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Research
Global

Global Solar

Solar: Inflection Ahead

Growth at a Lower Price

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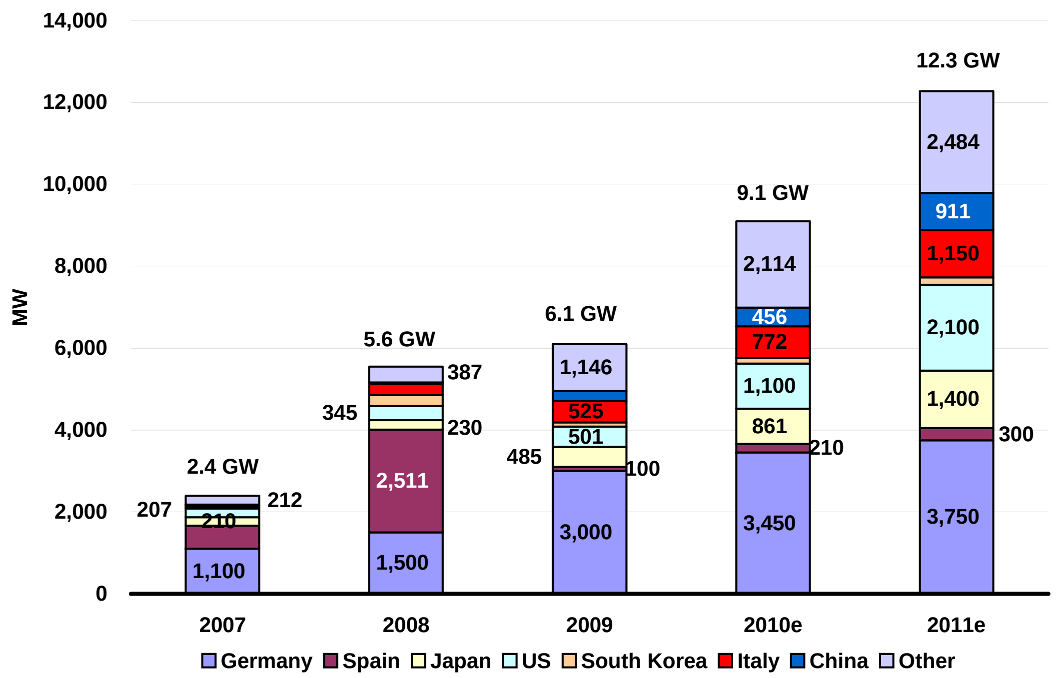
Europe remains the key marketplace in 2010 with 60% of global demand

Global Solar Demand Estimates



Source: Morgan Stanley Research estimates

European demand still shows growth

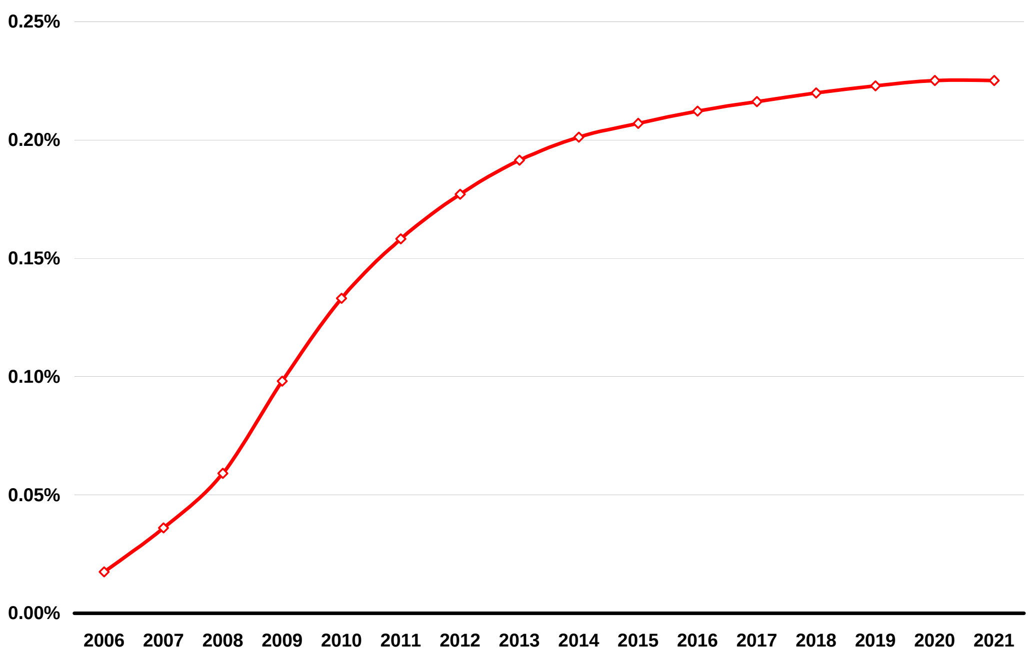
- We estimate "core" European demand of 5.6GW in 2010, 6.0GW in 2011, and see scope for growth beyond this in new markets.
- European solar is sustainable from both a budgetary and energy mix standpoint, and demand will grow as grid parity approaches.
- Subsidy reductions are being implemented in several markets, but returns are still attractive, and growth continues.
- 2010 could see boom conditions in several markets before the introduction of subsidy reductions in 2011.

Long-term solar subsidies remain modest as % of GDP

★Our View: Solar feed-in tariffs in European markets are sustainable as a share of GDP. Tariff reductions and long-term increases in conventional energy prices mean there is scope for further market growth

★Alternative View: *Subsidies are not sustainable at current levels and will need to be cut dramatically across the board.*

Germany case study – forecast solar subsidies as % of nominal GDP



Source: Morgan Stanley Research estimates

Solar FIT is sustainable long term

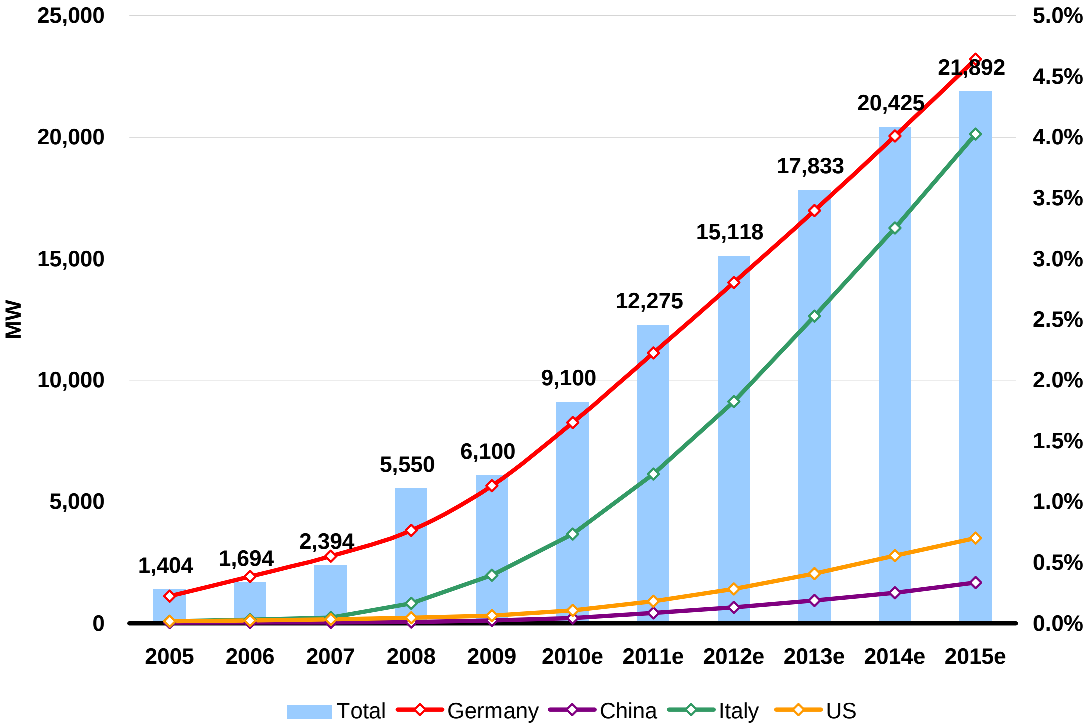
- Solar feed-in tariffs are a direct pass-through from utility sector to consumer – relevant to examine FIT in terms of broader economic contribution.
- We view 0.22-0.23% economic impact of solar FIT as sustainable long term. Implied subsidies decline as feed-in tariffs fall and conventional power prices recover from current cyclical lows.
- Our estimates imply annual installation rate of 3.5-4.5GW pa. We view 3GW market in 2009 as a base for sustainable growth.

Solar is a growing, but still small part of the energy mix

★Our View: Solar at an economic price is an important long-term part of the energy mix. Long-term forecast penetration rates are manageable, although further investment will be required in some regions.

★Alternative View: *Grid infrastructure will not sustain significant further growth in PV capacity.*

Global installation forecasts (LHS) & regional penetration rates (RHS)



Source: Morgan Stanley Research estimates

Strong volume growth is achievable within current grid constraints

- On our volume forecasts, no country will have solar power representing more than 5% of energy mix by 2015, none more than 11% by 2025.
- These rates are sustainable with current grid build-out plans in most countries. Spain currently has >30% contribution from wind on peak days. Solar is more stable
- Some regions (Czech Republic, Eastern Europe, US, China) require further grid investment for renewables.
- Strong upside in "sleeping giants" US and China.

Strong returns and price falls should facilitate growth through 2011

★Our View: Strong volumes likely to be sustained through 2010, helped by lower pricing and stronger market penetration from more cost competitive players.

★Alternative View: *Volumes will collapse after the reduction in German tariffs.*

	EEG 2010 (before tariff reduction)					EEG 2010 (after tariff reduction)					EEG 2011				
Installations size (kW)	**<30**	**3-100**	**100-1,000**	**>1,000**	**Ground**	**<30**	**3-100**	**100-1,000**	**>1,000**	**Ground**	**<30**	**3-100**	**100-1,000**	**>1,000**	**Ground**
Investment (€ mn / MW)	**3,000**	**2,900**	**2,650**	**2,650**	**2,550**	**2,600**	**2,500**	**2,150**	**2,150**	**1,950**	**2,300**	**2,150**	**1,950**	**1,950**	**1,750**
Load factor (kWh / kWp)	**1,100**	**1,100**	**1,100**	**1,100**	**1,100**	**1,100**	**1,100**	**1,100**	**1,100**	**1,100**	**1,100**	**1,100**	**1,100**	**1,100**	**1,100**
Average load factor (%)	12.6%	12.6%	12.6%	12.6%	12.6%	12.6%	12.6%	12.6%	12.6%	12.6%	12.6%	12.6%	12.6%	12.6%	12.6%
Solar tariff (€/kWh)	**0.39**	**0.37**	**0.35**	**0.29**	**0.28**	**0.33**	**0.31**	**0.30**	**0.25**	**0.25**	**0.30**	**0.28**	**0.27**	**0.22**	**0.23**
Asset IRR (after tax) %	**8.6%**	**7.7%**	**6.8%**	**5.8%**	**5.2%**	**8.2%**	**7.3%**	**6.8%**	**5.7%**	**6.6%**	**8.5%**	**7.9%**	**6.5%**	**5.5%**	**6.5%**
Equity IRR (after tax) %	**19.5%**	**17.1%**	**12.6%**	**9.4%**	**8.0%**	**18.0%**	**15.6%**	**12.6%**	**9.3%**	**11.3%**	**19.3%**	**17.7%**	**12.0%**	**8.8%**	**11.1%**
Investment Cost (€m/MW)															
Project cost (€/kW)	**3,000**	**2,900**	**2,650**	**2,650**	**2,550**	**2,600**	**2,500**	**2,150**	**2,150**	**1,950**	**2,300**	**2,150**	**1,950**	**1,950**	**1,750**
Module (€ / kW)	*1,800*	*1,800*	*1,600*	*1,600*	*1,600*	*1,500*	*1,500*	*1,200*	*1,200*	*1,200*	*1,300*	*1,200*	*1,100*	*1,100*	*1,100*
Inverter (€ / kW)	*350*	*350*	*350*	*350*	*300*	*300*	*300*	*300*	*300*	*250*	*250*	*250*	*250*	*250*	*200*
Other hardware (€ / kW)	*500*	*500*	*500*	*500*	*450*	*500*	*500*	*500*	*500*	*350*	*500*	*500*	*500*	*500*	*350*
Labour (€ / kW)	*350*	*250*	*200*	*200*	*200*	*300*	*200*	*150*	*150*	*150*	*250*	*200*	*100*	*100*	*100*
Common assumptions															
Tariff duration (years)	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Tariff inflation (%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Performance factor (%)	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%
Cost inflation	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Initial gearing (%)	90.0%	80.0%	80.0%	80.0%	80.0%	90.0%	80.0%	80.0%	80.0%	80.0%	90.0%	80.0%	80.0%	80.0%	80.0%
Interest rate (%)	3.75%	3.75%	3.75%	3.75%	4.00%	3.75%	3.75%	3.75%	3.75%	4.00%	3.75%	3.75%	3.75%	3.75%	4.00%
Cost of equity	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%

Source: Morgan Stanley Research estimates

2010 will be a boom year in some markets

★Our View: 2010 will be a boom year for some emerging European markets. Longer term, subsidies will be balanced with investor returns. We believe there is room for both in the market.

★Alternative View: *Other European markets are cutting tariffs too. Demand will be squeezed*

Italy

- GIFI has already proposed subsidy cuts of 5-20% in 2011. Investor returns would remain above 10% unlevered in 2011.
- Meeting of regions on solar tariffs postponed until after regional elections on 28-29 March.
- Market reached 525MW in 2009. Local players currently forecasting 800-1,000MW in 2010

Czech Republic

- Market is booming with ~450MW installed in 2009 and strong growth in 2010.
- Regulatory revisions underway, likely to be finalised after elections in late May.
- Slowdown in grid permits has limited impact short-term: up to 5,000MW already issued.
- Market likely to be more curtailed in 2011.

France

- Recent tariff cuts were moderate.
- 1.5GW of project permits issued as at September 2009.
- Some of demand speculative, but underpinned by strong returns.

Source: Morgan Stanley Research estimates

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Have prices stabilized? Too good to be true

★Recent Observations: Spot polysilicon price has increased from less than $50/Kg in Dec'09 to $53-54/kg currently. Over the same period wafer prices have increased from $0.79/Wp to $0.85/Wp and cell prices have firmed up from $1.26/Wp to $1.30/Wp.

★Our View: *This is a short-term aberration, due to strong near-term demand pull-in from Germany and EU because of fears about a reduction in FiT tariffs. With a significant increase in supply (our structural oversupply thesis), digestion of high-cost inventory and cost reduction, as numerous Asian companies race to meet their "market share gain" guidance, they will drive down prices. Steady depreciation of € acts as an effective FiT reduction, thereby forcing prices lower.*

★Alternative View: *Manufacturers cannot afford to reduce prices any further. With strong demand, there is an opportunity to increase prices.*

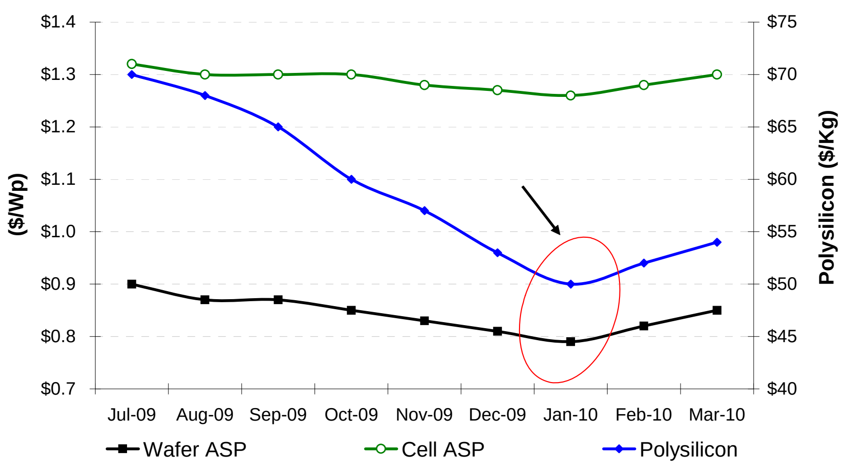
★Where could we be wrong? *Three areas:*

★Slow Policy Response – *With a rapid decline in prices in 2009, project IRRs in Germany, Spain, Italy, France, Czech Republic, Belgium, Canada have become very attractive. Hence policy makers need to reduce FiTs to avoid creating a bubble. If the domestic political processes delay these adjustments, market could support higher prices. "Whose money is it anyway?"*

★"Local Content"-driven policy – If FiT related incentives are set to allow high-cost producers to earn a reasonable return along with "market protection" policies, we could get a distorted market with high prices in protected markets.

★Strong 2H10 demand pull-in in Italy, France, Czech Republic, Canada, Bulgaria ahead of a potential reduction in FiT in 2011.

Cash Manufacturing Cost Structure



Source: Morgan Stanley Research

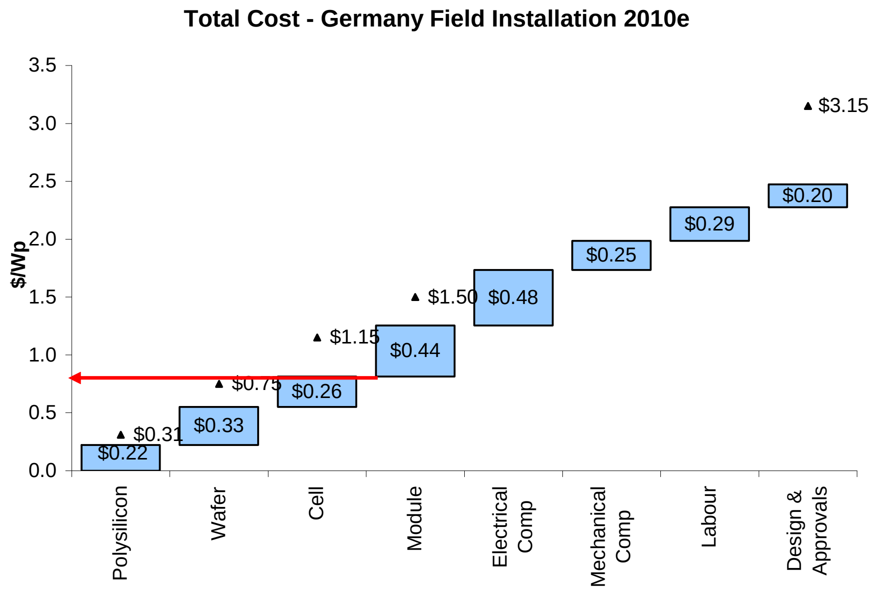
Can the industry bear module price of $1.45/Wp?

★Our View: While ASP pain may be unbearable for high cost EU and US manufacturers, large Asian manufacturers (Big 5 in China and Big 3 in Taiwan) have adequate margins (excluding legacy high-cost inventory).

★Alternative View: *Manufacturers cannot reduce prices any further.*

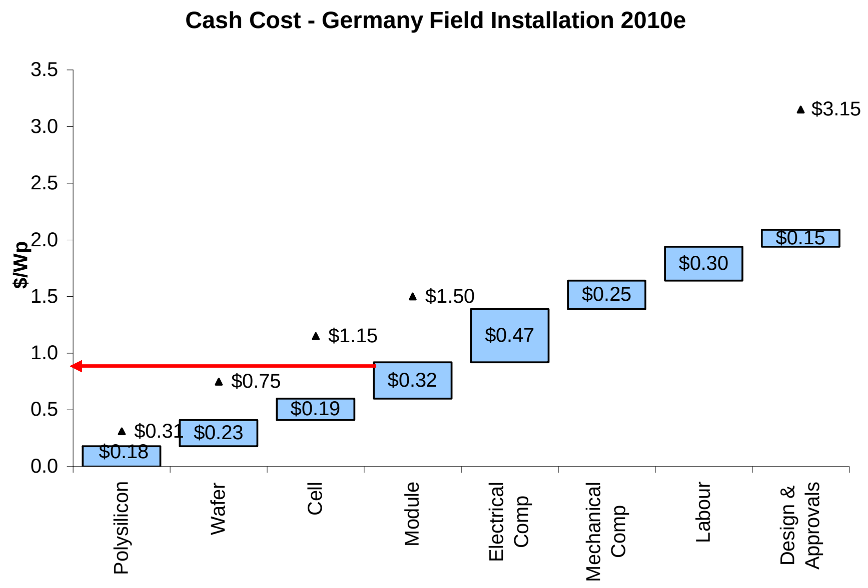
★Large Asian manufacturers (Big 5 in China and Big 3 in Taiwan) can earn an attractive gross margin (25%+), reasonable operating margin (15%+) and moderate return with module price of $1.45 by end-2010. With limited differentiation, cost savings will likely be competed away.

Total Manufacturing Cost Structure



Total manufacturing cost including depreciation & Opex. Excludes financing cost. Assumes nil operating profit

Cash Manufacturing Cost Structure



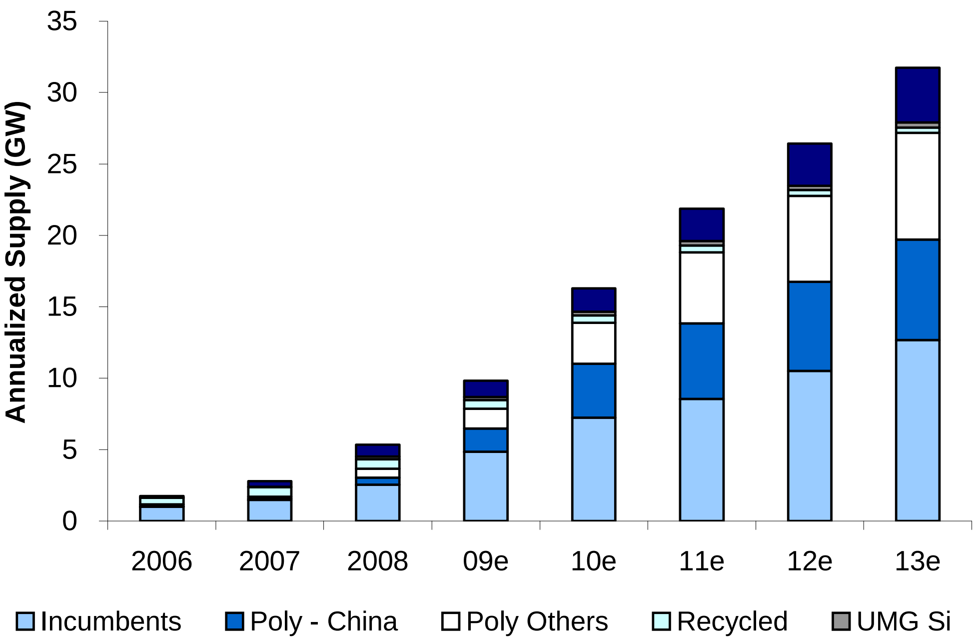
Cash manufacturing cost excludes depreciation, Opex and financing cost. Assumes negative gross profit

Source: Morgan Stanley Research

Supply: With demand recovery, will oversupply reduce?

★Our View: Solar industry growth will recover from FY10. However, oversupply is unlikely to reduce due to low entry barriers and short lead time for capacity expansion. Historically, the constraint has been at the upstream polysilicon end. However, with large investments over the past three years and falling entry barriers, there is likely to be abundant polysilicon.

★Alternative View: *With strong policy support in US and China, global demand is poised to explode, soaking up all capacity within next year.*



Poly Supply (MT)	08a	09e	10e	11e	12e
Primary silicon supply	**53,704**	**86,377**	**133,255**	**169,340**	**199,014**
Semiconductor use	23,199	22,039	26,447	28,827	31,422
Available for solar	30,505	64,338	106,808	140,513	167,592
Recycled	5,350	4,667	3,778	3,427	2,839
Available for solar (MT)	35,855	69,005	110,586	143,940	170,431
c-Si Supply (MW)	**4,482**	**9,013**	**15,005**	**19,992**	**24,004**
UMG Si Supply (MT)	2,617	2,390	2,532	3,004	3,004
UMG Supply (MW)	**182**	**195**	**245**	**298**	**302**

Module Supply (MW)	08e	09e	10e	11e	12e
c-Si Supply	4,664	9,208	15,250	20,290	24,307
Thin film Supply	823	1,155	1,649	2,275	2,956
Total Supply (MW)	**5,487**	**10,363**	**16,899**	**22,565**	**27,263**
% chg	*96%*	*89%*	*63%*	*34%*	*21%*
End Demand	5,559	6,018	8,900	11,900	15,828
Chg in Channel Inventory	398	(135)	721	750	982
Total Demand (MW)	**5,957**	**5,883**	**9,621**	**12,651**	**16,809**
Solar poly demand	44,257	35,249	64,100	80,103	105,326
Demand (incl channel) (MW	**5,957**	**5,883**	**9,621**	**12,651**	**16,809**
Excess / (Shortage) (MW)		4,480	7,279	9,915	10,454
% Excess / (Shortage)		76%	76%	78%	62%

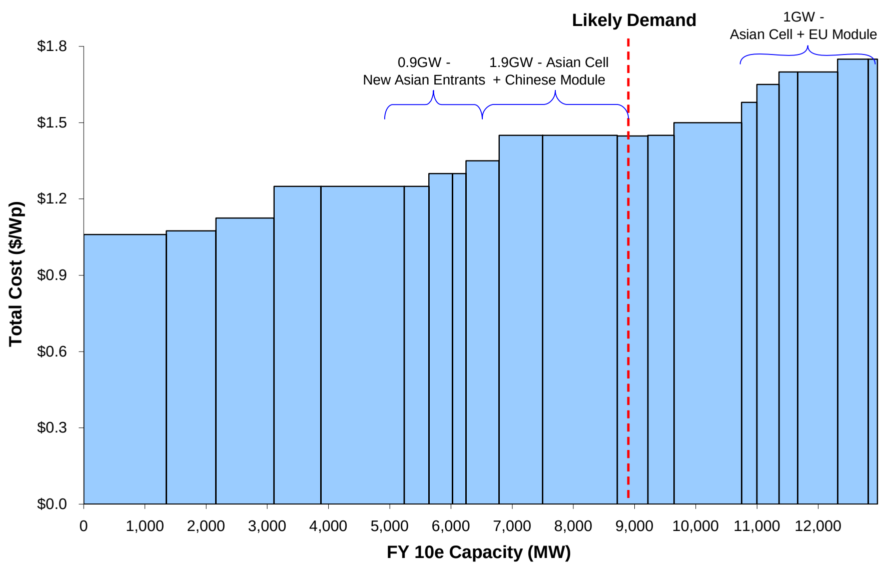
Source: Morgan Stanley Research. E = Morgan Stanley Research estimates

Structural oversupply: Figure out economic capacity!

★Our View: Polysilicon price will decline to $40/kg by year-end due to oversupply. Entry barriers and cost differentials in polysilicon manufacturing have fallen. Due to relatively low entry barriers and cost reduction along the rest of the manufacturing process, module price could decline to $1.45/Wp by end of FY10.

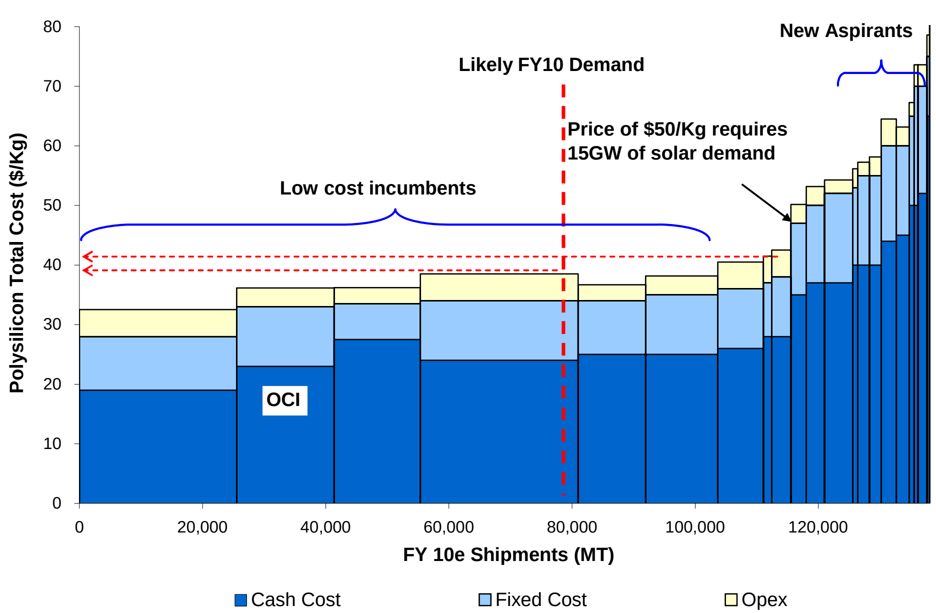
★Alternative View: *Polysilicon has stabilized at $50/kg and may rise as demand recovers. Module prices may not decline below $1.8/Wp in FY10.*

FY10 Global Module Cost Structure



Total manufacturing cost including depreciation. Excludes opex & financing cost.

FY10 Global Polysilicon Cost Structure



Total manufacturing cost including depreciation & opex. Excludes financing cost.

Source: Morgan Stanley Research

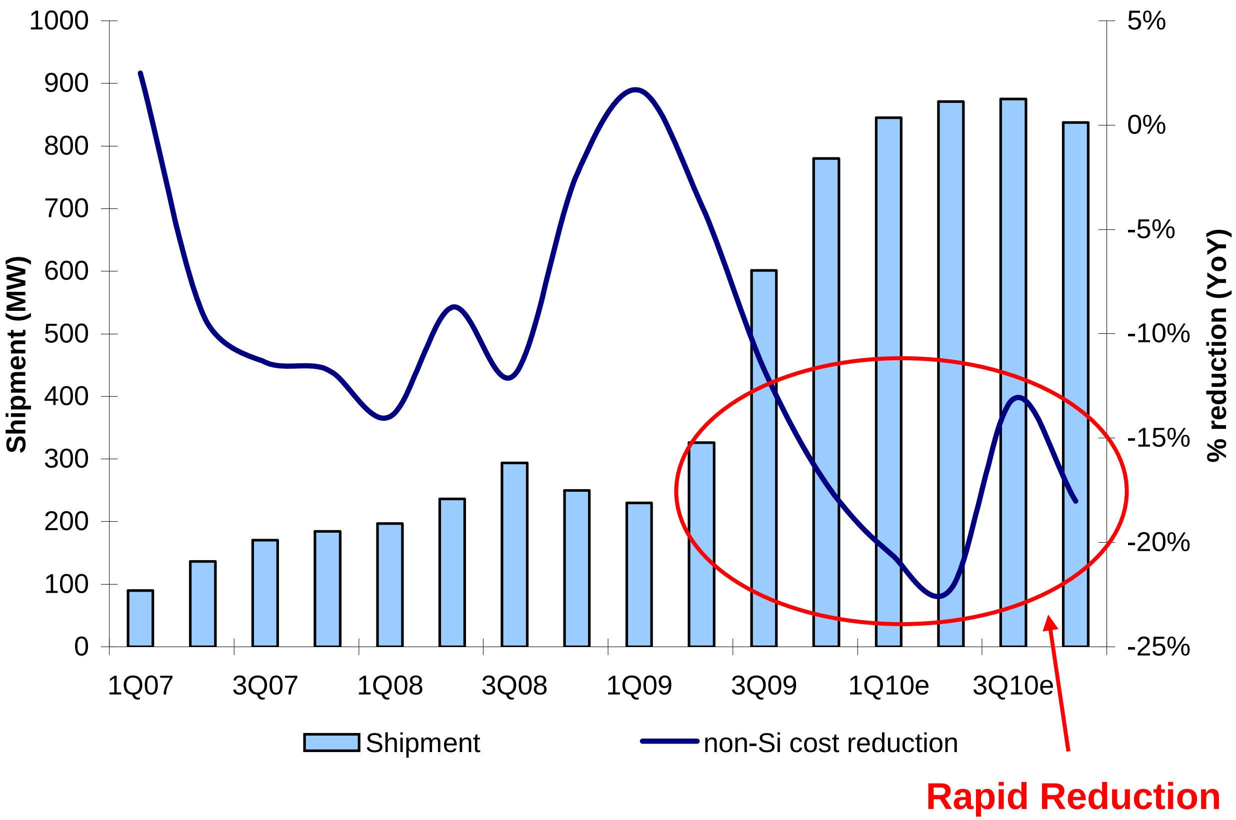
Structural Improvement: Faster cost reduction

- Over the past year, cost declines have accelerated to 10-15%, compared with a normal 5-7%.

- Due to very likely success of "**high efficiency**" cells, we expect this trend to continue for next 2-3 years.

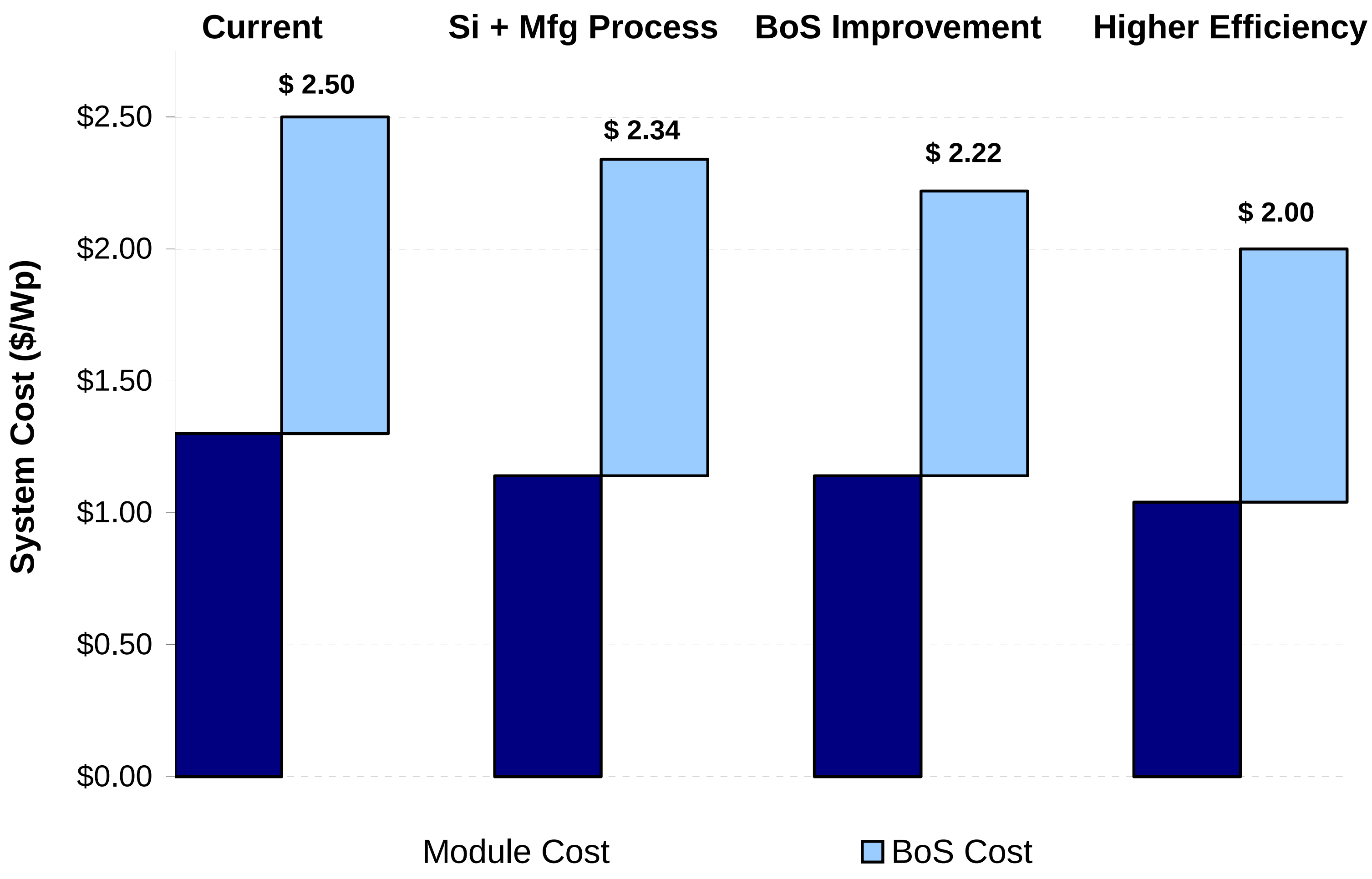
- Companies will not be able to retain this saving … pass it to the customer.

- Improves affordability … expands market



Source: Morgan Stanley Research

c-Si Cost Reduction Roadmap



Note: Cost includes manufacturing cost + depreciation + opex

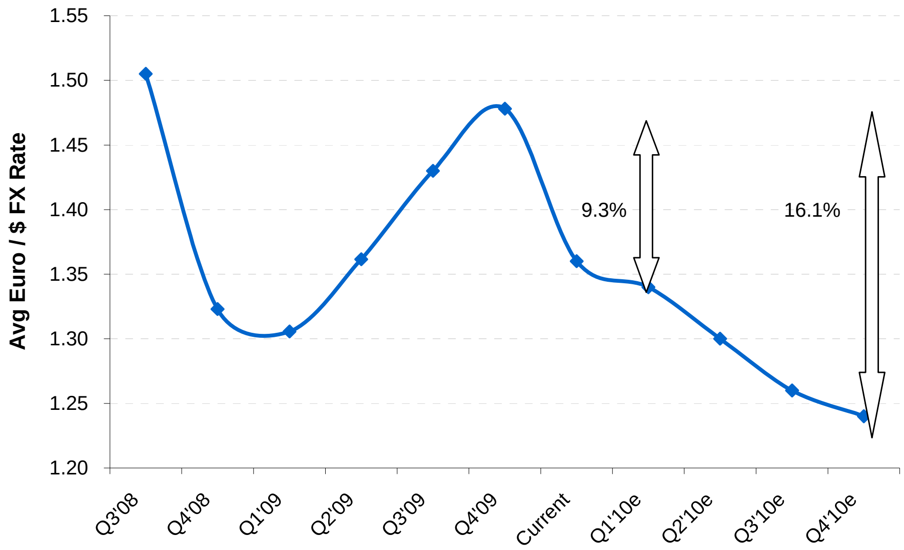
Source: Morgan Stanley Research

Affordability: Driven by Incentives & FX

★Our View: With 16% depreciation of € in 2010, it effectively implies a significant reduction in $ implied FiT for European markets (65% of global demand). This will require a reduction in module / system prices. Based on current incentives, industry could generate demand of 7.5GW at a module price of $2/Wp+. However, to generate an additional 1.5GW of demand, module pricing may have to decline to ~$1.5/Wp. Due to limited differentiation and oversupply, module price points will likely drift lower.

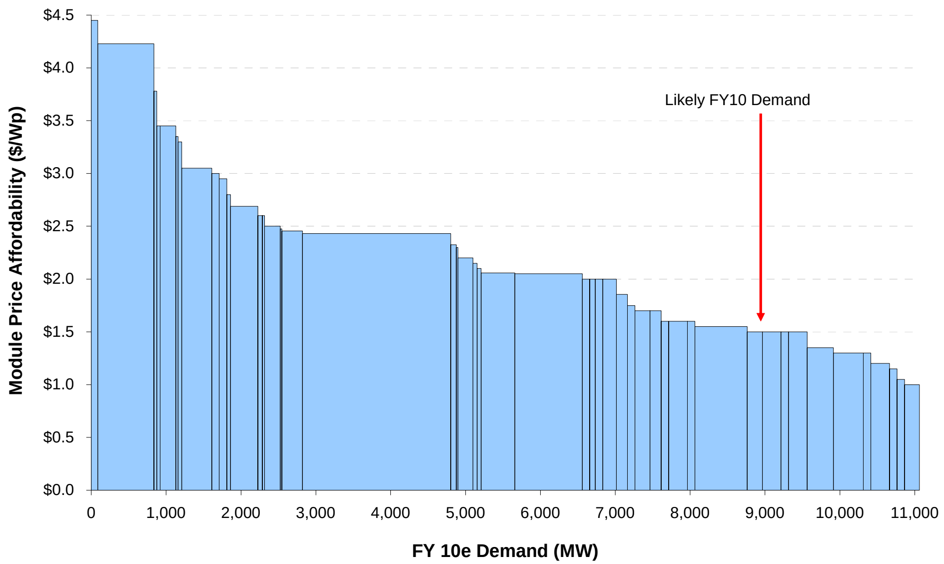
★Alternative View: *Demand in Germany could exceed 4.5GW in 2010. With strong demand from Italy, France, Czech Republic and Spain, total demand could exceed 10GW. There may be a prolonged shortage, resulting in robust ASPs.*

€ / $: Significant Declines



Source: Morgan Stanley Research

FY10: Module Affordability



Note: Each section represents an end market segment. Affordability calculated based on incentives, availability of financing and administrative costs.

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3. Best part of value chain to own

4. Best Stock Ideas




What is the best part of the value chain to own (1/2)?

★Our View: Structurally, the polysilicon and the cell manufacturing have the highest entry barriers. Thin-film manufacturers with large scale, such as First Solar, can also create natural barriers to entry.

★Alternative View: *Silicon production equipment manufacturers, such as GT Solar, have lowered the barriers of entry into the silicon space, and innovation in high efficiency cells is taking place at the cell production equipment maker level, which lowers the barrier to entry into high-efficiency cell production.*

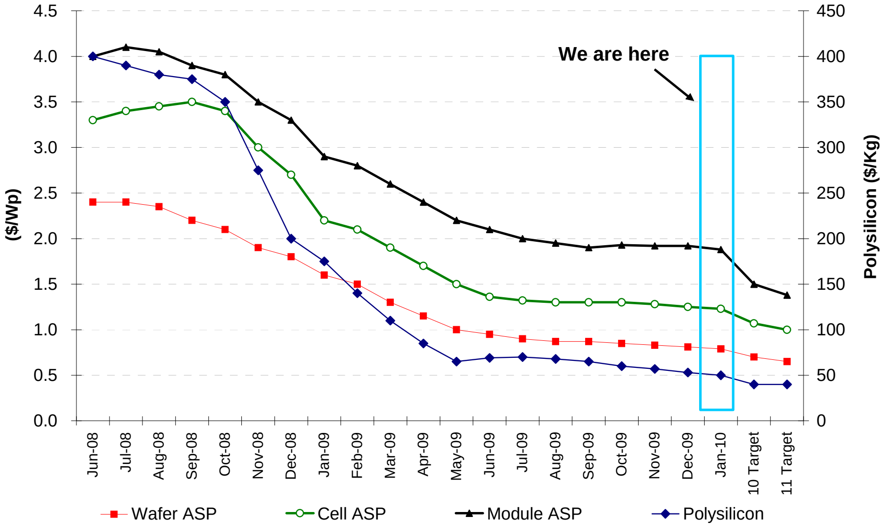
	Silicon Feedstock	Ingots & Wafers	Cells	Modules	PV Systems
Pricing Leverage	High - Relatively fixed cost, but high selling price.	Moderate - Primarily an agency processing Biz with high margin risk.	Low - Primarily an agency processing Biz with low margin risk.	Low - Primarily an agency processing Biz with low margin risk.	Very low.
Operating Leverage	High - Depreciation and other sticky costs are 25% of COGS.	Moderate - Depreciation and other sticky costs are 20% of COGS	Low - Depreciation and sticky costs are 12% of COGS.	Very Low - Depreciation and sticky costs are 5% of COGS.	Very low.
Supply Chain Risk	No risk on raw materials, risk of enforcing sales contracts.	Moderate risk of raw material contracts, but high risk of sales contracts.	Very high risk of managing supply contracts as well as sales contracts.	High risk of managing sales contracts.	High risk of project management delays
Industry Structure	Oligopoly, which is beginning to fragment.	Oligopoly, which is beginning to fragment.	Highly Fragmented. May see consolidation.	Highly Fragmented. May see consolidation.	Highly fragmented, difficult to scale
Entry Barrier	High due to long learning curve to achieve the desired cost structure.	Moderate for technology/process, but rising due to need for capital to achieve scale and attractive cost structure.	Limited entry barriers until high efficiency cells become mainstream.	No entry barriers.	No entry barriers other that capital.
Room for Differentiation	High level of differentiation depending on "chemical knowledge"	Moderate level of differentiation based on cost.	Currently low differentiation. Possible from high efficiency cells	Limited scope.	Limited scope
Capacity Lead Time	Very High - 18 months	Moderate - 6 months	Low - 3 months	Very Low - 1 month	Very low

What is the best part of the value chain to own (2/2)?

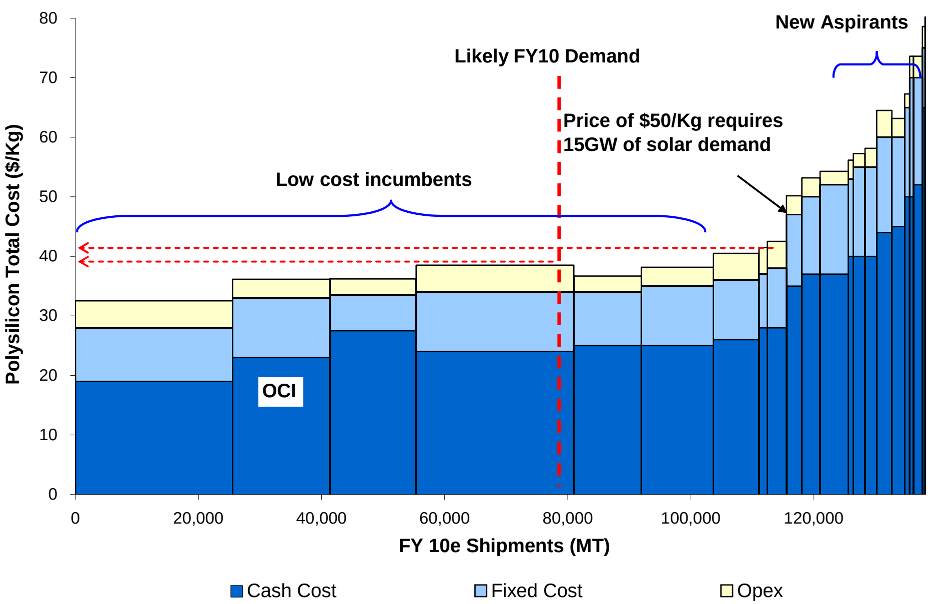
★Our View: Cyclically, the best part of the value chain to be is downstream when prices are falling. Polysilicon producers will end up bearing the brunt of the pain, as they do not have room to reduce their raw material costs. We will likely see polysilicon pricing head towards to the low $40/kg by the end of 2010.

★Alternative View: *ASPs decline will hurt everyone in the value chain equally as prices fall through out the value chain.*

More ASP Declines



FY10 Polysilicon Cost Structure



Source: Company data, Morgan Stanley Research

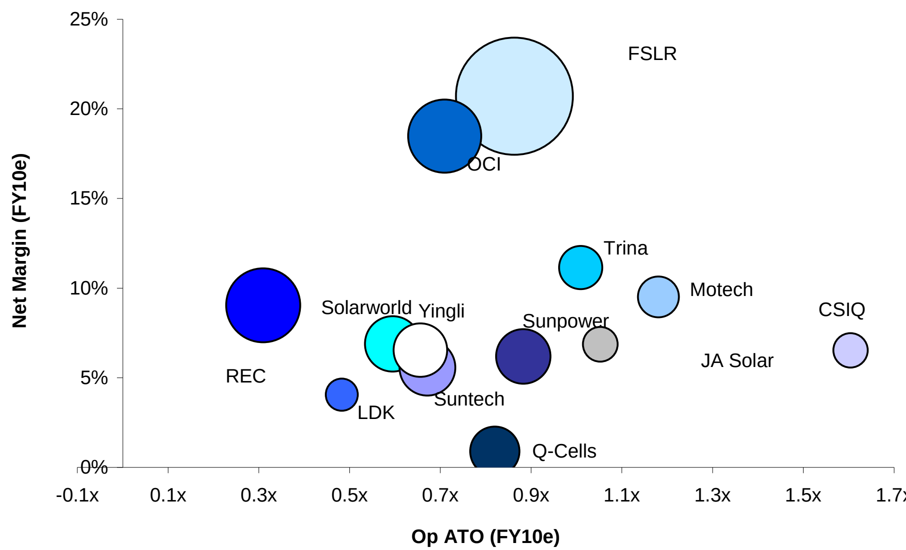
The solar world is flat. Is there any differentiation?

Our View: Differentiation is limited but sustainable.

- There is structural differentiation downstream (wafer, cell, module) between Asian and US/EU manufacturers because of cost differentials.
- There is differentiation in polysilicon because of "cheap electricity" and technology (i.e., FBR).
- There is significant differentiation in capital allocation and balance sheet management.
- Its still too early for the industry to consolidate. Expect more fragmentation as the end-markets broaden.
- Having recovered from "sloth and pride" as the industry tackles "greed and gluttony", not every company will pass the test of "diligence and moderation" to generate returns for investors. Our ability to identify a "differentiated management" is low.

Alternative View: Differentiation arises from vertical integration, as it always trumps a focused business model because of higher gross margin and better control over the supply chain. It allows vertically integrated companies to reduce prices and hence gain market share.

- Within c-Si technology future winners will emerge based on differentiated high efficiency cell on high-quality wafers.
- In thin film, FSLR is proven with its low-cost CdTe technology. CIS / CIGS technology seems promising, albeit unproven as yet.
- As the industry grapples with sustainability of high growth in an environment of declining ASP (i.e., higher capex intensity), differentiation will arise from asset-light business model to achieve free cash flow (FCF) neutrality and high ROE.
- We believe a minimum scale requirement will be 10,000MT for polysilicon and 1GW for downstream (wafer, cell, module). This would require an investment of >US$1bn. Hence, scale is likely to become a modest entry barrier.



e = Morgan Stanley Research estimates. Source: Company data, Morgan Stanley Research

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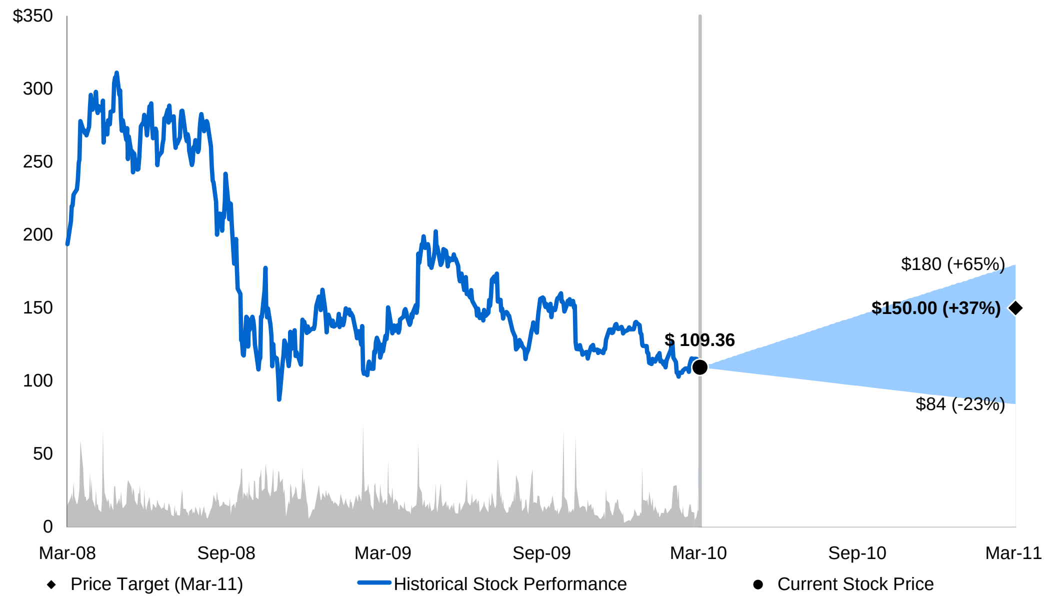
First Solar (FSLR, Overweight, PT $150)



Price Target $150		Based on 18x 2011e EPS of $8.39, in line with the long-term historical average.
Bull Case $180.00	20x Bull Case 2011e EPS of $9.20	**Utility-scale market growth leads to higher ASP and faster-than-expected ramp in capacity addition.** Utility-scale solar installations take off in the US, posting a 80% CAGR in 2009–12, and capacity additions arrive sooner than market is expecting. Assumes shipments of 1.93GW and ASPs of $1.45/watt.
Base Case $150.00	18x Base Case 2011e EPS of $8.39	**Business as usual.** Crystalline silicon prices decline 10-15% in 2011. Utility-scale solar installation CAGR of 60% in 2009–11. Assumes shipments of 1.93GW and ASPs of $1.35/watt.
Bear Case $84.00	12x Bear Case 2011e EPS of $7.00	**US utility-scale projects face delays .** German ground mounted market collapses due to feed-in tariff reductions; US utility-scale solar market growth is slower than expected (30% CAGR in 2009–11). Assumes shipments of 1.93GW in 2011 and ASPs of $1.25/watt.

E = Morgan Stanley Research estimates Source: FactSet, Morgan Stanley Research

Why Overweight?

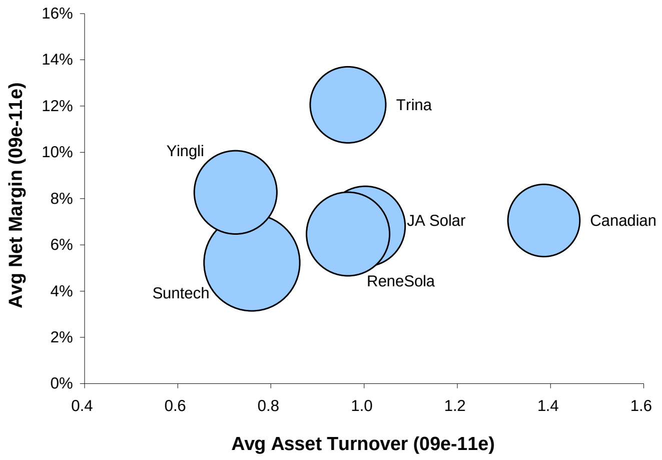
- *ASPs likely to be better than market is expecting.* ASP for modules are more protected from market price declines than market is expecting. The company's "bankability" advantage allows the company to charge a premium for its module, which the market appears to be underestimating. Vertical integration strategy will also protect module ASPs.
- *Lowest-cost producer of solar electricity with industry-leading scale.* FSLR's cost advantage will allow it to participate in growth of the US Utility Scale market, which is driven by cost, not IRR.
- Valuation of 17.1x 2010e EPS now reasonable after recent street downgrades to uncertainty regarding feed-in-tariff for ground mounted systems in Germany, and lower corporate wide margins due to higher than expected growth in systems business. Multiple expansion should reoccur when the market sees that the company is less exposed to pricing pressure compared to competitors.

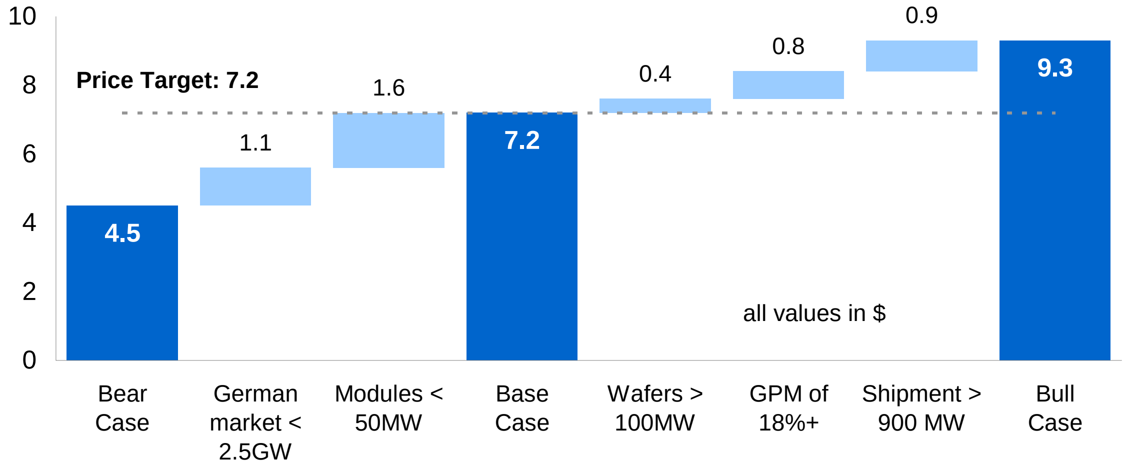
Near-term catalysts

- *Resolution of German farmland feed-in tariff uncertainty (next month)*
- *Utility-scale solar announcements in the US (FSLR has ~50% share of announced contracts) (coming quarters)*
- *Announcements of new plants (2H10)*

JA Solar (JASO.O) – Lowest Cost Producer

- It's globally the lowest cost solar cell producer.
- It has a clean balance sheet, i.e. it manages its working capital well.
- As a result of its flexible "white label" strategy it is an outsourced manufacturer of choice for cells and modules. This should allow it to grow with a nimble balance sheet.
- Stock is trading at a reasonable valuation of 1.2x P/BV with sustainable ROE in mid teens.
- JA Solar's expansion into downstream module making is ROE- and EPS-accretive and is well timed for disruption in European markets. It offers an opportunity to gain market share.
- As a result of its low cost and hence low pricing, it could replace high-cost European cell producers





Source: Morgan Stanley Research

Current Price: US$4.69
Price Target: US$7.2

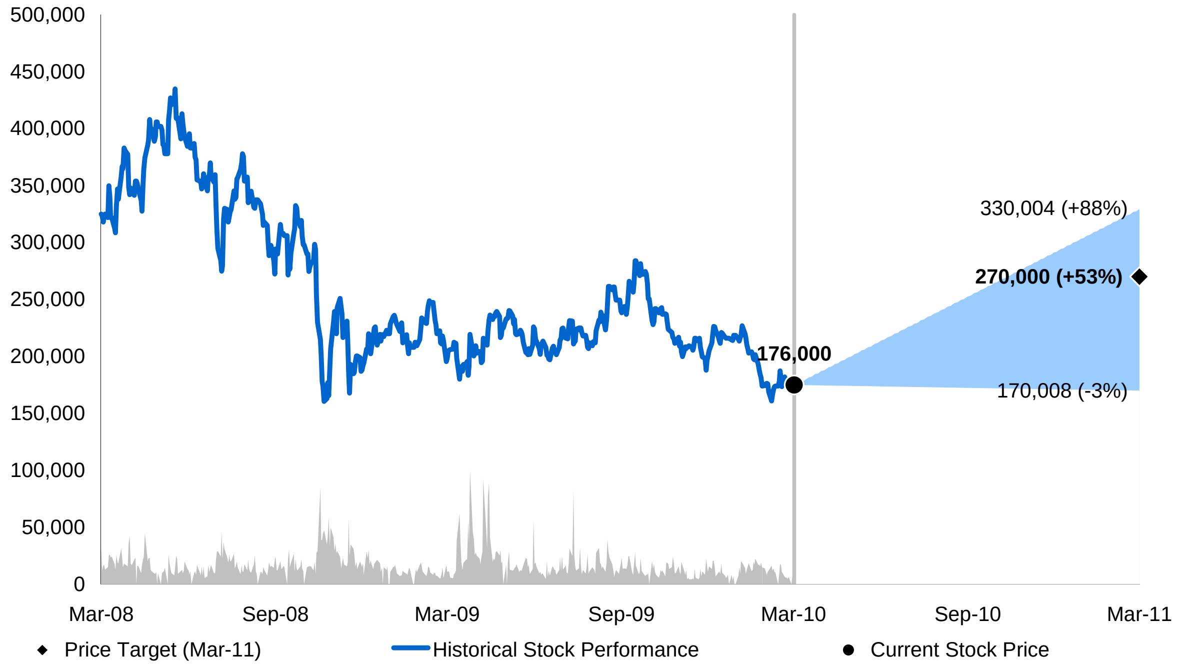
Potential Catalysts:
• Gain market shares from EU competitors through low pricing strategy
• Further improvement of cost structure

Key Value Drivers:
• Cell shipments
• Cell ASP
• Raw material cost (i.e., wafer cost)
• Integration into module making

Key Risks:
• Failure to win new international customers
• Slower demand recovery in its large end markets

OCI (010060.KS) – Second Lowest Cost Polysilicon Producer

- It's the second lowest cost polysilicon producer globally (after Hemlock).
- Has an unleveraged and clean balance sheet.
- Has option value in its landbank.
- Trading at 2.1x P/BV with 25% RoE and double-digit growth. Very compelling.



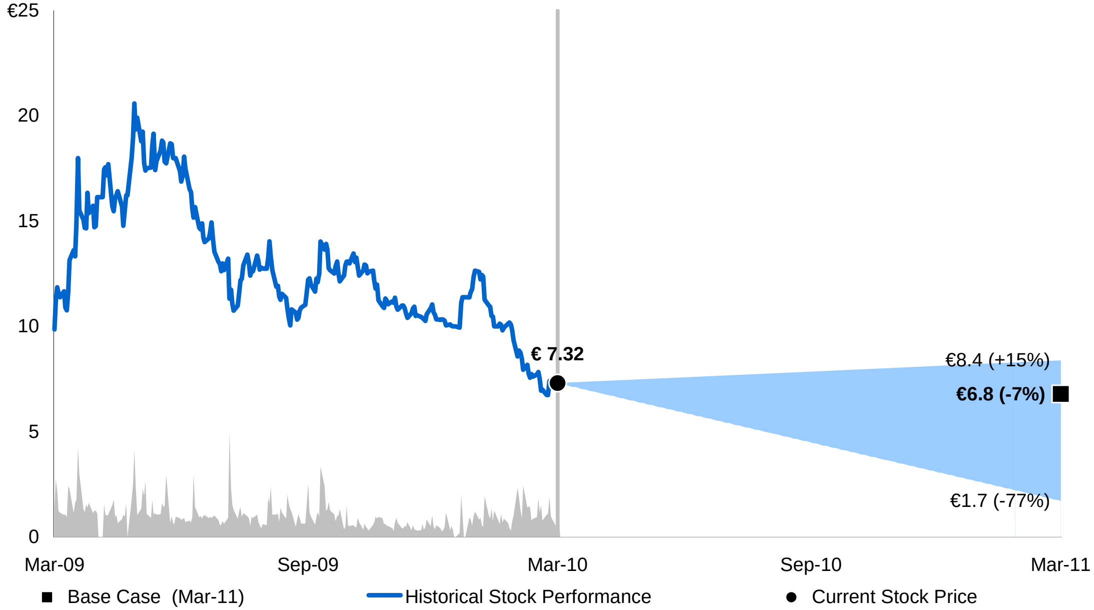
Source: Morgan Stanley Research

Current Price: KRW 193,000
Price Target: KRW 270,000

Potential Catalysts:
- Stability in polysilicon ASP.
- Further cost reduction.
- Progress on land development

Key Value Drivers:
- Polysilicon shipments
- Polysilicon ASP
- Polysilicon cost.

Q-Cells (QCEG.DE, UW, PT €6.8) – Structural Challenges



Price Target €6.8	P/Book valuation based on closest peers.
Bull Case €8.4	**Price/Book reflecting successful integration.** Given limited visibility on LT value, even on our bull-case operational assumptions, we prefer to reflect a Price / Book value in line with integrated peers, assuming Q-Cells successfully pursues its integrated project business.
Base Case €6.8	**P/Book valuation in line with peers.** Base case valuation on the median P/Book of wafer/cell companies LDK, MEMC PV Crystalox, JA Solar and Motech at 1.25x prospective 2010e BV, adjusted for write-offs reported with 4Q09 results.
Bear Case €1.7	**Asset-based valuation.** Average replacement cost for Dec-10 core cell capacity still running (500MW in Thalheim, 600MW in Malaysia), adjusted for inventory balance, 2010 capex, NPV of LDK pre-payment and Sunfilm charge. Debt at redemption value.

Source: FactSet, Morgan Stanley Research estimates

Why Underweight?

- *Not a leader.* We view cell technology as a commodity item.
- *Downside to bear case still substantial.* Visibility on long-term profitability is limited, meaning a break-up valuation could become relevant. We see substantial downside in this scenario.
- *Regulatory exposure*. Q-Cells is more exposed than peers both to the highly commoditised cell manufacturing segment and to regulatory curbs on greenfield projects in Germany, in our view.
- *Project success could surprise positively*. If management continues successful project development, this could both support cell pricing and improve working capital profile.

Near-term catalysts

- Annual report publication and conference call on 24 March.
- 1Q10 results on 11 May.

Global Upstream Solar: Valuation

	Rating	Price	Mkt Cap	P/E(X)		P/B (X)		EV/EBITDA (X)		ROE (%)		EPS Growth	
		24-Mar-10	($m)	10e	11e	10e	11e	10e	11e	10e	11e	10e	11e
Polysilicon Manufacturers													
KCC Corp (KRW)*	E	362,500	3,351	24.9	17.2	1.0	1.0	4.0	4.0	4.2	6.0	-46%	45%
OCI (KRW)*	O	193,000	3,882	10.9	10.3	2.3	1.9	7.8	6.2	26.5	22.6	7%	6%
Timminco (CAD)	NC	0.9	137	NM	NM	2.3	NM	NM	NM	(35.9)	NM	79%	NM
Tokuyama (JPY)*	O	504	1,918	16.7	15.0	0.9	1.0	2.4	3.6	0.1	0.1	30%	12%
Wacker-Chemie (EUR)*	O	106	7,351	11.9	9.6	1.9	1.6	5.9	5.1	17.7	19.3	136%	23%
Average				**16.4**	**13.0**	**2.0**	**1.6**	**6.0**	**5.3**	**4.8**	**13.2**	**45%**	**24%**
Polysilicon & Wafer													
MEMC (USD)*	E	14.7	3,340	21.0	15.9	1.4	1.3	8.7	6.8	7.3	8.8	NM	32%
REC Group (NOK)*	E	24.6	2,718	NM	NM	1.0	1.0	12.1	7.6	(0.0)	(0.0)	78%	46%
SolarWorld (EUR)*	E	10.6	1,581	NM	NM	1.3	1.3	25.0	19.1	(0.3)	(0.3)	-103%	4%
Average				**21.0**	**15.9**	**1.2**	**1.2**	**15.3**	**11.2**	**2.3**	**2.8**	**-13%**	**27%**
Solar Wafer Manufacturers													
Comtec (HKD)	NC	2.2	298	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Green Energy Tech (TWD)	NC	79.6	403	NM	NM	NM	NM	NM	NM	NM	NM	441%	59%
LDK Solar (USD)*	=	7.0	912	14.3	8.2	1.2	1.0	8.1	5.4	10.1	16.3	135%	74%
PV Crystalox (GBP)	NC	0.5	309	14.4	9.2	0.9	0.8	7.4	5.4	6.1	9.2	-50%	58%
ReneSola (USD)*	O	5.0	432	9.9	8.6	1.0	0.9	7.3	5.8	11.7	12.1	167%	15%
Sino-American (TWD)	NC	77.3	728	17.7	11.8	2.1	1.8	10.3	7.1	12.1	15.6	90%	50%
Solargiga (HKD)	NC	1.7	394	17.8	11.9	1.7	1.5	13.1	6.9	9.7	12.5	612%	49%
Wafer Works (TWD)	NC	50.1	424	20.9	11.1	2.4	2.0	NM	NM	NM	NM	NM	88%
Average				**15.8**	**10.1**	**1.5**	**1.3**	**9.3**	**6.1**	**10.0**	**13.1**	**232%**	**56%**

Source: Morgan Stanley Research

Global Downstream Solar: Valuation

	Rating	Price	Mkt Cap	P/E(X)		P/B (X)		EV/EBITDA (X)		ROE (%)		EPS Growth	
		24-Mar-10	($m)	10e	11e	10e	11e	10e	11e	10e	11e	10e	11e
Cell/Module Manufacturers													
Abengoa (EUR)	NC	21.5	2,596	11.1	8.7	2.4	1.9	9.1	7.6	21.5	22.0	3%	29%
Aleo solar (EUR)	NC	9.4	163	10.8	14.3	1.2	1.2	7.2	9.6	10.8	8.6	165%	-24%
Ascent Solar (USD)	NC	3.9	103	NM	NM	0.7	0.8	(3.1)	25.2	(15.0)	(10.0)	11%	44%
Canadian Solar (USD)	O	22.0	941	13.8	11.5	1.7	1.5	6.1	5.3	14.1	14.7	25%	19%
China Sunergy (USD)	NC	3.9	174	9.1	12.7	0.9	0.9	23.0	NM	10.2	6.8	300%	-28%
E-Ton Solar (TWD)	NC	63.3	437	21.8	21.0	1.5	1.3	21.0	14.8	6.7	6.1	157%	4%
ECD (USD)	NC	7.3	334	NM	NM	0.5	0.6	NM	NM	(16.6)	(11.4)	NM	40%
Evergreen Solar (USD)	E	1.2	247	NM	NM	0.7	0.9	10.4	14.4	(0.1)	(0.1)	75%	13%
First Solar (USD)	O	109.5	9,328	17.1	13.0	2.8	2.3	10.7	8.1	0.2	0.2	-15%	31%
Gintech (TWD)	NC	91.5	915	13.3	12.1	1.9	1.6	9.9	8.3	14.2	13.5	NM	10%
JA Solar (USD)*	O	4.9	815	14.2	11.5	1.1	1.0	3.6	3.1	8.1	9.3	411%	23%
Kaneka (JPY)	NC	576.0	2,194	18.2	14.0	0.8	0.8	4.8	4.4	4.3	5.4	29%	29%
Motech (TWD)*	U	118.5	1,403	24.6	23.4	3.1	2.9	11.5	10.0	0.1	0.1	NM	5%
Neo Solar (TWD)	NC	71.2	472	11.8	10.2	NM	NM	NM	NM	NM	NM	277%	NM
Q-Cells (EUR)*	U	7.5	913	80.5	19.4	1.2	1.2	9.4	7.9	1.6	6.4	101%	315%
Solar-Fabrik (EUR)	NC	2.8	44	10.2	8.1	0.7	0.7	4.5	4.0	7.1	8.2	177%	NM
Solon (EUR)	NC	5.3	88	NM	NM	0.4	0.7	22.1	11.6	(10.7)	0.4	92%	102%
Suntech (USD)*	E	13.9	2,447	24.5	24.2	1.4	1.4	10.9	10.1	6.7	6.4	15%	1%
Sunways (EUR)	NC	3.2	49	9.1	6.4	0.8	0.7	4.3	3.6	9.0	11.4	17%	43%
SunPower (USD)	NC	18.5	1,024	12.4	9.0	1.2	1.1	7.5	5.1	9.6	12.1	47%	38%
Trina Solar (USD)*	O	22.6	1,757	11.0	9.3	1.4	1.2	6.6	5.5	17.5	17.6	44%	19%
Yingli Green (USD)*	E	12.3	1,788	26.9	19.1	1.7	1.5	8.9	7.1	7.4	9.7	253%	41%
Average				**18.9**	**13.8**	**1.3**	**1.2**	**9.4**	**8.7**	**5.1**	**6.5**	**115%**	**38%**
Assemblers & Installers													
Conergy (EUR)	NC	0.8	412	NM	27.1	2.5	2.4	24.2	9.9	(11.1)	8.8	83%	183%
Phoenix (EUR)	NC	31.8	284	11.5	9.0	1.9	1.6	6.0	5.0	16.5	17.7	127%	27%
Akeena Solar (USD)	NC	1.1	39	NM	NM	NM	NM	NM	NM	NM	NM	25%	NM
S.A.G. Solarstrom (EUR)	NC	3.8	57	8.0	7.2	0.9	0.9	4.5	3.5	NM	NM	30%	11%
Average				**9.7**	**14.5**	**1.8**	**1.6**	**11.6**	**6.1**	**2.7**	**13.2**	**66%**	**74%**

Source: Morgan Stanley Research

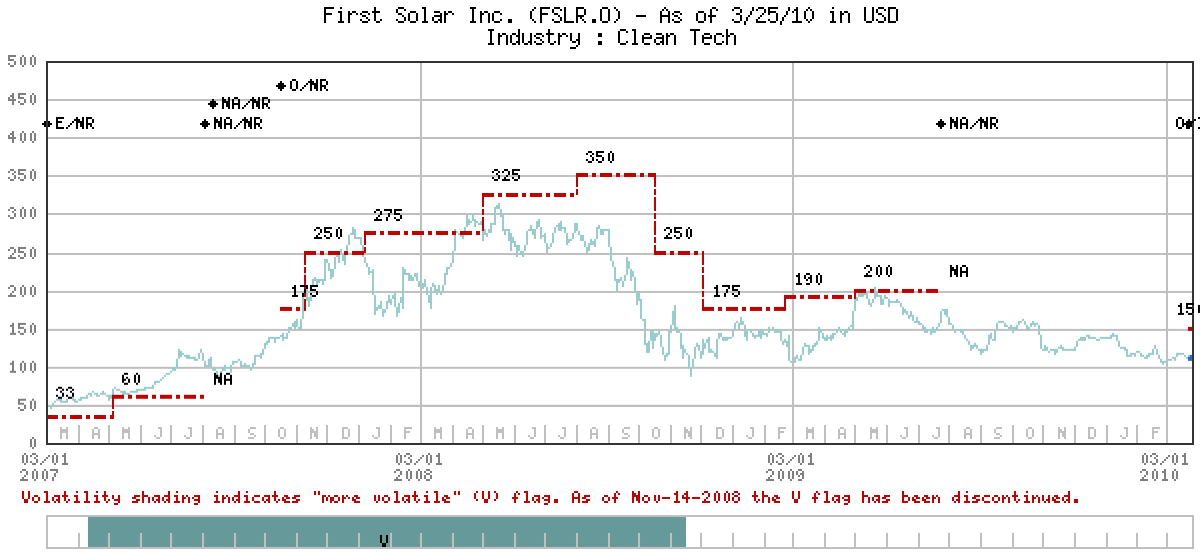
Global Solar Equipment: Valuation

	Rating	Price	Mkt Cap	P/E(X)		P/B (X)		EV/EBITDA (X)		ROE (%)		EPS Growth	
		24-Mar-10	($m)	10e	11e	10e	11e	10e	11e	10e	11e	10e	11e
Equipment Suppliers													
Advanced Energy Inst (USD	NC	14.9	629	20.5	10.0	2.2	NM	NM	NM	NM	NM	186%	104%
Applied Materials (USD)*	O	13.0	17,463	20.7	12.3	0.8	0.3	3.9	2.2	11.4	17.8	550%	69%
BTU International (USD)	NC	5.5	51	NM	NM	NM	NM	NM	NM	NM	NM	102%	NM
Coherent (USD)	NC	32.1	798	35.7	NM	1.3	NM	NM	NM	NM	NM	NM	NM
Komax Holding (CHF)	NC	88.5	280	46.2	16.9	1.4	1.3	16.3	9.3	3.1	7.8	139%	173%
Manz Automation (EUR)	NC	59.3	355	37.0	17.5	1.5	1.4	13.8	8.5	NM	NM	177%	111%
Meyer Burger Tech (CHF)	NC	27.4	1,141	31.1	18.6	2.8	2.2	9.6	6.8	9.1	12.0	0%	67%
OC Oerlikon (CHF)	NC	32.3	427	NM	9.8	0.9	0.7	5.5	3.6	(7.4)	7.5	90%	219%
PVA TePla (EUR)	NC	4.5	131	13.6	10.5	1.6	1.3	6.4	5.3	11.8	12.5	-31%	29%
Roth & Rau (EUR)	NC	27.0	546	23.5	16.4	1.5	1.4	9.5	6.7	6.5	8.8	24%	43%
Satcon Technology (USD)	NC	2.4	168	NM	25.6	NM	NM	NM	NM	NM	NM	81%	187%
Spire (USD)	NC	4.4	37	NM	NM	3.4	NM	NM	NM	NM	NM	94%	NM
ULVAC (JPY)	NC	2,335.0	1,254	59.1	26.6	1.1	1.1	10.4	7.5	1.9	4.1	127%	122%
Average				**31.9**	**16.4**	**1.7**	**1.2**	**9.4**	**6.2**	**5.2**	**10.1**	**128%**	**112%**

Source: Morgan Stanley Research

Stock Price, Price Target, and Ratings History

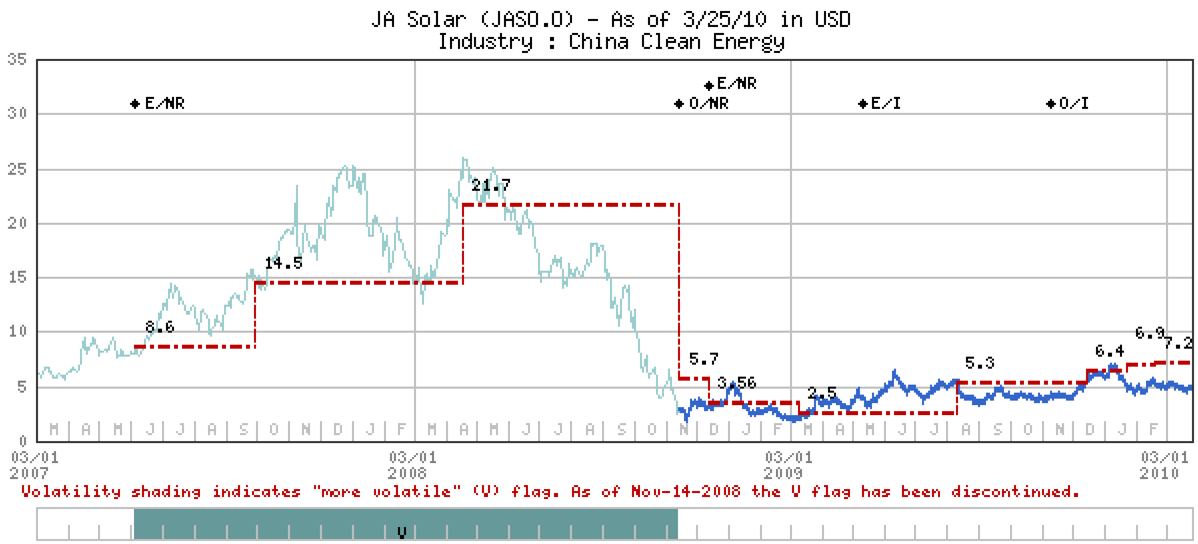
(See Rating Definitions)



Stock Rating History: 3/1/07 : E/NR; 8/2/07 : NA/NR; 8/10/07 : NA/NR; 10/16/07 : O/NR; 7/23/09 : NA/NR; 3/24/10 : O/I

Price Target History: 2/14/07 : 33; 5/4/07 : 60; 8/2/07 : NA; 10/16/07 : 175; 11/8/07 : 250; 1/7/08 : 275; 4/30/08 : 325; 7/31/08 : 350; 10/17/08 : 250; 12/2/08 : 175; 2/20/09 : 190; 4/30/09 : 200; 7/23/09 : NA; 3/24/10 : 150

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target -- No Price Target Assigned (NA)
Stock Price (Not Covered by Current Analyst) — Stock Price (Covered by Current Analyst) —
Stock and Industry Ratings (abbreviations below) appear as ♦ Stock Rating/Industry View
Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) More Volatile (V) No Rating Available (NA)
Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)



Stock Rating History: 6/5/07 : E/NR; 11/14/08 : O/NR; 12/12/08 : E/NR; 5/11/09 : E/I; 11/9/09 : O/I

Price Target History: 6/5/07 : 8.6; 9/28/07 : 14.5; 4/17/08 : 21.7; 11/14/08 : 5.7; 12/12/08 : 3.56; 3/10/09 : 2.5; 8/10/09 : 5.3; 12/14/09 : 6.4; 1/21/10 : 6.9; 2/18/10 : 7.2

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target No Price Target Assigned (NA)
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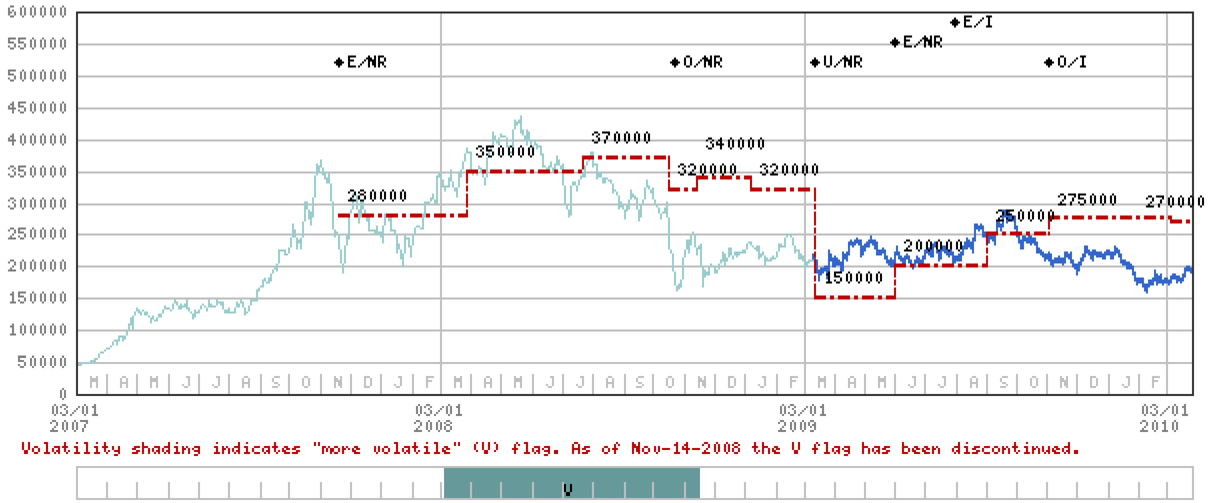
OCI Company Ltd. (010060.KS) - As of 3/25/10 in KRW
Industry : S. Korea Clean Tech



Stock Rating History: 11/20/07 : E/NR; 10/23/08 : O/NR; 3/12/09 : U/NR; 6/1/09 : E/NR; 7/31/09 : E/I; 11/2/09 : O/I

Price Target History: 11/20/07 : 280000; 3/28/08 : 350000; 7/21/08 : 370000; 10/17/08 : 320000; 11/14/08 : 340000; 1/6/09 : 320000; 3/12/09 : 150000; 6/1/09 : 200000; 9/1/09 : 250000; 11/2/09 : 275000; 3/4/10 : 270000

Source: Morgan Stanley Research   Date Format : MM/DD/YY   Price Target --   No Price Target Assigned (NA)

Stock Price (Not Covered by Current Analyst) —   Stock Price (Covered by Current Analyst) —

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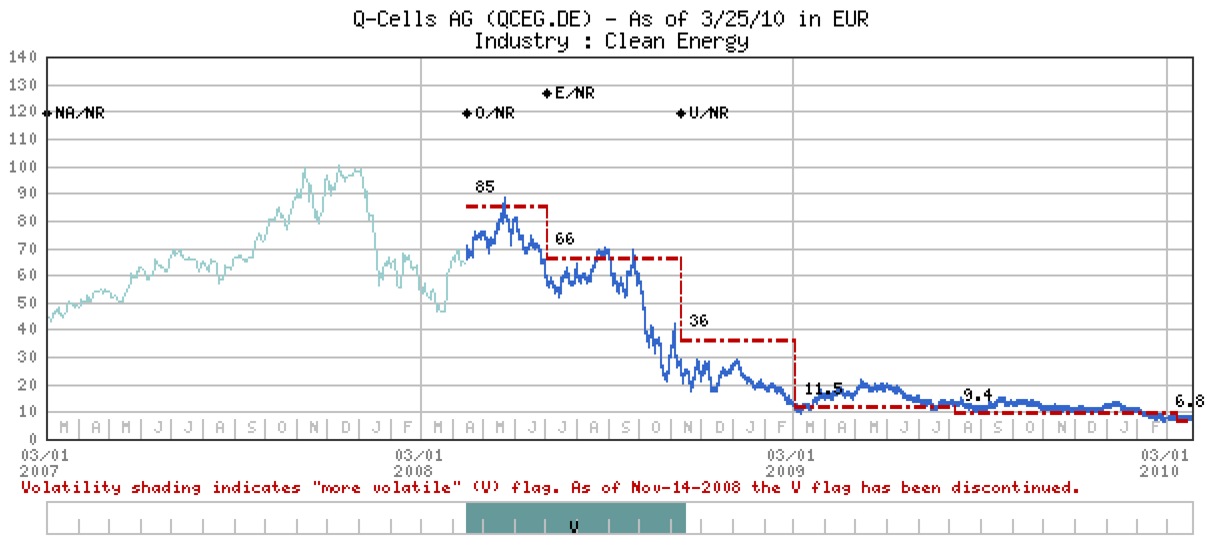

Stock Rating History: 3/1/07 : NA/NR; 4/15/08 : O/NR; 7/3/08 : E/NR; 11/11/08 : U/NR

Price Target History: 4/15/08 : 85; 7/3/08 : 66; 11/11/08 : 36; 3/3/09 : 11.5; 8/6/09 : 9.4; 3/11/10 : 6.8

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target -- No Price Target Assigned (NA)
Stock Price (Not Covered by Current Analyst) Stock Price (Covered by Current Analyst)
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Global Stock Ratings Distribution

(as of February 28, 2010)

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	Coverage Universe		Investment Banking Clients (IBC)		
Stock Rating Category	Count	% of Total	Count	% of Total IBC	% of Rating Category
Overweight/Buy	**1035**	**41%**	**316**	**42%**	**31%**
Equal-weight/Hold	**1091**	**43%**	**341**	**45%**	**31%**
Not-Rated/Hold	**22**	**1%**	**5**	**1%**	**23%**
Underweight/Sell	**382**	**15%**	**89**	**12%**	**23%**
Total	**2,530**		**751**		

Data include common stock and ADRs currently assigned ratings. An investor's decision to buy or sell a stock should depend on individual circumstances (such as the investor's existing holdings) and other considerations. Investment Banking Clients are companies from whom Morgan Stanley or an affiliate received investment banking compensation in the last 12 months.

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Overweight (O or Over) - The stock's total return is expected to exceed the total return of the relevant country MSCI Index, on a risk-adjusted basis over the next 12-18 months.
Equal-weight (E or Equal) - The stock's total return is expected to be in line with the total return of the relevant country MSCI Index, on a risk-adjusted basis over the next 12-18 months.
Not-Rated (NR) - Currently the analyst does not have adequate conviction about the stock's total return relative to the relevant country MSCI Index on a risk-adjusted basis, over the next 12-18 months.
Underweight (U or Under) - The stock's total return is expected to be below the total return of the relevant country MSCI Index, on a risk-adjusted basis, over the next 12-18 months.
Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

Analyst Industry Views

Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.
In-Line (I): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be in line with the relevant broad market benchmark, as indicated below.
Cautious (C): The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below.
Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index.

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