.0 Depreciation 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9	-	12.0	7 500/		27.0												()	(٠,
Tax 25.0%		12.0	7.50%														()	()	
Profit after tax (b) 1.6 1.7 1.6 1.5 1.6 1.9 1.9 2.0 2.1 2.2 2.2 2.3 2.3 3.0 Capital VAT offset 1.0 1.0 1.0 1.0 1.0 1.0 0.5		25 00/					1.7	1.0											
Capital 12.8 VAT offset 1.0 1.0 1.0 1.0 1.0 1.0 0.5		25.0%					- 4 -			, ,									
VAT offset 1.0 1.0 1.0 1.0 1.0 0.5	Profit after tax (b)					1.6	1.7	1.6	1.5	1.6	1.9	1.9	2.0	2.1	2.2	2.2	2.3	2.3	3.0
VAT offset 1.0 1.0 1.0 1.0 1.0 0.5	Capital				12.8														
Cash Flow (a)+(b)+(c)+(d) (12.8) 2.1 2.2 2.0 1.9 2.0 1.9 1.3 1.4 1.5 1.6 1.7 1.8 4.2 3.0 Equity IRR 16.5% Profit after tax 1.6 1.7 1.6 1.5 1.6 1.9 1.9 2.0 2.1 2.2 2.2 2.3 2.3 3.0 Depreciation 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9	VAT offset					1.0	1.0	1.0	1.0	1.0	0.5	-	-	-	-	-	-	-	-
Cash Flow (a)+(b)+(c)+(d) (12.8) 2.1 2.2 2.0 1.9 2.0 1.9 1.3 1.4 1.5 1.6 1.7 1.8 4.2 3.0 Equity IRR 16.5% Profit after tax 1.6 1.7 1.6 1.5 1.6 1.9 1.9 2.0 2.1 2.2 2.2 2.3 2.3 3.0 Depreciation 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9	Loan repayment (d)	12				(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)		
Profit after tax 1.6 1.7 1.6 1.5 1.6 1.9 1.9 2.0 2.1 2.2 2.2 2.3 2.3 3.0 Depreciation 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9	Cash Flow (a)+(b)+(c)+(d)			(1	2.8)	٠,									٠,	, ,	,	4.2	3.0
Profit after tax 1.6 1.7 1.6 1.5 1.6 1.9 1.9 2.0 2.1 2.2 2.2 2.3 2.3 3.0 Depreciation 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9																			
Depreciation 1.9	Equity IRR	16.5%																	
Depreciation 1.9	Profit after tax					1.6	1.7	1.6	1.5	1.6	1.9	1.9	2.0	2.1	2.2	2.2	2.3	2.3	3.0
VAT offset 1.0 1.0 1.0 1.0 0.5																			-
interest expense 2.0 1.9 1.7 1.5 1.3 1.1 0.9 0.7 0.6 0.4 0.2 (0.0) (0.0) (0.0) (42.5) 6.6 6.5 6.2 5.9 5.8 5.4 4.7 4.6 4.5 4.4 4.3 4.2 4.2 3.0	VAT offset												-	-	-	-		-	_
(42.5) 6.6 6.5 6.2 5.9 5.8 5.4 4.7 4.6 4.5 4.4 4.3 4.2 4.2 3.0												0.9	0.7	0.6	0.4	0.2	(0.0)	(0.0)	(0.0)
(1210) 110 112 112 112 113				(4	12.5)												(/	()	
	Project IRR	11.4%		(-	,	0.0	0.5	0.2	3.7	5.0	3.1	,	1.0	1.5		1.5			5.0

Source: Maybank Kim Eng



Figure 81: Distributed project IRR model (Scenario 2)

Solar power plant economic assumptions:		
Capacity	10	MW
Utilisation hours	1200	hours
System conversion efficiency	80%	
Distributed subsidy	0.42	CNY/kWh
Desulphurised tariff	0.4	CNY/kWh
Retail power tariff	0.7	CNY/kWh
VAT rate	17%	
annual module degradation	0.8%	
Investment cost	8.5	CNY/W
Total investment	170	million
Capex	153	million
VAT offset for capex	22.2	million
Equity (30%)	51	million
Bank Loan (70%)	119	million
Interest rate	7.5%	
Construction period	6	months
Self consumption ratio	90%	

Project income statement (CNYn	n)																
			0	1	2	3	4	5	6	7	8	9	10	11	12	13	25
Power generation (GWh)				12.0	11.9	11.8	11.7	11.6	11.5	11.4	11.3	11.2	11.1	11.0	10.9	10.8	9.7
Subsidy	0.42			5.0	5.0	5.0	4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.6	4.6	4.6	4.1
Tariff	0.77			0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Revenue (exclude 17% VAT)				6.9	6.8	6.8	6.7	6.7	6.6	6.5	6.5	6.4	6.4	6.3	6.3	6.2	5.6
VAT Refund				0.0	(0.0)	-	0.0	-	0.4	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.8
Total revenue				11.9	11.8	11.7	11.6	11.5	11.9	12.3	12.2	12.1	12.0	11.9	11.8	11.7	10.4
Depreciation (a)	20	76.5		3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	-
Maintenance costs	0.040	/kWh		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Maintenance material costs	0.3			-	-	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.6
insurance	0.3%	of capex		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
land cost	2	CNY2m/year		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total				5.5	5.5	5.8	5.8	5.8	5.8	5.8	5.8	5.9	5.9	5.9	5.9	5.9	2.2
Gross profit				6.4	6.3	5.9	5.8	5.7	6.1	6.5	6.4	6.2	6.1	6.0	5.9	5.8	8.2
Operating expense				0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.8
Operating profit				6.0	5.9	5.5	5.4	5.2	5.6	6.0	5.9	5.7	5.6	5.5	5.3	5.2	7.4
Loan balance at end of the year			59.5	54.5	49.6	44.6	39.7	34.7	29.8	24.8	19.8	14.9	9.9	5.0	(0.0)	(0.0)	(0.0)
Interest expense	12.0	7.50%		4.1	3.7	3.3	3.0	2.6	2.2	1.9	1.5	1.1	0.7	0.4	(0.0)	(0.0)	(0.0)
Profit before tax				1.9	2.2	2.1	2.4	2.6	3.3	4.1	4.4	4.6	4.8	5.1	5.3	5.2	7.4
Tax	25.0%			-	-	-	(0.3)	(0.3)	(0.4)	(1.0)	(1.1)	(1.2)	(1.2)	(1.3)	(1.3)	(1.3)	(1.8)
Profit after tax (b)				1.9	2.2	2.1	2.1	2.3	2.9	3.1	3.3	3.5	3.6	3.8	4.0	3.9	5.5
6 I																	
Capital			25.5	2.0	2.0	2.0	2.0	2.0									
VAT offset	42			2.0	2.0	2.0	2.0	2.0	1.1	(F 0)	-	-					
Loan repayment (d)	12		(2E E)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	7 7	5.5
Cash Flow (a)+(b)+(c)+(d)			(25.5)	2.8	3.1	3.0	2.9	3.2	2.9	2.0	۷.۱	2.3	2.5	2.7	2.9	7.7	5.5
Equity IRR	13.4%																
Equity IKK	13.7/0																
Profit after tax				1.9	2.2	2.1	2.1	2.3	2.9	3.1	3.3	3.5	3.6	3.8	4.0	3.9	5.5
Depreciation				3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	-
VAT offset				2.0	2.0	2.0	2.0	2.0	1.1	-	-	-	-	-	-	-	-
interest expense				4.1	3.7	3.3	3.0	2.6	2.2	1.9	1.5	1.1	0.7	0.4	(0.0)	(0.0)	(0.0)
·			(85.0)	11.9	11.7	11.3	10.9	10.7	10.1	8.8	8.6	8.4	8.2	8.0	7.8	7.7	5.5
Project IRR	10.0%																

Source: Maybank Kim Eng

Figure 82: Distributed project IRR model (Scenario 3)

Solar power plant economic assumptions:		
Capacity	20	MW
Utilisation hours	1200	hours
System conversion efficiency	80%	
Distributed subsidy	0	CNY/kWh
Tariff	1	CNY/kWh
Electricity price	0.9	CNY/kWh
VAT rate	17%	
annual module degradation	0.8%	
Investment cost	8.5	CNY/W
Total investment	170	million
Capex	153	million
VAT offset for capex	22.2	million
Equity (30%)	51	million
Bank Loan (70%)	119	million
Interest rate	7.5%	
Construction period	6	months
Self consumption ratio	0%	

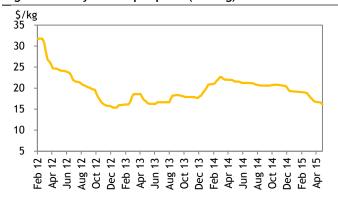
Project income statement (CNYr	n)																
(= -	,		0	1	2	3	4	5	6	7	8	9	10	11	12	13	25
Power generation (GWh)				24.0	23.8	23.6	23.4	23.2	23.0	22.8	22.7	22.5	22.3	22.1	21.9	21.7	19.4
Subsidy	0.42			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tariff	1.00			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Devenue (evelude 17% VAT)				20.5	20.3	20.2	20.0	19.9	19.7	19.5	19.4	19.2	19.0	10.0	18.7	10 E	16.6
Revenue (exclude 17% VAT)						20.2	0.0		0.9	1.9			1.9	18.9 1.9	1.9	18.5	1.6
VAT Refund Total revenue				0.0 20.5	(0.0)	20.2		- 19.9	20.6	21.5	1.9 21.3	1.9 21.1	20.9	20.7	20.6	1.8 20.4	18.2
rotat revenue				20.5	20.3	20.2	20.0	19.9	20.6	21.5	21.3	21.1	20.9	20.7	20.6	20.4	10.2
Depreciation (a)	20	153		7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	
Maintenance costs	0.040			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Maintenance material costs	0.3	7137711		1.0	1.0	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.6
insurance		of capex		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
land cost		CNY2m/year		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Total	_	Citizini year		11.0	11.0	11.3	11.3	11.3	11.3	11.3	11.3	11.4	11.4	11.4	11.4	11.4	3.9
Total						11.5	11.5	11.5	11.5	11.5	11.5						3.7
Gross profit				9.5	9.4	8.9	8.7	8.5	9.3	10.1	9.9	9.8	9.6	9.4	9.2	9.0	14.3
Operating expense				0.7	0.7	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.5
Operating profit				8.8	8.6	8.1	7.9	7.7	8.4	9.3	9.1	8.8	8.6	8.4	8.2	8.0	12.8
Loan balance at end of the year			119.0	109.1	99.2	89.3	79.3	69.4	59.5	49.6	39.7	29.8	19.8	9.9	(0.0)	(0.0)	(0.0)
Interest expense	12.0	7.50%		8.2	7.4	6.7	6.0	5.2	4.5	3.7	3.0	2.2	1.5	0.7	(0.0)	(0.0)	(0.0)
Profit before tax				0.6	1.2	1.4	2.0	2.5	4.0	5.6	6.1	6.6	7.1	7.7	8.2	8. 0	12.8
Tax	25.0%			-	-	-	(0.2)	(0.3)	(0.5)	(1.4)	(1.5)	(1.7)	(1.8)	(1.9)	(2.0)	(2.0)	(3.2)
Profit after tax (b)				0.6	1.2	1.4	1.7	2.2	3.5	4.2	4.6	5.0	5.4	5.8	6.1	6.0	9.6
Capital			51.0														
VAT offset				4.1	4.0	4.0	4.0	3.9	2.2	-	-	-	-	-	-	-	-
Loan repayment (d)	12			(9.9)									(9.9)				
Cash Flow $(a)+(b)+(c)+(d)$			(51.0)	2.4	3.0	3.2	3.5	3.9	3.4	1.9	2.3	2.7	3.1	3.5	3.9	13.6	9.6
Equity IRR	9.6%																
Profit after tax				0.6	1.2	1 1	4 7	2.2	3.5	4.2	4.6	5.0	5.4	5.8	6.1		9.6
				7.7	7.7	1.4 7.7	1.7 7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	6.0 7.7	9.0
Depreciation				7.7 4.1	4.0	4.0	4.0	3.9	2.2	7.7	7.7	7.7	7.7	7.7	7.7	7.7	
VAT offset				8.2	7.4	6.7	6.0	5.2	4.5	3.7	3.0	2.2	1.5	0.7	(0.0)	(0.0)	(0.0)
interest expense			(170.0)		20.3		19.3	19.0	17.7	15.5	15.2		14.5	14.1	13.8	13.6	(0.0)
Project IRR	8.2%		(170.0)	20.3	20.3	17.0	17.3	19.0	17.7	13.3	13.2	14.0	14.3	14.1	13.0	13.0	9.0
Project IRR	5.2%																

Source: Maybank Kim Eng

China Solar Sector

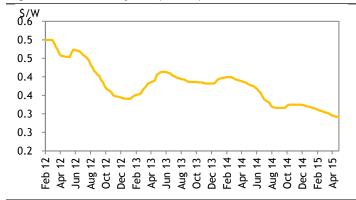
Appendix 2: Solar spot pricing

Figure 83: Polysilicon spot price (USD/kg)



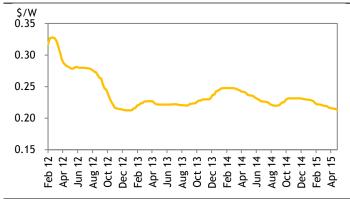
Source: PVInsights, Maybank Kim Eng

Figure 85: Multi cell price (USD/W)



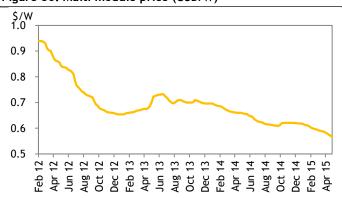
Source: PVInsights, Maybank Kim Eng

Figure 84: Multi 6" wafer price (USD/W)



Source: PVInsights, Maybank Kim Eng

Figure 86: Multi module price (USD/W)



Source: PVInsights, Maybank Kim Eng



Appendix 3:

Polysilicon production: FBR vs Siemen method

Figure 87: FBR method

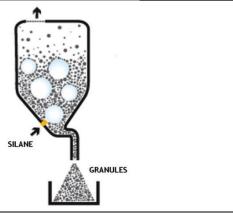
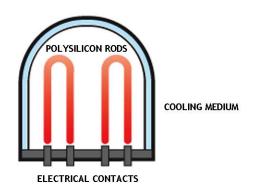


Figure 88: Siemens method

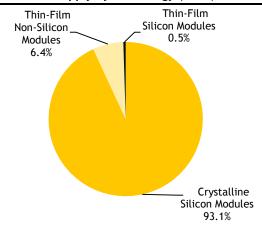


Source: REC Silicon website

Source: REC Silicon website

Crystalline module vs thin film module

Figure 89: Global PV module supply by technology (2013)



Module supply is still dominated by crystalline silicon modules.

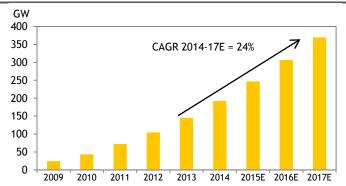
Source: Bloomberg, Maybank Kim Eng

Appendix 4: Global PV demand

Chinese module manufacturers supply 70% of the global PV demand. Before the solar subsidy cut in Europe and trade disputes in the US, over 90% of PV modules produced in China were exported. Traditional markets such as Germany, Italy and Spain are shrinking while other emerging markets like China, Japan, India and South Africa are growing with favourable solar policies.

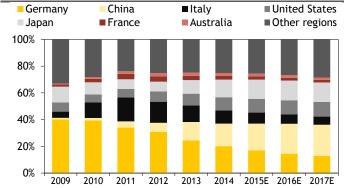
We forecast global solar power installation will reach 247GW by the end of 2015 and 370GW by end 2017. We forecast the CAGR from 2014 to 2017 will reach 24%. The proportion from China will keep increasing from 17% in 2014 to 23% in 2017E. Japan and the US will be another two important markets for solar power installation. We forecast Japan and the US will contribute 15% and 11% of total global installation by end-2017E.

Figure 90: Global cumulative solar installation



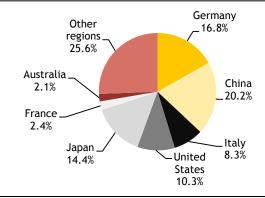
Source: Bloomberg, Maybank Kim Eng

Figure 91: Global solar installed capacity by country



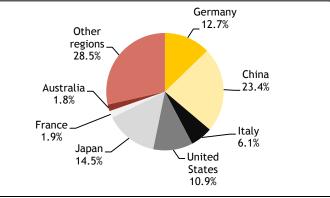
Source: Bloomberg, Maybank Kim Eng

Figure 92: Global solar capacity by country (2015E)



Source: Bloomberg, Maybank Kim Eng

Figure 93: Global solar capacity by country (2017E)



Source: Bloomberg, Maybank Kim Eng

Appendix 5: Industry consolidation

To speed up industry consolidation, in Jan 2015, the Ministry of Industry and Information Technology released a PV manufacturing industry standard guidelines that require a minimum capital ratio of 20% for all capacity expansion in 2015. The guidelines also emphasize on minimum production capacity, energy consumption and cell conversion efficiency. Factories that cannot meet the criteria will be forced to close.

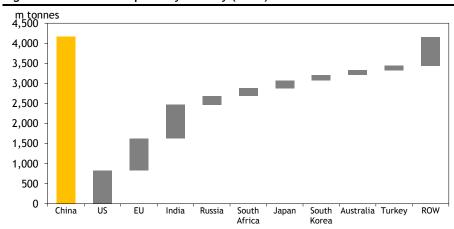
Figure 94: MIIT PV manufacturing industry standard guidelines

Туре	Requirements
Energy consumption	Polysilicon: existing plant <120kWh/kg, new-build <100kWh/kg
	Ingot: existing plant <8.5kWh/kg, new-build <7kWh/kg
	Multi wafer: existing plant <45kWh/kg, new-build <40kWh/kg
	Mono wafer: existing plant <40kWh/kg, new-build <35kWh/kg
	Cell: <120kWh/Wp
	Module: <60kWh/Wp
Conversion efficiency	Monocrystalline cells >18.5% and multi cells >17.5%
	Monocrystalline modules > 16% and multi modules > 15.5%
Capital ratio	>20%
Annual R&D expenditure	> 3% of revenue and >CNY10m
Minimum production capacity	Polysilicon: 3000tonne/year
	Ingot: 1000tonne/year
	Wafer: 50m pieces
	Cell: 200MWp/year
	Module: 200MWp/year
	Thin-film module: 50MWp/year
	Inverter: 200MWp/year

 ${\it Source: Ministry\ of\ Industry\ and\ Information\ Technology,\ Maybank\ Kim\ Eng}$

Appendix 6: Environmental concerns in China - drivers for solar development

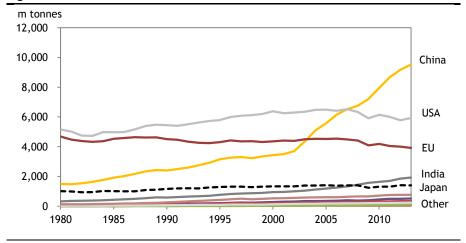
Figure 95: Coal consumption by country (2013)



Coal consumption in China is more than double that of the US and EU.

Source: EIA, Maybank Kim Eng

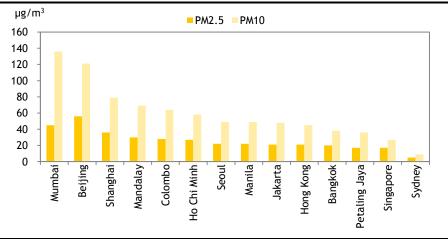
Figure 96: China carbon dioxide emissions



Carbon dioxide emission increased at a CAGR of 8% over the past 10 years.

Source: Bloomberg, Maybank Kim Eng

Figure 97: Air pollution in Beijing compared with other cities

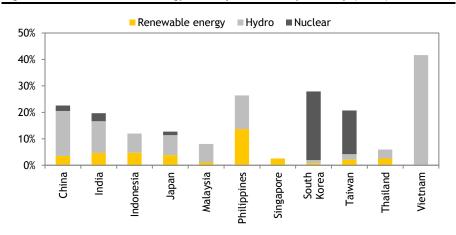


Beijing's concentration of PM2.5 is the highest among Asian cities.

Source: WHO, Maybank Kim Eng

China Solar Sector

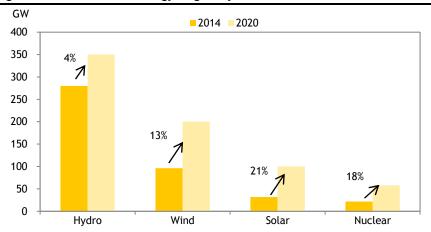
Figure 98: Share of clean energy in the power mix by country (2013)



Renewable energy will make up a growing share of the fuel power mix.

Source: BP, Maybank Kim Eng Note: Renewable include solar, wind, geothermal and biomass

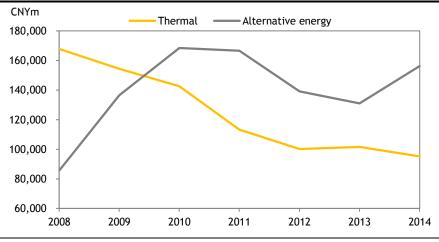
Figure 99: China's clean energy targets by 2020



China has aggressive targets for solar and wind capacity by 2020.

Source: State Council, Maybank Kim Eng

Figure 100: New investment in power sources by technology



Since 2010, China has invested more in alternative energy than in thermal coal. We think this trend will continue.

 $Note: Alternative \ energy \ including \ nuclear, \ wind \ and \ solar.$

Source: CEC, Maybank Kim Eng

Appendix 7: Oil price vs solar share price performance

The share price performance of upstream and midstream solar companies appear to be less correlated to oil prices recently. The market may worry about the competitiveness of solar as oil prices decline and the subsequent decline in demand for solar power. However, we believe this may not be the case in China.

We think the reasons are: (1) oil is not a major source of electricity generation in China and a short-term decline in oil prices cannot change the Chinese power mix immediately without large-scale developed oil-fired generation plants. (2) Alternative energy is at the top of China's policy agenda given environmental concerns. Therefore, solar installation will remain robust, driven by government policies.

Upstream — Midstream — — Brent oil price

20%

10%

-10%

-20%

-30%

-60%

Figure 101: Oil price vs share price performance of solar component makers

Note: Upstream includes polysilicon and wafer manufacturers, midstream includes cell and module manufacturers

May 14 Jun 14 Jul 14 Aug 14 Sep 14 Oct 14 Nov 14 Dec 14 Jan 15 Feb 15 Mar 15 Apr 15

Source: Bloomberg, Maybank Kim Eng

Appendix 8: China solar locations

Solar projects were traditionally built in north western China due to the high number of sunshine hours. As of 2014 Gansu province hosted the most PV projects in China at 5.2GW (18% of total installed capacity), followed by Qinghai (4.1GW) and Xinjiang (3.6GW).

Over 80% of solar power projects in China are utility-scale/groundmounted projects, thanks to the national fixed feed-in tariff of CNY1.15/kWh set in Aug 2011. The tariff was reduced to CNY0.9-1/kWh in Aug 2013.

The other 20% are small-scale rooftop or building-integrated PV projects. Distributed PV projects were previously subsidized under the Golden Sun Programme. Projects could previously receive a one-time subsidy of CNY5.5/W. However, quality of projects was not satisfactory and many projects missed the completion date. The Golden Sun programme was ended in 2013 and replaced by a generation-based subsidy whereby the Chinese government offers CNY0.42/kWh on distributed PV projects.

Figure 102: Utility-scale projects by province (2014)

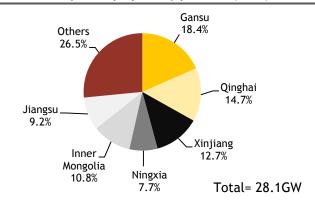
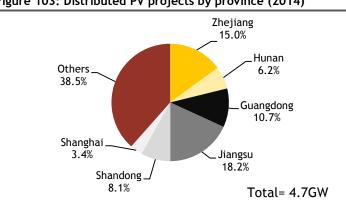


Figure 103: Distributed PV projects by province (2014)

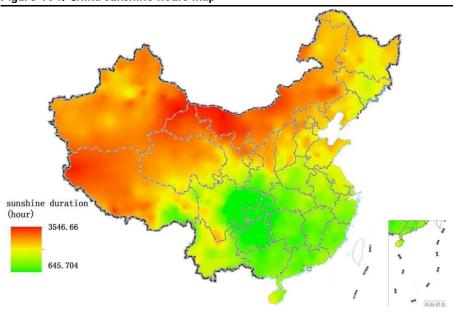


Source: NEA, Maybank Kim Eng

Source: NEA, Maybank Kim Eng

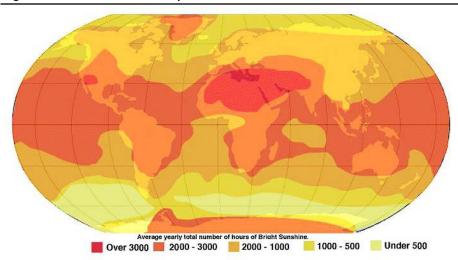
Appendix 9: Solar radiation in China

Figure 104: China sunshine hours map



Source: MDPI.com, Maybank Kim Eng

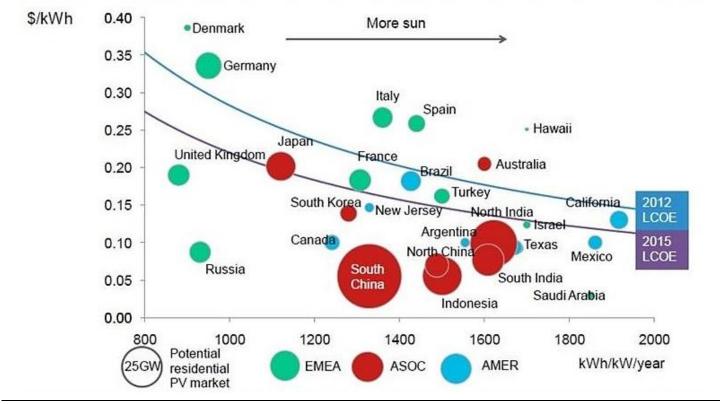
Figure 105: World sunshine map



Source: World Resources Institute, Earth Forum, Houston Museum of Natural Science, Maybank Kim Eng

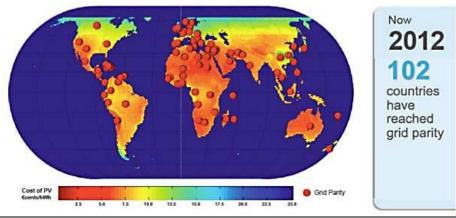
Appendix 10: Solar grid parity

Figure 106: Solar grid parity in 2015E



Source: Bloomberg New Energy Finance, Maybank Kim Eng

Figure 107: 2012 Status: PV solar at grid parity



Source: Clean Technica, Maybank Kim Eng



Xinyi Solar Holdings (968 HK)

Share Price: HKD2.86 MCap (USD): 2.4B China
Target Price: HKD3.60 (+26%) ADTV (USD): 16M Energy

BUY

(New)

The sun is shining brightly

- Initiate BUY, TP HKD3.6. Growth driver new solar farm business. We forecast this to contribute 16% of FY15 revenue. Recent placement will help fund solar farm developments, in our view.
- Xinyi Solar is the largest PV glass manufacturer in China. We expect its market share to increase from 26% in 2014 to 37% in 2015E on the back of new capacity commissioning.
- We expect Xinyi Solar's margin to rise from 32% to 36% due to: (1) higher proportion from processed glass sales; (2) cost reduction from more efficient new production lines and lower natural gas price in 2015E; and (3) more revenue from high-margin solar farm business.

Largest solar glass manufacturer in China

China's PV glass market is relatively concentrated. The top five players already had ~60% market share in 2014. We like Xinyi Solar as it's the largest solar glass manufacturer in China with 26% market share last year and we expect it will further increase to 37% due to new capacity. We believe limited new entrants for the niche industry could allow decent margins. As the leader in the industry, we forecast its cost will drop further due to its new production plants commissioned in Wuhu and the upcoming Malaysia plant that could drive down manufacturing cost of solar glass. The recent decline in natural gas price could also help lower production cost.

Initiate at BUY with TP of HKD3.60

We expect its solar farm operation could be an additional driver. We forecast its total solar capacity will increase from 320MW to 1GW this year and contribute 16% of its total 2015E revenue. We believe the overhang has been removed after the recent share placement to finance solar projects. Initiate at BUY with a DCF-based TP of HKD3.6, implying 20x FY15E PER and 4.6x FY15E P/BV on the back of the higher ROE of 28.5%.

FYE Dec (HKD m)	FY13A	FY14A	FY15E	FY16E	FY17E
Revenue	1,967.5	2,410.0	4,630.2	6,112.7	6,512.2
EBITDA	468.4	671.2	1,711.3	2,430.1	2,794.8
Core net profit	303.8	493.0	1,194.4	1,564.6	1,698.1
Core EPS (HKD)	0.07	0.08	0.18	0.24	0.26
Core EPS growth (%)	113.9	14.8	115.5	31.0	8.5
Net DPS (HKD)	0.02	0.04	0.09	0.11	0.12
Core P/E (x)	39.0	34.0	15.8	12.0	11.1
P/BV (x)	5.1	5.1	3.7	3.2	2.8
Net dividend yield (%)	0.6	1.4	3.0	3.9	4.3
ROAE (%)	18.0	17.6	28.5	28.5	26.7
ROAA (%)	11.1	11.7	13.1	10.0	8.7
EV/EBITDA (x)	13.6	19.8	12.8	10.4	9.7
Net debt/equity (%)	net cash	22.9	61.7	107.6	121.3

Key Data	
52w high/low (HKD)	2.89/1.87
3m avg turnover (USDm)	16.0
Free float (%)	34.9
Issued shares (m)	6,580
Market capitalization	HKD18.8B
Major shareholders:	
-Xinyi Glass Holdings Ltd.	29.5%
-LEE YIN YEE	12.5%
-TUNG CHING SAI	5.2%

Share Pric	e Perform	nance	
3.00 ¬			┌ 280
2.80 -)	41.	/ / \[- 260
2.60 -	MI.	N/V/	240
2.40 -	[]N		220
2.20 -	1,41.7	1/44/1	A 200
2.00 -		Mr. WA	180
1.80	ALE V		- 160
1.60	M		- 140
1.40	'		- 120
1.20 -			- 100
1.00 Dec-13	Mar-14 Jun-14	Sep-14 Dec-1	14 Mar-15 80
	Mar-14 Jun-14 Solar - (LHS, HKD)	·	g Seng Index - (RHS, %)

	1 Mth	3 Mth	12 Mth
Absolute(%)	2.5	35.5	50.5
Relative to index (%)	2.0	20.8	22.3

Maybank vs Market									
	Positive	Neutral	Negative						
Market Recs	9	0	0						
	Maybank	Consensus	% +/-						
Target Price (HKD)	3.60	3.30	9.1						
'15 PATMI (HKDm)	1,194	1,122	6.5						
'16 PATMI (HKDm)	1,565	1,375	13.8						

Source: FactSet; Maybank

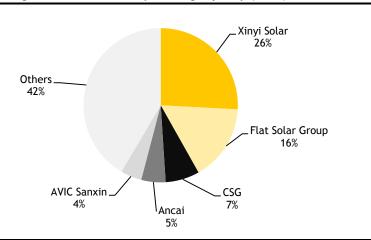
Jessica Ng (852) 2268 0678 jessicang@kimeng.com.hk Ricky WK Ng, CFA

(852) 2268 0689 rickyng@kimeng.com.hk

Largest solar glass manufacturer in China

Xinyi Solar specialises in producing PV glass used in silicon-based PV modules. Its solar glass capacity reached 3,800 tonnes/day of melting capacity in 2014, making it the largest solar glass manufacturer in China in terms of production capacity. It had 26% market share in China in 2014 and it aims to reach 30-40% in 2015-16E.

Figure 108: PV glass manufacturers by melting capacity (2014)



We expect Xinyi Solar will gain more market share in 2015/16 with the new manufacturing lines in Wuhu.

Source: Maybank Kim Eng

Capacity expansion in Malaysia

Xinyi Solar commissioned two 900-tonne raw glass production lines in Wuhu city in Anhui Province in 3Q14 and 4Q14. This brings its total production capacity to 3,800 tonnes with plants in Wuhu and Tianjin (Figure 109).

To avoid US tariff disputes, Xinyi Solar also plans to invest a new glass plant in the Malacca of Malaysia. The Malaysia plant will have a daily melting capacity of 900 tonnes of raw glass and should start operation in 2016, and the corresponding capacity for processed glass will be commissioned at the end of 2015. We expect it could diversify its production lines and enhance overseas sales, such as in Southeast Asia.

Nevertheless, we expect its major customers to still come from China with increasing demand in the domestic market. Currently, around 80% of Xinyi Solar's revenue comes from Chinese customers.

Figure 109: Xinyi Solar raw glass capacity at year-end

	Location	2011	2012	2013	2014	2015E	2016E
1	Dongguan	300	0	0	0	0	0
2	Wuhu	500	500	500	500	500	500
3	Wuhu	500	500	500	500	500	500
4	Tianjin	500	500	500	500	500	500
5	Wuhu	500	500	500	500	500	500
6	Wuhu				900	900	900
7	Wuhu				900	900	900
8	Malaysia						900
	Total	2300	2000	2000	3800	3800	4700

Source: Maybank Kim Eng. Note: Xinvi ceased production at Dongguan plant in May 2012.

Its manufacturing capacity will reach 4,700 tonnes per year with new production line in Malaysia coming in 2016.



High market concentration and high barriers to entry

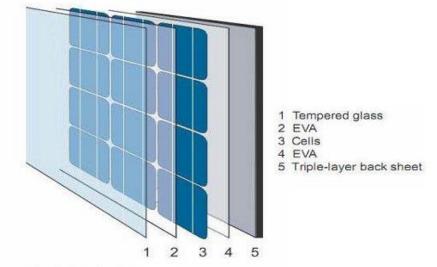
Solar glass is a concentrated market in China as the top five manufacturers made up 60% of the country's production capacity in 2014.

Glass is used in solar modules for protection. Therefore glass used in solar modules should have high light transmission as well as low reflection and absorption compared with regular glass.

Less intense competition due to high entry barriers

The process to produce solar glass requires high quality control: (1) low iron content; and (2) anti-reflective coating on glass surface. The Chinese government requires the iron content of solar glass should be lower than 0.01% to ensure light transmission of over 91%. Light transmission for standard glass is around 88-90%. To reduce light reflection, the glass is made by a continuous roll-impressed process to produce so-called patterned glass. Also, construction of the manufacturing plants is capital intensive, similar to other mid-stream solar manufacturing.

Figure 110: Solar glass in solar modules



Source: Google, Maybank Kim Eng

Xinyi Solar to gain 37% market share in 2015E

Our forecasts suggest new global PV installation of 55GW in 2015E. And this will translate into around 417m square metres of solar glass required globally, in our estimate. As around 90% of the world's solar glass is produced in China, we estimate the glass demand from China will be 376m square metres. As we forecast Xinyi's production capacity in 2015 will reach 3,800 tonnes per day, up 57% YoY, we expect the production will also increase to 139 square metres, representing around 37% of market share in 2015E.

Figure 111: PV glass demand for 2015E

_ 5	
	2015
Our global PV demand forecast in 2015E	54.6 GW
Silicon-based modules required (90%)	49.1 GW
Glass required for 1GW of PV modules	8.5 million square metres
Solar glass required globally	417.4 million square metres
Solar glass to be produced in China	375.7 million square metres
Xinyi melting capacity per day	3,800 tonnes
1 tonne of production capacity	125 sq metres
Glass produced per day (80% utilisation rates)	0.38 million square metres
Glass produced a year	138.7 million square metres
Xinyi Solar's market share	37%
Source: Maybank Kim Eng	

We calculate that the solar glass production of Xinyi Solar could represent around 37% of global solar glass demand in 2015E.

Solar glass manufacturing requires high quality control and it is a capital intensive industry.

We expect margin improvement in FY15E

Change in product mix and high-margin solar farm revenue

Xinyi produces two types of solar glass: ultra-clear raw glass (10% of total 2014 revenue) and ultra-clear processed glass (89% of total 2014 revenue). Gross margin of raw glass is lower, ie, 18% compared with 30-35% for processed glass. The company is moving towards increasing production of processed glass to boost margins.

Besides margin, the difference between raw glass and processed glass is that processed glass is a kind of tempered glass with controlled thermal treatments to increase its strength and protect the solar modules from high pressure. This processing can create higher margins than selling raw glass to third-party processing companies.

We expect Xinyi Solar's margin would improve in 2015 due to higher revenue contribution from high-margin processed glass and its solar farm business.

The increasing revenue contribution from its solar farm will also contribute to the margin improvement. We forecast the gross margin from the solar farm business will be 60%.

Figure 112: Revenue breakdown

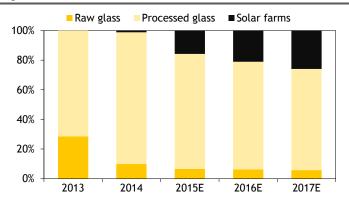
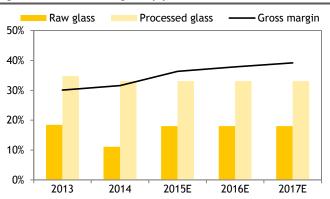


Figure 113: Gross margins by products



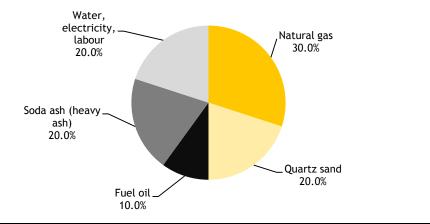
Source: Maybank Kim Eng

Economies of scale

Source: Maybank Kim Eng

We expect Xinyi's unit cost of glass production can be reduced through economies of scale in 2015E. After full utilisation of its two new 900-tonne capacity plants in Wuhu, we expect its average unit cost to produce raw glass can be reduced by ~5%. It could be reduced further in 2016 as it will commence operation of its glass manufacturing plant in Malaysia.

Figure 114: Cost breakdown of XInyi Solar to produce solar glass in 2014

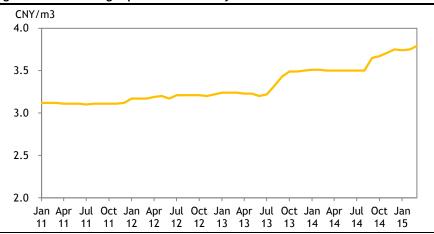


Source: Maybank Kim Eng

Fall in natural gas costs in 2015E

Natural gas accounts for 30% of its production cost of solar glass. As >60% of its gas consumption comes from pipeline gas, we believe Xinyi Glass could benefit from the recent price adjustment of natural gas city gate prices starting from 1 Apr 2015. In Anhui and Tianjin, the city gate prices for industrial users on additional gas volume were down by around 2%, according to the NDRC.

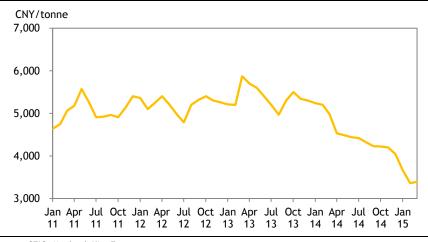
Figure 115: Natural gas prices for industry



Cost of natural gas will start to fall in April 2015 on the latest price adjustment of city gas prices.

Source: CEIC, Maybank Kim Eng

Figure 116: Fuel oil prices



Cost of fuel oil fell 16% from Jan-Mar 15 on lower crude oil prices.

Source: CEIC, Maybank Kim Eng

Figure 117: Soda ash prices (heavy)



Cost of soda ash is relative stable at CNY1,500/tonne.

Source: CEIC, Maybank Kim Eng

We expect solar glass ASP to become stable

We believe ASP declined slightly in 2H14 due to lower-than-expected PV demand in China. The spot market prices are now stable at CNY21/square metre for raw glass and CNY33/square metre for processed glass. We expect the ASP will decline by 1% for processed glass in 2015E.

Figure 118: Raw glass ASP

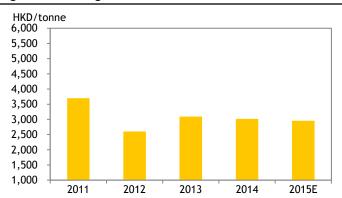
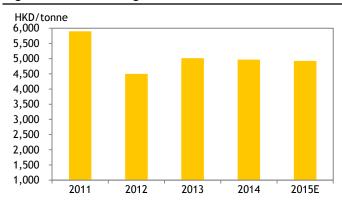


Figure 119: Processed glass ASP



Source: SCI99, Maybank Kim Eng

Source: SC199, Maybank Kim Eng

Source: Maybank Kim Eng

Sweet spot from solar farm business

Like some solar glass players, Xinyi Solar also expanded into downstream projects in 2014. We believe Xinyi Solar's solar capacity will reach 1GW by the end of 2015. It commissioned 250MW of ground-mounted solar farms in Anhui Province in 2014. Sales of electricity from its solar farms contributed 1.3% of its total 2014 revenue. As of May 2015, the company has 580MW of projects under development and construction.

We expect Xinyi Solar's downstream business will contribute 16% of its revenue in 2015 and 21% in 2016.

Figure 120: Xinyi capacity growth forecast

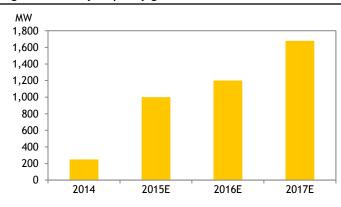
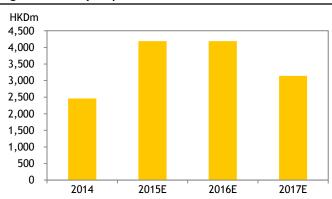


Figure 121: Xinyi capex forecast



Source: Maybank Kim Eng

We expect the solar farm business will continue to grow and would contribute 16% of total revenue in 2015E and 21% in 2016E as more solar farms start operation in Fujian, Hubei and Anhui province.

We believe Xinyi Solar will continue to build projects in Anhui and Fujian province with 1,100-1,300 sunshine hours given its good relationship with the local government. Given its low net gearing ratio (22.9% in 2014) and low financing costs in Hong Kong, we believe Xinyi Solar has more flexibility on loan financing compared with peers. On 10 May 2015, Xinyi announced a syndicated loan facility of up to HKD2b from HSBC for solar

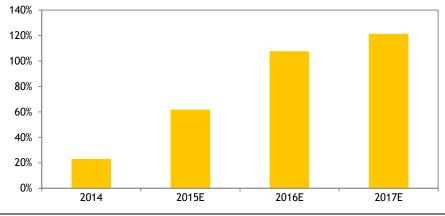
farm projects. It also announced a possible issue of USD80m CBs to its parent Xinyi Glass to fund its solar farm development.

Figure 122: Xinyi Solar's downstream project list

No	Project name	Location	Capacity (MW)	Туре	Status	Date of grid connection
1	Wuhu	Anhui	35	Distributed PV	Commissioned	Self-use
	distributed					
_	phase I					
2	Luan plant	Anhui	150	Ground-mounted	Commissioned	3Q14
3	Wuhu plant	Anhui	100	Ground-mounted	Commissioned	4Q14
4	Wuhu	Anhui	13.1	Distributed PV	Commissioned	4Q14
	distributed					
	phase II					
5	Tianjin	Tianjin	25	Distributed PV	Commissioned	4Q14
	distributed					
6	Nanping plant	Fujian	30	Ground-mounted	Commissioned	1Q15
	Total commiss	ioned	353			
7	Bozhou plant	Anhui	20	Distributed PV	Under construction	End of 2015
8	Huanggang	Hubei	50	Ground-mounted	Under construction	End of 2015
	plant					
	Others		510		Under development	End of 2015
	Total		933			

Source: Company announcements, Maybank Kim Eng

Figure 123: Our forecast for net debt to equity ratio for Xinyi Solar



We forecast net debt to equity would be at around 62% in 2015E and 108% in 2016E.

Source: Maybank Kim Eng

Initiate at BUY on Xinyi Solar

Initiate at BUY on Xinyi Solar. We used the DCF model as the valuation methodology. We expect the earnings growth will be mainly driven by margin expansion of solar glass, and capacity growth from both solar glass manufacturing and solar farms.

Our target price is based on the assumption of 7.9% WACC and 4% terminal growth rate. Our TP implies 20x FY15E PER and 4.7x FY15E P/BV. We think it is justified given the high ROE of 28% in 2015E. Xinyi Solar is trading at 15.8x FY15E PER and 3.7x FY15E P/BV.

Figure 124: DCF valuation for Xinyi Solar

Terminal value	
Terminal Growth Rate	4.0%
Terminal WACC	7.9%
Estimated Free Cash Flow	1,782.4
Terminal Value	45,176.8
NPV of Terminal Value	27,138.3
DCF valuation	
NPV of Forecasts	(2,693.0)
NPV of Terminal Value	27,138.3
Enterprise Value	24,445.3
Less: Net Debt	(757.3)
Equity Value	23,688.1
No. Shares (millions)	6,580
Per Share Equity Value	HKD3.6

Initiate at BUY with TP of HKD3.6 per share based on DCF valuation with assumption of 8% WACC and 4% terminal growth rate.

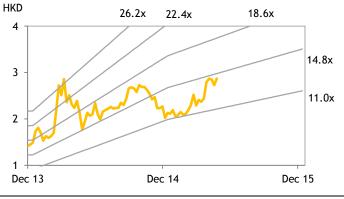
Source: Maybank Kim Eng

Figure 125: Sensitivity analysis, WACC against terminal growth

			Terminal gro	wth		
		3.0%	3.5%	4.0%	4.5%	5.0%
U	6.9%	3.84	4.49	5.37	6.61	8.48
WACC	7.4%	3.22	3.72	4.36	5.21	6.41
>	7.9%	2.73	3.12	3.60	4.22	5.05
	8.4%	2.34	2.64	3.02	3.49	4.09
	8.9%	2.01	2.26	2.55	2.92	3.37

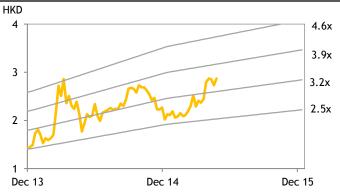
Source: Maybank Kim Eng

Figure 126: Xinyi Solar - forward PER band



Source: Bloomberg, Maybank Kim Eng

Figure 127: Xinyi Solar - forward P/BV band



Source: Bloomberg, Maybank Kim Eng

Figure 128: Our major assumptions

Our Major Assumptions	FY14	FY15E	FY16E	FY17E
Melting capacity per year (1,000 tonnes)	838	1,312	1,640	1,640
ASP for raw glass (HKD/tonne)	3,016	2,955	2,896	2,896
ASP for processed glass (HKD/tonne)	4,969	4,922	4,876	4,876
Installed capacity solar projects (MW)	250	1,000	1,200	1,680
Average power tariff (CNY/kWh) (exclude VAT)	n/a	0.85	0.85	0.85
Utilisation hours	n/a	1,100	1,100	1,100

Source: Maybank Kim Eng



Shareholder structure

Figure 129: Bloomberg screen on shareholder structure of Xinyi Solar



Source: Bloomberg

Management background

Lee Yin Yee, Chairman

- Executive director and Chairman of the parent Xinyi Glass
- More than 25 years of experience in the glass industry
- Prior to Xin Glass Mr Lee engaged in the trading of automobile parts

Chu Charn Fai, Financial Controller and Company Secretary

- Over 13 years of financial controller experience
- Former experience in international accounting firm
- Member of the Hong Kong Institute of Certified Public Accountants
- Master degree in corporate finance from the Hong Kong Polytechnic University

Risks

- 1) The capacity installation could be slower than the market expectation.
- 2) Potential share placement to finance the expansion
- 3) Feed-in tariff cut/change in favourable supportive policy
- 4) Grid curtailment for solar power plants
- 5) Bottleneck is the funding channel to build solar farms.

FYE 31 Dec	FY13A	FY14A	FY15E	FY16E	FY17E
Key Metrics					
P/E (reported) (x)	39.0	34.0	15.8	12.0	11.1
Core P/E (x)	39.0	34.0	15.8	12.0	11.1
P/BV (x)	5.1	5.1	3.7	3.2	2.8
P/NTA (x)	5.1	5.1	3.7	3.2	2.8
Net dividend yield (%)	0.6	1.4	3.0	3.9	4.3
FCF yield (%)	3.5	nm	nm	nm	nm
EV/EBITDA (x)	13.6	19.8	12.8	10.4	9.7
EV/EBIT (x)	17.2	23.0	14.8	12.3	11.9
INCOME STATEMENT (HKD m)					
Revenue	1,967.5	2,410.0	4,630.2	6,112.7	6,512.2
Gross profit	592.3	760.9	1,683.3	2,313.7	2,553.4
EBITDA	468.4	671.2	1,711.3	2,430.1	2,794.8
Depreciation	(97.3)	(92.1)	(227.2)	(381.7)	(516.6)
Amortisation	(2.4)	(2.4)	0.0	0.0	0.0
EBIT	368.7	576.7	1,484.1	2,048.4	2,278.2
Net interest income /(exp)	1.7	(5.1)	(99.1)	(234.1)	(309.1)
Associates & JV	0.0	0.0	0.0	0.0	0.0
Exceptionals	0.0	0.0	0.0	0.0	0.0
Other pretax income	0.0	0.0	0.0	0.0	0.0
Pretax profit	370.5	571.6	1,385.0	1,814.3	1,969.1
Income tax	(66.7)	(78.7)	(190.6)	(249.7)	(271.0)
Minorities	0.0	0.0	0.0	0.0	0.0
Discontinued operations	0.0	0.0	0.0	0.0	0.0
Reported net profit	303.8	493.0	1,194.4	1,564.6	1,698.1
Core net profit	303.8	493.0	1,194.4	1,564.6	1,698.1
BALANCE SHEET (HKD m)					
Cash & Short Term Investments	279.1	542.7	2,165.6	3,944.8	2,053.2
Accounts receivable	704.5	760.4	1,245.0	1,540.3	1,540.3
Inventory	91.0	299.2	489.9	606.1	606.1
Property, Plant & Equip (net)	1,368.0	3,685.2	7,593.6	11,346.6	13,916.8
Intangible assets	0.0	0.0	0.0	0.0	0.0
Investment in Associates & JVs	0.0	0.0	0.0	0.0	0.0
Other assets	244.3	476.4	982.1	1,467.0	1,798.7
Total assets	2,687.0	5,764.0	12,476.1	18,904.9	19,915.2
ST interest bearing debt	0.0	142.9	142.9	142.9	142.9
Accounts payable	350.2	1,120.8	2,002.9	2,582.1	2,690.7
LT interest bearing debt	0.0	1,157.1	5,157.1	10,157.1	10,157.1
Other liabilities	26.0	37.0	90.0	118.0	128.0
Total Liabilities	376.6	2,458.1	7,393.1	13,000.3	13,119.0
Shareholders Equity	2,310.4	3,305.9	5,083.0	5,904.6	6,796.2
Minority Interest	0.0	0.0	0.0	0.0	0.0
Total shareholder equity	2,310.4	3,305.9	5,083.0	5,904.6	6,796.2
Total liabilities and equity	2,687.0	5,764.0	12,476.2	18,904.9	19,915.2
CASH FLOW (HKD m)					
Pretax profit	370.5	571.6	1,385.0	1,814.3	1,969.1
Depreciation & amortisation	370.5 99.7	94.5	227.2	381.7	516.6
Adj net interest (income)/exp	(1.7)	5.1	(7.8)	(17.6)	(17.2)
Change in working capital	224.1	116.8	206.8	(17.6) 167.6	108.6
Cash taxes paid	(43.9)	(67.0)	(139.4)	(222.7)	(261.3)
Other operating cash flow	5.0	(67.0)	(139.4)	0.0	0.0
Cash flow from operations	653.7	715.0	1,671.9	2,123.4	2,315.9
Capex	(239.7)	(2,321.7)	(4,188.0)	(4,188.0)	(3,141.0)
Free cash flow	414.0	(1,606.7)	(2,516.1)	(2,064.6)	(825.1)
Dividends paid	0.0	(1,606.7)	(567.2)	(743.0)	(806.4)
•	0.0	(199.9)	0.0	0.0	0.0
Equity raised / (purchased)			0.0		0.0
Perpetual securities	0.0 0.0	0.0 1.300.0	4,000.0	0.0 5.000.0	
Change in Debt	0.0	1,300.0	4,000.0	5,000.0	0.0
Change in Debt		0.0	0.0	Λ Λ	Λ Λ
Perpetual securities distribution	0.0	0.0 771.8	0.0 706.2	0.0 (413.1)	(260.1)
=		0.0 771.8 (1.6)	0.0 706.2 0.0	0.0 (413.1) 0.0	0.0 (260.1) 0.0

FYE 31 Dec	FY13A	FY14A	FY15E	FY16E	FY17E
Key Ratios					
Growth ratios (%)					
Revenue growth	28.3	22.5	92.1	32.0	6.5
EBITDA growth	85.4	43.3	155.0	42.0	15.0
EBIT growth	158.2	56.4	157.3	38.0	11.2
Pretax growth	157.7	54.3	142.3	31.0	8.5
Reported net profit growth	153.5	62.3	142.3	31.0	8.5
Core net profit growth	153.5	62.3	142.3	31.0	8.5
Profitability ratios (%)					
EBITDA margin	23.8	27.9	37.0	39.8	42.9
EBIT margin	18.7	23.9	32.1	33.5	35.0
Pretax profit margin	18.8	23.7	29.9	29.7	30.2
Payout ratio	24.5	47.5	47.5	47.5	47.5
DuPont analysis					
Net profit margin (%)	15.4	20.5	25.8	25.6	26.1
Revenue/Assets (x)	0.7	0.4	0.4	0.3	0.3
Assets/Equity (x)	1.2	1.7	2.5	3.2	2.9
ROAE (%)	18.0	17.6	28.5	28.5	26.7
ROAA (%)	11.1	11.7	13.1	10.0	8.7
Liquidity & Efficiency					
Cash conversion cycle	92.8	(8.6)	(64.6)	(83.3)	(99.5)
Days receivable outstanding	123.1	109.4	78.0	82.0	85.2
Days inventory outstanding	40.4	42.6	48.2	51.9	55.1
Days payables outstanding	70.7	160.6	190.8	217.2	239.7
Dividend cover (x)	4.1	2.1	2.1	2.1	2.1
Current ratio (x)	2.9	1.2	1.8	2.2	1.4
Leverage & Expense Analysis					
Asset/Liability (x)	7.1	2.3	1.7	1.5	1.5
Net debt/equity (%)	net cash	22.9	61.7	107.6	121.3
Net interest cover (x)	na	nm	15.0	8.7	7.4
Debt/EBITDA (x)	0.0	1.9	3.1	4.2	3.7
Capex/revenue (%)	12.2	96.3	90.4	68.5	48.2
Net debt/ (net cash)	(279.1)	757.3	3,134.4	6,355.2	8,246.8

Source: Company; Maybank



GCL New Energy (451 HK)

Share Price: HKD0.89
Target Price: HKD1.60 (+80%)

MCap (USD): 1.6B
ADTV (USD): 7M
Energy

Hong Kong
Energy

(New)

A rising star

- Initiate at BUY on this under-researched name with DCFbased TP of HKD1.60.
- Goldman Sachs Investment Holdings (GSI) buying USD100m of CBs issued by its subsidiary GCL Yield Holding (GCLYH) represents a breakthrough.
- With the funding from the CB and its parents' technical and operational support, we expect GCLNE could pioneer the 'Yield-co' business model in China and become the leader of a fragmented but highly profitable sector.

What's Our View

We believe the breakthrough for GCLNE is GSI's purchase of USD100m of zero-coupon CBs issued by GCLNE's subsidiary, GCLYH. We expect the proceeds could help GCLYH to acquire solar power projects from GCLNE. The meaningful point is it could imply financial investors' confidence in the solar farm business. If GSI converts the CBs to shares of GCLYH, the issued shares will represent ~45.5% of the total issued share capital.

We like GCLNE as we think its self-development capability is strong leveraging the IPP development experience of its parent. We estimate the parent's experience and brand could reduce the total cost of solar projects by ~CNY2/W or ~20%. We expect its total installation will increase robustly from 616MW at end-2014 to 2.2GW by end-2015.

Initiate at BUY and TP of HK1.60

We expect GCLNE could be the first to carry out the "Yield Co" business model to further boost capacity. We expect GCLNE could spin off the entity holding operating solar power projects to create another financing channel to secure cheaper funds to acquire the newly constructed GCLNE solar projects. Initiate at BUY with DCF-based TP of HKD1.60. We forecast it will turn around to a net profit of HKD559m and HKD1,252m in FY15 and FY16 respectively.

FYE Mar (HKD m)	FY14A*	FY14A	FY15E	FY16E	FY17E
Revenue	1,579.8	1,172.9	3,048.5	5,534.6	6,997.0
EBITDA	179.9	(35.9)	2,086.5	4,094.9	5,281.2
Core net profit	(173.3)	(112.8)	558.7	1,251.7	1,595.9
Core FDEPS (HKD)	(0.02)	(0.01)	0.04	0.09	0.11
Core FDEPS growth(%)	nm	nm	nm	120.9	27.5
Net DPS (HKD)	0.00	0.00	0.00	0.00	0.01
Core FD P/E (x)	nm	nm	23.1	10.4	8.2
P/BV (x)	33.0	3.7	3.6	2.6	2.0
Net dividend yield (%)	0.0	0.0	0.0	0.0	1.2
ROAE (%)	(53.5)	(7.2)	17.6	30.6	29.4
ROAA (%)	(11.2)	(2.0)	3.2	4.3	4.3
EV/EBITDA (x)	23.7	nm	11.6	6.9	5.9
Net debt/equity (%)	140.0	54.7	342.9	338.4	304.7

Note: Starting from 2015, the company switched from Mar YE to Dec YE. The latest actual figures include only nine-month data from Apr to Dec 2014 (FY14A). Previous year was 12-month from Apr 2013 to Mar 2014 (FY14).

Key Data	
52w high/low (HKD)	1.34/0.36
3m avg turnover (USDm)	7.3
Free float (%)	78.7
Issued shares (m)	13,872
Market capitalization	HKD12.3B
Major shareholders:	
-GCL-Poly Energy	62.3%
-Yip Sum Yin	6.1%
-Chung Chi Shing	6.1%

Share Price Performance	
1.40	0
1.20	0
1.00 -	0
0.80 -	0
0.60 - 25	0
0.40	0
0.20 May-13 Sep-13 Jan-14 May-14 Sep-14 Jan-15	

GCL New Energy - (LHS, HKD) ——GCL New Energy / Hang Seng Index - (RHS, %)

	1 Mth	3 Mth	12 Mth
Absolute(%)	(23.9)	23.6	120.0
Relative to index (%)	(24.3)	10.1	78.7

Maybank vs Market							
	Positive	Neutral	Negative				
Market Recs	0	0	0				
	Maybank C	onsensus	% +/-				
Target Price (HKD)	1.60	na	na				
'15 PATMI (HKDm)	559	na	na				
'16 PATMI (HKDm)	1,252	na	na				

Source: FactSet; Maybank

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Jessica Ng (852) 2268 0678 jessicang@kimeng.com.hk GCL New Energy

"GCL Yield Holding" issues zero-coupon CBs to GSI

On 24 April 2015, GCLNE announced its subsidiary, GCL Yield Holding (GCLYH), proposed to issue USD100m of zero coupon CBs to GSI. The maturity date will be three years from the issue date and the investor will have the sole discretion to extend for an additional 12 months. If GSI converts the CBs to GCLYH shares, the issued shares will represent ~45.5% of the total issued share capital.

We believe the chance of conversion is high. However, if the CBs are not converted and are redeemed on the maturity date, the total Internal Rate of Return for the investor would be 7% per year. We think 7% is reasonable to both parties as we believe the cost of borrowing should be similar and GCLNE will also benefit as the project IRR of a solar project should be around 10%, in our estimate. Going forward, if GSI converts it into shares, we expect GSI could receive around 4% dividend yield.

We think the positive sign from this issuance is the possible implementation of the 'Yield Co' business model. It also shows GSI's confidence in the business model and management's ability to launch the new business model, in our view. Going forward, we expect GCL Yield Holding will acquire operating projects from GCLNE after receiving the proceeds from the CBs. Although we don't know the scale of the assets to be held by GCL Yield Holding, we expect the proceeds from this CB could allow GCLYH to acquire 400MW of solar power projects from GCLNE. GCLNE has a portfolio totalling 616MW as of end-FY14.

GCLNE CB issuance

On 29 April 2015, GCLNE entered in an agreement to propose issuing CBs to China Orient Asset Management at a principal amount of HKD775m and Ivyrock at an amount of HKD200m. The conversion price is HKD1.20. If converted to shares, they will represent 5.53% of the enlarged issued share capital of GCLNE. The interest rate for the CBs is 6% and the maturity will be three years.

We think it is positive to GCLNE as the total proceeds of HKD975m could help GCLNE to develop around 500MW of solar projects, in our estimate. The interest rate for the CBs at 6% is also low compared to peers' interest rate for CBs, which is about 7.5%. The conversion price of HKD1.20 is also well above the current trading price, compared to peers.

Possible "Yield Co" business model could help

Among peers, we expect GCLNE could be the first to carry out the "Yield Co" (YC) business model due to its more diversified geographic exposure, high new installation growth, and strong EPC, O&M as well as IPP management capability, supported by its parent GCL-Poly (3800 HK, BUY).

We believe the development of GCLNE could come from bundling and spinoff the operating solar projects as a "Yield Co". The stable and robust cash flow of YC could help secure cheaper funding that could be used to buy GCLNE EPC entity's newly built solar projects, in our view. This business model would be very similar to a property developer spinning off investment property projects to form a REIT company. A breakthrough could be the CB issuance to GSI, in our view.

GCL New Energy ®KimEng

Increasing availability of funding to develop even faster

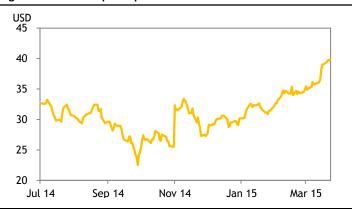
The bottleneck of developing solar projects is the source of funding. In fact, we think both cost of equity and cost of debt are relatively high for solar power EPCs. However, YCs could help to solve this funding problem. In fact, this is the business model adopted by Sun Edison in the US.

Figure 130: Share price performance of SunEdison



Source: Bloomberg, Maybank Kim Eng

Figure 131: Share price performance of TerraForm Power



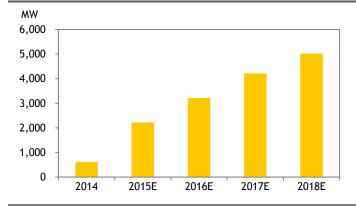
Source: Bloomberg, Maybank Kim Eng Note: TerraForm is the Yield Co of SunEdison.

Rapidly growing installation capacity

GCLNE has a portfolio totalling 616MW as of end-FY14. However, the company is targeting to reach ~2.6GW of total cumulative operational installed capacity by 31 Dec 2015. However, we have factored in only 2.2GW of total cumulative installations by end 2015 in our forecast due to GCLNE's stretched balance sheet. We think share-placement risk is high given the large upfront cost for solar project development. We forecast GCLNE's cumulative solar power installation will reach 78% CAGR from 2014 to 2017E.

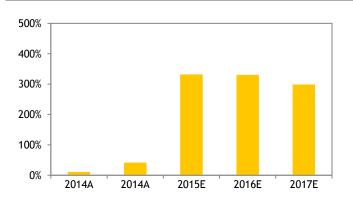
We forecast the total cumulative capacity to reach 2.2GW by end 2015.

Figure 132: Our forecast of installed capacity of GCLNE



Source: Maybank Kim Eng

Figure 133: Our forecast of net-gearing ratio of GCLNE



Source: Maybank Kim Eng

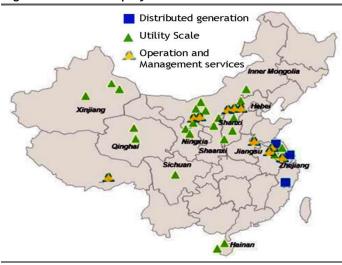
Diversified generation capacity

Compared to peers, GCL has a more diversified exposure. Around 19% of its total capacity is in Inner-Mongolia, 21% in Jiangsu, 12% in Qinghai and 12% in Shaanxi province. GCLNE's more diversified exposure could lower the geographic-concentration risk.

Of the total portfolio, we estimate 8% of the capacity was from acquisitions and 92% were jointly developed/self-developed. We also estimate 93% was utility scale vs 7% being distributed PV projects.

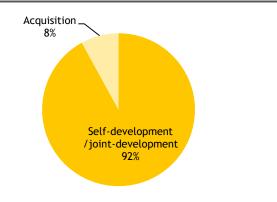
GCL New Energy

Figure 134: GCLNE's project locations



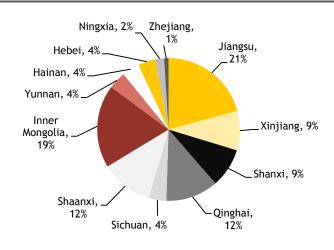
Source: Company data, Maybank Kim Eng

Figure 136: Our estimate to project type breakdown



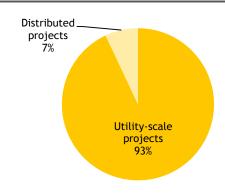
Source: Maybank Kim Eng

Figure 135: GCLNE's capacity breakdown by province



Source: Company data, Maybank Kim Eng Note: Total capacity as of January 2015 is 1.6GW, including projects under construction and O&M services.

Figure 137: Our estimate to project type breakdown



Source: Maybank Kim Eng

Synergies with the parent

Self-development cost savings

GCL-Poly and Golden Concord have a proven track record in project design and development. Its parent's experience could help GCLNE to develop solar farms at a faster pace and probably lower cost, in our view. We think GCLNE could also leverage the brand and reputation of its parent.

EPC cost savings

GCLNE could also leverage its parent's expertise in engineering. The EPC execution capability is actually quite strong as the parent has vast experience in building solar farms, IPPs and manufacturing plants.

O&M cost savings

As the parent has very good experience in developing IPP projects in China, we expect GCLNE could save some cost in O&M.

Overall, we believe the total cost saving based on these three parameters could reach CNY2.02/W, i.e. CNY1/W from self-development cost saving, CNY1/W from EPC cost saving and CNY0.02/W from O&M cost saving.

We expect synergies could happen between GCLNE and its parent.



Good relationship with banks to secure loans

Company secured USD80m in revolving facilities

In Dec 2014, GCLNE secured an USD80m revolving facility from BOCI Leveraged and Structural Finance. We believe this credit line can help GCLNE's rapid pace of solar power project development.

Strategic co-operation with CMB Nanjing

GCLNE recently announced a two-year strategic agreement with CMB Nanjing to develop close and long-term financing cooperation. We think it could help fulfil GCLNE's funding requirements.

CMB Nanjing intends to provide tentative financing services, including investment banking, financial leasing and bank loans, with an aggregate amount of not more than CNY8b to GCLNE. CMB Nanjing will also provide business support in relation to settlement services, financing needs and wealth management on a priority basis. On the other hand, GCLNE will give priority, under comparable market terms and conditions, for the engagement of principal underwriting bank for project revenue notes, asset-backed medium-term notes, mergers and acquisitions bonds and commercial papers and medium-term notes provided by CMB Nanjing.

Milestones and development of GCLNE

Figure 138: Major milestones of GCLNE

Date	Milestones
09 May 2014	Became a listed subsidiary of GCL-Poly and raised HKD1.64b gross proceeds
22 Aug 2014	Signed operation service agreement with GCL-Poly for a total of 353MW of installed capacity
26 Aug 2014	Started construction of its first jointly-developed solar farm with capacity of 100MW in Jiangsu province
16 Oct 2014	Top-up placement for 291m primary shares
12 Nov 2014	First grid-connected solar farm with a capacity of 17.5MW in Zhejiang province
29 Dec 2014	Secured USD80m in revolving facility from BOCI
31 Dec 2015	Plans to have a total capacity of 2.6GW by the end of 2015

Source: Maybank Kim Eng

Initiate at BUY with DCF-based TP of HKD1.60

Initiate at BUY. We used DCF model as the valuation methodology. We believe once solar farms start operating, they will provide stable and robust cash flow. Earnings growth will be mainly be driven by new capacity installation.

Our target price is based on the assumption of 9.7% WACC and 4% terminal growth rate. Our TP implies 40x FY15E PER on the back of 12% fully diluted EPS growth in FY16F or 48% fully diluted EPS CAGR from FY15F to FY18F. We think this is justified given the high capacity growth. GCLNE is trading at 23x FY15E FDPER and 3.6x P/BV FY15.

Initiate with BUY and DCF-based TP of HKD1.60.



Figure 139: DCF valuation for GCL New Energy

4.0%
9.7%
5,392.3
95,329.7
39,098.1
(5,040.1)
39,098.1
34,058.0

Per Share Equity Value
Source: Maybank Kim Eng

Less: Net Debt

Equity Value

Less: Minority interest

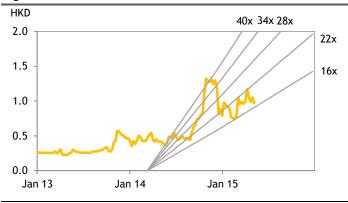
No. Shares (millions)

Figure 140: Sensitivity analysis, WACC against terminal growth

			Terminal grov	vth		
		3.0%	3.5%	4.0%	4.5%	5.0%
U	8.7%	1.87	2.18	2.56	3.03	3.63
WACC	9.2%	1.48	1.73	2.03	2.40	2.85
>	9.7%	1.15	1.36	1.60	1.89	2.24
	10.2%	0.87	1.04	1.24	1.47	1.75
	10.7%	0.63	0.78	0.94	1.13	1.35

Source: Maybank Kim Eng

Figure 141: GCLNE - forward PER band



Source: Bloomberg, Maybank Kim Eng

Figure 142: GCLNE - forward P/BV band

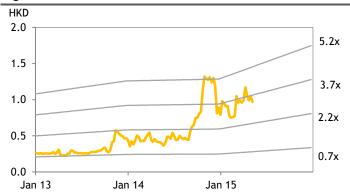
(11,863.4)

22,194.6

13,871.8

HK\$1.60

(0.4)



Source: Bloomberg, Maybank Kim Eng

Figure 143: Our major assumptions

Our Major Assumptions	FY15E	FY16E	FY17E	FY18E
Total installed capacity (MW)	2,216	3,216	4,216	5,016
Solar power generation (GWh)	1,473	3,938	5,388	6,693
Utilization hours (Solar)	1450	1450	1450	1450
Average on-grid tariff (CNY/MWh) (including VAT)	0.94	0.94	0.94	0.94

Source: Maybank Kim Eng

Figure 144: EPS vs FD EPS

Valuation	FY15E	FY16E	FY17E
P/E	22.1	9.9	7.7
FD P/E	23.1	10.4	8.2
P/B	3.6	2.6	2.0
Dividend Yield (%)	0.0	0.0	1.2

Source: Maybank Kim Eng



Management background

Tang Cheng, Chairman

- Former president of Golden Concord
- Former executive director and executive vice president of large-scale state-owned IPP
- More than 20 years of management experience in the IPP industry
- Skilled in industry insights and strategy management

Chau Tien Hsiang, CFO

- Over 15 years of finance experience
- Former CFO of GCL-Poly
- Experience in investment banking
- MBA from MIT and completed executive programmes in corporate strategy and negotiation from Stanford University and Harvard Law School

Risks

- 1) Capacity installation could be slower than market expectation.
- 2) Potential share placement to finance the expansion
- 3) Possible feed-in tariff cut/change in favourable supportive policy
- 4) The pace for connecting to grids could be slower than the installation
- 5) Bottleneck is the funding channel to build solar farms

FYE 31 Mar	FY14A*	FY14A	FY15E	FY16E	FY17E
Key Metrics	(42.0)	(0.4 E)	22.4	0.0	7.7
P/E (reported) (x)	(42.0)	(94.5)	22.1 22.1	9.9	7.7
Core P/E (x) Core FD P/E (x)	(42.0) nm	(94.5) nm	23.1	9.9 10.4	7.7 8.2
P/BV (x)	33.0	3.7	3.6	2.6	2.0
P/NTA (x)	33.0	3.7	3.6	2.6	2.0
Net dividend yield (%)	0.0	0.0	0.0	0.0	1.2
FCF yield (%)	0.5	nm	nm	nm	nm
EV/EBITDA (x)	23.7	nm	11.6	6.9	5.9
EV/EBIT (x)	85.4	nm	20.3	11.3	10.0
INCOME STATEMENT (HKD m)					
Revenue	1,579.8	1,172.9	3,048.5	5,534.6	6,997.0
Gross profit	130.8	94.6	1,351.2	2,731.1	3,348.8
EBITDA	179.9	(35.9)	2,086.5	4,094.9	5,281.2
Depreciation	(130.4)	(101.5)	(892.9)	(1,600.5)	(2,169.1)
Amortisation	0.5	0.4	0.0	0.0	0.0
EBIT	49.9	(137.0)	1,193.6	2,494.4	3,112.1
Net interest income /(exp)	(30.0)	(16.9)	(536.2)	(1,021.7)	(1,234.5)
Associates & JV	0.0	(0.7)	0.0	0.0	0.0
Exceptionals	(166.7)	57.3	0.0	0.0	0.0
Other pretax income	0.0	0.0	0.0	0.0	0.0
Pretax profit	(146.7)	(97.3)	657.4	1,472.7	1,877.6
Income tax	(26.6)	(15.5)	(98.6)	(220.9)	(281.6)
Minorities	0.0	(0.1)	(0.1)	(0.1)	(0.1)
Discontinued operations	0.0	0.0	0.0	0.0	0.0
Reported net profit	(173.3)	(112.8)	558.7	1,251.7	1,595.9
Core net profit	(173.3)	(112.8)	558.7	1,251.7	1,595.9
BALANCE SHEET (HKD m)	46.2	759 /	2 220 7	2 149 0	2 264 9
Cash & Short Term Investments	46.3	758.4	3,230.7	2,148.9	2,364.8
Accounts receivable	367.7	572.2 174.7	1,983.1	3,600.2	4,551.5
Inventory Property Plant & Equip (not)	205.3 863.9	6,679.6	605.6 17,675.2	1,099.5 24,404.8	1,390.0 30,150.6
Property, Plant & Equip (net) Intangible assets	0.0	0.0	0.0	0.0	0.0
Investment in Associates & JVs	0.0	80.6	80.6	80.6	80.6
Other assets	35.5	1,702.5	1,828.0	1,964.4	2,046.9
Total assets	1,518.6	9,968.0	25,403.2	33,298.3	40,584.4
ST interest bearing debt	284.7	380.0	380.0	380.0	380.0
Accounts payable	479.0	3,643.2	5,352.7	8,399.0	10,929.7
LT interest bearing debt	70.5	1,964.0	14,714.1	17,714.1	20,714.1
Other liabilities	464.0	1,080.0	1,496.0	2,094.0	2,413.0
Total Liabilities	1,298.0	7,066.9	21,943.3	28,586.6	34,436.3
Shareholders Equity	220.7	2,900.7	3,459.5	4,711.3	6,147.7
Minority Interest	0.0	0.4	0.4	0.4	0.4
Total shareholder equity	220.7	2,901.2	3,460.0	4,711.7	6,148.1
Total liabilities and equity	1,518.6	9,968.0	25,403.2	33,298.3	40,584.4
CASH FLOW (HKD m)					
Pretax profit	(146.7)	(97.3)	657.4	1,472.7	1,877.6
Depreciation & amortisation	130.0	101.1	892.9	1,600.5	2,169.1
Adj net interest (income)/exp	30.0	16.9	536.2	1,021.7	1,234.5
Change in working capital	(9.0)	(121.8)	(132.2)	935.2	1,288.9
Cash taxes paid	(25.0)	(15.1)	241.9	280.2	(32.8)
Other operating cash flow	0.0	0.0	0.0	0.0	0.0
Cash flow from operations	121.6	(518.2)	1,597.8	4,230.9	5,275.9
Capex	(85.9)	(2,155.3)	(11,861.6)	(8,303.2)	(7,888.0)
Free cash flow	35.7	(2,673.4)	(10,263.8)	(4,072.2)	(2,612.1)
Dividends paid	0.0	0.0	0.0	0.0	(159.6)
Equity raised / (purchased)	0.0	2,361.8	0.0	0.0	0.0
Perpetual securities	0.0	0.0	0.0	0.0	0.0
Change in Debt	(46.0)	1,130.8	12,750.1	3,000.0	3,000.0
Perpetual securities distribution	0.0	0.0	0.0	0.0	(12.4)
Other invest/financing cash flow	7.1	(110.7)	(14.0)	(9.6)	(12.4)
Effect of exch rate changes	2.3	3.7	0.0	0.0	0.0
Net cash flow	(0.9)	712.2	2,472.2	(1,081.8)	216.0

Note: Starting from 2015, the company switched from Mar YE to Dec YE. The latest actual figures include only ninemonth data from Apr to Dec 2014 (FY14A). Previous year was 12-month from Apr 2013 to Mar 2014 (FY14).

FYE 31 Mar	FY14A [*]	FY14A	FY15E	FY16E	FY17E
Key Ratios					
Growth ratios (%)					
Revenue growth	10.9	(25.8)	159.9	81.5	26.4
EBITDA growth	20.8	nm	nm	96.3	29.0
EBIT growth	116.0	nm	nm	109.0	24.8
Pretax growth	nm	nm	nm	124.0	27.5
Reported net profit growth	nm	nm	nm	124.0	27.5
Core net profit growth	nm	nm	nm	124.0	27.5
Profitability ratios (%)					
EBITDA margin	11.4	nm	68.4	74.0	75.5
EBIT margin	3.2	nm	39.2	45.1	44.5
Pretax profit margin	nm	nm	21.6	26.6	26.8
Payout ratio	0.0	0.0	0.0	0.0	9.4
DuPont analysis					
Net profit margin (%)	nm	nm	18.3	22.6	22.8
Revenue/Assets (x)	1.0	0.1	0.1	0.2	0.2
Assets/Equity (x)	6.9	3.4	7.3	7.1	6.6
ROAE (%)	(53.5)	(7.2)	17.6	30.6	29.4
ROAA (%)	(11.2)	(2.0)	3.2	4.3	4.3
Liquidity & Efficiency					
Cash conversion cycle	14.2	(480.5)	(720.4)	(591.9)	(621.1)
Days receivable outstanding	81.3	144.3	150.9	181.6	209.7
Days inventory outstanding	49.5	63.4	82.8	109.5	122.8
Days payables outstanding	116.6	688.2	954.0	882.9	953.7
Dividend cover (x)	nm	nm	nm	nm	10.6
Current ratio (x)	0.5	0.4	0.9	0.7	0.7
Laurence & Francisco Analysis					
Leverage & Expense Analysis	1.2	1.4	1.2	1.2	1.2
Asset/Liability (x)	1.2 140.0	1.4	1.2 342.9	1.2 338.4	
Net debt/equity (%)	140.0	54.7	342.9 2.2	338.4 2.4	304.7 2.5
Net interest cover (x)		na			
Debt/EBITDA (x)	2.0	nm 192 9	7.2	4.4	4.0
Capex/revenue (%)	5.4	183.8	389.1	150.0	112.7
Net debt/ (net cash)	308.9	1,585.5	11,863.4	15,945.2	18,729.2

Source: Company; Maybank

^{*}Note: Starting from 2015, the company switched from Mar YE to Dec YE. The latest actual figures include only ninemonth data from Apr to Dec 2014 (FY14A). Previous year was 12-month from Apr 2013 to Mar 2014 (FY14*).



May 13, 2015

GCL-Poly Energy (3800 HK)

Share Price: HKD2.19 MCap (USD): 4.4B Hong Kong
Target Price: HKD2.80 (+28%) ADTV (USD): 41M Energy

BUY

(Unchanged)

Cost-reduction trend is the key

- We believe the driver of the stock is the pace of cost reduction. We forecast the cash cost of polysilicon will drop to USD11.5/kg in 2015 from USD13.5/kg.
- We expect cost reduction will be mainly driven by the use of FBR method and the low-cost FBR capacity could reach 25,000MT by end of 2015. We expect another cost-reduction driver could be development of the captive power plants.
- Maintain BUY and TP of HKD2.80 based on 2.1x FY15 P/BV. We expect the update regarding the commission date of the captive power plant will be the catalyst to the stock.

What's Our View

After two years of industry consolidation (2012 to 2013) GCL-Poly has turned around from a net loss of HKD664m in FY13 to a net profit of HKD1,955m in FY14. Gross margin surged from 12% in FY13 to 21% in FY14, mainly driven by cost reduction and ASP recovery.

Going forward, we expect cost reduction will be the main driver of GCL-Poly's earnings growth. We expect the cash cost of polysilicon production will decrease from around USD13.5/kg to USD11.5/kg in 2015E. We estimate the cash cost of the Fuildized Bed Reactor (FBR) polysilicon production method will be USD9-10/W. We expect the FBR capacity will reach 25,000MT by the end of 2015 and it could produce about 5,000-8,000MT of polysilicon in FY15E. We think the captive power plant (electricity self-supply) has been delayed since mid-2014, so, the market has not factored in this electricity cost saving potential. However, we expect the plant to be commissioned this year, which could be a catalyst.

Maintain BUY and TP of HKD2.80

Maintain BUY and TP of HKD2.80 based on 2.1x FY15E P/BV. We expect the polysilicon ASP in China will start to mildly rebound in mid-year as we believe less imported polysilicon in second half of 2015.

FYE Dec (HKD m)	FY13A	FY14A	FY15E	FY16E	FY17E
Revenue	25,530.0	37,224.7	39,898.9	44,041.8	47,293.0
EBITDA	5,454.5	10,005.2	11,722.8	15,002.6	17,108.2
Core net profit	(664.3)	1,955.0	2,690.9	3,940.7	5,034.0
Core FDEPS (HKD)	(0.04)	0.13	0.17	0.25	0.32
Core FDEPS growth(%)	nm	nm	37.6	46.4	27.7
Net DPS (HKD)	0.00	0.00	0.03	0.05	0.06
Core FD P/E (x)	nm	17.4	12.6	8.6	6.7
P/BV (x)	2.1	1.8	1.6	1.4	1.2
Net dividend yield (%)	0.0	0.0	1.6	2.3	3.0
ROAE (%)	(4.1)	11.3	13.8	17.8	19.6
ROAA (%)	(0.9)	2.3	2.8	3.7	4.5
EV/EBITDA (x)	12.4	6.3	6.6	5.4	4.8
Net debt/equity (%)	177.3	174.5	191.5	183.6	160.6

Key Data	
52w high/low (HKD) 3.	06/1.66
3m avg turnover (USDm)	40.7
Free float (%)	65.3
Issued shares (m)	15,487
Market capitalization H	KD33.9B
Major shareholders:	
-ZHU GONG SHAN FAMILY	32.4%
-China Investment Corp. (Investment Man	4.6%
-Fidelity Management & Research Co.	3.9%

Share	Price Performance	
3.20	270	j
3.00		j
2.80	- 230)
2.60)
2.40	- 190)
2.20	170)
2.00	150)
1.80	130 harry 1 130)
1.60	- W - 110)
1.40	ay-13 Sep-13 Jan-14 May-14 Sep-14 Jan-15	
Mo	19-13 Sep-13 Jan-14 May-14 Sep-14 Jan-15	

GCL-Poly Energy - (LHS, HKD) ——GCL-Poly Energy / Hang Seng Index - (RHS, %)

	1 Mth	3 Mth	12 Mth
Absolute(%)	(11.0)	29.6	(6.0)
Relative to index (%)	(11.4)	15.5	(23.7)

Maybank vs Market							
	Positive	Neutral	Negative				
Market Recs	26	3	4				
	Maybank	Consensus	% +/-				
Target Price (HKD)	2.80	2.60	7.6				
'15 PATMI (HKDm)	2,691	2,700	(0.3)				
'16 PATMI (HKDm)	3,941	3,550	11.0				

Source: FactSet; Maybank

Ricky WK Ng, CFA (852) 2268 0689 rickyng@kimeng.com.hk Jessica Ng

Jessica Ng (852) 2268 0678 jessicang@kimeng.com.hk

Figure 145: GCL statistics

	FY14	FY13	1H14	1H13
Polysilicon production (MT)	66,876	50,440	32,341	21,980
External shipment (MT)	15,443	16,329	7,463	8,472
Poly-si ASP (USD/kg)	21.7	17.4	22.1	17.0
Wafer production (MW)	13,098	8,827*	6,042*	3,548*
External shipment (MW)	12,909	9,436*	5,896*	3,938*
Wafer ASP** (USD/W)	0.22	0.21	0.23	0.20
Power business				
Installed capacity (MW)	1,460	1,490	1,460	1,478
Power sales (GWh)	5,903	5,756	3,019	2,761
Steam sales (1,000 tonnes)	8,616	8,851	4,219	4,365

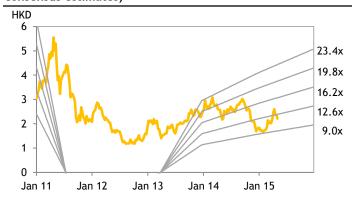
Source: Maybank Kim Eng Note: * the figures of production and shipment volume were restated by including processing with supplied materials **excluding ASP of wafers processed with supplied materials

Figure 146: EPS vs FD EPS

Valuation	FY15E	FY16E	FY17E
P/E	12.6	8.6	6.7
FD P/E	12.6	8.6	6.7
P/B	1.6	1.4	1.2
Dividend Yield (%)	1.6	2.3	3.0

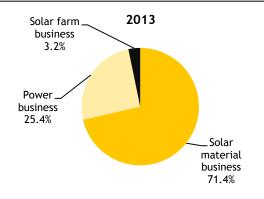
Source: Maybank Kim Eng

Figure 147: GCL Poly - forward PER band (Bloomberg consensus estimates)



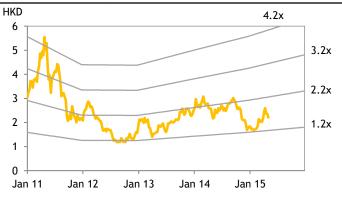
Source: Bloomberg, Maybank Kim Eng

Figure 149: Revenue breakdown (2013)



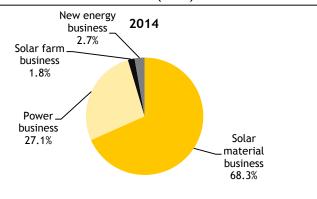
Source: Maybank Kim Eng

Figure 148: GCL Poly - forward P/BV band (Bloomberg consensus estimates)



Source: Bloomberg, Maybank Kim Eng

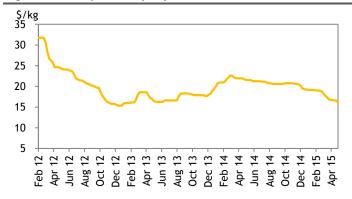
Figure 150: Revenue breakdown (2014)



Source: Maybank Kim Eng

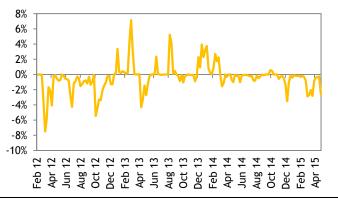
GCL-Poly Energy ®KimEng

Figure 151: Polysilicon spot prices



Source: PVinsights, Maybank Kim Eng

Figure 152: WoW changes of polysilicon spot prices



Source: PVinsights, Maybank Kim Eng

FYE 31 Dec	FY13A	FY14A	FY15E	FY16E	FY17E
Key Metrics					
P/E (reported) (x)	(51.0)	17.3	12.6	8.6	6.7
Core P/E (x)	(51.0)	17.3	12.6	8.6	6.7
Core FD P/E (x)	nm	17.4	12.6	8.6	6.7
P/BV (x)	2.1	1.8	1.6	1.4	1.2
P/NTA (x)	2.0	1.6	1.4	1.3	1.1
Net dividend yield (%)	0.0	0.0	1.6	2.3	3.0
FCF yield (%)	14.9	7.8	nm	0.3	10.0
EV/EBITDA (x)	12.4	6.3	6.6	5.4	4.8
EV/EBIT (x)	31.1	9.9	10.1	8.0	7.1
INCOME STATEMENT (HKD m)					
Revenue	25,530.0	37,224.7	39,898.9	44,041.8	47,293.0
Gross profit	3,039.6	7,650.6	9,614.7	12,296.1	13,952.1
EBITDA	5,454.5	10,005.2	11,722.8	15,002.6	17,108.2
Depreciation	(3,315.1)	(3,712.1)	(4,048.9)	(4,849.0)	(5,456.6)
Amortisation	37.6	88.7	0.0	0.0	0.0
EBIT	2,177.0	6,381.8	7,673.8	10,153.7	11,651.6
Net interest income /(exp)	(2,415.6)	(3,033.6)	(3,176.7)	(3,497.5)	(3,497.5)
Associates & JV	440.6	47.7	47.7	47.7	47.7
Exceptionals	0.0	0.0	0.0	0.0	0.0
Other pretax income	(457.7)	(601.2)	(644.4)	(711.3)	(763.8)
Pretax profit	(255.7)	2,794.7	3,900.4	5,992.5	7,437.9
Income tax	(190.1)	(639.3)	(780.1)	(1,198.5)	(1,487.6)
Minorities	(218.5)	(200.3)	(429.5)	(853.3)	(916.3)
Discontinued operations	0.0	0.0	0.0	0.0	0.0
Reported net profit	(664.3)	1,955.0	2,690.9	3,940.7	5,034.0
Core net profit	(664.3)	1,955.0	2,690.9	3,940.7	5,034.0
core nee prone	(004.3)	1,733.0	2,070.7	3,740.7	3,034.0
BALANCE SHEET (HKD m)					
Cash & Short Term Investments	6,168.8	5,529.0	8,029.3	3,869.6	2,851.9
Accounts receivable	1,809.6	1,891.0	1,976.1	2,045.3	2,096.4
Inventory	1,108.0	1,118.9	1,132.0	1,154.9	1,177.1
Property, Plant & Equip (net)	43,995.1	50,611.8	60,612.0	68,207.8	73,769.4
Intangible assets	853.0	806.4	818.9	838.1	853.2
Investment in Associates & JVs	536.0	562.2	580.3	608.4	630.4
Other assets	22,172.0	29,484.5	30,734.6	32,791.5	34,390.7
Total assets	76,642.6	90,003.8	103,883.2	109,515.6	115,769.1
ST interest bearing debt	24,915.5	21,951.3	21,951.3	21,951.3	21,951.3
Accounts payable	13,737.3	20,832.5	21,332.8	22,362.3	23,485.9
LT interest bearing debt	9,882.4	15,697.4	25,447.4	25,447.4	25,447.4
Other liabilities	10,102.0	10,159.0	10,749.0	12,007.0	12,908.0
Total Liabilities	58,637.5	68,640.7	79,480.1	81,767.7	83,792.2
Shareholders Equity	16,146.1	18,405.6	20,558.3	23,710.8	27,738.0
Minority Interest	1,859.0	2,957.6	3,844.8	4,037.1	4,238.9
Total shareholder equity	18,005.1	21,363.2	24,403.1	27,747.9	31,976.9
Total liabilities and equity	76,642.6	90,003.8	103,883.2	109,515.6	115,769.1
CASH FLOW (HKD m)					
Pretax profit	(255.7)	2,794.7	3,900.4	5,992.5	7 427 0
•	(255.7) 3,277.5	•	-		7,437.9 5,456.6
Depreciation & amortisation	•	3,623.4	4,048.9 3,079.6	4,849.0 3 412 3	•
Adj net interest (income)/exp Change in working capital	2,203.8 3,054.7	2,710.0	3,079.6	3,412.3	3,449.4 147.9
Cash taxes paid	-	(146.6) (533.0)	(338.9) (614.5)	(163.0)	
•	(77.7) (98.7)	(533.0)	(614.5)	(704.2) 44.0	(1,146.3) 34.5
Other operating cash flow	(98.7) 8 507 2			13,430.5	
Cash flow from operations	8,507.2	9,040.8	10,321.3		15,380.0
Capex	(3,454.3)	(6,397.7)	(14,802.5)	(13,322.3)	(11,990.1)
Free cash flow	5,052.9	2,643.1	(4,481.2)	108.2	3,390.0
Dividends paid	(86.4)	(280.7)	(538.2)	(788.1)	(1,006.8)
Equity raised / (purchased)	0.0	0.0	0.0	0.0	0.0
Change in Debt	2,019.3	2,948.4	9,750.0	0.0	0.0
Other invest/financing cash flow	(5,475.5)	(5,946.8)	(2,230.3)	(3,479.8)	(3,400.9)
Effect of exch rate changes	162.9	(3.9)	0.0	0.0	0.0
Net cash flow	1,673.2	(639.9)	2,500.3	(4,159.7)	(1,017.7)

FYE 31 Dec	FY13A	FY14A	FY15E	FY16E	FY17E
Key Ratios					
Growth ratios (%)					
Revenue growth	14.2	45.8	7.2	10.4	7.4
EBITDA growth	64.2	83.4	17.2	28.0	14.0
EBIT growth	275.5	193.1	20.2	32.3	14.8
Pretax growth	nm	nm	39.6	53.6	24.1
Reported net profit growth	nm	nm	37.6	46.4	27.7
Core net profit growth	nm	nm	37.6	46.4	27.7
Profitability ratios (%)					
EBITDA margin	21.4	26.9	29.4	34.1	36.2
EBIT margin	8.5	17.1	19.2	23.1	24.6
Pretax profit margin	nm	7.5	9.8	13.6	15.7
Payout ratio	0.0	0.0	20.0	20.0	20.0
DuPont analysis					
Net profit margin (%)	nm	5.3	6.7	8.9	10.6
Revenue/Assets (x)	0.3	0.4	0.4	0.4	0.4
Assets/Equity (x)	4.7	4.9	5.1	4.6	4.2
ROAE (%)	(4.1)	11.3	13.8	17.8	19.6
ROAA (%)	(0.9)	2.3	2.8	3.7	4.5
Liquidity & Efficiency					
Cash conversion cycle	(140.2)	(179.0)	(219.8)	(218.4)	(219.2)
Days receivable outstanding	25.0	17.9	17.4	16.4	15.8
Days inventory outstanding	17.8	13.6	13.4	13.0	12.6
Days payables outstanding	183.0	210.4	250.6	247.8	247.5
Dividend cover (x)	nm	nm	5.0	5.0	5.0
Current ratio (x)	0.7	0.7	0.8	0.7	0.7
Leverage & Expense Analysis					
Asset/Liability (x)	1.3	1.3	1.3	1.3	1.4
Net debt/equity (%)	177.3	174.5	191.5	183.6	160.6
Net interest cover (x)	0.9	2.1	2.4	2.9	3.3
Debt/EBITDA (x)	6.4	3.8	4.0	3.2	2.8
Capex/revenue (%)	13.5	17.2	37.1	30.2	25.4
Net debt/ (net cash)	28,629.1	32,119.8	39,369.4	43,529.1	44,546.8

Source: Company; Maybank



China Singyes Solar Technologies (750 HK)

Share Price: HKD11.64
Target Price: HKD12.20 (+5%)
ADTV (USD): 1.0B
ADTV (USD): 10M
Energy

HOLD
(New)

A solar EPC contractor

- Initiate Singyes at HOLD, TP HKD12.20.
- Although we are not highly optimistic about solar EPC margins due to intense competition, Singyes could deserve a scarcity premium in the HK market and as it's an EPC contractor enjoying growth of the distributed PV market.
- We believe traditional EPC companies like Singyes that own and operate solar power plants will be at higher risk due to the burden to the balance sheet and lack of experience in solar project operation. We will wait and see the progress.

What's New

We expect the margins of solar EPC contracts will not rebound but in fact drop from 27% in 2014 to 26% in 2015E. We expect Singyes could obtain more lower-margin utility-scale EPC contracts. However, we are not highly optimistic it can raise the proportion of higher-margin distributed PV EPC orders.

Although China is targeting 17.8GW of projects in 2015E, we believe Singyes has limited local resources to obtain EPC orders from local governments. Besides its strong exposure in Guangdong, Hunan and Shandong province, it has no track record in other provinces, in our view. As a traditional distributed EPC company, Singyes will bear a higher risk if it expands into solar farm operation. We expect one challenge will be the lack of experience and expertise to operate the projects, and another challenge will be the capex required. We estimate building 300MW of power plants will require CNY2.4b in 2015E.

Initiate with HOLD and TP of HKD12.20

We initiate Singyes Solar at HOLD and TP of HKD12.20 based on 10.5x FY15E PER (the mid-point of the PER band in 2014). Fundamentally, we are concerned about its margin risk, execution and financial capabilities, but Singyes is not trading at a demanding PER (11x PER in FY15E). Initiate at HOLD. The upside risk will be potentially more favourable policies towards distributed PV, in our view.

FYE Dec (CNY m)	FY13A	FY14A	FY15E	FY16E	FY17E
Revenue	4,150.5	5,011.4	7,221.2	8,763.9	10,443.1
EBITDA	804.5	934.9	1,188.5	1,399.1	1,558.8
Core net profit	490.6	584.3	643.7	732.5	765.7
Core FDEPS (CNY)	0.74	0.69	0.82	0.94	0.98
Core FDEPS growth(%)	41.4	(6.7)	20.1	13.8	4.5
Net DPS (CNY)	0.09	0.09	0.10	0.11	0.12
Core FD P/E (x)	12.7	13.6	11.3	9.9	9.5
P/BV (x)	2.3	2.1	1.7	1.5	1.3
Net dividend yield (%)	1.0	1.0	1.1	1.2	1.3
ROAE (%)	22.1	20.4	18.7	18.0	16.1
ROAA (%)	9.5	8.1	7.0	6.6	5.8
EV/EBITDA (x)	5.8	6.9	6.7	6.2	6.1
Net debt/equity (%)	25.2	15.2	39.6	51.0	58.7

Key Data	
52w high/low (HKD)	15.08/9.85
3m avg turnover (USDm)	9.6
Free float (%)	64.7
Issued shares (m)	696
Market capitalization	HKD8.1B
Major shareholders:	
-Strong Eagle Ltd.	35.3%
-HSBC Global Asset Management (Hon	g Kor 5.0%
-Pioneer Investment Management Ltd	1.5%

Share Pric	ce Performance
16.0 ¬	┌ 280
15.0 -	- 260
14.0	- 240
13.0 -	220
12.0 -	200
11.0	180 Y
10.0	160
9.0	140 المال مال المال الما
8.0	- 120
7.0	100
6.0	Sep-13 Jan-14 May-14 Sep-14 Jan-15 80
	——China Singyes Solar - (LHS, HKD)
	——China Singyes Solar / Hang Seng Index - (RHS, %)

	1 Mth	3 Mth	12 Mth
Absolute(%)	(7.6)	16.6	9.4
Relative to index (%)	(8.1)	3.9	(11.1)

Maybank vs Mark	tet		
	Positive	Neutral	Negative
Market Recs	16	1	1
	Maybank	Consensus	% +/-
Target Price (HKD)	12.20	13.67	(10.8)
'15 PATMI (CNYm)	644	773	(16.7)
'16 PATMI (CNYm)	732	929	(21.1)

Source: FactSet; Maybank

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We expect margins to decline for solar EPC

In the past with the Golden Sun programme and BIPV subsidy, Singyes was able to achieve 35% gross margin for EPC contracts on rooftop solar projects in 2012. However, after the subsidy was cut in 2013, the growth of distributed projects seems slowed down. Singyes started to receive orders from mid-stream solar module makers on utility-scale projects, which have lower margins than distributed projects. In 2014, we believe solar EPC contracts that came from utility-scale power plants increased for Singyes. This change in product mix has dragged down the gross margin of solar EPC contracts from 29.5% in 2013 to 26.7% in 2014. We expect the margin will not rebound and remain at a relatively low level of 26% in 2015E.

We expect Singyes can maintain a stable margin of 15% from conventional curtain walls and green building business. However, for the solar EPC business, Singyes is facing blended-margin decline as we expect more orders to come from lower-margin utility-scale EPC contracts.

We forecast the solar EPC margin of Singyes will drop mildly in 2015E.

Figure 153: Our forecast to the revenue breakdown (FY15E)

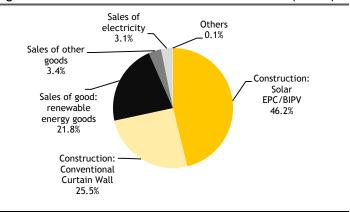
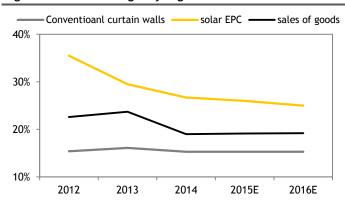


Figure 154: Gross margin by segment



Source: Maybank Kim Eng Source: Maybank Kim Eng

We think there is increasing competition among solar EPC companies in China. In the list of top five solar EPC companies in 2014, it seems that large players such as TBEA, Zhongli Technology, GD Solar and Astronergy have much more resources than Singyes, in our view. In 2014, Singyes has completed 240MW Solar EPC contracts.

Figure 155: Top five solar EPC companies in China

EPC companies	Ticker	2014 capacity (MW)
TBEA	600089 CH	834
Shanghai Solar Energy	n/a	700
GD Solar	n/a	650
Astronergy	n/a	400
Zhongli Talesun Solar	002309 CH	350

Source: IHS, Maybank Kim Eng

Limited local resources to catch up with rapid industry growth

The NEA announced 2015 solar capacity target of 17.8GW, up 19% from its previous target of 15GW. It also represents 68% YoY increase from the 10.6GW installed in 2014. Although Singyes has a good track record as an EPC contractor for Golden Sun projects, we think it may not grow as rapidly as the industry because of its limited local expertise.

We believe securing EPC contracts actually depend on its local resources. We think Singyes owns exposure in Guangdong, Shandong and Hunan provinces and these provinces have NEA's targets of 900MW, 800MW and 400MW respectively in 2015. If we assume Singyes obtains 500MW out of these three provinces only, this could mean 24% market share and we believe this is not easy. Thus, we believe Singyes requires more effort to expand into other provinces and to negotiate with local governments to obtain more EPC orders.

Figure 156: NEA solar capacity target in 2015 (MW)

Province	2015
Hebei	1,200
Shanxi	650
Inner Mongolia	800
Liaoning	300
Jilin	300
Heilongjiang	300
Jiangsu	1,000
Zhejiang	1,000
Anhui	1,000
Fujian	400
Jiangxi	600
Shandong *	800
Henan	600
Hubei	500
Hunan *	400
Guangdong *	900
Guangxi	350
Hainan	200
Sichuan	600
Guizhou	200
Yunnan	600
Shaanxi	800
Gansu	500
Qinghai	1,000
Ningxia	1,000
Xinjiang	1,800
Total	17,800

Source: NEA, Maybank Kim Eng Note: * Singyes project exposure

We think Singyes is targeting 600MW of solar EPC contracts in 2015, of which 500MW would come from the domestic market and 100MW from overseas. Giving its limited local expertise, we believe its order backlog remains uncertain for 2H15. We are more conservative and forecast Singyes will achieve only 450MW in 2015, up 88% YoY.

expect the **EPC** completion in this year could be smaller than market expectation.

MW Solar EPC contracts **BOT** projects ■ Sales of renewable energy goods 1,800 1,600 1,400 1,200 1,000 800 600 400 200 0 2012 2013 2014 2015E 2016E

Figure 157: Our forecasts for Singyes' renewable energy business

Source: Maybank Kim Eng Note: BOT indicates build-operate-transfer projects. Sales of renewable energy goods include PV system, solar heat pump, and solar heat collectors.

Downside risks

Singyes may miss BOT plan in 2015

Singyes plans to build not less than 300MW of solar projects in 2015E. The company should have around 100MW of projects under development and we expect it could connect to the grid in June 2015. We estimate this will require capex of CNY2.4b in 2015E, assuming CNY8/W of investment cost. If we assume 80% to be funded by bank loans, we estimate Singyes has to borrow CNY1.9b.

We believe it could be a better strategy for Singyes to just focus on EPC as it does not require experience to operate a power plant like a utility company. EPCs and power operators are totally two different business models with different skill sets and engineering teams. And we believe the operation and execution risks are relatively high.

Historical record on project disposals

In 2014, Singyes sold 25MW of solar projects for CNY89.7m, netting a gain of CNY35.3m.

We expect Singyes will try to sell 90.8MW of distributed projects. These projects were supposed to be sold to United PV based on the framework agreement signed in 2013. However, this agreement was terminated in March 2014, possibly because a price could not be agreed on, in our view. If we assume Singyes can sell the projects, we estimate Singyes could receive CNY454m in cash (assuming CNY5/W) that could fund some of its solar plants, in our view.

Figure 158: Our estimates: Singyes' operational projects

	 . ,	
Province	Capacity (MW)	Grid connection date
Gansu	50	Oct-14
Xinjiang	30	Apr-14
Hunan	90.8	Oct-14
Total	170.8	

Source: Maybank Kim Eng

Potential disposal of operating projects could be good to Singyes.

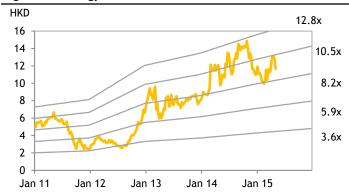
0.5x

Initiate at HOLD, TP HKD12.20

Initiate at HOLD on Singyes Solar. We used a target 10.5x FY15E PER to derive a TP of HKD12.20. We applied 10.5x as this is the mid-point of its 2014 PER band since the promotion of distributed PV in China. Singyes Solar is trading at 11x FY15E PER and 1.7x FY15E P/BV.

Initiate with a BUY rating and TP of HKD12.20.

Figure 159: Singyes - forward PER band



HKD 2.3x 1.7x 1.1x

Jan 13

Jan 14

Jan 15

Figure 160: Singyes - forward P/BV band

Source: Bloomberg, Maybank Kim Eng

Jan 12

8

6

4

2

0

Jan 11

Source: Bloomberg, Maybank Kim Eng

Figure 161: Our major assumptions

	FY15E	FY16E	FY17E	FY18E
Solar EPC contracts (MW)	450	585	761	989
-Capacity for distributed projects (MW)	90	117	152	198
-Capacity for utility-scale projects (MW)	360	468	608	791
Renewable energy goods (MW)	276	331	397	477
Solar farm generation capacity (MW)	461	701	9,41	1,181
Generation (MWh)	272,500	688,300	978,300	1,268,300
Utilisation hours (Distributed)	1,000	1,000	1,000	1,000
Utilisation hours (Utility-scale)	1,250	1,250	1,250	1,250
Average tariff (including VAT)	0.95	0.95	0.95	0.95

Source: Maybank Kim Eng

Figure 162: EPS vs FD EPS

Valuation	FY15E	FY16E	FY17E
P/E	10.1	8.8	8.5
FD P/E	11.3	9.9	9.5
P/B	1.7	1.5	1.3
Dividend Yield (%)	1.1	1.2	1.3

Source: Maybank Kim Eng

Management

Liu Hongwei, CEO

- Good relationship with Guangdong government, especially Zhuhai.
- Engineering experience in respect of construction materials.
- More than 17 years of experience in curtain wall engineering.
- More than 8 years of experience in solar PV application.

Yu Chon Man, Financial controller

- Responsible for financial reporting and general investor affairs.
- 11 years of experience in financial accounting.
- Graduated from Hong Kong Polytechnic University with a bachelor's degree in accountancy.

Adrian Lai, Chief Strategy Officer

- Responsible for business development strategies.
- 9 years of experience in overseas business development.

Risks

- 1) The capacity installation could be slower than the market expectation.
- 2) Possible feed-in tariff cut/change in favourable supportive policy.
- 3) The pace for connecting to grids could be slower than the installation.
- 4) Bottleneck is the funding channel to build solar farms.

P.F.E (reported) (x) 12.4 11.1 10.1 8.8 Core P.P.E (x) 12.4 11.1 10.1 8.8 Core P.P.E (x) 12.4 11.1 10.1 8.8 P.P.E (x) 12.7 13.6 11.3 9.9 P.P.B (x) 12.7 13.6 11.3 9.9 P.P.B (x) 2.3 2.1 1.7 1.5 1.5 P.P.B (x) 2.3 2.1 1.7 1.5 1.5 P.P.B (x) 2.3 2.1 1.7 1.5 P.P.B (x) 2.5 P.B (x	FYE 31 Dec	FY13A	FY14A	FY15E	FY16E	FY17E
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Depreciation	· · · · · · · · · · · · · · · · · · ·	804.5				1,558.8
Amortisation (2.8) (2.9) 0.0 0.0 EBIT 737.4 936.8 1,044.0 1,216.3 1,3 1,3 Net interest income /(exp) (110.9) (237.9) (259.1) (323.1) (40 Associates & JV 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		(64.3)	(110.9)	•		(222.0)
EBIT 737.4 936.8 1,044.0 1,216.3 1,3 Net interest income /(exp) (110.9) (237.9) (259.1) (323.1) (40 Associates & JV 0.0 0.0 0.0 0.0 0.0 Exceptionals 0.0 0.0 0.0 0.0 0.0 Other pretax income 0.0 0.0 0.0 0.0 0.0 Other pretax income 0.0 0.0 0.0 0.0 0.0 Other pretax profit 626.5 698.9 784.9 893.3 9 Income tax (135.9) (114.1) (141.3) (160.8) (16 Minorities (0.0) (0.6) 0.0 0.0 0.0 Discontinued operations 0.0 0.0 0.0 0.0 0.0 Discontinued operations 0.0 0.0 0.0 0.0 0.0 Reported net profit 490.6 584.3 643.7 732.5 77 Core net profit 490.6 584.3 643.7 732.5 77 BALANCE SHEET (CNY m) Cash & Short Term Investments 894.7 901.4 401.9 438.3 66 Accounts receivable 2,030.8 2,615.8 3,769.2 4,574.4 5,4 Inventory 76.6 114.6 165.1 200.4 2 Property, Plant & Equip (net) 2,680.2 3,455.1 4,418.4 5,398.9 6,3 Intangible assets 1.7 1.6 2.0 2.5 Investment in Associates & JVs 29.4 12.3 12.3 12.3 Other assets 587.3 1,108.1 1,322.3 1,498.0 1,6 Total assets 6,300.7 8,208.8 10,091.3 12,124.7 14,41 ST interest bearing debt 681.3 391.7 891.7 1,691.7 2,6 Other liabilities 675.0 2,090.0 2,115.0 2,133.0 2,1 Total Liabilities 3,701.6 5,068.2 6,356.4 7,726.2 9,33 Shareholders Equity 2,599.1 3,140.0 3,734.3 4,397.9 5,0 Minority Interest 0.0 0.6 0.6 0.6 0.6 Total liabilities 3,701.6 5,068.2 6,356.4 7,726.2 9,33 Shareholders Equity 2,599.1 3,140.6 3,734.9 4,398.5 5,087 Total liabilities and equity 2,599.1 3,140.6 3,734.9 4,398.5 5,087 Total liabilities and equity 2,599.1 3,140.6 3,734.9 4,398.5 5,087 Total liabilities and equity 2,599.1 3,140.6 3,734.9 4,398.5 5,087 Total liabilities and equity 2,599.1 3,140.6 3,734.9 4,398.5 5,087 Total liabilities and equity 6,300.7 8,208.8 10,091.3 12,124.7 14,41 CASH FLOW (CNY m) Pretax profit 626.5 698.9 784.9 893.3 9 Depreciation & amortisation 67.1 113.8 144.5 182.8 2 Adj net interest (income)/exp 104.2 214.2 252.5 318.9 3 Change in working capital 75.6 (766.0) (566.1) (376.1) (416.0) (416.0) (416.0) (416.0) (416.0) (416.0) (416.0) (416.0) (416.0) (416.0) (416.0) (416.0) (416.0) (416.0) (416.0) (416.0) (416.0) (416	•	, ,	, ,	, ,		0.0
Associates & JV 0.0 0.0 0.0 0.0 0.0 0.0 Exceptionals 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	EBIT	737.4	936.8	1,044.0	1,216.3	1,336.8
Exceptionals 0.0 0.0 0.0 0.0 0.0 Other pretax income 0.0 0.0 0.0 0.0 Pretax profit 626.5 698.9 784.9 893.3 9 Income tax (135.9) (114.1) (141.3) (160.8) (16 Minorities (0.0) (0.6) 0.0 0.0 0.0 Discontinued operations 0.0 0.0 0.0 0.0 0.0 Reported net profit 490.6 584.3 643.7 732.5 7 Core net profit 490.6 584.3 643.7 732.5 7 BALANCE SHEET (CNY m) Cash & Short Term Investments 894.7 901.4 401.9 438.3 6 Accounts receivable 2,030.8 2,615.8 3,769.2 4,574.4 5,4 Inventory 76.6 114.6 165.1 200.4 2 Property, Plant & Equip (net) 2,680.2 3,455.1 4,418.4 5,398.9 6,3 Intargible as	Net interest income /(exp)	(110.9)	(237.9)	(259.1)	(323.1)	(403.1)
Other pretax income 0.0 0.0 0.0 0.0 Pretax profit 626.5 698.9 784.9 893.3 9 Income tax (135.9) (114.1) (141.3) (160.8) (16 Minorities (0.0) (0.6) 0.0 0.0 0.0 Discontinued operations 0.0 0.0 0.0 0.0 Reported net profit 490.6 584.3 643.7 732.5 7 Core net profit 490.6 584.3 643.7 732.5 7 BALANCE SHEET (CNY m) Cash & Short Term Investments 894.7 901.4 401.9 438.3 6 Accounts receivable 2,030.8 2,615.8 3,769.2 4,574.4 5,4 Inventory 76.6 114.6 165.1 200.4 2 Property, Plant & Equip (net) 2,680.2 3,455.1 4,418.4 5,398.9 6,3 Investment in Associates & JVs 29.4 12.3 12.3 12.3 12.3	Associates & JV	0.0	0.0	0.0	0.0	0.0
Pretax profit 626.5 698.9 784.9 893.3 9 Income tax (135.9) (114.1) (141.3) (160.8) (16 Minorities (0.0) (0.6) 0.0 0.0 Discontinued operations 0.0 0.0 0.0 0.0 Reported net profit 490.6 584.3 643.7 732.5 7 Core net profit 490.6 584.3 643.7 732.5 7 BALANCE SHEET (CNY m) Cash & Short Term Investments 894.7 901.4 401.9 438.3 6 Accounts receivable 2,030.8 2,615.8 3,769.2 4,574.4 5,4 Inventory 76.6 114.6 165.1 200.4 2 Property, Plant & Equip (net) 2,680.2 3,455.1 4,418.4 5,389.9 6,3 Investment in Associates & JVs 29.4 12.3 12.3 12.3 12.3 Other assets 587.3 1,108.1 1,322.3 1,498.0 1,6	Exceptionals	0.0	0.0	0.0	0.0	0.0
Income tax	Other pretax income	0.0	0.0	0.0	0.0	0.0
Minorities (0.0) (0.6) 0.0 0.0 Discontinued operations 0.0 0.0 0.0 0.0 Reported net profit 490.6 584.3 643.7 732.5 7 Core net profit 490.6 584.3 643.7 732.5 7 BALANCE SHEET (CNY m) Cash & Short Term Investments 894.7 901.4 401.9 438.3 6 Accounts receivable 2,030.8 2,615.8 3,769.2 4,574.4 5,4 Inventory 76.6 114.6 165.1 200.4 2 Property, Plant & Equip (net) 2,680.2 3,455.1 4,418.4 5,398.9 6,3 Intangible assets 1.7 1.6 2.0 2.5 Investment in Associates & JVs 29.4 12.3 12.3 12.3 Other assets 587.3 1,108.1 1,322.3 1,498.0 1,6 ST interest bearing debt 869.6 987.5 987.5 987.5 987.5 987.5 987.5<	Pretax profit	626.5	698.9	784.9	893.3	933.7
Discontinued operations 0.0 0.0 0.0 0.0 Reported net profit 490.6 584.3 643.7 732.5 7 Core net profit 490.6 584.3 643.7 732.5 7 BALANCE SHEET (CNY m) Cash & Short Term Investments 894.7 901.4 401.9 438.3 6 Accounts receivable 2,030.8 2,615.8 3,769.2 4,574.4 5,4 Inventory 76.6 114.6 165.1 200.4 2 Property, Plant & Equip (net) 2,680.2 3,455.1 4,418.4 5,398.9 6,3 Intangible assets 1.7 1.6 2.0 2.5 Investment in Associates & JVs 29.4 12.3 12.3 12.3 Other assets 587.3 1,108.1 1,322.3 1,498.0 1,6 Total assets 6,300.7 8,208.8 10,091.3 12,124.7 14,41 ST interest bearing debt 869.6 987.5 987.5 987.5 9 </td <td>Income tax</td> <td>(135.9)</td> <td>(114.1)</td> <td>(141.3)</td> <td>(160.8)</td> <td>(168.1)</td>	Income tax	(135.9)	(114.1)	(141.3)	(160.8)	(168.1)
Reported net profit 490.6 584.3 643.7 732.5 77 Core net profit 490.6 584.3 643.7 732.5 77 BALANCE SHEET (CNY m) Cash & Short Term Investments 894.7 901.4 401.9 438.3 6 Accounts receivable 2,030.8 2,615.8 3,769.2 4,574.4 5,4 Inventory 76.6 114.6 165.1 200.4 2 Property, Plant & Equip (net) 2,680.2 3,455.1 4,418.4 5,398.9 6,3 Intangible assets 1.7 1.6 2.0 2.5 Investment in Associates & JVs 29.4 12.3 12.3 12.3 Other assets 587.3 1,108.1 1,322.3 1,488.0 1,6 Total assets 6,300.7 8,208.8 10,091.3 12,124.7 14,41 ST interest bearing debt 869.6 987.5 987.5 987.5 987.5 987.5 987.5 987.5 987.5 987.5 987.5	Minorities	(0.0)	(0.6)	0.0	0.0	0.0
Core net profit 490.6 584.3 643.7 732.5 7 BALANCE SHEET (CNY m) Cash & Short Term Investments 894.7 901.4 401.9 438.3 6 Accounts receivable 2,030.8 2,615.8 3,769.2 4,574.4 5,4 Inventory 76.6 114.6 165.1 200.4 2 Property, Plant & Equip (net) 2,680.2 3,455.1 4,418.4 5,398.9 6,3 Intangible assets 1.7 1.6 2.0 2.5 1 Investment in Associates & JVs 29.4 12.3 12.3 12.3 Other assets 587.3 1,108.1 1,322.3 1,498.0 1,6 Total assets 6,300.7 8,208.8 10,091.3 12,124.7 14,41 ST interest bearing debt 869.6 987.5 987.5 987.5 987.5 987.5 987.5 987.5 987.5 987.5 987.5 987.5 987.5 987.5 987.5 987.5 987.5 987.5 987.5	Discontinued operations	0.0	0.0	0.0	0.0	0.0
BALANCE SHEET (CNY m) Cash & Short Term Investments 894.7 901.4 401.9 438.3 6 Accounts receivable 2,030.8 2,615.8 3,769.2 4,574.4 5,4 Inventory 76.6 114.6 165.1 200.4 2 Property, Plant & Equip (net) 2,680.2 3,455.1 4,418.4 5,398.9 6,3 Intangible assets 1.7 1.6 2.0 2.5 Investment in Associates & JVs 29.4 12.3 12.3 12.3 Other assets 587.3 1,108.1 1,322.3 1,498.0 1,6 Total assets 6,300.7 8,208.8 10,091.3 12,124.7 14,41 ST interest bearing debt 869.6 987.5 987.5 987.5 987.5 Total assets 681.3 391.7 891.7 1,691.7 2,6 Other liabilities 675.0 2,090.0 2,115.0 2,133.0 2,1 Total Liabilities 3,701.6 5,068.2 6,356.4 7,726.2 9,32 Shareholders Equity 2,599.1 3,140.0 3,734.3 4,397.9 5,0 Minority Interest 0.0 0.6 0.6 0.6 Total shareholder equity 2,599.1 3,140.6 3,734.9 4,398.5 5,08 Total liabilities and equity 6,300.7 8,208.8 10,091.3 12,124.7 14,41 CASH FLOW (CNY m) Pretax profit 626.5 698.9 784.9 893.3 9 Depreciation & amortisation 67.1 113.8 144.5 182.8 2 Adj net interest (income)/exp 104.2 214.2 252.5 318.9 3 Change in working capital 75.6 (766.0) (566.1) (376.1) (41 Cash taxes paid (103.6) (140.7) (124.1) (148.5) (16 Other operating cash flow (19.2) (68.7) (53.9) (54.8)	Reported net profit	490.6	584.3	643.7	732.5	765.7
Cash & Short Term Investments 894.7 901.4 401.9 438.3 6 Accounts receivable 2,030.8 2,615.8 3,769.2 4,574.4 5,4 Inventory 76.6 114.6 165.1 200.4 2 Property, Plant & Equip (net) 2,680.2 3,455.1 4,418.4 5,398.9 6,3 Intangible assets 1.7 1.6 2.0 2.5 Investment in Associates & JVs 29.4 12.3 12.3 12.3 Other assets 587.3 1,108.1 1,322.3 1,498.0 1,6 Total assets 6,300.7 8,208.8 10,091.3 12,124.7 14,41 ST interest bearing debt 869.6 987.5 987.0	Core net profit	490.6	584.3	643.7	732.5	765.7
Accounts receivable 2,030.8 2,615.8 3,769.2 4,574.4 5,4 Inventory 76.6 114.6 165.1 200.4 2 Property, Plant & Equip (net) 2,680.2 3,455.1 4,418.4 5,398.9 6,3 Intangible assets 1.7 1.6 2.0 2.5 Investment in Associates & JVS 29.4 12.3 12.3 12.3 12.3 Other assets 6,300.7 8,208.8 10,091.3 12,124.7 14,41 5T interest bearing debt 869.6 987.5 987.5 987.5 987.5 1,598.7 2,362.0 2,914.0 3,55 LT interest bearing debt 681.3 391.7 891.7 1,691.7 2,66 Other liabilities 675.0 2,090.0 2,115.0 2,133.0 2,1 Total Liabilities 675.0 2,090.0 2,115.0 2,133.0 2,1 Total Liabilities 3,701.6 5,068.2 6,356.4 7,726.2 9,32 Shareholders Equity 2,599.1 3,140.0 3,734.3 4,397.9 5,00 Minority Interest 0.0 0.6 0.6 0.6	BALANCE SHEET (CNY m)					
Inventory 76.6	Cash & Short Term Investments	894.7	901.4	401.9	438.3	692.2
Property, Plant & Equip (net) 2,680.2 3,455.1 4,418.4 5,398.9 6,3 Intangible assets 1.7 1.6 2.0 2.5 Investment in Associates & JVs 29.4 12.3 12.3 12.3 Other assets 587.3 1,108.1 1,322.3 1,498.0 1,6 Total assets 6,300.7 8,208.8 10,091.3 12,124.7 14,41 ST interest bearing debt 869.6 987.5 987.5 987.5 9 Accounts payable 1,475.5 1,598.7 2,362.0 2,914.0 3,5 LT interest bearing debt 681.3 391.7 891.7 1,691.7 2,6 Other liabilities 675.0 2,090.0 2,115.0 2,133.0 2,1 Total Liabilities 3,701.6 5,068.2 6,356.4 7,726.2 9,32 Shareholders Equity 2,599.1 3,140.0 3,734.3 4,397.9 5,0 Minority Interest 0.0 0.6 0.6 0.6 0.6 0.6	Accounts receivable	2,030.8	2,615.8	3,769.2	4,574.4	5,450.9
Intangible assets 1.7 1.6 2.0 2.5 Investment in Associates & JVs 29.4 12.3 12.3 12.3 Other assets 587.3 1,108.1 1,322.3 1,498.0 1,6 Total assets 6,300.7 8,208.8 10,091.3 12,124.7 14,41 ST interest bearing debt 869.6 987.5 987.5 987.5 987.5 9 Accounts payable 1,475.5 1,598.7 2,362.0 2,914.0 3,5 LT interest bearing debt 681.3 391.7 891.7 1,691.7 2,6 Other liabilities 675.0 2,090.0 2,115.0 2,133.0 2,1 Total Liabilities 3,701.6 5,068.2 6,356.4 7,726.2 9,32 Shareholders Equity 2,599.1 3,140.0 3,734.3 4,397.9 5,0 Minority Interest 0.0 0.6 0.6 0.6 0.6 Total shareholder equity 2,599.1 3,140.6 3,734.9 4,398.5 5,08 </td <td>Inventory</td> <td>76.6</td> <td>114.6</td> <td>165.1</td> <td>200.4</td> <td>238.8</td>	Inventory	76.6	114.6	165.1	200.4	238.8
Investment in Associates & JVs 29.4 12.3 12.3 12.3 Other assets 587.3 1,108.1 1,322.3 1,498.0 1,6 Total assets 6,300.7 8,208.8 10,091.3 12,124.7 14,41 ST interest bearing debt 869.6 987.5 987.5 987.5 9 Accounts payable 1,475.5 1,598.7 2,362.0 2,914.0 3,5 LT interest bearing debt 681.3 391.7 891.7 1,691.7 2,6 Other liabilities 675.0 2,090.0 2,115.0 2,133.0 2,1 Total Liabilities 3,701.6 5,068.2 6,356.4 7,726.2 9,32 Shareholders Equity 2,599.1 3,140.0 3,734.3 4,397.9 5,0 Minority Interest 0.0 0.6 0.6 0.6 Total shareholder equity 2,599.1 3,140.6 3,734.9 4,398.5 5,08 Total liabilities and equity 6,300.7 8,208.8 10,091.3 12,124.7 14,41 <td>Property, Plant & Equip (net)</td> <td>2,680.2</td> <td>3,455.1</td> <td>4,418.4</td> <td>5,398.9</td> <td>6,340.2</td>	Property, Plant & Equip (net)	2,680.2	3,455.1	4,418.4	5,398.9	6,340.2
Other assets 587.3 1,108.1 1,322.3 1,498.0 1,6 Total assets 6,300.7 8,208.8 10,091.3 12,124.7 14,41 ST interest bearing debt 869.6 987.5 987.5 987.5 9 Accounts payable 1,475.5 1,598.7 2,362.0 2,914.0 3,5 LT interest bearing debt 681.3 391.7 891.7 1,691.7 2,6 Other liabilities 675.0 2,090.0 2,115.0 2,133.0 2,1 Total Liabilities 3,701.6 5,068.2 6,356.4 7,726.2 9,32 Shareholders Equity 2,599.1 3,140.0 3,734.3 4,397.9 5,0 Minority Interest 0.0 0.6 0.6 0.6 Total shareholder equity 2,599.1 3,140.6 3,734.9 4,398.5 5,08 Total liabilities and equity 6,300.7 8,208.8 10,091.3 12,124.7 14,41 CASH FLOW (CNY m) Pretax profit 626.5 698.9 <t< td=""><td>=</td><td></td><td></td><td></td><td></td><td>2.9</td></t<>	=					2.9
Total assets 6,300.7 8,208.8 10,091.3 12,124.7 14,41 ST interest bearing debt 869.6 987.5 987.5 987.5 9 Accounts payable 1,475.5 1,598.7 2,362.0 2,914.0 3,5 LT interest bearing debt 681.3 391.7 891.7 1,691.7 2,6 Other liabilities 675.0 2,090.0 2,115.0 2,133.0 2,1 Total Liabilities 3,701.6 5,068.2 6,356.4 7,726.2 9,32 Shareholders Equity 2,599.1 3,140.0 3,734.3 4,397.9 5,0 Minority Interest 0.0 0.6 0.6 0.6 0.6 Total shareholder equity 2,599.1 3,140.6 3,734.9 4,398.5 5,08 Total liabilities and equity 6,300.7 8,208.8 10,091.3 12,124.7 14,41 CASH FLOW (CNY m) Pretax profit 626.5 698.9 784.9 893.3 9 Depreciation & amortisation <						12.3
ST interest bearing debt 869.6 987.5 987.5 987.5 9 Accounts payable 1,475.5 1,598.7 2,362.0 2,914.0 3,5 LT interest bearing debt 681.3 391.7 891.7 1,691.7 2,6 Other liabilities 675.0 2,090.0 2,115.0 2,133.0 2,1 Total Liabilities 3,701.6 5,068.2 6,356.4 7,726.2 9,32 Shareholders Equity 2,599.1 3,140.0 3,734.3 4,397.9 5,0 Minority Interest 0.0 0.6 0.6 0.6 0.6 Total shareholder equity 2,599.1 3,140.6 3,734.9 4,398.5 5,08 Total liabilities and equity 6,300.7 8,208.8 10,091.3 12,124.7 14,41 CASH FLOW (CNY m) Pretax profit 626.5 698.9 784.9 893.3 9 Depreciation & amortisation 67.1 113.8 144.5 182.8 2 Adj net interest (income)/exp			•	•	•	1,674.6
Accounts payable 1,475.5 1,598.7 2,362.0 2,914.0 3,5 LT interest bearing debt 681.3 391.7 891.7 1,691.7 2,6 Other liabilities 675.0 2,090.0 2,115.0 2,133.0 2,1 Total Liabilities 3,701.6 5,068.2 6,356.4 7,726.2 9,32 Shareholders Equity 2,599.1 3,140.0 3,734.3 4,397.9 5,0 Minority Interest 0.0 0.6 0.6 0.6 0.6 Total shareholder equity 2,599.1 3,140.6 3,734.9 4,398.5 5,08 Total liabilities and equity 6,300.7 8,208.8 10,091.3 12,124.7 14,41 CASH FLOW (CNY m) Pretax profit 626.5 698.9 784.9 893.3 9 Depreciation & amortisation 67.1 113.8 144.5 182.8 2 Adj net interest (income)/exp 104.2 214.2 252.5 318.9 3 Change in working capital 75.6 (766.0) (566.1) (376.1) (41 Cash taxes pai		•	•		•	14,411.7
LT interest bearing debt 681.3 391.7 891.7 1,691.7 2,6 Cher liabilities 675.0 2,090.0 2,115.0 2,133.0 2,1 Total Liabilities 3,701.6 5,068.2 6,356.4 7,726.2 9,37 Shareholders Equity 2,599.1 3,140.0 3,734.3 4,397.9 5,0 Minority Interest 0.0 0.6 0.6 0.6 Total shareholder equity 2,599.1 3,140.6 3,734.9 4,398.5 5,08 Total liabilities and equity 6,300.7 8,208.8 10,091.3 12,124.7 14,41 CASH FLOW (CNY m) Pretax profit 626.5 698.9 784.9 893.3 9 Depreciation & amortisation 67.1 113.8 144.5 182.8 2 Adj net interest (income)/exp 104.2 214.2 252.5 318.9 3 Change in working capital 75.6 (766.0) (566.1) (376.1) (41 Cash taxes paid (103.6) (140.7) (124.1) (148.5) (166 Other operating cash flow (19.2) (68.7) (53.9) (54.8) (55	•					987.5
Other liabilities 675.0 2,090.0 2,115.0 2,133.0 2,1 Total Liabilities 3,701.6 5,068.2 6,356.4 7,726.2 9,32 Shareholders Equity 2,599.1 3,140.0 3,734.3 4,397.9 5,0 Minority Interest 0.0 0.6 0.6 0.6 0.6 Total shareholder equity 2,599.1 3,140.6 3,734.9 4,398.5 5,08 Total liabilities and equity 6,300.7 8,208.8 10,091.3 12,124.7 14,41 CASH FLOW (CNY m) Pretax profit 626.5 698.9 784.9 893.3 9 Depreciation & amortisation 67.1 113.8 144.5 182.8 2 Adj net interest (income)/exp 104.2 214.2 252.5 318.9 3 Change in working capital 75.6 (766.0) (566.1) (376.1) (41 Cash taxes paid (103.6) (140.7) (124.1) (148.5) (16 Other operating cash flow		·	•	•	•	3,507.0
Total Liabilities 3,701.6 5,068.2 6,356.4 7,726.2 9,32 Shareholders Equity 2,599.1 3,140.0 3,734.3 4,397.9 5,0 Minority Interest 0.0 0.6 0.6 0.6 Total shareholder equity 2,599.1 3,140.6 3,734.9 4,398.5 5,08 Total liabilities and equity 6,300.7 8,208.8 10,091.3 12,124.7 14,41 CASH FLOW (CNY m) Pretax profit 626.5 698.9 784.9 893.3 9 Depreciation & amortisation 67.1 113.8 144.5 182.8 2 Adj net interest (income)/exp 104.2 214.2 252.5 318.9 3 Change in working capital 75.6 (766.0) (566.1) (376.1) (41 Cash taxes paid (103.6) (140.7) (124.1) (148.5) (16 Other operating cash flow (19.2) (68.7) (53.9) (54.8) (5	•					2,691.7
Shareholders Equity 2,599.1 3,140.0 3,734.3 4,397.9 5,0 Minority Interest Minority Interest 0.0 0.6 0.6 0.6 0.6 Total shareholder equity 2,599.1 3,140.6 3,734.9 4,398.5 5,08 Total liabilities and equity 6,300.7 8,208.8 10,091.3 12,124.7 14,41 CASH FLOW (CNY m) Pretax profit 626.5 698.9 784.9 893.3 9 Depreciation & amortisation 67.1 113.8 144.5 182.8 2 Adj net interest (income)/exp 104.2 214.2 252.5 318.9 3 Change in working capital 75.6 (766.0) (566.1) (376.1) (41 Cash taxes paid (103.6) (140.7) (124.1) (148.5) (16 Other operating cash flow (19.2) (68.7) (53.9) (54.8) (5						2,140.0
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Depreciation & amortisation 67.1 113.8 144.5 182.8 2 Adj net interest (income)/exp 104.2 214.2 252.5 318.9 3 Change in working capital 75.6 (766.0) (566.1) (376.1) (41 Cash taxes paid (103.6) (140.7) (124.1) (148.5) (16 Other operating cash flow (19.2) (68.7) (53.9) (54.8) (5						
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Other operating cash flow (19.2) (68.7) (53.9) (54.8)	• • •					(417.2)
	•	. ,				(163.5)
Cash flow from operations 750.0 51.5 438.0 815.5 9						(52.6)
Capey (1.221.9) (1.194.0) (1.107.0) (1.142.2) (4.44	•					919.9
						(1,163.2) (243.4)
						(81.9)
Equity raised / (purchased) 299.6 9.6 0.0 0.0	•					0.0
Perpetual securities 0.0 0.0 0.0 0.0						0.0
	·					1,000.0
Perpetual securities distribution 0.0 0.0 0.0 0.0	•					0.0
·	·					(420.9)
Effect of exch rate changes (1.5) (0.1) 0.0 0.0	•					0.0
						253.9

FYE 31 Dec	FY13A	FY14A	FY15E	FY16E	FY17E
Key Ratios					
Growth ratios (%)					
Revenue growth	34.0	20.7	44.1	21.4	19.2
EBITDA growth	42.8	16.2	27.1	17.7	11.4
EBIT growth	44.9	27.0	11.4	16.5	9.9
Pretax growth	49.1	11.6	12.3	13.8	4.5
Reported net profit growth	49.3	19.1	10.2	13.8	4.5
Core net profit growth	49.3	19.1	10.2	13.8	4.5
Profitability ratios (%)					
EBITDA margin	19.4	18.7	16.5	16.0	14.9
EBIT margin	17.8	18.7	14.5	13.9	12.8
Pretax profit margin	15.1	13.9	10.9	10.2	8.9
Payout ratio	12.0	10.7	10.7	10.7	10.7
DuPont analysis					
Net profit margin (%)	11.8	11.7	8.9	8.4	7.3
Revenue/Assets (x)	0.7	0.6	0.7	0.7	0.7
Assets/Equity (x)	2.4	2.6	2.7	2.8	2.8
ROAE (%)	22.1	20.4	18.7	18.0	16.1
ROAA (%)	9.5	8.1	7.0	6.6	5.8
Liquidity & Efficiency					
Cash conversion cycle	30.9	35.9	46.0	49.0	48.9
Days receivable outstanding	146.2	166.9	159.2	171.4	172.8
Days inventory outstanding	8.0	8.7	8.6	9.1	9.1
Days payables outstanding	123.3	139.7	121.8	131.5	133.0
Dividend cover (x)	8.4	9.4	9.4	9.4	9.4
Current ratio (x)	1.5	1.6	1.5	1.5	1.6
Leverage & Expense Analysis					
Asset/Liability (x)	1.7	1.6	1.6	1.6	1.5
Net debt/equity (%)	25.2	15.2	39.6	51.0	58.7
Net interest cover (x)	6.6	3.9	4.0	3.8	3.3
Debt/EBITDA (x)	1.9	1.5	1.6	1.9	2.4
Capex/revenue (%)	32.1	23.6	15.3	13.3	11.1
Net debt/ (net cash)	656.2	477.8	1,477.3	2,240.9	2,987.0

Source: Company; Maybank



United Photovoltaics Group (686 HK)

Share Price: HKD1.42 MCap (USD): 868M China
Target Price: na ADTV (USD): 12M Energy

Not Rated

Wait for sunshine

- United PV is one of the pure-plays in solar farm development. It owns solar power plants with total installed capacity of around 872MW as of May 2015.
- China Merchant New Energy Group (CMNEG) recently increased its stake in United PV. This could help but investors still concerned how supportive is China Merchants Group (CMG).
- United PV's recent generation statistics appear encouraging. Its solar power generation in 1Q15 rose 104% YoY to 198GWh due to new solar project acquisition.

Concerns over shareholder structure

If CMG could give more financial support to United PV, the latter could grow rapidly. Although United PV's largest shareholder China Merchants New Energy Group has substantially increased its stake from 19% to 24%, investors still have concerns how supportive it is. United PV raised funds by issuing several convertible bonds at a coupon rate of 7.5%. Given the conversion price of HKD1.03/share, some CBs are likely to be converted resulting in dilutions.

Strong project pipeline

Nevertheless, United PV has a strong project pipeline of 8.4GW from its EPC partners and it could leverage its good relationship with mid-stream players to acquire more projects in the future. Its acquisition strategy could ensure projects start generating cash flows immediately after the project acquisition, avoiding 6-9 months of delay for application of government subsidies after connection to the grid.

Following the recent rally, the stock is trading at 19.5x PER FY15E and 1.6x P/BV FY15E based on Bloomberg consensus. We have not rated United PV as we will wait to see whether there is more evidence of CMG's commitment to United PV.

Trading in the shares of the company was halted since 1pm on 12 May 2015 pending the release of an announcement in relation to the inside information of the company.

FYE Dec (HKD m)	FY10A	FY11A	FY12A	FY13A	FY14A
Revenue	249.1	840.5	223.3	37.7	524.0
EBITDA	4.3	(1,025.3)	(705.9)	(2,162.0)	974.9
Core net profit	(15.1)	(1,148.9)	(200.9)	(2,305.5)	377.1
Core EPS (HKD)	(0.04)	(1.36)	(0.23)	(1.38)	0.09
Core EPS growth (%)	na	nm	nm	nm	nm
Net DPS (HKD)	0.00	0.00	0.00	0.00	0.00
Core P/E (x)	(34.9)	(1.0)	(6.2)	(1.0)	15.4
P/BV (x)	0.3	1.4	5.5	5.3	3.2
Net dividend yield (%)	0.0	0.0	0.0	0.0	0.0
ROAE (%)	na	(89.1)	(38.1)	(686.1)	33.3
ROAA (%)	na	(48.9)	(11.0)	(60.7)	5.0
EV/EBITDA (x)	124.1	nm	nm	nm	6.9
Net debt/equity (%)	net cash	net cash	29.7	240.7	133.6

Source: company data, Factset

Key Data	
52w high/low (HKD)	1.45/0.58
3m avg turnover (USDm)	11.6
Free float (%)	62.9
Issued shares (m)	4,741
Market capitalization	HKD6.7B
Major shareholders:	
-China Merchant New Energy Group	24.1%
-Invesco Ltd	10.1%
-Zhongli Science & Technology Group	6.3%

Share Price Performance	
2.20	_ 220
2.00 -	- 200
1.80	- 180
1.60	- 160
1.40 M MARKET W 1 M	140
1.20	120
1.00 - 1.00	100
0.80	M 80
0.60 -	- 60
0.40 May-13 Sep-13 Jan-14 May-14 Sep-14 Jan-	15 40
United Photovoltaics / Hang Seng Index - (RHS,	%)

	1 Mth	3 Mth	12 Mth
Absolute(%)	21.4	40.6	178.4
Relative to index (%)	20.8	25.3	126.2

Maybank vs Market							
	Positive	Neutral	Negative				
Market Recs	0	1	0				
	Maybank (Consensus	% +/-				
Target Price (HKD)	na	1.00	na				
'15 PATMI (HKDm)	na	196	na				
'16 PATMI (HKDm)	na	na	na				

Source: FactSet; Maybank

Jessica Ng (852) 2268 0678 jessicang@kimeng.com.hk

Ricky WK Ng, CFA (852) 2268 0689 rickyng@kimeng.com.hk

Brief company background

United PV achieved a backdoor listing on the Hong Kong stock exchange from a solar cell maker Goldpoly New Energy in Jan 2013. In Feb 2014, the company changed its name to United Photovoltaics Group. Ever since, it has become a power operator with a focus on solar projects in China.

Shareholder structure

United PV's share price dropped to an all-time low of HKD0.51 in May 2014, possibly related to concerns about the complicated shareholder structure and the possible change in management. The market is worried whether CMG could really provide funding or support to United PV.

Investors may concerned how supportive is CMG.

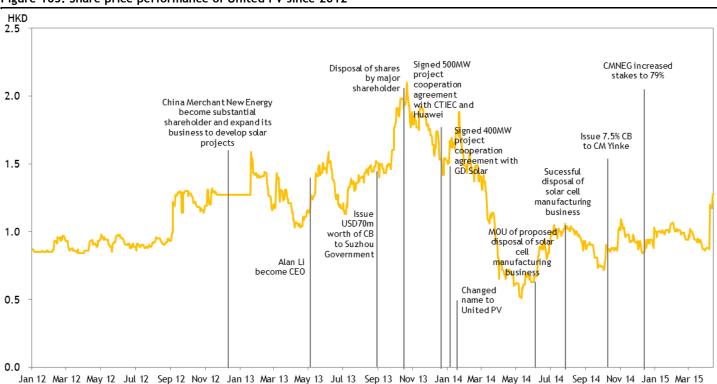


Figure 163: Share price performance of United PV since 2012

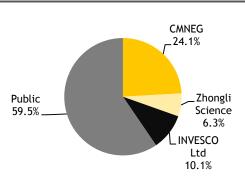
Source: Company announcement, Bloomberg, Maybank Kim Eng

CMNEG is increasing its stake in United PV

The largest shareholder of United PV is China Merchants New Energy Group. It increased its stake in United PV from 19.2% to 21.6% in Dec 2014 and then further raised it to 24.1% in Feb 2015. Including all the convertible bonds, China Merchants New Energy Group and its associates have a 19% stake in United PV, we estimate.

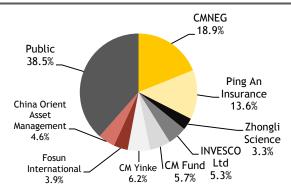
In Dec 14, Snow Hill Developments also purchased ordinary shares in China Merchants New Energy increasing its stake from 53.6% to 79.4%. Snow Hill Developments is 100% owned by China Merchants Technology Holdings, which is a wholly-owned subsidiary of China Merchants Capital.

Figure 164: Shareholder structure before conversion of CB



Source: Maybank Kim Eng Note: as of Apr 2015. *CMNEG=China Merchants New Energy Group — 79% owned by Snow Hill (wholly-owned subsidiary of China Merchants Technology Holdings), including its associates and parties acting in concern. CM Fund=China Merchants Fund (55% owned by China Merchants Bank and 45% owned by China Merchants Securities).CM Yinke = China Merchants Yinke which is wholly-owned subsidiary of China Merchants Technology Holdings.

Figure 165: Shareholder structure after conversion of all CB



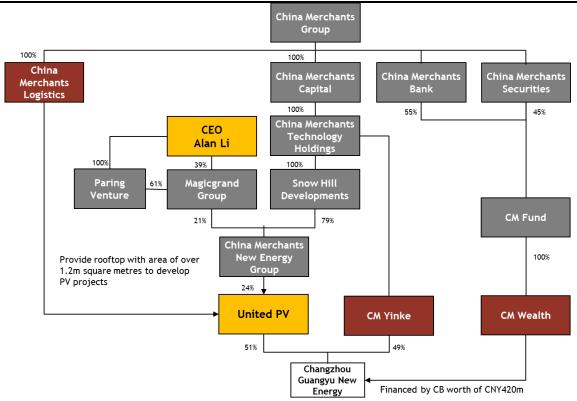
Source: Maybank Kim Eng Note: Based on our calculation as of Apr 2015. *CMNEG=China Merchants New Energy Group — 79% owned by Snow Hill (wholly-owned subsidiary of China Merchants Technology Holdings), including its associates and parties acting in concern. CM Fund=China Merchants Fund (55% owned by China Merchants Bank and 45% owned by China Merchants Securities). CM Yinke = China Merchants Yinke which is wholly-owned subsidiary of China Merchants Technology Holdings.

Cooperation with CM Yinke and CM Wealth

In addition to the increase in stakes, United PV signed deals with China Merchants Yinke and China Merchants Wealth to fund its acquisition of a project company in Xinjiang province. China Merchants Yinke, which is also indirectly owned by China Merchants Capital, will acquire 49% of the Xinjiang project and United PV will own 51%. The Xinjiang project consists of four solar plants with total capacity of 80MW and all of them achieved grid connection. The acquisition was completed in April 2015. To fund the equity required, United PV also issued three-year convertible bonds of around CNY420m to China Merchants Wealth at 7.5% interest rate.

Some signs of cooperation with CMG subsidiaries to provide funding for acquiring solar projects.

Figure 166: China Merchants Group relationship with United PV



Source: Company announcements, Maybank Kim Eng Note: CM Yinke = China Merchants Yinke and CM Wealth = China Merchants Wealth. Box in red indicate companies under China Merchants Group is cooperating with United PV.

A pure solar operator

United PV is one of a few pure solar operators listed in Hong Kong. Its total grid-connected capacity has increased from 133MW as of 2013 to 517MW in 2014. It is likely to increase its project portfolio steadily going forward.

Figure 167: Cumulative solar operating capacity

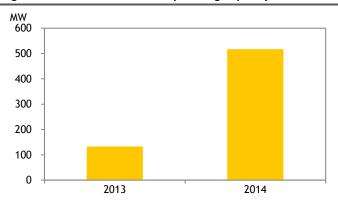
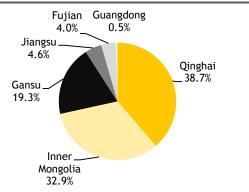


Figure 168: Solar projects by province (2014)



Source: Maybank Kim Eng

Source: Maybank Kim Eng

Unique acquisition-based business model

United PV adopts a unique operating model by expanding its project portfolio via acquisitions. The difference between self-developing and acquiring operational projects is companies do not need to obtain the required project approval ("lutiao") from the local government and this reduces construction time period.

United PV's project criteria are likely to be: (1) the project IRR threshold is 9%; and (2) should be grid-connected. This could be a good strategy to minimize the delay risks of grid connection.

Figure 169: United PV project lists

	gure 169: United PV pr	Oject iists						
					Equity		Deal	Grid
	Diam'r.	Daniel de la constant	T	Grid-connected	interest	Consolidation	completion	connection
#	Plant name	Province	Type	capacity (MW)	(%)	date	date	date
1	Shenzhen Qianhai demo	Guangdong	By acquisition	2.1	100%	Jun-13	Jun-13	Oct-12
2	Shenzhen Qianhai demo	Guangdong	Self-developed	0.3	100%	Apr-14	-	Apr-14
3	Fujian Quanzhou demo	Fujian	Self-developed	10.8	30%	Jun-13	-	Jun-13
4	Fujian Quanzhou demo	Fujian	Self-developed	10	30%	Jul-14	-	Jul-14
5	Jiangsu Xuzhou	Jiangsu	By acquisition	20	50%	Dec-13	Dec-13	Dec-11
6	Jiangsu Xuzhou	Jiangsu	By acquisition	3.8	50%	Dec-13	Dec-13	Dec-11
7	Gansu Jiayuguan	Gansu	By acquisition	100	100%	Jun-13	Jun-13	Jun-14
8	Qinghai Republic	Qinghai	By acquisition	20	100%	Jun-13	Jun-13	Sep-13
9	Qinghai Republic	Qinghai	By acquisition	100	100%	Jun-14	Jun-14	Dec-13
10	Qinghai Republic	Qinghai	By acquisition	50	100%	Jun-14	Jun-14	Dec-13
11	Qinghai Republic	Qinghai	By acquisition	30	100%	Jun-14	Jun-14	Dec-13
12	Chaheryouqianqi	Inner Mongolia	By acquisition	50	87%	Apr-14	Mar-14	Dec-13
13	Tumotezzuoqi	Inner Mongolia	By acquisition	65	55%	2015	-	Dec-13
14	Tuoketuo	Inner Mongolia	By acquisition	40	90%	Apr-14	Apr-14	Dec-13
15	Walatehouqi	Inner Mongolia	By acquisition	40	90%	Apr-14	Mar-14	Dec-13
16	Kezuohouqi	Inner Mongolia	By acquisition	40	10%	Jan-15	Jan-15	Dec-13
17	Hami I	Xinjiang	By acquisition	20	51%	Apr-15	Apr-15	Dec-13
18	Hami II	Xinjiang	By acquisition	20	51%	Apr-15	Apr-15	Dec-13
19	Turpan I	Xinjiang	By acquisition	20	51%	Apr-15	Apr-15	Dec-13
20	Turpan II	Xinjiang	By acquisition	20	51%	Apr-15	Apr-15	Sep-14
21	Chaheryouqianqi Second	Inner Mongolia	By acquisition	30	100%	May-15	May-15	Dec-14
22	Kezuozhonggi	Inner Mongolia	By acquisition	60	100%	May-15	May-15	Dec-14
23	Shangdu County Second	Inner Mongolia	By acquisition	50	100%	May-15	May-15	Dec-14
24	Linxi	Inner Mongolia	By acquisition	40	100%	May-15	May-15	Dec-14
25	Haining Heliyuan	Zhejiang	By acquisition	30	100%	May-15	May-15	3Q15
	Total projects owned	, ,	- '	872		,		
26	Zhengxin Minfeng I	Xinjiang	By acquisition	20	91%	2015	In progress	Dec-14
27	Zhengxin Minfeng II	Xinjiang	By acquisition	30	91%	2015	In progress	2015

Source: Company announcements, Maybank Kim Eng Note: As of May 2015

Good operating record versus peers

As most of the projects started grid connection in Dec 2013, power generation started to contribute revenue for United PV in 2014. Utilisation hours of projects in Qinghai could reach 1,400 hours and around 1,600-1,700 hours in Inner Mongolia. For distributed PV projects, the utilisation hours were 1,028 for its 10.8MW Fujian demonstration projects.

United PV's solar power generation in 2014 is comparable to Shunfeng Clean Energy, although Shunfeng has more than triple its installed capacity as of 2014. This is due to United PV's unique acquisition-based model that means projects start to generate revenue as of day one of the acquisition.

Nevertheless we saw proven and good operating statistics vs peers. Its solar power generation was up 104% YoY on new solar capacity in 1Q15.

Possible acquisition pipeline

With its good relationship with EPC companies and module makers, it currently has a solar project pool of 8.4GW. Most of the projects acquired in 2013-14 come from its EPC partners such as Zhongli Telesun, TBEA and GD Solar. In 2013, United PV signed a framework agreement with five other partners to cooperate on a 5GW solar power plant from 2013-2018.

Figure 170: Possible project acquisition pipeline

		Agreement signed			Capacity
	Project type	with	Province	Time	(MW)
China Merchants subsidiaries	Rooftop	United PV	China	2014-16	200
Photovoltaic Green Ecosystem Organisation (PGO)	Utility- scale/Rooftop	China Merchants New Energy	China	2013-18	5,000
Zhongli Telesun	Utility-scale	United PV	Qinghai, Gansu, Xinjiang, Jiangsu	2012-17	2,000
Yingli Solar	Utility-scale	China Merchants New Energy	China	2013-15	300
CTIEC, Huawei	Utility-scale	United PV	China, Europe,, North America, Japan	2014-	500
GD Solar	Utility-scale	United PV	China	2014-	400
Total					8,400

 $Source: \ Company \ presentation, \ Maybank \ Kim \ Eng \ \ Note: \ CTEIC = China \ Triumph \ International \ Engineer \ Co.$

Possible dilution risks from CBs

To fund its solar project acquisition, United PV issued several convertible bonds in 2014-15. The coupon rate is 7-7.5%, which is quite high compared to long-term bank loans. Investors are exposed to high dilution risks as some conversion price is HKD1.03/share compared with the current share price of HKD1.4/share.

The company raised totally around CNY3.5b by issuing CBs to China Huarong International, Fosun Industrial, Ping An Issuance, China Merchants Wealth and China Orient Asset Management. The coupon rate was 7-7.5% with due date in 2017-18. We estimate this could give enough capital to help acquire over 1GW of projects, if assuming equity investment of 20%.

Figure 171: Convertible bond issuance of United PV

Date	Company	Period	Conversion price (HKD/share)	Interest rate	Amount (CNYm)
May 2015	China Huarong International	3-year	1.31	7%	620
Apr 2015	Chinastone, Ping An Issuance	3-year	1.03	7.5%	1,260
Mar 2015	China Orient Asset Management	3-year	1.03	7.5%	186
Jan 2014	Fosun Industrial	3-year	1.03	7.5%	93
Dec 2014	Zhongli Telsun	3-year	1.00	7.5%	180
Oct 2014	China Merchants Wealth	3-year	1.03	7.5%	420
Dec 2013	China Merchants New Energy	3-year	1.60	5%	744
Total					3,503

Source: Company announcements, Maybank Kim Eng

Bank borrowings are still the major source of funding for United PV. It maintains a good relationship with the China Development Bank, especially in Guangdong and Qinghai province. The Qinghai branch of China Development Bank agreed to provide bank borrowings of CNY150m in August 2014. The Shenzhen branch also agreed to provide financing for 1GW of solar projects in China in Feb 2014. For future projects, United PV could use its credit facility signed with China Development Bank in 2012.

Shareholder structure

Figure 172: Bloomberg screen on shareholder structure of United PV



Source: Bloomberg

Management background

Li Yuan, Chairman and CEO

- Director of China Merchants New Energy Group Limited and Pairing Venture Limited
- Founder of Photovoltaic Green Ecosystem Organization (PGO)
- mainly engaged in investment, mergers and acquisitions in China
- extensive and solid experience in investment and management of conglomerate companies
- Mr. Li received an MBA from Murdoch University of Australia

Li Hong, CFO

- Over 15 years' managerial experience in large state-owned enterprises, industrial enterprise, as well as in touring industry and media industry
- Worked in the finance department of Overseas Chinese Affairs Office of the State Council
- Mr. Li graduated from the China Central University of Finance and Economics with a Bachelor's Degree of Economics, majoring Monetary Banking
- Received an MBA degree from Murdoch University of Australia

Luo Kanglin, Chief Communications Officer

- Newly appointed in April 2015 to help manage public relations and investor relations in United PV
- Worked as Senior Manager in Administration Department of China Merchants Group and took part in many major events of CMG
- Experienced in the execution of cross-boundary communications

FYE 31 Dec	FY10A	FY11A	FY12A	FY13A	FY14A
Key Metrics P/E (reported) (x)	(34.9)	(1.0)	(1.5)	(1.0)	15.8
Core P/E (x)	(34.9)	(1.0)	(6.2)	(1.0)	15.4
P/BV (x)	0.3	1.4	5.5	5.3	3.2
P/NTA (x)	na	na	na	na	na
Net dividend yield (%)	0.0	0.0	0.0	0.0	0.0
FCF yield (%)	nm	nm	nm	19.5	4.7
EV/EBITDA (x)	124.1	nm	nm	nm	6.9
EV/EBIT (x)	nm	nm	nm	nm	8.4
INCOME STATEMENT (HKD m)					
Revenue	249.1	840.5	223.3	37.7	524.0
Gross profit	109.3	150.5	(66.5)	37.4	479.5
EBITDA	4.3	(1,025.3)	(705.9)	(2,162.0)	974.9
Depreciation	(6.8)	(40.4)	(38.6)	(33.3)	(182.2)
Amortisation	(2.0)	(12.7)	(3.2)	1.8	(0.0)
EBIT	(4.4)	(1,078.3)	(747.7)	(2,193.5)	792.7
Net interest income /(exp) Associates & JV	(9.5) 0.0	(60.5) 0.0	(65.0) (0.7)	(168.0) 0.0	(182.3) 19.1
Exceptionals	0.0	0.0	0.0	0.0	0.0
Other pretax income	0.0	0.0	0.0	0.0	0.0
Pretax profit	(13.8)	(1,138.8)	(813.4)	(2,361.5)	629.5
Income tax	(1.3)	(10.0)	(1.4)	168.0	0.0
Minorities	0.0	0.0	0.0	(0.5)	10.5
Discontinued operations	0.0	0.0	0.0	(112.0)	(252.5)
Reported net profit	(15.1)	(1,148.9)	(814.8)	(2,193.5)	629.6
Core net profit	(15.1)	(1,148.9)	(200.9)	(2,305.5)	377.1
BALANCE SHEET (HKD m)					
Cash & Short Term Investments	117.2	162.8	32.3	137.4	269.6
Accounts receivable	68.8	281.5	195.3	324.9	588.5
Inventory	98.6	22.3	28.8	8.8	1.7
Property, Plant & Equip (net)	371.7	675.6	857.2	2,561.6	5,807.8
Intangible assets	1,753.6	612.8	0.0	1,648.0	1,253.9
Investment in Associates & JVs Other assets	0.0 254.2	5.1 274.9	4.5 487.4	289.8 1,020.5	368.0 796.7
Total assets	2,664.0	2,034.9	1,605.4	5,990.9	9,086.1
ST interest bearing debt	85.8	136.5	98.8	376.7	638.9
Accounts payable	237.8	342.5	488.7	1,154.7	2,127.3
LT interest bearing debt	0.0	0.0	0.0	839.4	2,062.0
Other liabilities	592.0	725.0	794.0	3,170.0	2,382.0
Total Liabilities	915.5	1,204.4	1,381.5	5,540.9	7,210.2
Shareholders Equity	1,748.5	830.5	224.0	448.1	1,819.9
Minority Interest	0.0	0.0	0.0	1.8	56.1
Total shareholder equity	1,748.5	830.5	224.0	449.9	1,876.0
Perpetual securities	0.0	0.0	0.0	0.0	0.0
Total liabilities and equity	2,664.0	2,034.9	1,605.4	5,990.9	9,086.1
CASH FLOW (HKD m)					
Pretax profit	(13.8)	(1,138.8)	(813.4)	(2,361.5)	629.5
Depreciation & amortisation	8.7	53.1	41.8	31.5	182.2
Adj net interest (income)/exp	10.9	60.5	65.0	168.0	182.3
Change in working capital Cash taxes paid	(16.3)	65.0	199.0	442.6	(182.5)
Other operating cash flow	0.0 0.1	0.0 1,131.8	0.0 634.7	0.0 2,134.3	0.0 (626.9)
Cash flow from operations	(11.7)	156.9	107.5	470.4	280.9
Capex	(17.7)	(314.2)	(196.6)	(8.0)	(5.9)
Free cash flow	(29.5)	(157.4)	(89.1)	462.4	275.1
Dividends paid	0.0	0.0	0.0	0.0	0.0
Equity raised / (purchased)	163.4	180.6	0.1	94.5	808.7
Perpetual securities	0.0	0.0	0.0	0.0	0.0
Change in Debt	(7.5)	35.0	(37.7)	(810.7)	266.2
Perpetual securities distribution	0.0	0.0	0.0	0.0	0.0
Other invest/financing cash flow	(12.2)	(20.3)	(4.4)	357.6	(1,217.9)
Effect of exch rate changes	(0.0)	7.6	0.7	1.2	0.1
Net cash flow	114.2	45.5	(130.5)	105.1	132.2

FYE 31 Dec	FY10A	FY11A	FY12A	FY13A	FY14A
Key Ratios					
Growth ratios (%)					
Revenue growth	na	237.4	(73.4)	(83.1)	1,289.0
EBITDA growth	na	nm	nm	nm	nm
EBIT growth	na	nm	nm	nm	nm
Pretax growth	na	nm	nm	nm	nm
Reported net profit growth	na	nm	nm	nm	nm
Core net profit growth	na	nm	nm	nm	nm
Profitability ratios (%)					
EBITDA margin	1.7	nm	nm	nm	nm
EBIT margin	nm	nm	nm	nm	nm
Pretax profit margin	nm	nm	nm	nm	nm
Payout ratio	0.0	0.0	0.0	0.0	0.0
DuPont analysis					
Net profit margin (%)	nm	nm	nm	nm	nm
Revenue/Assets (x)	0.1	0.4	0.1	0.0	0.1
Assets/Equity (x)	1.5	2.5	7.2	13.4	5.0
ROAE (%)	na	(89.1)	(38.1)	(686.1)	33.3
ROAA (%)	na	(48.9)	(11.0)	(60.7)	5.0
Liquidity & Efficiency					
Cash conversion cycle	na	(44.9)	nm	nm	nm
Days receivable outstanding	na	75.0	nm	nm	313.8
Days inventory outstanding	na	31.5	31.7	nm	42.3
Days payables outstanding	na	151.4	516.3	nm	nm
Dividend cover (x)	nm	nm	nm	nm	nm
Current ratio (x)	1.0	1.1	0.6	0.4	0.4
Leverage & Expense Analysis					
Asset/Liability (x)	2.9	1.7	1.2	1.1	1.3
Net debt/equity (%)	net cash	net cash	29.7	240.7	133.6
Net interest cover (x)	na	na	na	na	4.3
Debt/EBITDA (x)	19.7	nm	nm	nm	2.8
Capex/revenue (%)	7.1	37.4	88.1	21.1	1.1
Net debt/ (net cash)	(31.5)	(26.3)	66.5	1,078.8	2,431.3

Source: Company data, Factset



Trina Solar (TSL US)

Share Price: USD12.12 MCap (USD): 1.1B China
Target Price: na ADTV (USD): 29M Energy

Not Rated

More exciting solar farm business

- Trina's solar farm business is poised to be in a sweet spot amid intense competition in the cell and module operations. Downstream PV projects new connection could reach 700-750MW in FY15.
- Trina's market share in global module production was 8.1% in 2014, surpassing its rival Yingli Green. It aims to gain more market share in 2015E with 4.8GW of module manufacturing capacity by the end of 2015E.
- Gross margin may still be under pressure in 2015. However, its low net gearing ratio and availability of credit lines may help fund its capex for capacity expansion and solar farms business.

Moving to downstream

Downstream solar farm business may potentially add value to Trina's overall profitability because generally, we estimate the average equity IRR of a solar farm could reach 17%. On the other hand, we think solar farm development may also help reduce Trina's module inventories - about 10% of its modules are used for downstream projects. However, it appears Trina's core business, cell and modules making, is still facing intense competition and margins may remain under pressure on oversupply as many module makers have announced manufacturing expansion plans.

Healthier balance sheet

Trina appears to be in a better financial position than peers. Its net debt to equity ratio was 44% at the end of 2014 compared to Yingli's 884%. The healthier balance sheet could help finance the expansion plan for both manufacturing and solar farm businesses.

The trade dispute in the US/Europe could be a concern and this may limit the growth potential in those markets. Trina is now switching to Japan, China, Southeast Asia, India and South American markets due to growing demand. Based on the consensus estimates, Trina is trading at FY15E PER and P/BV of 12x and 0.9x.

FYE Dec (USD m)	FY10A	FY11A	FY12A	FY13A	FY14A
Revenue	1,857.7	2,047.9	1,296.7	1,775.0	2,286.1
EBITDA	365.1	(38.9)	(376.0)	(154.9)	11.8
Core net profit	311.5	(37.8)	(266.6)	(72.2)	61.3
Core EPS (cts)	457.7	(53.7)	(7.5)	(2.0)	1.6
Core EPS growth (%)	159.1	nm	nm	nm	nm
Net DPS (cts)	0.0	0.0	0.0	0.0	0.0
Core P/E (x)	2.6	(22.6)	(160.7)	(606.0)	767.9
P/BV (x)	0.7	0.7	48.6	52.4	48.4
Net dividend yield (%)	0.0	0.0	0.0	0.0	0.0
ROAE (%)	33.6	(3.3)	(26.3)	(8.5)	6.8
ROAA (%)	16.9	(1.5)	(9.3)	(2.7)	2.1
EV/EBITDA (x)	2.7	nm	nm	nm	nm
Net debt/equity (%)	net cash	net cash	7.8	54.6	43.9

Source: Company data, Factset

Key Data	
52w high/low (USD)	14.51/7.74
3m avg turnover (USDm)	28.9
Free float (%)	0.0
Issued shares (m)	92
Market capitalization	USD1.1B
Major shareholders:	
-Templeton Global Advisors Ltd.	12.5%
-Platinum Investment Management Ltd	i. 11.5%
-Impax Asset Management Ltd.	4.6%

Share Price Performance	
20.0	450
18.0 -	400
16.0 - 10.0	- 350
14.0 -	- 300
12.0 - 12	- 250
10.0 -	- 200
8.0 -	- 150
6.0	- 100
4.0 May-13 Sep-13 Jan-14 May-14 Sep-14 Jan-15	- 50
may 13 356 13 3an 14 may 14 366 14 3an 13	
— Trina Solar - (LHS, USD) — Trina Solar / Hang Seng Index - (RH	S. %)

	1 Mth	3 Mth	12 Mth	
Absolute(%)	2.4	18.5	12.0	
Relative to index (%)	0.7	3.9	(11.6)	

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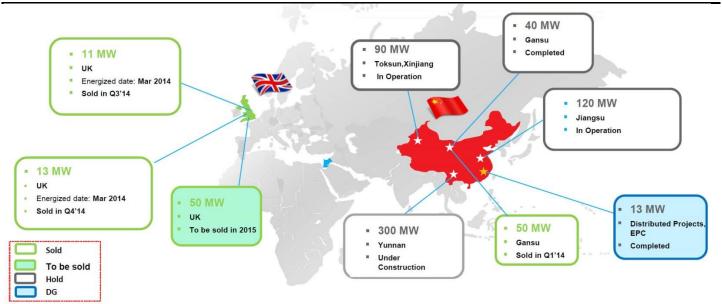
Moving to downstream business

Many Chinese module manufacturers are moving to downstream as it could potentially help reduce its module inventories. Trina has also moved to downstream since 2013. It first started to do some build-and-transfer projects in the UK. In 2014 around 10% of its module could be used for its solar farm business in China and outside of China.

The company completed 337MW of projects in 2014 and it may be able to build around 700-750MW in 2015, around 80% of it will be in China. Generally, Trina's projects are located in Xinjiang, Gansu, Jiangsu, and Yunnan - provinces with high sunshine hours. In December the company also commissioned a 90MW power plant in Xinjiang province. According to our estimates in the industry section of our report, we estimate a solar farm project could generally provide around 17% equity IRR.

The company expects to build 700-750MW in 2015, mostly in China. And it will continue its build-and-transfer model for projects outside of China.

Figure 173: Trina solar farm project pipeline in China



Source: Company presentation, Maybank Kim Eng

For overseas projects, Trina develops them under the build-and-transfer model. In Sep 2014 and Jan 2015, the company sold its 11MW and 13MW solar projects in the UK respectively. Because its headquarters is in China, where there are high project returns, Trina also has an aggressive plan to build and hold solar power plants in its home country.

Figure 174: Solar projects that Trina sell to other parties

Location	Capacity (MW)	Status/Completion
Gansu	50	Sold
UK	11	Sold
UK	13	Sold
UK	50	To be sold in 2015

Source: Company presentation, Maybank Kim Eng

Figure 175: Solar projects that Trina plan to hold in China

Location	Capacity (MW)	Status
Xinjiang	90	In operation
Jiangsu	120	In operation
Yunnan	300	Under construction
Gansu	40	Completed
Distributed projects	13 (multiple projects)	Completed

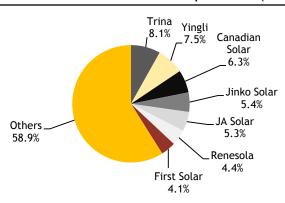
Source: Company presentation, Maybank Kim Eng

Capacity expansion on higher demand

Trina operated at full capacity in 2014. In light of growing demand globally, Trina's module manufacturing capacity increased by 43% YoY to 4.0GW as at the end of 2014. The company expects to build a 500MW module and 700MW cell production plant in Thailand. The new power plant will commence production in late 2015 or early 2016.

Trina's market share in global module production was 8.1% in 2014. However, other Chinese players (top seven) are also ramping up capacity in 2014, and it appears Trina will continue to face fierce competition in 2015F

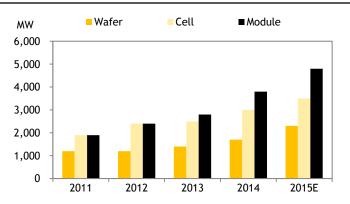
Figure 176: Trina market share in module production (2014)



Source: Bloomberg, Maybank Kim Eng

Trina gained 8.1% of module shipment globally in 2014 and it is very likely that Trina will continue to face fierce competition on increasing supply in 2015E.

Figure 177: Trina capacity expansion



Source: Company data, Maybank Kim Eng

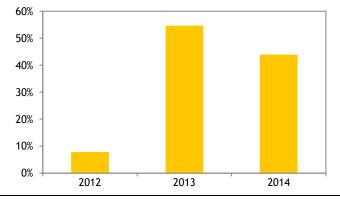
Low net gearing ratio

Among the Chinese solar module companies, Trina had low net gearing ratio in 2014 (ie 44%). This makes it possible for Trina to get loan financing to meet its future capacity requirements including manufacturing capacity expansion and solar farm business.

Trina has also singed a framework investment agreement with PingAn Trust and Jiangsu Jiuzhou Investment Group to jointly develop selected PV projects in China, with total capacity of 500-1,000MW over the next three years.

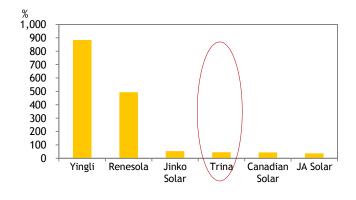
Trina has relatively low net gearing ratio in 2014, compared with its Chinese peers.

Figure 178: Trina's net debt to equity ratio



Source: Maybank Kim Eng

Figure 179: Net debt to equity comparison (2014)



Source: Maybank Kim Eng

Trade dispute limits growth potential in US/European markets

It appears growth potential in the US/EU markets is limited with local protection import tariffs. US has been an important market for Trina. In fact, Trina's position has been better than peers as the US government had imposed a relative low import tariff on Trina compared to other Chinese players (refer to table below). Going forward, Trina may gain more exposure to Asian countries such as Japan, China, Southeast Asia and India.

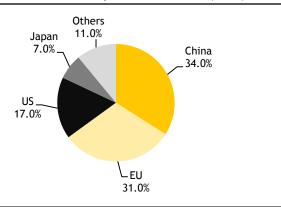
Trina maintains its module shipment to the US given its low import tariffs compared to other Chinese players.

Figure 180: US antidumping and countervailing duties on China solar products

			Firs	st case			Secon		
			(For Chin	a cells only)		(All China solar products with third-party cells)			
		Anti-					Anti-		
		dumping	Anti-	Countervailing		Countervailing	dumping	Anti-	
		duty	dumping	duty	Countervailing		duty		Countervailing
		preliminary	duty final	preliminary	duty final	preliminary	preliminary	duty final	duty final
		17 May 2012	10 Oct 2012	20 Mar 2012	10 Oct 2012	03 Jun 2014	25 Jul 2014	16 Dec 2014	16 Dec 2014
	Trina	31.14%	18.32%	4.73%	15.97%	18.56%	26.33%	26.71%	49.79%
	Suntech	31.22%	31.73%	2.90%	14.78%	35.21%	42.33%	52.13%	27.64%
China	Renesola/Jinko Solar	-	-	-	-	-	58.87%	78.42%	38.72%
	59 exporters	31.18%	25.96%	3.61%	15.24%	26.89%	42.33%	52.13%	38.72%
	Remaining exporters	249.96%	249.96%	3.61%	15.24%	26.89%	165.04%	165.04%	38.72%
	Gintech Energy	n/a	n/a	n/a	n/a	n/a	27.59%	27.55%	n/a
Taiwar	Motech Industries	n/a	n/a	n/a	n/a	n/a	44.18%	11.45%	n/a
	All others	n/a	n/a	n/a	n/a	n/a	35.89%	19.50%	n/a

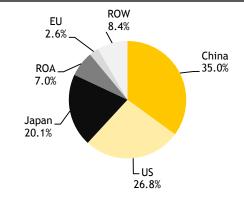
Source: US Department of Commerce, Maybank Kim Eng

Figure 181: Trina module shipment breakdown (2013)



Source: Company presentation, Maybank Kim Eng

Figure 182: Trina module shipment breakdown (2014)



Source: Company presentation, Maybank Kim Eng

FYE 31 Dec	FY10A	FY11A	FY12A	FY13A	FY14A
Key Metrics P/E (reported) (x)	2.6	(22.6)	(160.7)	(606.0)	nm
Core P/E (x)	2.6	(22.6)	(160.7)	(606.0)	767.9
P/BV (x)	0.7	0.7	48.6	52.4	48.4
P/NTA (x)	na	na	na	na	na
Net dividend yield (%)	0.0	0.0	0.0	0.0	0.0
FCF yield (%)	14.5	nm	nm	nm	nm
EV/EBITDA (x)	2.7	nm	nm	nm	nm
EV/EBIT (x)	2.4	1.4	nm	nm	nm
INCOME STATEMENT (USD m)					
Revenue	1,857.7	2,047.9	1,296.7	1,775.0	2,286.1
Gross profit	584.4	332.6	57.2	218.2	385.6
EBITDA	365.1	(38.9)	(376.0)	(154.9)	11.8
Depreciation	0.0	0.0	0.0	0.0	0.0
Amortisation	0.0	0.0	0.0	0.0	0.0
EBIT	417.3	31.0	(264.9)	(38.1)	120.1
Net interest income /(exp)	(31.4)	(32.0)	(43.3)	(44.5)	(32.1)
Associates & JV	0.0	0.0	0.0	0.0	0.0
Exceptionals	0.0	0.0	0.0	0.0	0.0
Other pretax income	(26.5)	(29.5)	16.2	(2.7)	(11.3)
Pretax profit	359.5	(30.5)	(292.0)	(85.3)	76.7
Income tax	(48.1)	(7.3)	25.4	13.0	(15.5)
Minorities	0.0	0.0	0.0	0.0	0.0
Discontinued operations	0.0	0.0	0.0	0.0	0.0
Reported net profit	311.5	(37.8)	(266.6)	(72.2)	61.3
Core net profit	311.5	(37.8)	(266.6)	(72.2)	61.3
BALANCE SHEET (USD m)					
Cash & Short Term Investments	752.7	816.8	807.3	486.7	392.9
Accounts receivable	377.3	466.5	390.2	435.1	621.5
Inventory	79.1	249.8	318.5	244.5	350.9
Property, Plant & Equip (net)	571.5	919.7	893.3	889.8	1,253.5
Intangible assets	0.0	0.0	0.0	0.0	0.0
Investment in Associates & JVs	0.0	4.1	11.0	11.8	25.6
Other assets	351.4	420.6	444.6	499.4	555.2
Total assets	2,132.1	2,877.4	2,864.9	2,567.2	3,199.6
ST interest bearing debt	158.7	389.5	875.8	935.6	820.3
Accounts payable	188.0	472.1	424.0	461.1	750.1
LT interest bearing debt	0.0	0.0	0.0	0.0	0.0
Other liabilities	612.0	871.0	683.0	348.0	628.0
Total Liabilities	958.4	1,732.1	1,983.1	1,744.8	2,198.5
Shareholders Equity	1,173.6	1,145.1	881.6	822.2	972.8
Minority Interest	0.0	0.2	0.2	0.3	28.2
Total shareholder equity	1,173.6	1,145.3	881.8	822.5	1,001.1
Total liabilities and equity	2,132.1	2,877.4	2,864.9	2,567.2	3,199.6
CASH FLOW (USD m)					
Pretax profit	359.5	(30.5)	(292.0)	(85.3)	76.7
Depreciation & amortisation	(52.3)	(69.8)	(111.1)	(116.8)	(108.3)
Adj net interest (income)/exp	0.0	0.0	0.0	0.0	0.0
Change in working capital	(120.1)	(75.3)	14,931.6	(85.7)	(44.5)
Cash taxes paid	0.0	0.0	0.0	0.0	0.0
Other operating cash flow	(27.8)	57.9	105.6	54.6	40.8
Cash flow from operations	263.9	21.9	(178.2)	46.5	184.0
Capex	(144.1)	(360.9)	(141.1)	(70.0)	(404.7)
Free cash flow	119.8	(339.0)	(319.3)	(23.5)	(220.7)
Dividends paid	0.0	0.0	0.0	0.0	0.0
Equity raised / (purchased)	177.4	0.2	0.0	1.8	421.3
Perpetual securities	0.0	0.0	0.0	0.0	0.0
Change in Debt	8.7	451.0	381.3	(254.9)	(160.8)
Perpetual securities distribution	0.0	0.0	0.0	0.0	0.0
Other invest/financing cash flow	41.3	(49.3)	(68.6)	(50.3)	(136.0)
Effect of exch rate changes	(0.4)	1.2	(3.0)	6.2	2.4
Net cash flow	346.7	64.0	(9.5)	(320.6)	(93.8)

FYE 31 Dec	FY10A	FY11A	FY12A	FY13A	FY14A
Key Ratios					
Growth ratios (%)					
Revenue growth	119.8	10.2	(36.7)	36.9	28.8
EBITDA growth	260.6	nm	nm	nm	nm
EBIT growth	208.3	(92.6)	nm	nm	nm
Pretax growth	197.3	nm	nm	nm	nm
Reported net profit growth	223.7	nm	nm	nm	nm
Core net profit growth	223.7	nm	nm	nm	nm
Profitability ratios (%)					
EBITDA margin	19.7	nm	nm	nm	0.5
EBIT margin	22.5	1.5	nm	nm	5.3
Pretax profit margin	19.4	nm	nm	nm	3.4
Payout ratio	0.0	0.0	0.0	0.0	0.0
DuPont analysis					
Net profit margin (%)	16.8	nm	nm	nm	2.7
Revenue/Assets (x)	0.9	0.7	0.5	0.7	0.7
Assets/Equity (x)	1.8	2.5	3.2	3.1	3.3
ROAE (%)	33.6	(3.3)	(26.3)	(8.5)	6.8
ROAA (%)	16.9	(1.5)	(9.3)	(2.7)	2.1
Liquidity & Efficiency					
Cash conversion cycle	34.2	39.4	71.3	46.4	24.9
Days receivable outstanding	64.5	74.2	118.9	83.7	83.2
Days inventory outstanding	22.7	34.5	82.5	65.1	56.4
Days payables outstanding	52.9	69.3	130.1	102.3	114.7
Dividend cover (x)	nm	nm	nm	nm	nm
Current ratio (x)	2.4	1.8	1.2	1.0	1.0
Leverage & Expense Analysis					
Asset/Liability (x)	2.2	1.7	1.4	1.5	1.5
Net debt/equity (%)	net cash	net cash	7.8	54.6	43.9
Net interest cover (x)	13.3	1.0	na	na	3.7
Debt/EBITDA (x)	0.4	nm	nm	nm	nm
Capex/revenue (%)	7.8	17.6	10.9	3.9	17.7
Net debt/ (net cash)	(594.1)	(427.3)	68.5	448.9	427.4

Source: Company data; Factset



Yingli Green Energy (YGE US)

Share Price: USD1.70 MCap (USD): 309M China
Target Price: na ADTV (USD): 4M Energy

Not Rated

In the red

- Lower profitability compared with peers as European market shrinks. FY14 net loss of USD210m. The situation in 2015 likely to remain challenging.
- Similar to peers, Yingli also expanded to downstream business. It has 1.6GW of projects in coming years. However, funding remains a concern given its high net gearing ratio.
- Earnings growth potential appears relatively small judging by industry oversupply situation and interest-expense burden.

Weak balance sheet

Yingli may face challenges ahead as its net debt-to-equity ratio rises. Its net gearing ratio was 884% in FY14. It appears the poor profitability may not relieve the weak balance much in the near term. 4Q14 operating margin was -5.8%. Without the support from operation cash flow, Yingli still requires additional funding for its downstream solar farm projects. Thus, there are doubts whether Yingli can proceed with its 1.6GW project pipeline in 2015-2016.

Margin remain under pressure

Yingli lowered its production cost by 7.7% YoY to USD0.48/W in 4Q14 and it may continue to strengthen its cost reduction in 2015. Given the anti-dumping duties in the US and the minimum selling price restriction in Europe, Yingli is selling more modules to China and Japan thanks to favourable policies in these markets. However, Yingli's margin may remain under pressure due to intensive competition. Besides Asia, Yingli could expand in other emerging countries such as South Africa and Middle East. This should help diversify its geographical locations.

In conclusion, Yingli appears less competitive to peers, such as Trina, due to a weaker balance sheet and profitability. Unless spot price rebounds, it may continue to struggle.

Key Data	
52w high/low (USD)	4.01/1.67
3m avg turnover (USDm)	3.7
Free float (%)	0.0
Issued shares (m)	182
Market capitalization	USD309.0M
Major shareholders:	
-Skagen AS	4.4%
-TB Alternative Assets Ltd.	3.3%
-Norges Bank Investment Management	1.7%

Share Price Performance	
9.0	450
8.0 -	400
7.0 -	- 350
6.0 - NY [NA]	- 300
5.0 - [] \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	- 250
4.0 - 10 10 10 10 10 10 10 10 10 10 10 10 10	- 200
3.0	- 150
2.0	100
1.0 May-13 Sep-13 Jan-14 May-14 Sep-14 Jan-15	- 50
——Yingli Green Energy - (LHS, USD)	

	1 Mth	3 Mth	12 Mth
Absolute(%)	(11.9)	(18.7)	(42.2)
Relative to index (%)	(13.3)	(28.6)	(54.4)
Returive to mack (70)	(13.3)	(20.0)	(31.1

FYE Dec (USD m)	FY 10A	FY 11A	FY 12A	FY 13A	FY 14A
Revenue	1,893.9	2,332.1	1,828.5	2,216.5	2,083.5
EBITDA	326.5	(571.4)	(602.8)	(404.4)	(243.8)
Core net profit	210.1	(509.9)	(491.9)	(321.2)	(209.5)
Core EPS (cts)	138.7	(325.2)	(314.4)	(205.1)	(120.7)
Core EPS growth (%)	nm	nm	nm	nm	nm
Net DPS (cts)	0.0	0.0	0.0	0.0	0.0
Core P/E (x)	1.4	(0.6)	(0.6)	(0.9)	(1.6)
P/BV (x)	0.2	0.4	0.8	3.6	nm
Net dividend yield (%)	0.0	0.0	0.0	0.0	0.0
ROAE (%)	18.8	nm	nm	nm	nm
ROAA (%)	6.9	nm	nm	nm	nm
EV/EBITDA (x)	6.6	nm	nm	nm	nm
Net debt/equity (%)	24.3	106.3	225.7	456.9	883.7

Source: Company data, Factset

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Low profitability despite cost reduction

While the margins of other Chinese module makers such as Canadian Solar and Jinko Solar have recovered since 2Q13, Yingli Green was still making operating losses. Its operating margin was -5.8% in 4Q14. With its unique 100% vertically integrated capacity (from ingot to modules), its production costs were reduced by 7.7% YoY to USD0.48/W in 4Q14. However, given the challenging oversupply situation ahead, Yingli's margin recovery may still be under pressure in FY15.

As module oversupply situation continues, Yingli's margin recovery may still be under pressure in FY15.

Figure 183: Yingli quarterly operating margin

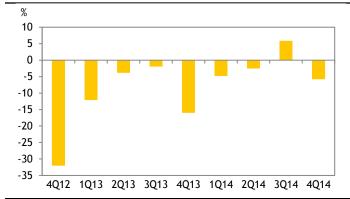
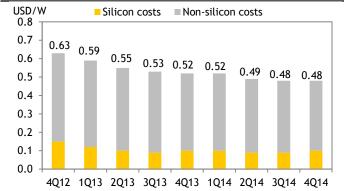


Figure 184: Yingli module production costs (mono & multi)

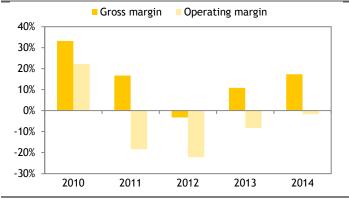


Source: Company presentation, Maybank Kim Eng

Source: Maybank Kim Eng

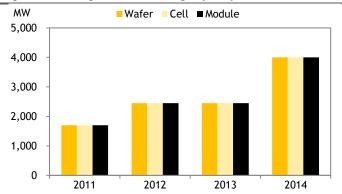
Another reason for the low profitability is because Yingli relied on third-party OEMs to fulfil the additional demand from China. It outsourced the modules to third-party OEMs in China, resulting in minor or zero margins. This situation may continue in 2015 as the company has no plans to expand capacity this year.

Figure 185: Yingli Green gross margin vs operating margin



Source: Maybank Kim Eng

Figure 186: Yingli manufacturing capacity



Source: Maybank Kim Eng

China becomes key market for Yingli

More shipments to China

With declining demand from Europe and favourable subsidies in the Japanese and Chinese markets, the share of China and Japan in terms of Yingli's total revenue increased significantly from 41% in 2013 to 55% in 2014. A higher proportion of revenue from China will lower the ASP of Yingli's modules, making margin recovery appear more challenging.

Figure 187: Yingli quarterly shipments to China

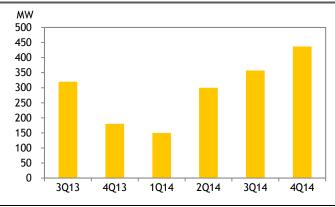
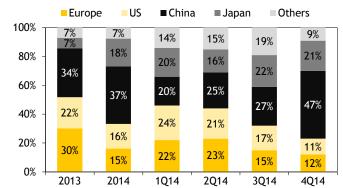


Figure 188: Yingli revenue breakdown by country



Source: Company presentation, Maybank Kim Eng

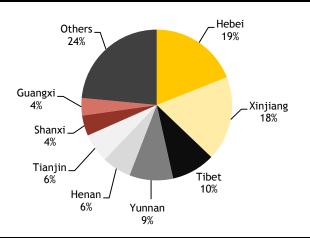
Source: Company presentation, Maybank Kim Eng

Solar farm business in China

Like many other Chinese manufacturers, Yingli is moving downstream and it's developing solar farms. Out of its 1.6GW project pipeline, the company targets 400-600MW of its downstream PV projects to be grid-connected in 2015. It started construction of projects in Hebei, Guangxi, Shanxi, Yunnan and Guangdong province. Except for Guangxi and Guangdong, sunshine hours in those regions reached over 1,200 hours with a national tariff of CNY0.95-1/kWh.

Yingli is also moving to downstream business with 1.6GW of project pipeline.

Figure 189: Yingli solar farm project pipeline in China



Source: Maybank Kim Eng Note: Total capacity = 1.6GW as of March 2015.



Weakening financial position

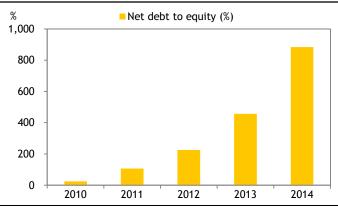
Yingli has the highest net debt-to-equity ratio among the Chinese module manufacturers. Yingli's net gearing increased significantly to 884% from 457% in 2013 and its cash balance remains very low as of 4Q14. Yingli may require additional funding to finance its 1.6GW project pipeline in the coming years.

Yingli's net gearing ratio has increased significantly from 460% in 2013 to 880% in 2014.

One of its strategies is to sell but not own the projects it builds to generate cash. The company signed a framework agreement with United PV (686 HK) to sell at least 300MW of projects in 2014-16.

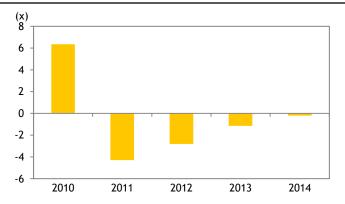
It also adopts a joint venture business model. In Apr'14, Yingli set up a CNY1b renewable energy fund with Shanghai Sailing Capital Management to invest in downstream projects in China. Yingli contributed 51% of the total capital in the fund and it will focus on ground-mounted solar power plants and distributed PV projects.

Figure 190: Yingli net debt to equity ratio



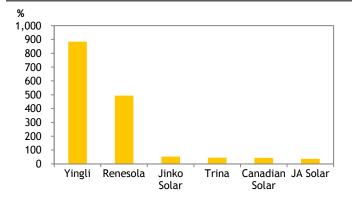
Source: Maybank Kim Eng

Figure 191: Yingli's interest coverage ratio



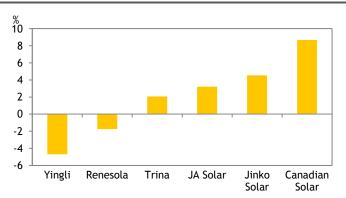
Source: Maybank Kim Eng

Figure 192: Net debt to equity comparison (2014)



Source: Bloomberg, Maybank Kim Eng

Figure 193: ROA comparison (2014)



Source: Bloomberg, Maybank Kim Eng

FYE 31 Dec	FY10A	FY11A	FY12A	FY13A	FY14A
Key Metrics P/E (reported) (x)	1.2	(0.5)	(0.5)	(0.8)	(1.4)
Core P/E (x)	1.2	(0.5)	(0.5)	(0.8)	(1.4)
P/BV (x)	0.2	0.3	0.7	3.2	nm
P/NTA (x)	na	na	na	na	na
Net dividend yield (%)	0.0	0.0	0.0	0.0	0.0
FCF yield (%)	nm	nm	nm	nm	nm
EV/EBITDA (x)	6.6	nm	nm	nm	nm
EV/EBIT (x)	5.1	nm	nm	nm	nm
INCOME STATEMENT (USD m)					
Revenue	1,893.9	2,332.1	1,828.5	2,216.5	2,083.5
Gross profit	629.2	389.2	(59.2)	241.0	360.7
EBITDA	326.5	(571.4)	(602.8)	(404.4)	(243.8)
Depreciation	71.4	131.4	192.0	214.5	209.1
Amortisation	23.4	11.8	5.7	5.2	0.0
EBIT	421.3	(428.2)	(405.0)	(184.7)	(34.7)
Net interest income /(exp)	(63.9)	(95.0)	(136.5)	(155.3)	(158.1)
Associates & JV	(0.1)	8.3	0.1	0.2	0.0
Exceptionals Other protest income	0.0	(25.2)	0.0	0.0	(19.4)
Other pretax income Pretax profit	(49.5) 307.8	(25.2) (540.1)	(3.9) (545.4)	5.5 (334.3)	(18.6) (211.4)
Income tax	(50.5)	21.2	33.0	(5.1)	(14.5)
Minorities	(47.2)	9.0	20.5	18.2	16.4
Discontinued operations	0.0	0.0	0.0	0.0	0.0
Reported net profit	210.1	(509.9)	(491.9)	(321.2)	(209.5)
Core net profit	210.1	(509.9)	(491.9)	(321.2)	(209.5)
BALANCE SHEET (USD m)					
Cash & Short Term Investments	887.3	664.3	334.6	182.6	172.3
Accounts receivable	289.3	338.5	583.3	697.7	698.5
Inventory	382.6	424.4	405.1	357.6	338.3
Property, Plant & Equip (net)	1,505.1	1,968.4	2,121.7	2,227.4	1,951.1
Intangible assets	65.8	17.5	10.1	9.7	9.4
Investment in Associates & JVs	0.0	0.0	0.0	0.0	0.0
Other assets	534.8	953.5	903.7	1,059.2	1,204.2
Total assets	3,664.9	4,366.7	4,358.5	4,534.2	4,373.9
ST interest bearing debt	887.6	1,306.8	1,208.0	1,109.4	1,565.7
Accounts payable	375.1	473.0	590.7	931.6	844.2
LT interest bearing debt	378.3	548.5	654.3	678.6	460.7
Other liabilities	467.0	918.0	1,229.0	1,463.0	1,293.0
Total Liabilities	2,108.3	3,246.0	3,681.6 380.4	4,183.0	4,164.1
Shareholders Equity Minority Interest	1,265.3 291.3	820.0 300.7	296.4	83.9 267.4	(35.0) 244.8
Total shareholder equity	1,556.6	1,120.7	676.8	351.4	209.8
Total liabilities and equity	3,664.9	4,366.7	4,358.4	4,534.3	4,373.9
CASH FLOW (USD m)					
Pretax profit	307.8	(540.1)	(545.4)	(334.3)	(211.4)
Depreciation & amortisation	(94.8)	(143.2)	(197.7)	(219.7)	(209.1)
Adj net interest (income)/exp	0.0	0.0	0.0	0.0	0.0
Change in working capital	(25.5)	(162.0)	(144.0)	100.7	0.0
Cash taxes paid	0.0	0.0	0.0	0.0	0.0
Other operating cash flow	191.2	899.5	557.1	511.6	420.5
Cash flow from operations	378.8	54.2	(330.0)	58.2	0.0
Capex	(466.3)	(768.8)	(313.4)	(196.7)	(55.6)
Free cash flow	(87.6)	(714.6)	(643.4)	(138.5)	(55.6)
Dividends paid	0.0	0.0	0.0	0.0	0.0
Equity raised / (purchased)	0.0	(19.7)	(0.6)	0.0	0.0
Perpetual securities	0.0	0.0	0.0	0.0	0.0
		547.2	(7.8)	(106.0)	238.4
Change in Debt	628.0			0.0	^ ^
Perpetual securities distribution	0.0	0.0	0.0	0.0	0.0
•				0.0 88.0 (5.3)	0.0 (238.4) 0.0

FYE 31 Dec	FY10A	FY11A	FY12A	FY13A	FY14A
Key Ratios					
Growth ratios (%)					
Revenue growth	78.2	23.1	(21.6)	21.2	(6.0)
EBITDA growth	nm	nm	nm	nm	nm
EBIT growth	802.8	nm	nm	nm	nm
Pretax growth	nm	nm	nm	nm	nm
Reported net profit growth	nm	nm	nm	nm	nm
Core net profit growth	nm	nm	nm	nm	nm
Profitability ratios (%)					
EBITDA margin	17.2	nm	nm	nm	nm
EBIT margin	22.2	nm	nm	nm	nm
Pretax profit margin	16.3	nm	nm	nm	nm
Payout ratio	0.0	0.0	0.0	0.0	0.0
DuPont analysis					
Net profit margin (%)	11.1	nm	nm	nm	nm
Revenue/Assets (x)	0.5	0.5	0.4	0.5	0.5
Assets/Equity (x)	2.9	5.3	11.5	54.0	nm
ROAE (%)	18.8	(48.9)	(82.0)	(138.4)	(857.0)
ROAA (%)	6.9	(12.7)	(11.3)	(7.2)	(4.7)
Liquidity & Efficiency					
Cash conversion cycle	49.0	44.6	68.4	34.8	7.8
Days receivable outstanding	51.9	48.5	90.7	104.0	120.6
Days inventory outstanding	89.2	74.8	79.1	69.5	72.7
Days payables outstanding	92.0	78.6	101.4	138.7	185.5
Dividend cover (x)	nm	nm	nm	nm	nm
Current ratio (x)	1.3	1.0	0.9	0.8	0.6
Leverage & Expense Analysis					
Asset/Liability (x)	1.7	1.3	1.2	1.1	1.1
Net debt/equity (%)	24.3	106.3	225.7	456.9	883.7
Net interest cover (x)	6.6	na	na	na	na
Debt/EBITDA (x)	3.9	nm	nm	nm	nm
Capex/revenue (%)	24.6	33.0	17.1	8.9	2.7
Net debt/ (net cash)	378.5	1,191.0	1,527.7	1,605.4	1,854.0

Source: Company data; Factset



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