RENEWABLE ENERGY
European Renewable Energy

Initiation of Coverage

SECTOR VIEW

New:	NEUTRAL
Old:	NEUTRAL

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Solar

Picking the sunny spots

We forecast a strong volume recovery for the sector, but remain selective across the value chain. We regard Tier 1 poly manufacturers as benefiting from the volume uplift with sustainable competitive advantages that should compensate for falling prices. We believe that the midstream sector will not benefit from the recovery as we are highly uncertain as to sustainable margin levels. We also forecast strong growth prospects in the solar thermal sector. We initiate coverage on Wacker Chemie (WCH GR, TP 130), REC (REC NO, TP NOK 46), PV Crystaloxx (PVCS LN, TP 78p), Renesola (SOLA LN, TP 190p) and Solar Millennium (S2M GR, TP EUR 45) with Buy recommendations.

- We are bullish on Tier 1 poly manufacturers. Despite global overcapacity, tier 1 poly supply falls short of demand. We think there is too much pessimism with regards to their ability to sustain prices and maintain a cost advantage.
- We forecast strong growth prospects for solar thermal and a revival of the sector. Global installed capacity could grow by 53% CAGR 2009-20 and beyond that according to our estimate.
- We forecast strong volume recovery this year. But as a result of our forecast oversupply, we expect a scenario of higher volumes at lower profitability.
- We remain concerned over profitability in the cell and module basis as we expect further price erosion. We think that owing to the structural competitive disadvantages of European manufacturers, the benefit of the volume recovery will not feed through to earnings growth.

Our top buys are Wacker Chemie (WCH GR TP EUR 130) and REC (REC NO, TP NOK 46), both of whome are market leading Tier 1 poly manufacturers. We think that Wacker benefits from substantial and sustainable competitive advantages in terms of pricing and costs. Our other upstream Buys are the low cost Asian based wafer manufacturers, PV Crystaloxx (PVCS LN, TP 78p) and Renesola (SOLA LN, TP 190p). Within downstream, we are buyers of Solar Millennium (S2M GR, TP EUR 45). SMA Solar Technologies (S92 GR, TP EUR 110) is our top equipment pick and we are buyers of Centrotherm (CTN GR, TP EUR 50). We initiate coverage of Conergy (CGY GR, TP EUR 0.5) and Solon (SOO1 GR, TP EUR 4.50) with a Reduce recommendation and reiterate our Reduce recommendations on Q-Cells (QCE GR, TP 9.40), Solarworld (SWV GR, TP EUR 12) and Manz Automation (M5Z gr, TP EUR 30). Abengoa (ABG SM, TP EUR 25), Meyer Burger (MBTN SW, TP SFR 26) and Roth & Rau (R8R GR, TP EUR 29) are rated Neutral.

ANY AUTHORS NAMED ON THIS REPORT ARE RESEARCH ANALYSTS UNLESS OTHERWISE INDICATED.
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Nomura International plc

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Executive summary

- We are bullish on Tier 1 poly manufacturers on the basis of their exposure to the end market recovery with sustainable competitive advantages that we see as under-recognised in current share prices. The upstream 2011E P/E is 11x vs 20x for the solar sector average.
- We expect European cell and module manufacturers to continue to underperform owing to their structural disadvantage and we are not tempted by current share price levels. We prefer downstream names that are geared into the volume recovery.
- We forecast strong long-term growth prospects for solar thermal.
- We continue our selective stance in the equipment sector, especially after the strong performance over the past six months.
- Our model suggests higher volumes at lower profitability on the basis of a strong end market recovery but persistent overcapacity across the value chain.
- Key buys: Wacker Chemie (WCH GR, TP EUR 130), REC (REC NO, TP NOK 46), PV Crystaloxx (PVCS LN, TP 78p), Renesola (SOLA LN, TP 190p), SMA Solar Technologies (S92 GR, TP EUR 110), Solar Millennium (S2M GR, TP EUR 45), Centrotherm (CTN GR, TP EUR 50). Reduces: Q-Cells (QCE GR, TP EUR 9.40), Solarworld (SWV GR, TP EUR 12), Conergy (CGY GR, TP EUR 0.5), Solon (SOO1 GR, TP 4.50), Manz Automation (M5Z GR, TP 30). Neutrals: Abengoa (ABG SM, TP EUR 25), Roth & Rau (R8R GR, TP EUR 29), Meyer Burger (MBTN SW, TP SFR 26).

We perceive a complex attitude by investors towards the solar sector. We believe that there is a lot of appetite for the long-term growth prospects but see concerns over structural changes that make profitable investing difficult. Believing in the former and taking the latter as a factor of differentiation between segments and companies, we believe that current share prices provide a number of opportunities in a sector that is recovering from arguably its worst year in history.

Upstream: Tier 1 poly manufacturers attractive

Tier 1 poly manufacturers are the most attractively valued vs. the solar segment and benefit from the volume recovery while sustaining competitive advantage

Buy Wacker, REC

We see poly manufacturers as standing out as the most attractive of the big segments within the solar space on aggregate with a 2011E P/E multiple of 11x vs. the solar sector average of 20x. We think that Tier 1 poly manufacturers stand to outperform despite overcapacity and falling prices as we see them sustaining a more favourable price trajectory and benefitting from the strong end volume recovery in the sector. In our view, capacity utilisation will be above the segment average, as Tier 1 supply still falls short of demand and the market leaders have sustainable quality and cost advantages. We are concerned about wafer prices in the early parts of this year, but think this is reflected in current share prices.

Mid and downstream: Avoid cells and modules, looking for downstream

The midstream segment is left out of the recovery. We are bearish despite low share prices

Reduce Q-Cells, Solarworld

Despite share price levels close to trough again, we are not tempted by the midstream segment. We consider the cell and module segment in Europe as the most challenged within the sector and as potentially a candidate for missing out on the benefits of a recovery. We see it as characterised by structural cost disadvantages for manufacturers in Europe, overcapacity and intense competition. We think that it is likely that manufacturing dislocation will continue and that first tier Asian names continue to capture market share. In our view it is highly uncertain where long-term margins will go. Within the segment, we prefer vertically integrated names and those with downstream access, strong branding and channel penetration. We see them as sheltered to a point if they can sustain a degree of premium pricing. Some of them might eventually move towards a pure marketing model with strong brands and white labeled manufacturing. As downstream access is becoming more valuable in order to secure volumes, we expect the trend of vertical integration to continue. But we think that project development provides limited benefit, while channels into the roof top market are more important.

Equipment: Selective stance

Selective stance on equipment after strong performance

Buy SMA, Centrotherm, Reduce Manz

We believe that equipment manufacturers will benefit from volume and innovation driven capacity build. But we continue with our selective stance as order signals are still mixed, even though we are beginning to see improvement in order momentum. We expect market leaders with high end product, integration across the production chain and turnkey products to outperform. Single equipment focused names are, in our view, later recovery stocks. The segment has outperformed the solar sector by 30% over the past six months

We see vertical integration as a trend that will also continue to shape the equipment sector. We continue to like module agnostic system equipment that has exposure into downstream volumes, eg inverters.

Solar thermal

We forecast strong long-term growth prospects in solar thermal and expect the market to pick up from 2010

Buy Solar Millennium

We see solar thermal as a highly promising segment within solar. Global solar thermal capacity could reach c 830GW by 2050 from currently 560MW with potential 53% CAGR in capacity between 2009 and 2020 (source: Greenpeace and Estela). As financing is one of the big drivers for solar thermal given the large scale of projects, the recovery in availability of financing should lend new momentum to the market, along with new clarity on regulation in key markets, namely Spain. Scalability, potential for co-firing with traditional turbines and economics that stack up favourably vs other solar technologies at our estimated new entrant cost of EUR 120-180/MWh are other factors that make us like the segment.

According to our estimates, solar thermal is the most attractively valued segment within the solar sector at c7x P/E 2011E, even though we caution that the segment is not very broad in terms of number of stocks.

View on the global solar sector

Our global solar model captures our views on demand and supply across the global solar value chain. We track and forecast demand on a detailed country level and on a global basis for poly and photovoltaics (pv) installations. We match this with our forecast global supply by manufacturers in each sector of the solar value chain. Our model is based on current policies and regulations and only takes schemes and policies into account once signed into law.

We forecast a strong demand recovery but expect higher volumes at lower profitability for the sector

In a nutshell, we forecast a strong demand turn, as price elasticity is coming into the market, but expect a scenario of higher volumes at lower profitability for most of the sector.

Despite short-term uncertainty, we believe that the global solar sector is a highly attractive long-term growth segment in the renewables space: We forecast 21% global demand growth to 2015, which would imply 38GW of capacity being installed compared with the current global installed capacity of c17GW. This is equal to a 30GW pv and over 200kt of polysilicon annual market by 2015 compared with 5.6GW of pv demand in 2008, with further growth beyond that. Solar thermal offers even higher growth prospects in our view as the segment starts from a lower base and has the potential for installed capacity to reach 80GW by 2050.

Overcapacity across all segments to persist

Tier 1 supply falls short of demand

But our model suggests overcapacity across all segments for some years yet. While we forecast poly overcapacity on the basis of our estimated risked capacity including umg-si, Tier 1 and 2 capacity is likely to fall short of demand by 2015. Tier 1 capacity is below demand. Even when considering only demand by Tier 1 module manufacturers as the most likely customers of Tier 1 poly, this still underpins 60-70% of capacity. For the other tiers, the degree of uncertainty relating to actual build and to output is high, in our view. We forecast module overcapacity to persist as we see the current volume strength sending the wrong supply signal and thus capacity taking longer to be withdrawn from the market. Over the long term, we see the capacity balance improving, but expect structural overcapacity as a rapid innovation cycle, market share battles, and expectations of growth in new markets continue to drive net build.

ASP erosion is likely to continue across the value chain, and to increase in wafers

We expect ASP erosion to continue across the value chain. Poly prices have held steady over most of 2009, but we expect the soft capacity balance to put pressure on prices. We expect strong pricing pressure in the wafer segment in the early parts of this year: Wafer prices have held up while module and poly prices have declined sharply and we expect pricing pressure to move into the segment now as a number of companies have indicated contract renegotiations. Module ASP erosion is likely to continue in our view, but at a more moderate pace than last year. We currently forecast 15% module price erosion on average. The final outcome of the German fee-in tariff legislation will be paramount.

Figure 1: Nomura global solar model

SUMMARY	2008	2009E	2010E	2011E	2012E	2013E	2014E	2015E
Global PV Demand	5,606	6,053	8,927	12,444	16,292	19,998	24,580	30,156
% growth		8.0%	47.5%	39.4%	30.9%	22.7%	22.9%	22.7%
Global PV Capacity	14,050	16,500	20,587	24,263	29,059	33,887	38,370	43,138
% growth	0%	17%	25%	18%	20%	17%	13%	12%
Global Poly Demand	75,276	67,143	90,293	116,491	137,227	161,014	183,445	216,442
% growth	0%	-11%	34%	29%	18%	17%	14%	18%
Realistic Global Poly Capacity	71,867	94,007	138,184	176,541	211,540	239,189	256,060	270,822
% growth	86%	59%	44%	23%	21%	8%	7%	6%

PV CAPACITY IN MW	2008	2009E	2010E	2011E	2012E	2013E	2014E	2015E
Global Capacity	14,050	16,500	20,587	24,263	29,059	33,887	38,370	43,138
% growth		17.4%	24.8%	17.9%	19.8%	16.6%	13.2%	12.4%
Tier-1 Players	**6,879**	**8,344**	**10,785**	**12,521**	**13,999**	**14,902**	**15,786**	**16,692**
% growth		21.3%	29.3%	16.1%	11.8%	6.5%	5.9%	5.7%
Others	6455	5806	6677	8012	9615	11538	13845	16614
% growth		-10.1%	15.0%	20.0%	20.0%	20.0%	20.0%	20.0%
Total crystalline capacity	**13,334**	**14,150**	**17,462**	**20,533**	**23,614**	**26,440**	**29,631**	**33,306**
Others (Thin Film)								
First Solar	716	850	1,100	1,300	1,800	1,980	2,178	2,287
Others	0	1,500	2,025	2,430	3,645	5,468	6,561	7,545
Total thin film	**716**	**2,350**	**3,125**	**3,730**	**5,445**	**7,448**	**8,739**	**9,832**
Total capacity	**14,050**	**16,500**	**20,587**	**24,263**	**29,059**	**33,887**	**38,370**	**43,138**

PV DEMAND in MW	2008	2009E	2010E	2011E	2012E	2013E	2014E	2015E
GLOBAL CAPACITY	14,050	16,500	20,587	24,263	29,059	33,887	38,370	43,138
GLOBAL PRODUCTION CAPACITY	9,133	10,725	13,382	15,771	18,888	22,027	24,941	28,040
% growth		17.4%	24.8%	17.9%	19.8%	16.6%	13.2%	12.4%
GLOBAL DEMAND	5,606	6,053	8,927	12,444	16,292	19,998	24,580	30,156
% growth		8.0%	47.5%	39.4%	30.9%	22.7%	22.9%	22.7%
-Thin Film		901	1,311	1,885	2,589	3,694	4,715	6,019
GLOBAL DEMAND BY REGION								
Germany	1,500	2,925	3,071	3,225	3,386	3,555	3,733	3,920
% growth		95.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Italy	258	387	774	1,006	1,308	1,570	1,884	2,260
% growth		50.0%	100.0%	30.0%	30.0%	20.0%	20.0%	20.0%
France	46	299	493	814	1,221	1,771	2,390	2,868
% growth		550.0%	65.0%	65.0%	50.0%	45.0%	35.0%	20.0%
Spain	2,511	350	500	600	600	630	662	695
% growth		-86.1%	42.9%	20.0%	0.0%	5.0%	5.0%	5.0%
EUROPE	**4,549**	**4,401**	**5,657**	**7,114**	**8,959**	**10,518**	**12,260**	**14,053**
% growth		-3.3%	28.6%	25.7%	25.9%	17.4%	16.6%	14.6%
USA	**342**	**496**	**1,488**	**2,603**	**3,515**	**4,393**	**5,492**	**6,865**
% growth		45.0%	200.0%	75.0%	35.0%	25.0%	25.0%	25.0%
China	45	113	169	506	1,013	1,519	2,278	3,417
% growth		150.0%	50.0%	200.0%	100.0%	50.0%	50.0%	50.0%
ASIA	**589**	**778**	**1,215**	**1,961**	**2,823**	**3,792**	**5,146**	**7,052**
% growth		32.1%	56.2%	61.4%	43.9%	34.4%	35.7%	37.0%
RoW	**126**	**378**	**567**	**765**	**995**	**1,294**	**1,682**	**2,186**
% growth		200.0%	50.0%	35.0%	30.0%	30.0%	30.0%	30.0%

POLYSILICON DEMAND IN METRIC TONS	2008	2009E	2010E	2011E	2012E	2013E	2014E	2015E
Solar	51,051	47,763	67,037	89,746	109,146	131,528	152,485	183,934
% growth		-6.4%	40.4%	33.9%	21.6%	20.5%	15.9%	20.6%
Semiconductors	24,225	19,380	23,256	26,744	28,082	29,486	30,960	32,508
% growth		-20.0%	20.0%	15.0%	5.0%	5.0%	5.0%	5.0%
Total Polysilicon Demand	**75,276**	**67,143**	**90,293**	**116,491**	**137,227**	**161,014**	**183,445**	**216,442**
%growth		**-10.8%**	**34.5%**	**29.0%**	**17.8%**	**17.3%**	**13.9%**	**18.0%**

POLYSILICON CAPACITY IN METRIC TONS	2008	2009E	2010E	2011E	2012E	2013E	2014E	2015E
Realistic Tier 1	48,240	61,551	82,387	102,994	116,760	127,401	135,733	141,403
Realistic Tier 1+2	56,910	91,089	121,444	143,412	172,199	185,559	196,598	205,108
Realistic Tier 1+2+3	67,967	111,148	151,221	180,462	213,718	230,011	243,995	255,722
Realistic Tier 1+2+3+umg-si	71,867	116,148	160,221	192,862	230,218	248,161	263,960	277,684
REALISTIC AVERAGE POLY CAPACITY	**71,867**	**94,007**	**138,184**	**176,541**	**211,540**	**239,189**	**256,060**	**270,822**
% growth		31%	47%	28%	20%	13%	7%	6%
Total Polysilicon Demand	**75,276**	**67,143**	**90,293**	**116,491**	**137,227**	**161,014**	**183,445**	**216,442**

Source: Photon, EPIA, Solarbuzz, Company data, Nomura estimates

Stock recommendations

Our top buys are **Wacker Chemie** and **REC**. Both are market leading Tier 1 poly manufacturers. We think that Wacker benefits from substantial and sustainable competitive advantages in terms of pricing and costs. Our other upstream Buys are the low cost Asian based wafer manufacturers, **PV Crystaloxx** and **Renesola.** Within downstream, we are buyers of **Solar Millennium**. **SMA Solar Technologies** is our top equipment pick and we are buyers of **Centrotherm**. We initiate coverage of **Conergy** and **Solon** with a Reduce recommendation and reiterate our Reduce recommendations on **Q-Cells**, **Solarworld** and **Manz** Automation. **Abengoa, Meyer Burger** and **Roth & Rau** are rated Neutral.

Figure 2: Investment case

Stock	Ticker	Recommendation	Price target	PT (old)	Investment points
Wacker Chemie	WCHG.DE / WCH GR	Buy	EUR 130	n/a	Market leading Tier 1 poly manufacturer with sustained price, quality, cost and execution advantage
REC	REC NO / REC.OL	Buy	DKK 46	n/a	Tier 1 poly manufacturer. The current share price weakness reflects negative sentiment on wafer prices and execution of the company's capacity build. We see this as a buying opportunity as long term growth prospects should return to focus later in the year.
PV Crystaloxx	PVCS LN / PVCS.L	Buy	GBp 78	n/a	As a low cost high quality wafer manufacturer with outsourced production, PV Crystaloxx should hold near term profitability as we expect it to pass through pricing pressure. This positions the company as standing out to benefit from long term growth with high profitability.
Renesola	SOLA LN / SOLA.L	Buy	GBp 190	n/a	We think that Renesola has a superior business model, with low cost China based wafer manufacturing, coupled with in house poly production and increasing vertical integration through module manufacturing. With this comes an intriguing strategy that pursues manufacturing white labelling for European manufacturers which could be anticipating where the sector might head over the long term. We recognise high execution risk as a new entrant, but the growth prospects imply strong upside.
Q-Cells	QCE GR / QCEG.DE	Reduce	EUR9.40	EUR 9.30	We are concerned that the company will be left out of the recovery as the impact of its restructuring will come in too late and many questions relating to the business model remain open.
Solarworld	SWV GR / SWVG.DE	Reduce	EUR 12	EUR15.30	We think that the company is one of the few likely survivors, but are concerned over the long term level of profitability. We are therefore not tempted by the current share price level, but recognise that the stock may trade as a benchmark for the sector.
Conergy	CGY GR / CGYG.DE	Reduce	EUR 0.5	n/a	We see little barriers to entry in the company's installation and wholesale business, while we estimate that its manufacturing is uncompetitive. With huge balance sheet issues and being in breach of its banking covenants, the company's survival depends on its ability to negotiate further covenant wafers and a refinancing. Its major shareholder who is also an underwriter of the main financing facility is looking to sell. Takeover speculation could continue.
Solon	SOO1 GR / SOOG.DE	Reduce	EUR 4.50	n/a	Despite growth prospects, the company's business model of module manufacturing and solar park development is undifferentiated and constrained by a tight balance sheet. This might limit its ability to build up strength in some of the downstream areas where it is attractively positioned. We forecast it will take more than a year to return to profitability despite the attractive sector backdrop.
Solar Millennium	S2M GR / S2MG.DE	Buy	EUR 45	n/a	On the back of our bullish expectations for solar thermal we like Solar Millennium as a pure play.
Abengoa	ABG SM / ABG.MC	Neutral	EUR 25	n/a	We see the growth prospects from new solar thermal capacity and biofuels plants as reflected in the current share price.
Centrotherm	CTN GR / CTNG.DE	Buy	EUR 50	EUR 38	Centrotherm stands out in the equipment sector as one of the few companies with growth and has having the highest quality order book. We expect that the company's market leading products will support further order momentum this year.
Roth & Rau	R8R GR / R8RG.DE	Neutral	EUR 29	EUR 22	Roth and Roth could be a late recovery name with its focus on single equipment by large manufacturers which we think will stay subdued this year.
Manz Automation	M5Z GR / M5GG.DE	Reduce	EUR 30	EUR 32	We think that the share price is discounting too much optimism on a 2010 recovery and future growth potential from lithium ion batteries. Even with a sizeable recovery built into our numbers and some growth contribution from lithium ion batteries, our share price target of Eur 30 implies c50% downside. Manz is the most expensive stock in the equipment subsector with the lowest visibility.
Meyer Burger	MBTN SW / MBTN.S	Neutral	SWF 26	SWF 260*	The company's attractions as market leader in wafer sawing equipment are in our view reflected in the current share price. For a further leg up, increased firm order momentum is required in our view. We see the company's drive towards vertical integration as reflective of a sector trend
SMA Solar Technology	S92 GR / S92G.DE	Buy	EUR110	EUR 110	Recent weakness in the share price on the back of regulatory uncertainty in Germany and a misunderstood statement regarding profitability provide a buying opportunity in a downstream name that is directly geared to end market volume growth.

*Source: Nomura estimates: *adjusted for new number of shares*

Views on the global solar sector

The big trends

Appetite for growth exposure, but we are selective as the sector reshapes

As the sector has gone through arguably one of the most difficult periods ever, we think that a number of mega themes have emerged that will continue to shape the sector. We see these big overarching trends as:

- Long-term growth of the solar sector as part of the global renewables & climate change theme
- The sector reshapes as it goes mainstream and matures

We think that investors will continue to want exposure to the long-term growth theme, which will continue to drive interest in the sector. But the challenges on the way from the shake-up in the sector will continue to pose a challenge and require a selective stance, in our view.

Nomura global solar model

Our global solar model captures our views on demand and supply across the global solar value chain. We track and forecast demand on a detailed country level and on a global basis for poly and pv installations. We match this with our forecast global supply by manufacturers in each sector of the solar value chain. Our model is based on current policies and regulations and only takes schemes and policies into account once signed into law.

21 pa global demand growth to 2015 for pv, 53% CAGR 2009-20 for solar thermal

In a nutshell, despite short-term uncertainty, we believe that the global solar sector is a highly attractive long-term growth segment in the renewables space: we forecast 21% global demand growth to 2015, which would imply 38GW of capacity being installed compared with the current global installed capacity of c17GW. This is equal to a 30GW pv and over 200kt of polysilicon annual market by 2015 compared with 5.6GW of pv demand in 2008, with further growth beyond that. We forecast that solar thermal offers even higher growth prospects because the segment starts from a lower base and its installed capacity could reach 860GW by 2050 vs just over 500MW currently installed. We are aware of different forecasts: For example, the EPIA suggests a range between 12-23GW pa of installations by 2013. Photon forecasts 8,6GW for 2009. Sharp is currently expecting c 8.5GW of demand for 2010.

Global overcapacity to persist

Our model also suggests overcapacity for a time to come yet, both at the module and at the polysilicon level.

Figure 3: Nomura global solar model

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Global PV Demand	5,606	6,053	8,927	12,444	16,292	19,998	24,580	30,156
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Others	6455	5806	6677	8012	9615	11538	13845	16614
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GLOBAL PRODUCTION CAPACITY	9,133	10,725	13,382	15,771	18,888	22,027	24,941	28,040
% growth		17.4%	24.8%	17.9%	19.8%	16.6%	13.2%	12.4%
GLOBAL DEMAND	5,606	6,053	8,927	12,444	16,292	19,998	24,580	30,156
% growth		8.0%	47.5%	39.4%	30.9%	22.7%	22.9%	22.7%
-Thin Film		901	1,311	1,885	2,589	3,694	4,715	6,019
GLOBAL DEMAND BY REGION								
Germany	1,500	2,925	3,071	3,225	3,386	3,555	3,733	3,920
% growth		95.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Italy	258	387	774	1,006	1,308	1,570	1,884	2,260
% growth		50.0%	100.0%	30.0%	30.0%	20.0%	20.0%	20.0%
France	46	299	493	814	1,221	1,771	2,390	2,868
% growth		550.0%	65.0%	65.0%	50.0%	45.0%	35.0%	20.0%
Spain	2,511	350	500	600	600	630	662	695
% growth		-86.1%	42.9%	20.0%	0.0%	5.0%	5.0%	5.0%
EUROPE	**4,549**	**4,401**	**5,657**	**7,114**	**8,959**	**10,518**	**12,260**	**14,053**
% growth		-3.3%	28.6%	25.7%	25.9%	17.4%	16.6%	14.6%
USA	**342**	**496**	**1,488**	**2,603**	**3,515**	**4,393**	**5,492**	**6,865**
% growth		45.0%	200.0%	75.0%	35.0%	25.0%	25.0%	25.0%
China	45	113	169	506	1,013	1,519	2,278	3,417
% growth		150.0%	50.0%	200.0%	100.0%	50.0%	50.0%	50.0%
ASIA	**589**	**778**	**1,215**	**1,961**	**2,823**	**3,792**	**5,146**	**7,052**
% growth		32.1%	56.2%	61.4%	43.9%	34.4%	35.7%	37.0%
RoW	**126**	**378**	**567**	**765**	**995**	**1,294**	**1,682**	**2,186**
% growth		200.0%	50.0%	35.0%	30.0%	30.0%	30.0%	30.0%

POLYSILICON DEMAND								
IN METRIC TONS	**2008**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**2014E**	**2015E**
Solar	51,051	47,763	67,037	89,746	109,146	131,528	152,485	183,934
% growth		-6.4%	40.4%	33.9%	21.6%	20.5%	15.9%	20.6%
Semiconductors	24,225	19,380	23,256	26,744	28,082	29,486	30,960	32,508
% growth		-20.0%	20.0%	15.0%	5.0%	5.0%	5.0%	5.0%
Total Polysilicon Demand	**75,276**	**67,143**	**90,293**	**116,491**	**137,227**	**161,014**	**183,445**	**216,442**
% growth		**-10.8%**	**34.5%**	**29.0%**	**17.8%**	**17.3%**	**13.9%**	**18.0%**

POLYSILICON CAPACITY								
IN METRIC TONS	**2008**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**2014E**	**2015E**
Wacker Chemie	15,000	19,000	26,000	26,000	35,000	39,600	42,800	44,000
% growth	50%	26.7%	36.8%	0.0%	34.6%	13.1%	8.1%	2.8%
REC	6,000	7,640	13,821	20,027	24,342	29,588	32,027	33,328
% growth	3%	27%	81%	45%	22%	22%	8%	4%
Hemlock	14,500	20,000	25,000	36,000	36,720	37,454	39,327	41,293
% growth	32%	38%	25%	44%	2%	2%	5%	5%
Tokuyama	5,200	8,200	11,000	14,000	14,700	14,994	15,744	16,531
% growth	4%	58%	34%	27%	5%	2%	5%	5%
Mitsubishi Materials	2,100	2,250	2,500	2,800	2,940	3,087	3,241	3,403
% growth	11%	7%	11%	12%	5%	5%	5%	5%
Mitsubishi Polysilicon	1,550	1,600	1,840	2,024	2,125	2,231	2,343	2,460
% growth	11%	3%	15%	10%	5%	5%	5%	5%
MEMC	8,200	8,500	10,000	12,000	12,240	12,852	13,495	14,169
% growth	37%	4%	18%	20%	2%	5%	5%	5%
Sumitomo Titanium	1,050	1,200	1,380	1,587	1,666	1,750	1,837	1,929
% growth	5%	14%	15%	15%	5%	5%	5%	5%
TIER-1 CAPACITY	53,600	68,390	91,541	114,438	129,734	141,557	150,814	157,114
% growth	27%	28%	34%	25%	13%	9%	7%	4%
TIER-2 CAPACITY	10,200	34,750	45,950	47,550	65,223	68,421	71,606	74,947
% growth	0%	241%	32%	3%	37%	5%	5%	5%
TIER-3 CAPACITY	17,010	30,860	45,810	57,000	63,875	68,388	72,919	77,869
% growth	217%	81%	48%	24%	12%	7%	7%	7%
METALLURGICAL SILICON	19,500	25,000	45,000	62,000	82,500	90,750	99,825	109,808
% growth	301%	28%	80%	38%	33%	10%	10%	10%
TOTAL POLY SI CAPACITY	100,310	159,000	228,301	280,988	341,331	369,115	395,164	419,738
% growth	86%	59%	44%	23%	21%	8%	7%	6%
Realistic Tier 1	48,240	61,551	82,387	102,994	116,760	127,401	135,733	141,403
Realistic Tier 1+2	56,910	91,089	121,444	143,412	172,199	185,559	196,598	205,108
Realistic Tier 1+2+3	67,967	111,148	151,221	180,462	213,718	230,011	243,995	255,722
Realistic Tier 1+2+3+umg-si	71,867	116,148	160,221	192,862	230,218	248,161	263,960	277,684
REALISTIC AVERAGE POLY CAPACITY	**71,867**	**94,007**	**138,184**	**176,541**	**211,540**	**239,189**	**256,060**	**270,822**
% growth		31%	47%	28%	20%	13%	7%	6%
Total Polysilicon Demand	**75,276**	**67,143**	**90,293**	**116,491**	**137,227**	**161,014**	**183,445**	**216,442**

Source: Photon, EPIA, Solarbuzz, Company data, Nomura estimates

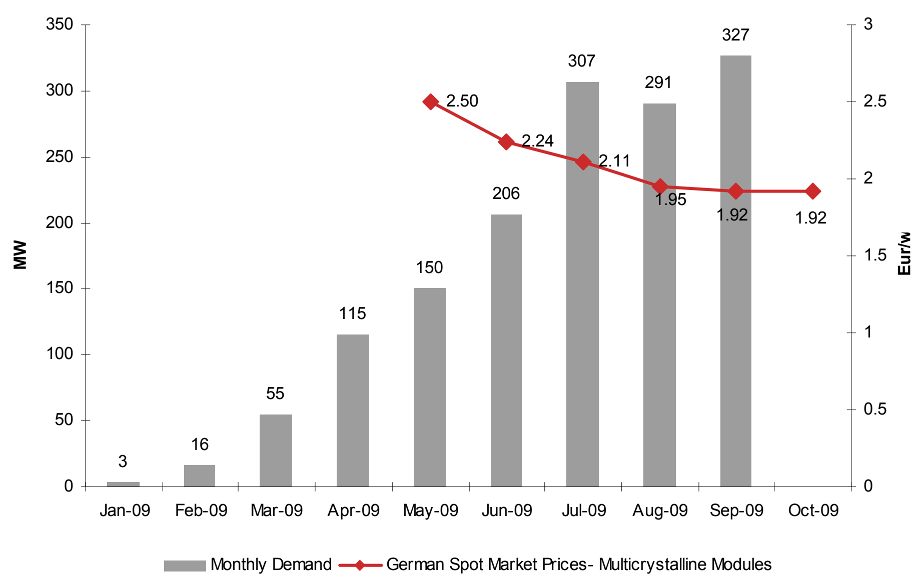
Volume elasticity to drive strong end market demand

Price elasticity coming into the market should drive strong volumes

We think that volume elasticity is coming into the sector following rapid price declines. Demand elasticity is already apparent. While we had detected early signs of demand recovery from Q2 09 (see our note "Findings from Intersolar", published June 2009), true momentum has become evident since September 09. The additional impact of the 2010 vs 09 German feed-in tariff reduction has added to this, but we see prices as the first main driver of strong demand and expect this to continue in 2010. With our view of further price reductions from regulation, oversupply and competition, end markets should see strong volumes, as finally the push to demand from prices is happening. (As a side note, we think that it is not grid parity but regulated returns that are at work).

We have reflected this view in our global solar model and are now expecting 9GW of demand for 2010 and see the volume growth track as restored.

Figure 4: Prices and demand elasticity in Germany



Source: Photon

Germany stays the single most important market; we expect sustained demand even after the feed-in tariff reductions

Germany is the single most important demand driver, and we expect it to account for almost 50% of global demand this year and c 35% next. The level of demand strength that has come through in Q3 and early Q4 09 is a result of the scheduled feed in tariff reduction from 2010 and the much reduced system cost. Installers have reportedly been refusing orders since late September 09 owing to lack of available capacity. Module manufacturers have been sold out since October 09, and we think there could have been an above normal rate of imports in Q4. Given our view of an additional tariff reduction from H2 2010 for rooftops (see below) and for ground mounted systems, we expect another strong year of demand for 2010. Even if the reduction becomes effective in April 2010 as currently discussed, there is likely to still be strong demand as there is already a run-up in the expectation of the tariff reduction and as there will be likely spillover into Q2 as well as strong Q3 demand ahead of the scheduled 2011 reduction. But we do expect a small contraction growth in 2011. The German market holding stronger for longer than expected means that there may be more time for other markets to develop without disturbing global demand growth.

New markets: strength in France, Italy, US, China from 2010/11

Of the new growth markets, anecdotal evidence points to strong momentum of installations in France, in particular in the BIPV segment where France offers one of the highest feed-in tariffs globally, with up to EUR 0.55/kWh. Feed-in tariffs for rooftop installations will be reduced from 2012 from EUR 0.55/kWh to EUR 0.42/kWh. Even with the announced reduction, we think that the market should be very strong. The new level is still above the current level in Germany of EUR 0.39/kWh, and some of the southern regions in France have considerable higher irradiation levels, which makes for very attractive returns. France should be the strongest incremental growth market in percentage terms this year. Anecdotal evidence seems to support this; as one indication, EDF has been receiving 3000 applications a day in November 2009. This is from a low sub 100MW level though. But we think that France can reach proportions of the German market size given the similar market sizes but better sun irradiation in France, particularly in the south. We forecast France to reach the 1GW by 2012.

Italy is another potential high growth market that we expect to reach the 1GW mark by 2012. But growth has been somewhat slower than expected. Ground mounted systems are the predominant segment at this stage, and tight financing conditions as well as slow permitting have been the main reasons for slower growth.

We think that the southern regions of Eastern Europe could become long-term attractive solar markets with high solar irradiation. Bulgaria and the Czech Republic have very attractive feed-in tariffs, at EUR 380-480/MWh. At the moment, financing is still the main bottleneck. Wind seems to be taking a role as the leading renewables source, but we expect solar to catch on eventually as well.

We expect growth in the US to pick up from 2010 and think that the market will reach 1GW from next year. Large scale projects are an important part of growth in the US. While we think that wind will grab headlines as far as large scale renewables build, solar carve-outs exist in a number of states. This should underpin RPS-based growth. The investment tax credit (ITC) should underpin growth across all segments. We also think that the rooftop market will pick up as the economy recovers.

Japan is back on track to growth with the new subsidies plans by the new government, and we forecast a market size of 1GW from 2011 with further growth beyond that.

We see China as one of the big future markets with long-term annual demand potential in excess of 3GW on the basis of the Golden Sun programme. We forecast 1GW by 2012. But we think that the benefit will come almost exclusively to Chinese manufacturers, first, second and third tier. We think that some of this will be met by new capacity build.

Oversupply across the value chain to persist

Overcapacity across the value chain contains structural features

We estimate that the global solar market will remain in a situation of overcapacity across the value chain for some years to come despite our forecast of strong and sustained recovery in end market volumes. Some of this is in our view a structural feature. Not withstanding overcapacity, we forecast ongoing capacity build.

Poly: overcapacity on new entrant capacity build…….

….but execution risk for new entrants…..

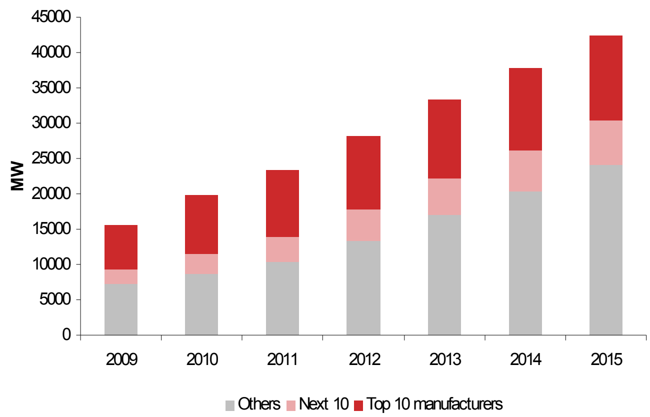
….. Tier 1 supply falls short of demand. Tier 1+2 supply balances demand in 2014.

At the poly level, we forecast overcapacity on new entrant capacity build as well as incumbents' ongoing expansion. We have included risk weighted capacity and upgraded metallurgical silicon (umg-si) in our calculation. We recognise that umg-si is still a distance away from being a competitive force, especially as we expect poly prices to continue to fall (see below), but think that it will eventually take a share of the market. For 2010, we expect excess capacity of 45kt over a total demand of 90kt on this basis. We see overcapacity increasing up to a peak in 2012, driven by second and third tier capacity growth. However, we see a divide between Tier I and other manufacturers: we forecast supply by first tier manufacturers consistently below global demand. As they will, in our view, continue to benefit from their track record and higher quality, we expect their capacity expansion to be covered by demand. Even when considering only Tier 1 module manufacturers as likely customers, this would still underpin 60-70% of capacity. Premium module manufacturers will be able to support premium poly pricing as they charge higher prices for a more performing end product. The supply of Tier I and II manufacturers balances with demand around 2014, according to our estimate. We still think that execution of capacity expansion and quality of the output by anything but Tier I manufacturers as highly uncertain. In fact, given the much higher capex requirement and complexity of poly fabs, we see the uncertainty on capacity execution and quality of the output even if the fabs are built as much higher than in any of the other segments in the solar value chain. This will, in our view, sustain the competitive advantage of incumbent manufacturers and make for a capacity utilisation gap between them and other segments. We think that a lot of Tier II and III capacity that is being built in Asia will go into local cell production by second and third tier names in the cell and module segments.

50% module overcapacity in 2010 despite demand uplift

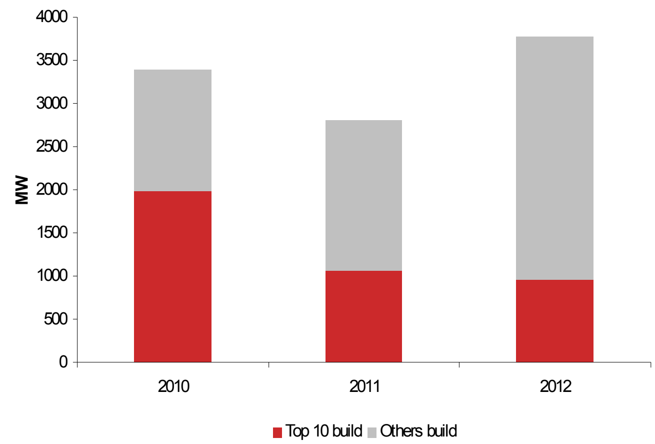
At the module level, we still see close to 50% overcapacity in 2010 and over 25% in 2011, even given the demand uplift. Of our total expected c 4GW of new capacity for 2010, 2.7GW are by the 20 largest global manufacturers, thus in our view quite likely to materialise. Of the smaller manufacturers, the degree of certainty is much lower. But even taking a 25% haircut on new capacity by large manufacturers and 50% on the smaller ones, this still leaves almost 3GW of new capacity coming into the market.

Figure 5: Module manufacturing capacity by segments



Source: Company data, Photon, Nomura research

Figure 6: New module capacity build by segments



Source: Company data, Photon, Nomura research

We see several drivers for capacity build.

- Volume signal. The price induced return of volume growth actually provides a signal in favour of capacity build. Asian manufacturers continue to announce and execute on existing expansion plans. At the poly level, strategic procurement in Asia also has an impact. Increasing momentum of equipment orders at the leading names seems to confirm this, even though we note that there is still some tail of order cancellations. We think the latter is owing to financing difficulties by weaker manufacturers/new entrants.

- Market share battles. New entrants, predominantly in Asia are still aiming at capturing market share from established names. They are continuing to build capacity in the hope of displacing older, less competitive, capacity by incumbents, and we think this trend is accelerating in what we see as the big sector reshaping. We see the dislocation of capacities towards low cost locations as one of the big themes in the sector in the midstream segment. In our view, this can lead to a major shift by higher cost European manufacturers to potentially white labelling large parts of their production in partnership with Asian manufacturers and focusing on high end downstream. As price erosion speeds up the innovation cycle as a means of cost reduction beyond the above mentioned traditional components of low cost production (labour, energy, etc), this is likely to be a continuous process.

- New growth markets. Market growth is likely to lead to capacity build, mainly in the US and Asia, on the basis of the requirement for local product to qualify for subsidies, and closeness to demand. We think that US capacity build will level the playing field between Asian and Western manufacturers in the market share battle for the US.

Plant retirements might not happen before late 2010

What about retirements? Plant retirement at the poly level is not a feature, in our view. At the cell and module level, pricing should induce capacity closures over the long term once it is below full costs. Marginal cost production is possible for some time, but prices at marginal costs would eventually lead to capacity closures. But this will be a result of mostly

European names struggling with their cost base. Some Chinese names will likely be affected, but most of the retirements would likely happen in Europe. While this should improve the global supply demand balance, it does not augur well for the profitability of European manufacturers. We see a scenario of higher volumes at lower margins.

Over the near term, we think that there will be capacity closures in Europe, but more likely in H2 given our expectation of strong H1 demand. At the end of last year, most manufacturers were running at full capacity and some were reactivating old lines. Volumes could thus keep older lines open for longer. This will therefore mean a low rate of retirement, at least in the early parts of the year. We do see retirement as a feature of the sector, and think this will happen over the long term. We think that volume signals could affect supply more than price elasticity at least over the short term, making for a continued soft capacity balance. Closures could speed up in H2, even though we caveat this with our expectation of more German demand strength ahead of the next scheduled feed-in tariff reduction (see below).

High volumes at lower profitability

Pricing pressure will continue on the basis of oversupply and tariff cuts

Following from our thoughts above on continued oversupply, we think pricing pressure will continue despite volume strength and much faster than expected price declines in all segments in 2009. The scheduled and one-off feed-in tariff reductions in Europe (see below) will add to that. Altogether, this makes for a high volume low margin outlook, which is where we think the sector is heading structurally with the exception to some degree of Tier I poly, where we see margins eroding less than in other segments.

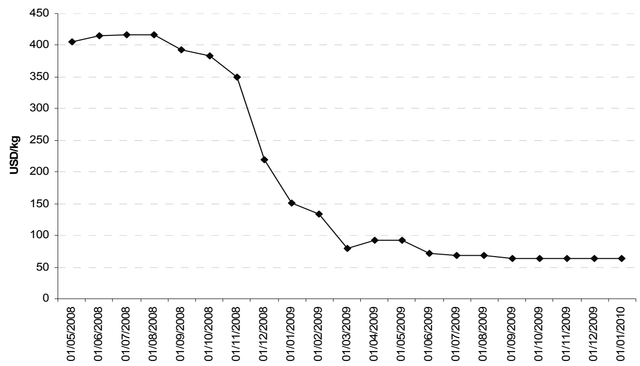
We forecast 15-20% ASP erosion on average; wafer price erosion strongest

Our current forecast is for c15%-20% average ASP erosion across the segments. We think that, while the module and cell end has born the brunt of ASP erosion in 2009, poly prices have also already fallen materially and the wafer segment has held up relatively well; however, we see the risk that the wafer segment gets hit harder than other segments within the value chain.

Tier 1poly incumbents will sustain a price premium, while actual new entrant costs are above claimed targets

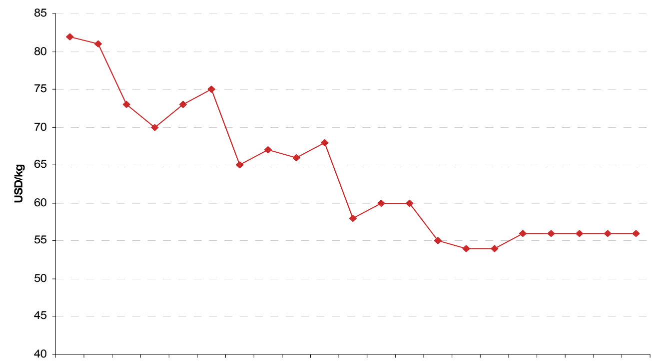
Polysilicon spot prices are now in the region of US$60-70/kg (US$63/kg according to the latest Photon data) compared with US$475/kg in Q1 08. Long-term contract prices are now around US$50-55/kg, but we are hearing lower prices than that as well. We think that US$50-52/kg is a likely contract price for this year, and next year contract prices should fall below US$50/kg. In our view, Tier I incumbents will maintain a quality and reliability premium over average spot and contract prices. It is also worth noting that the cost for poly from new entrant capacity will initially be higher than their cost claims. A number of them target US$40/kg and below at the first stage, and below US$30/kg over the longer term. But we think that initial product will more likely be around US$50-70/kg.

Figure 7: Poly spot prices



Source: Photon

Figure 8: Poly contract prices



Source: Photon

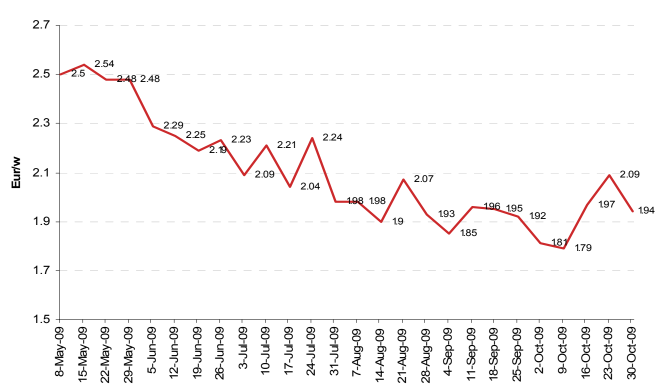
Wafer price erosion gathering pace; Europe vs Asia premium declining

Wafer prices by European manufacturers are still c 30% above those of Asian manufacturers at EUR 0.85-0.95/w, whereas we gauge Asian wafer prices around US$0.9-1.0/w. This is a c 20% y/y decline vs. over a 25-30% module price decline and a c 30% poly price decline. We think that wafer price erosion will now gather pace. A number of wafer manufacturers have guided towards contract renegotiations, and cell and module manufacturers have also stated that they are adjusting contracts. We sense that this process really kicked off in Q4 09 and is now in full swing. Asian wafer prices will continue to decline in our view, and we also expect the Europe vs. Asia premium to gradually decline. As a result, we think that wafer price erosion could come in above that in other segments within the value chain. For the companies in our universe we forecast on average -27% for 2010.

Module price erosion to continue but at more moderate pace

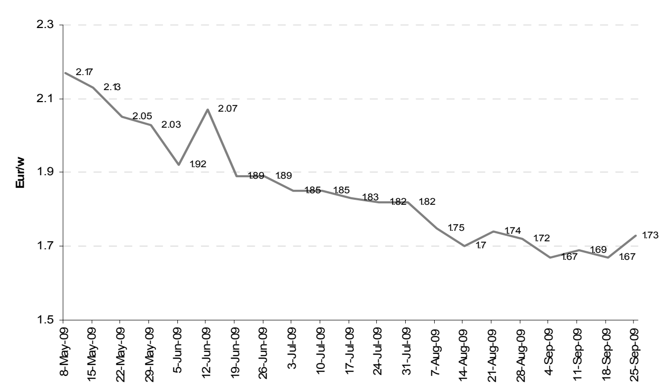
ASPs in the cell and module segments have fallen more than 25% in 2009 for the industry on average, in some cases more, particularly at second and third tier manufacturers. We expect ongoing ASP decline across the value chain, but to be more moderate than that of the past year. For now we assume 15% y-o-y on average.

Figure 9: German average multi crystalline spot prices



Source: Photon

Figure 10: Germany spot prices for modules from China, India, Taiwan and Thailand



Source: Photon

We see the overarching drivers of prices as follows:

- Oversupply: On the basis of our forecast oversupply across the value chain (see above), we think that ASP erosion has not yet bottomed, even though the rate seems to be slowing. We think that there is risk of prices reaching marginal costs in some segments, particularly in cells. The poly price fall is to the largest extent a reflection of the capacity balance having swung from severe capacity constraints to overcapacity. But the fact that lower quality grades have come into the market, mostly from new entrants, has also contributed to a decrease in average spot prices. As a consequence of improved availability and lower prices, midstream companies are not only renegotiating supply contracts but also less willing to enter into new high priced multi-year supply contracts. Despite our forecast 135% and 130% y/y demand growth in 2010 and 2011, we forecast 45% module overcapacity (see above). This, along with capacity dislocation towards cheaper manufacturing locations, should continue to put pressure on ASPs, in our opinion.

- Regulation. Scheduled and extraordinary feed-in tariff reductions: Germany is the single most important region and it continues to be the benchmark. The scheduled 8-10% reduction in 2010 (see below) should be the minimum rate of decline. The impact of the one-off reduction could be less clear. In theory, this is a reduction to reflect the decline in module prices in 2009. But in reality we expect it to lead to pricing pressure. As a result of these two items, price erosion in 2010 could be more front end loaded in 2010 than usual. We have adjusted our forecasts and now assume at least 15% on average ASP erosion for the sector at the midstream level. In 2011, there is another scheduled feed-in tariff reduction in Germany.

- Technology and production advancement On the poly level, a number of companies target production costs of US$40/kg for 2010 and below US$40/kg for the next years. These are fully loaded costs, meaning that execution problems could mean that actual achieved production costs remain higher over the short term. Long-term production costs should fall towards US$25-28/kg and potentially below. We see this as a prime driver of poly price declines. This in turn will drive ASP declines across the value chain up to the module end. Beyond that, production and technology advancement at the cell and module end should result in an orderly decline that we believe to be around the 2-5% level pa, but we expect this to be completely overshadowed by competition and overcapacity.

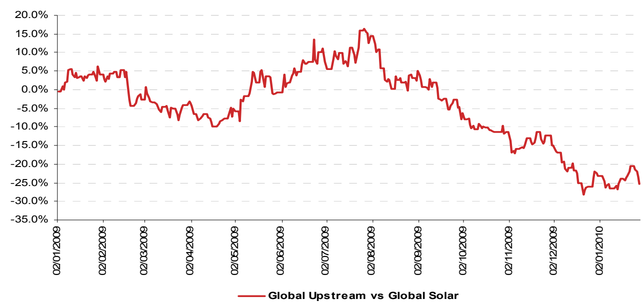
View on the value chain segments

Upstream is the most attractively valued within the big solar sector at 11 P/E 2011E vs 20x for the global solar sector

Upstream

We see Tier I poly manufacturers as a segment as potentially outperforming the rest of the sector. Following last year's 25% underperformance vs the solar sector, upstream is now the most attractively valued among the big segments at 11x P/E 2011E. The current share prices on average imply poly prices around 10-30% below our estimates and c 15% below current production costs by new entrants.

Figure 11: Upstream vs solar sector performance



Source: Bloomberg, Nomura research

Figure 12: Upstream relative multiples

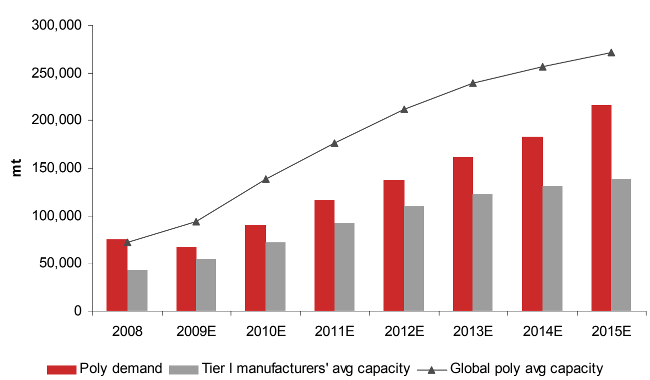
	P/E		EV/Sales		P/B	
	2010E	2011E	2010E	2011E	2010E	2011E
Global Upstream	20.5	9.7	1.4	1.3	1.1	1.1
Upstream relative	81.4%	49.8%	91.6%	101.9%	57.0%	66.0%
Global Solar	25.14	19.41	1.57	1.27	1.92	1.66

Source: Bloomberg, Nomura research

Incumbent manufacturers are likely to sustain pricing and cost advantage while getting the benefit of recovering volumes

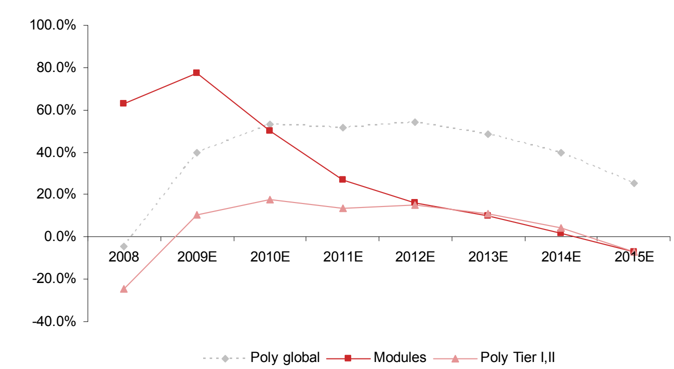
Whereas there clearly is overcapacity and prices are likely to continue to fall (see above), we think that the incumbent manufacturers will continue to enjoy competitive advantages from their status as the first call for first tier cell and module manufacturers and beyond on the basis of quality and reliability. We think that given the execution difficulties and risk to quality by many new entrants, the big six names will maintain premium pricing for the foreseeable future. We estimate at least US$10/kg as a premium. Capacity utilisations will be above the segment average in our view, which along with higher achieved pricing, should lead to higher profitability. The customer base of Tier I suppliers is likely to be of a stronger market and financial standing than that of the rest of the poly segment.

Figure 13: Tier I poly supply vs demand



Source: EPIA, Photon, Company data, Nomura research

Figure 14: Capacity balance poly vs other segments



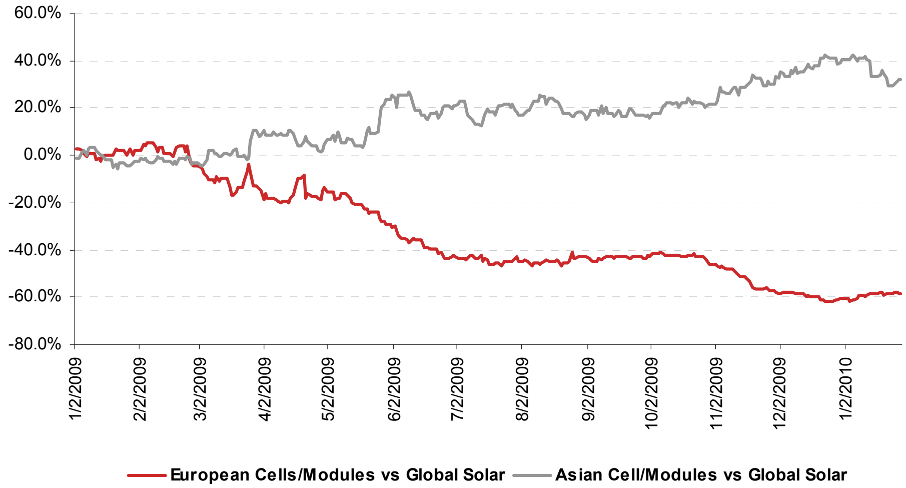
Source: EPIA, Photon, Company data, Nomura research

Mid and downstream

European cell/module manufacturers have begun to underperform on competitive disadvantages ……

We think that the aggregate share price performance during the past year of Asian vs European stocks is illustrative of the shift that is occurring in the solar market. Asian manufacturers have outperformed the European ones by almost 100% over the past year as the competitive battle has taken off.

Figure 15: Asian vs European cell and module manufacturers' relative performance

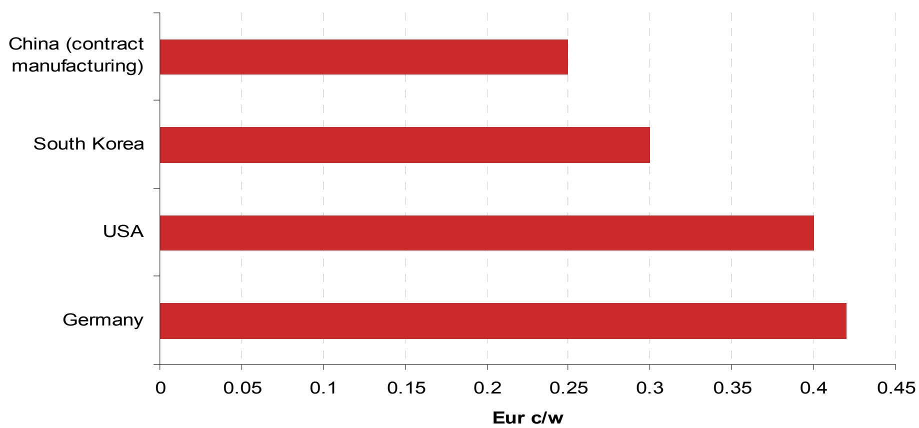


Source: Bloomberg, Nomura research

…..which cancel out earnings growth from the volume uplift

We still see the European cell and module segment as characterised by structural cost disadvantage and intense competition. The segment might not see the full benefit of strong end markets. Manufacturing is highly automated, but energy costs, credit and labour continue to favour Asian manufacturing and we therefore think that manufacturing dislocation will continue.

Figure 16: Module manufacturing costs by location



Source: FTD quote of Solarworld

But even for those companies with swift execution, this entails periods of ramp-up, potential closures and suboptimal capacity use. We think that it is still not clear how low margins will go in the segment; the scope for companies to offset pricing pressure with cost cutting is, in our view, limited. If the market share battles pan out in such a way that first tier Asian names capture large market share at the expense of European manufacturers, the latter might lag in obtaining economies of scale and thus profitability. On a side note, while downwards vertically integrated manufacturers are likely to continue to outperform in our view, we think that it is too late for focused manufacturers to embark on downwards integration in an environment of falling wafer prices.

New models of outsourced manufacturing might emerge while downstream integration continues

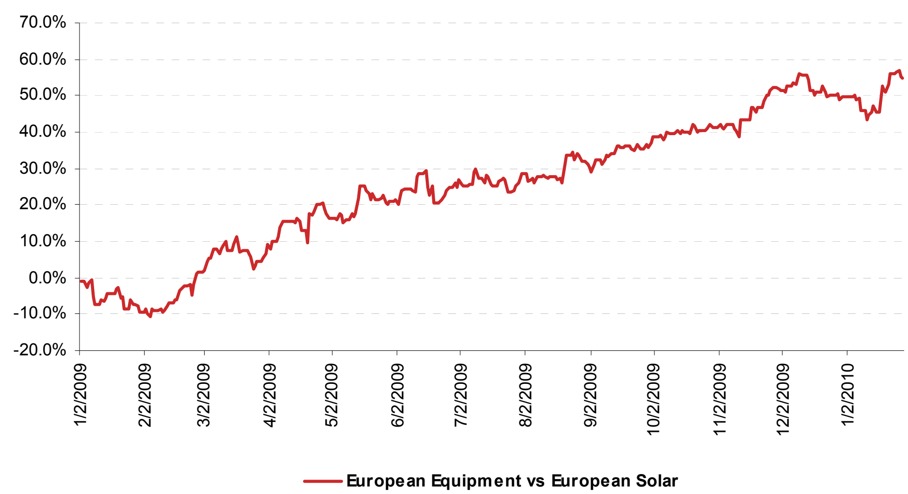
Our preferred names within the segment are those with downstream access, strong branding and channel penetration. We see these companies as sheltered to a point if they can sustain a degree of premium pricing. Some of them might eventually move towards a pure marketing model with strong brands and white labeled manufacturing. As downstream access is becoming more valuable in order to secure volumes, we expect the trend of vertical integration to continue. But we think that project development provides limited benefit for that matter, while channels into the roof top market are more important.

Equipment

Selective stance on equipment after strong performance

We continue our selective stance in the equipment sector after the strong performance of the segment in the past six months. Capex by major names and in the single equipment space is still slow. We expect a slow pick-up, but not before late 2010. Meanwhile, capacity build by Asian manufacturers continues at a strong pace, in modules and poly. We expect this to be the main driver of a continuing improvement in equipment orders. There has been sequential improvement in indicative and firm orders, but the picture on order conversion is still mixed. We see vertical integration as a trend that will also continue to shape the equipment sector. We continue to like module agnostic system equipment that has exposure to downstream volumes, eg inverters.

Figure 17: Solar equipment relative performance

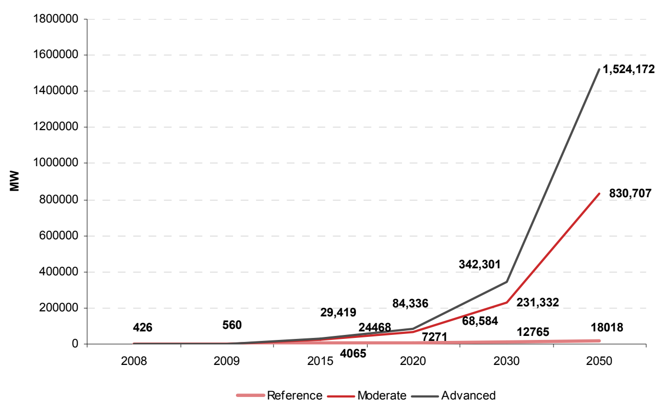


Source: Bloomberg, Nomura research

Solar thermal

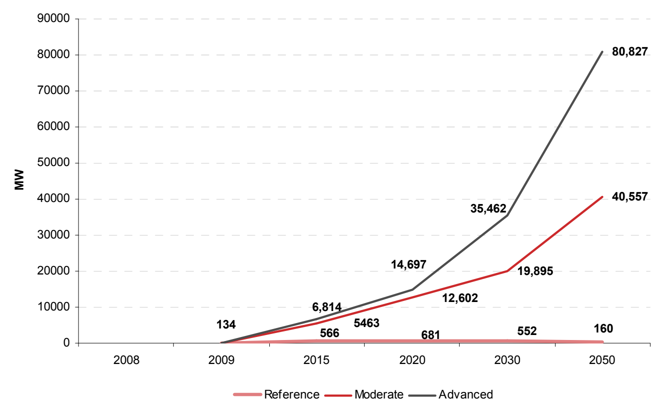
We see solar thermal as a highly promising segment within solar. Greenpeace forecasts global solar thermal capacity to reach c 830GW by 2050 in a moderately optimistic scenario, as much as our forecast for global installed wind capacity in 2020.

Figure 18: Forecasts for global solar thermal capacity



Source: Greenpeace

Figure 19: Annual solar thermal installations



Source: Greenpeace

Spain is the market with the strongest near-term growth, but the US, the Middle East and Asia/Pacific have vast potential. Given that new Spanish regulation has provided clarity on the capacity cap through the pre-register, and has established a EUR 270/MWh feed in tariff, we think that this will lead to growth in the Spanish market this year. The US cash grant scheme should also lead to a pick-up in US projects.

Vast growth potential in solar thermal with scalable hybrid technology

One of the reasons for our bullish view on solar thermal is the scalability that enables large projects of utility size. Beyond that, we think the technology has distinct operating advantages. Given that the plants are run with traditional steam engines, they allow for co-firing with conventional fuels, which significantly improves load factors and economics. It even allows some load scheduling. Storage capacity up to 7 hours depending on technology is another factor that adds to competitiveness through the same load management and utilisation advantages.

Capital costs are among the highest within the renewable energy spectrum, between EUR 4,500-6,500/kW, depending on storage and other project characteristics. We estimate new entrant costs for solar thermal plant of around EUR 120-180/MWh.

Improving availability of financing and regulatory clarity in key markets should revive growth from this year

As financing requirements are large, we expect the easing of financing availability to contribute to a pick up in momentum in solar thermal development.

The Desertec Initiative in which large industrials, focus on solar thermal developers and major utilities are involved has increased the profile of the segment, and even though a project that is very long out in the future and faces many challenges, is also likely to continue to attract investor attention as an illustration of potential growth.

Figure 20: Major solar thermal developers (MW)

Company	Pipeline
Abengoa	1,860
Other	300
Iberdrola	540
ACS-Cobra	400
NextEra/Luz	354
Acciona	133
Solar Millennium	100
Solel	150
Torresol	100
SAMCA	50
FPL	75
Albiasa	0

Source: Company data

We have outlined the broad features of the different solar thermal technologies in the appendix to this report.

Figure 21: Renewables company valuations

Renewables Company Valuations

COMPANY	RATING		Latest Price 04-Feb	Price target	Upside	No. of shares	Mkt Cap	Mkt Cap[E]	Mkt Cap (USD)	P/E 09 YE	P/E 10 YE	P/E 11YE	EV/SALES 09 YE	EV/SALES 10 YE	EV/SALES 11YE	P/CF 09 YE	P/CF 10 YE	P/CF 11YE	P/BV 09 YE	P/BV 10 YE	P/BV 11YE
WIND UPSTREAM																					
Vestas	BUY	DKK	287.50	445.00	54.8%	199.08	57235.2	7688.6	10693.3	14.3	13.6	10.9	1.17	1.02	0.79	n/m	9.54	5.90	2.34	2.04	1.72
GoldWind*	NR	CNY	31.10	NA	NA	1400.00	43540.0	4585.1	6377.0	27.6	22.8	18.7	3.83	2.86	2.25	44.94	19.17	20.46	8.21	6.49	5.02
Gamesa	BUY	EUR	10.40	17.00	63.5%	243.30	2529.1	2529.1	3517.5	17.1	14.9	12.8	0.89	0.79	0.68	n/m	9.87	6.52	1.55	1.44	1.32
Suzlon	NEUTRAL	INR	77.30	64.00	NA	1557.00	120356.1	1882.5	2618.2	10.0	n/m	13.1	0.89	1.06	0.86	n/m	3.72	12.51	1.40	1.27	1.07
Repower*	NR	EUR	132.00	NA	NA	9.18	1211.4	1211.4	1684.8	27.7	26.4	20.1	1.09	0.82	0.67	n/a	19.33	15.81	n/a	2.74	2.43
Nordex*	NR	EUR	9.71	NA	NA	66.85	649.1	649.1	902.7	28.9	19.0	11.6	0.50	0.47	0.37	17.31	11.03	6.72	1.88	1.70	1.46
Average					**59.2%**			18545.8	25793.5	**20.94**	**19.32**	**14.53**	**1.39**	**1.17**	**0.94**	**31.13**	**12.11**	**11.32**	**3.08**	**2.61**	**2.17**
WIND OPERATION																					
Iberdrola Renovables	REDUCE	EUR	3.24	3.40	5.1%	4224.05	13669.0	13669.0	19010.9	34.4	29.5	27.5	9.48	8.86	8.55	14.72	13.41	9.85	1.22	1.18	1.15
EDP Renovaveis	NEUTRAL	EUR	6.18	8.00	29.4%	872.31	5390.9	5390.9	7497.6	45.7	39.2	30.7	11.25	9.80	8.74	7.32	15.01	6.60	1.03	1.01	0.98
EDF Energies Nouvelles	NEUTRAL	EUR	35.64	39.00	9.4%	77.60	2765.3	2765.3	3845.9	34.2	28.5	21.9	5.36	5.28	5.46	29.83	13.91	9.38	1.79	1.71	1.62
Theolia*	NR	EUR	3.26	NA	NA	39.90	130.1	130.1	180.9	n/m	n/m	93.1	2.18	1.83	1.66	13.42	7.73	7.71	0.86	0.87	0.90
Greentech*	NR	DKK	20.50	NA	NA	48.14	986.9	132.6	184.4	n/m	25.7	11.5	19.48	10.34	5.92	n/m	569.44	359.65	0.58	0.55	0.52
Average					**14.7%**			22087.8	30719.7	**38.1**	**30.7**	**37.0**	**9.55**	**7.22**	**6.07**	**16.32**	**123.90**	**78.64**	**1.09**	**1.06**	**1.03**
WIND EQUIPMENT																					
China High Speed Transmissions	BUY	HKD	15.80	21.60	36.7%	1245.00	19671.0	1820.9	2532.5	20.7	14.2	10.7	3.62	2.77	2.06	30.07	13.60	11.27	4.04	3.29	2.66
Hansen Transmissions*	NR	GBp	0.96	NA	NA	670.10	639.9	732.4	1018.6	15.6	n/m	24.8	1.24	1.67	1.35	13.17	24.84	18.84	1.20	1.23	1.17
Average					**36.7%**			2553.2	3551.1	**18.1**	**14.2**	**17.8**	**2.43**	**2.22**	**1.71**	**21.62**	**19.22**	**15.06**	**2.62**	**2.26**	**1.91**
Wind average					**33.2%**			43186.8	60064.3	**25.1**	**23.4**	**23.7**	**4.69**	**3.66**	**3.03**	**21.35**	**56.20**	**37.79**	**2.18**	**1.96**	**1.69**
SOLAR																					
SILICON																					
Wacker Chemie	BUY	EUR	97.20	130.00	33.7%	49.68	4828.7	4828.7	6715.8	30.1	12.3	10.2	1.29	1.22	1.14	5.70	7.32	5.87	2.45	2.52	2.17
REC	BUY	NOK	33.98	46.00	35.4%	664.77	22588.8	2769.2	3851.3	n/m	40.5	12.7	3.85	3.05	2.54	19.21	9.98	5.93	1.14	1.10	1.02
GCL Poly Energy	NEUTRAL	HKD	1.96	2.25	14.8%	15471.55	30324.2	2467.6	3432.0	n/m	19.1	19.1	2.65	1.93	2.17	n/m	5.52	5.02	1.36	1.06	1.00
LDK Solar	NEUTRAL	USD	6.61	8.00	21.0%	113.00	747.2	537.2	747.2	n/m	11.2	9.6	1.83	1.51	1.69	n/m	n/m	13.11	1.22	1.10	0.99
Renesola	BUY	GBp	1.58	1.90	20.6%	172.63	271.9	601.9	837.2	n/m	9.1	6.3	1.62	0.94	0.84	10.26	5.43	3.60	0.97	0.84	0.71
PV Crystalox Solar	BUY	GBp	0.54	0.78	45.3%	416.73	223.8	256.1	356.2	8.1	10.0	8.5	0.61	0.53	0.39	4.45	5.53	5.33	0.89	0.85	0.79
Average					**28.5%**			11460.8	2656.6	**19.1**	**17.1**	**11.1**	**1.98**	**1.53**	**1.46**	**9.90**	**6.76**	**6.48**	**1.34**	**1.25**	**1.11**
CELLS/MODULES																					
First Solar*	NR	USD	118.18	NA	NA	85.11	10058.0	7231.8	10058.0	16.1	18.6	15.2	4.82	3.52	2.57	15.34	13.91	11.88	4.11	3.35	2.73
Suntech Power	NEUTRAL	USD	14.07	15.68	11.4%	164.48	2314.1	1663.9	2314.1	67.0	48.5	32.7	1.89	1.96	1.51	6.17	13.86	21.43	1.82	1.76	1.67
Solarworld	REDUCE	EUR	12.54	12.00	-4.3%	111.72	1400.4	1400.4	1947.7	14.9	14.2	11.3	1.51	1.36	1.07	11.44	7.08	12.61	1.50	1.35	1.21
Q-cells	REDUCE	EUR	10.06	9.40	-6.6%	113.50	1141.8	1141.8	1588.0	n/m	64.8	26.7	1.79	1.41	1.03	n/m	12.32	6.76	1.25	1.23	1.18
Sunpower Corp*	NR	USD	21.02	NA	NA	54.94	1154.8	830.3	1154.8	18.1	11.9	10.0	0.72	0.61	0.49	15.83	8.85	6.90	1.47	1.32	1.11
Yingli	BUY	USD	13.67	23.00	68.3%	127.00	1736.1	1248.1	1735.9	n/m	13.5	12.1	2.09	1.47	1.33	35.59	5.31	7.82	1.74	1.93	1.66
Trina Solar	BUY	USD	24.32	52.00	113.8%	68.32	1661.5	1194.7	1661.5	7.4	8.7	5.9	2.21	1.82	1.48	2.62	2.39	2.27	1.11	0.97	0.82
Motech	REDUCE	TWD	125.00	58.70	-53.0%	299.00	37375.0	840.4	1168.8	156.3	70.6	36.2	2.43	2.15	1.91	19.66	18.20	12.00	3.00	2.85	2.62
JA Solar	BUY	USD	4.91	7.00	42.6%	161.00	790.5	568.4	790.5	n/m	10.9	8.8	1.56	0.91	0.64	31.70	3.70	5.21	0.96	1.04	0.93
Canadian Solar	BUY	USD	23.22	25.00	7.7%	43.00	998.5	717.9	998.5	18.1	15.3	13.3	1.54	1.10	0.97	2.54	5.54	5.54	1.72	1.74	1.53
Conergy*	REDUCE	EUR	0.78	0.50	-35.9%	398.09	310.5	310.5	431.9	n/m	n/m	44.6	1.10	0.88	0.69	20.53	9.07	5.29	2.97	3.71	3.38
Solargiga	REDUCE	HKD	1.77	1.10	-37.9%	1691.00	2993.1	277.1	385.3	13.5	10.1	9.0	1.11	0.97	0.75	5.12	19.16	4.90	1.74	1.49	1.28
E-ton	REDUCE	TWD	68.20	57.40	-15.8%	139.00	9479.8	213.1	296.4	n/m	n/m	117.6	1.66	2.09	1.47	n/m	10.87	17.81	1.05	1.09	1.08
Solon*	REDUCE	EUR	6.39	4.50	-29.6%	12.50	79.9	79.9	111.1	n/m	n/m	19.2	1.09	0.83	0.82	0.76	9.38	2.18	0.30	0.32	0.32
Average					**5.1%**			17718.3	24642.6	**38.9**	**26.1**	**25.9**	**1.82**	**1.50**	**1.20**	**13.94**	**9.97**	**8.76**	**1.77**	**1.73**	**1.54**
EQUIPMENT																					
SMA Solar Technology	BUY	EUR	86.91	110.00	26.6%	34.70	3015.8	3015.8	4194.3	19.4	16.2	13.8	3.20	2.55	1.88	22.55	17.15	14.54	7.51	5.48	4.15
Centrotherm	BUY	EUR	39.55	50.00	26.4%	21.16	837.0	837.0	1164.0	19.7	16.8	13.8	1.32	1.09	0.87	28.77	15.37	13.35	2.32	2.04	1.78
Meyer Burger	NEUTRAL	CHF	27.40	26.00	-5.1%	44.60	1222.0	829.7	1153.9	38.6	27.6	19.6	2.80	2.49	2.04	16.85	38.79	12.54	5.17	4.38	3.60
Roth and Rau	NEUTRAL	EUR	30.42	29.00	-4.7%	13.80	419.8	419.8	583.9	30.4	19.1	14.6	1.75	1.36	1.06	19.53	13.95	11.06	1.90	1.73	1.55
Manz Automation	REDUCE	EUR	66.00	30.00	-54.5%	4.48	295.7	295.7	411.2	n/m	68.6	31.4	2.98	1.99	1.61	321.34	-71.83	15.33	1.64	1.60	1.51
Average					**-2.3%**			5397.9	7507.4	**27.0**	**29.6**	**18.6**	**2.41**	**1.90**	**1.49**	**81.81**	**2.69**	**13.36**	**3.71**	**3.05**	**2.52**
DEVELOPMENT																					
Solar Millennium	BUY	EUR	33.30	45.00	35.2%	12.50	416.2	416.2	578.8	13.6	9.8	7.2	2.39	1.69	1.09	n/m	27.47	14.79	2.39	1.80	1.41
Phoenix Solar*	NR	EUR	32.46	NA	NA	6.70	217.5	217.5	302.5	27.6	10.4	8.4	0.45	0.35	0.30	16.92	21.57	11.39	2.28	1.90	1.57
Average								633.7	881.3	**20.6**	**10.1**	**7.8**	**1.42**	**1.02**	**0.70**	**16.92**	**24.52**	**13.09**	**2.34**	**1.85**	**1.49**
Solar Average					**10.6%**			34381.0	47817.0	**32.7**	**24.5**	**20.9**	**2.00**	**1.61**	**1.33**	**30.91**	**9.37**	**9.82**	**2.17**	**1.95**	**1.69**
BIOMASS																					
Ecodiesel ON*	NR	BRL	1.37	NA	NA	725.25	993.6	386.1	537.0	68.5	15.2	12.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cropenergies*	NR	EUR	3.62	NA	NA	85.00	308.0	308.0	428.3	61.4	30.2	11.5	n/a	1.08	0.89	19.07	11.61	6.16	0.99	0.98	0.90
Verbio*	NR	EUR	3.53	NA	NA	63.00	222.1	222.1	308.9	25.2	13.6	10.4	0.60	0.47	0.29	n/a	n/a	n/a	0.80	0.76	0.71
Thenergo*	NR	EUR	2.10	NA	NA	19.63	41.2	41.2	57.3	19.1	10.5	5.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pacific Ethanol*	NR	USD	2.05	NA	NA	57.64	118.2	85.0	118.2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Aventine Renewables*	NR	USD	0.20	NA	NA	42.96	8.7	6.2	8.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Biomass average								1048.5	1458.3	**43.5**	**17.4**	**10.0**	**0.60**	**0.77**	**0.59**	**19.07**	**11.61**	**6.16**	**0.90**	**0.87**	**0.80**
DIVERSIFIED																					
Acciona	BUY	EUR	88.83	165.00	85.7%	63.55	5645.1	5645.1	7851.3	4.7	26.6	18.1	1.89	1.83	1.71	13.45	6.14	5.30	1.10	1.07	1.03
Abengoa	NEUTRAL	EUR	22.00	24.00	9.1%	90.47	1990.3	1990.3	2768.2	12.5	10.8	9.9	1.62	1.43	1.39	3.10	2.90	2.42	2.42	1.90	1.54
Sechilienne-Sidec*	NR	EUR	24.61	NA	NA	28.44	699.9	699.9	973.5	15.7	12.3	10.5	4.80	4.91	4.55	9.22	7.65	6.48	2.50	2.28	2.04
Actelios*	NR	EUR	3.61	NA	NA	67.68	244.2	244.2	339.6	19.3	24.1	18.0	1.79	6.22	9.05	n/a	n/a	n/a	0.67	0.66	0.64
Diversified average					**47.4%**			8579.6	11932.5	**13.0**	**18.4**	**14.1**	**2.53**	**3.60**	**4.17**	**8.59**	**5.56**	**4.74**	**1.67**	**1.48**	**1.31**
Renewables Average					**16%**			87167.57	121232.66	**28.61**	**22.25**	**19.63**	**2.76**	**2.29**	**1.99**	**24.96**	**23.13**	**17.41**	**2.01**	**1.82**	**1.58**
Utilities average										**12.60**	**11.80**	**10.80**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**
Capital goods average											**16.89**	**12.98**		**1.14**	**1.06**	**n/a**	**n/a**	**n/a**	**0.11**	**n/a**	**n/a**
Technology average										**17.37**	**19.22**	**14.12**	**2.73**	**2.27**	**1.94**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**

*Source: Bloomberg, Company data, Nomura estimates *Consensus, Prices as of 03/02/10; 06h30 (GMT)*

Figure 22: Renewables company valuations

Renewables Company Valuations

COMPANY		NET DEBT			EPS					EBITDA			EV/EBITDA			Performance (Abs)			Performance (Rel)		
		09 YE	10 YE	11YE	08 YA	09 YE	10 YE	11YE	CAGR(%)	09 YE	10 YE	11YE	09 YE	10 YE	11YE	1M	3M	1YR	1M	3M	1YR
WIND UPSTREAM																					
Vestas	DKK	260	74	-749	2.77	2.70	2.83	3.55	9%	965	1082	1319	8.2	7.2	5.3	-9.3%	-18.7%	1.8%	-12.09%	-22.88%	9.17%
GoldWind*	CNY	-1941	-2168	-3006	0.65	1.13	1.37	1.66	37%	1985	2450	2985	21.0	16.9	13.6	8.8%	8.3%	31.9%	9.28%	8.80%	32.81%
Gamesa	EUR	429	426	269	1.32	0.61	0.70	0.81	-15%	439	500	559	6.7	5.9	5.0	-11.8%	-13.9%	-17.8%	-14.48%	-18.30%	-11.88%
Suzlon	INR	111435	124552	133002	1.58	7.70	-0.90	5.90	55%	32405	18901	33075	7.2	13.0	7.7	-14.0%	40.2%	84.0%	-12.91%	45.25%	95.29%
Repower*	EUR	-32	-91	-117	5.75	4.77	5.01	6.57	5%	77	95	122	15.4	11.8	9.0	5.9%	25.1%	15.4%	2.71%	18.74%	23.70%
Nordex*	EUR	-46	-14	-22	0.71	0.34	0.51	0.84	6%	58	81	117	10.3	7.8	5.3	-7.3%	-10.5%	6.5%	-10.17%	-15.07%	14.08%
Average													**11.5**	**10.4**	**7.6**	**-4.6%**	**5.1%**	**20.3%**	**-6.3%**	**2.8%**	**27.2%**
WIND OPERATION																					
Iberdrola Renovables	EUR	5177	6600	8686	0.09	0.09	0.11	0.12	8%	1334	1572	1800	14.1	12.9	12.4	-2.5%	6.1%	6.1%	-5.50%	0.69%	13.69%
EDP Renovaveis	EUR	3174	4510	5777	0.12	0.14	0.16	0.20	19%	552	747	954	15.5	13.3	11.7	-6.8%	-7.8%	9.5%	-9.63%	-12.47%	17.31%
EDF Energies Nouvelles	EUR	2489	3398	4269	1.05	1.04	1.25	1.62	16%	306	401	527	17.2	15.4	13.3	-1.0%	2.0%	12.9%	-4.06%	-3.17%	21.01%
Theolia*	EUR	443	347	372	-6.12	-0.33	-0.10	0.04	-116%	41	42	50	13.9	11.4	10.0	12.0%	-14.9%	26.8%	8.61%	-19.22%	35.92%
Greentech*	DKK	640	1174	1729	-0.40	-4.32	0.80	1.78	-265%	31	134	326	51.7	16.1	8.3	-13.9%	-13.5%	7.9%	-16.51%	-17.92%	15.74%
Average													**22.5**	**13.8**	**11.2**	**-2.4%**	**-5.6%**	**12.6%**	**-5.4%**	**-10.4%**	**20.7%**
WIND EQUIPMENT																					
China High Speed Transmis	CNY	1947	2254	2909	0.56	0.67	0.98	1.30	32%	1296	1674	2224	14.8	11.7	9.1	-16.3%	0.8%	62.9%	-16.05%	1.02%	63.36%
Hansen Transmissions*	GBp	62	161	193	0.07	0.07	-0.02	0.04	-13%	103	42	95	7.7	21.3	9.7	-12.4%	-29.1%	-12.6%	-12.11%	-28.95%	-12.33%
Average													**11.3**	**16.5**	**9.4**	**-14.3%**	**-14.2%**	**25.2%**	**-14.1%**	**-14.0%**	**25.5%**
Wind average													**15.7**	**12.7**	**9.3**	**-5.3%**	**-2.0%**	**18.1%**	**-7.1%**	**-4.9%**	**24.5%**
SOLAR																					
SILICON																					
Wacker Chemie	EUR	26	311	434	0.00	3.23	7.88	9.53	nm	604	1011	1177	8.0	5.1	4.5	-2.7%	24.6%	79.6%	-5.62%	18.22%	92.44%
REC	NOK	n/a	n/a	n/a	5.41	-1.44	0.84	2.67	-21%	n/a	n/a	n/a	19.8	12.7	8.2	-24.1%	0.9%	-40.2%	-25.72%	-0.21%	-29.38%
GCL Poly Energy	CNY	n/a	168	138	0.14	-0.32	0.09	0.09	-14%	21	40	64	11.2	9.1	11.2	-18.0%	7.1%	243.9%	-17.73%	7.37%	244.85%
LDK Solar	USD	1271	1583	1956	0.67	-1.72	0.59	0.69	1%	-134	199	236	n/m	11.7	11.5	-5.7%	18.9%	-41.9%	-5.24%	19.47%	-41.68%
Renesola	GBp	373	416	356	-0.43	-0.32	0.28	0.40	-198%	-42	112	148	n/m	7.6	5.3	5.7%	38.8%	24.5%	5.08%	35.01%	37.70%
PV Crystalox Solar	GBp	-85	-110	-136	0.25	0.07	0.05	0.06	-37%	51	45	49	2.7	2.5	1.8	-12.5%	-17.9%	-37.6%	-13.06%	-20.11%	-30.94%
Average													**10.4**	**8.1**	**7.1**	**-9.5%**	**12.1%**	**38.0%**	**-10.4%**	**10.0%**	**45.5%**
CELLS/MODULES																					
First Solar*	USD	-421	-575	-1372	4.34	7.33	6.35	7.75	21%	794	777	957	12.1	12.2	9.1	-12.7%	-5.1%	-15.9%	-12.32%	-4.65%	-15.48%
Suntech Power	USD	309	622	613	0.57	0.21	0.29	0.43	-9%	152	182	220	17.3	16.1	13.3	-15.4%	10.7%	53.9%	-15.01%	11.20%	54.64%
Solarworld	EUR	139	201	336	1.33	0.84	0.88	1.11	-6%	254	269	310	6.1	6.0	5.6	-18.2%	-14.3%	-24.1%	-20.72%	-18.63%	-18.69%
Q-cells	EUR	537	558	517	1.70	-8.44	0.16	0.38	-40%	-81	185	220	n/m	9.2	7.5	-11.8%	-8.5%	-42.2%	-14.44%	-13.21%	-38.08%
Sunpower Corp*	USD	-93	110	171	1.15	1.16	1.77	2.10	22%	211	323	409	5.0	3.9	3.2	-11.2%	-17.1%	-35.7%	-10.82%	-16.70%	-35.36%
Yingli	USD	3127	2947	2833	5.26	-2.30	6.90	7.70	14%	965	2487	2742	15.5	6.0	5.4	-13.5%	12.2%	162.4%	-13.14%	12.75%	163.59%
Trina Solar	USD	187	306	338	1.23	3.28	2.78	4.13	50%	172	187	256	10.7	10.5	7.8	-9.9%	28.2%	533.3%	-9.46%	28.83%	536.25%
Motech	TWD	2379	2895	2219	7.69	0.80	1.77	3.45	-23%	1611	2626	3629	24.7	15.3	10.9	-15.5%	28.9%	98.6%	-15.78%	31.84%	109.92%
JA Solar	USD	40	-106	-164	0.44	-0.13	0.45	0.56	8%	28	123	146	29.7	5.6	4.3	-13.9%	33.1%	94.8%	-13.46%	33.67%	95.74%
Canadian Solar	USD	-8	103	103	-0.30	1.28	1.52	1.75	-280%	69	116	139	14.4	9.5	7.9	-19.4%	41.5%	349.1%	-19.06%	42.15%	351.20%
Conergy*	EUR	306	308	288	-4.67	-0.24	-0.06	0.02	-116%	-45	24	60	n/m	26.3	10.0	18.2%	7.3%	-0.6%	14.58%	1.82%	6.47%
Solargiga	CNY	-727	-440	-509	0.05	0.12	0.15	0.17	50%	292	411	502	6.5	5.3	4.2	-11.9%	2.3%	4.7%	-11.66%	2.57%	5.04%
E-ton	TWD	9499	10539	12338	8.88	-4.47	-1.82	0.58	-60%	373	856	1626	50.9	23.4	13.4	-15.6%	1.9%	10.3%	-15.83%	4.30%	16.53%
Solon*	EUR	328	368	373	2.61	-8.82	-1.36	0.33	-50%	-80	24	35	n/m	18.8	13.0	-10.9%	-12.6%	-42.8%	-13.61%	-17.06%	-38.71%
Average													**17.5**	**12.0**	**8.3**	**-11.6%**	**7.8%**	**81.9%**	**-12.2%**	**7.1%**	**85.2%**
EQUIPMENT																					
SMA Solar Technology	EUR	-170	-190	-254	3.44	4.48	5.38	6.29	22%	232	288	346	12.2	9.8	8.0	-6.8%	29.4%	189.7%	-9.64%	22.82%	210.42%
Centrotherm	EUR	-141	-158	-175	2.06	2.01	2.35	2.87	12%	75	89	107	9.2	7.7	6.2	-6.3%	30.1%	171.1%	-9.14%	23.46%	190.47%
Meyer Burger	CHF	-72	-76	-124	1.26	0.71	0.99	1.40	4%	49	62	81	23.3	18.4	13.6	3.8%	24.3%	235.8%	1.40%	20.98%	263.92%
Roth and Rau	EUR	-85	-105	-139	1.82	1.00	1.60	2.08	5%	28	39	45	12.0	8.2	6.2	0.7%	32.4%	132.9%	-2.41%	25.62%	149.59%
Manz Automation	EUR	-46	-36	-47	5.04	-2.63	0.96	2.10	-25%	-8	10	18	n/m	25.5	13.7	-0.8%	44.5%	125.3%	-3.78%	37.08%	141.37%
Average													**14.2**	**13.9**	**9.5**	**-1.9%**	**32.1%**	**170.9%**	**-4.7%**	**26.0%**	**191.2%**
DEVELOPMENT																					
Solar Millennium	EUR	64	64	54	0.53	2.45	3.40	4.59	105%	44	66	90	10.8	7.2	5.2	-5.9%	54.1%	221.1%	-8.79%	46.21%	244.04%
Phoenix Solar*	EUR	-11	-4	-4	3.63	1.17	3.11	3.87	2%	12	31	38	17.0	6.9	5.6	-23.1%	-11.9%	11.0%	-25.48%	-16.36%	18.91%
Average													**13.9**	**7.0**	**5.4**	**-14.5%**	**21.1%**	**116.0%**	**-17.1%**	**14.9%**	**131.5%**
Solar Average													**15.8**	**11.6**	**8.4**	**-10.0%**	**14.5%**	**99.0%**	**-11.8%**	**11.8%**	**100.6%**
BIOMASS																					
Ecodiesel ON*	BRL	n/a	n/a	n/a	-1.13	0.02	0.09	0.11	n/a	n/a	n/a	n/a	n/a	n/a	n/a	25.7%	37.0%	124.8%	17.53%	29.89%	182.02%
Cropenergies*	EUR	n/a	168	138	0.07	0.06	0.12	0.31	65%	21	40	64	n/a	11.8	7.0	-6.6%	7.8%	15.8%	-9.47%	2.33%	24.03%
Verbio*	EUR	98	79	-39	0.15	0.14	0.26	0.34	n/a	25	37	41	12.8	8.2	4.5	16.3%	116.3%	206.5%	12.79%	105.23%	228.45%
Thenergo*	EUR	n/a	n/a	n/a	-3.59	0.11	0.20	0.37	n/a	16	21	31	n/a	n/a	n/a	1.9%	-16.7%	-28.8%	-1.16%	-20.92%	-23.72%
Pacific Ethanol*	USD	n/a	n/a	n/a	-3.02	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	188.7%	485.7%	266.1%	190.06%	488.41%	267.76%
Aventine Renewables*	USD	n/a	n/a	n/a	-1.12	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-45.4%	-39.0%	-53.0%	-45.15%	-38.69%	-52.81%
Biomass average													**12.8**	**10.0**	**5.7**	**30.1%**	**98.5%**	**88.6%**	**27.4%**	**94.4%**	**104.3%**
DIVERSFIED																					
Acciona	EUR	7873	8232	8590	7.29	19.10	3.34	4.92	-12%	1035	1317	1520	13.1	10.5	9.4	0.2%	-11.4%	20.7%	-2.84%	-15.88%	29.28%
Abengoa	EUR	4448	5083	5409	1.55	1.76	2.04	2.23	13%	623	734	897	10.3	9.6	8.2	-2.7%	24.6%	79.6%	-5.62%	18.22%	92.44%
Sechilienne-Sidec*	EUR	538	710	864	2.19	1.57	2.01	2.36	2%	104	127	156	11.9	11.1	10.0	-13.2%	-9.8%	-11.7%	-15.84%	-14.42%	-5.42%
Actelios*	EUR	-86	275	631	0.26	0.19	0.15	0.20	-9%	35	36	42	4.5	14.4	20.7	0.2%	-11.4%	20.7%	-2.84%	-15.88%	29.28%
Diversified average													**10.0**	**11.4**	**12.1**	**-3.9%**	**-2.0%**	**27.3%**	**-6.8%**	**-7.0%**	**36.4%**
Renewables Average													**14.76**	**11.53**	**8.63**	**-3.2%**	**18.8%**	**66.7%**			
Utilities average													**8.20**	**7.80**	**7.60**	**-4.4%**	**2.4%**	**-0.1%**			
Capital goods average														**9.00**	**7.54**	**n/a**	**n/a**	**n/a**			
Technology average													**4.43**	**8.50**	**6.84**	**n/a**	**n/a**	**n/a**			

*Source: Bloomberg, Company data, Nomura estimates *Consensus, Prices as of 03/02/10; 06h30 (GMT)*

Wacker Chemie

Reuters:REC.OL Bloomberg WCH GR

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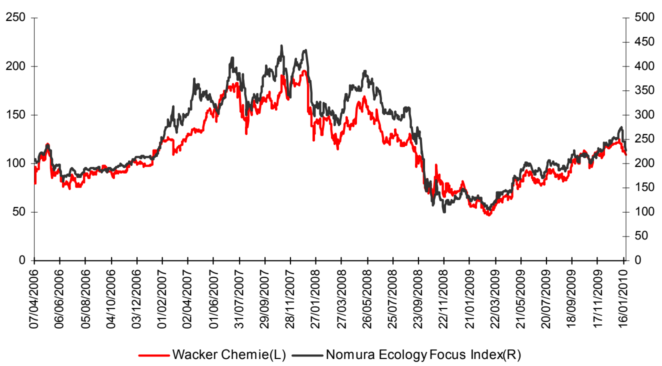
Vorsprung durch Qualität: Edge through quality



Recommendation(new)	BUY	Recommendation(old)	N/A
Share Price (Eur)	97.2	Market Cap (Eur m)	4830
Sector:	Renew able Energy		

Year-end 31/12 (Eur m)	Sales	EBITDA	EBIT	Net Profit
2007A	3,781	1,003	651	422
2008A	4,298	1,089	681	439
2009E	3,755	604	161	160
2010E	4,202	1,011	628	391
2011E	4,615	1,177	743	474
Year-end 31/12 (Eur m)	**P/Sales**	**EV/EBITDA**	**P/E**	**P/CF**
2007A	1.26	4.6	11.4	3.6
2008A	1.11	4.5	11.4	5.0
2009E	1.27	8.0	29.8	5.6
2010E	1.14	5.0	12.2	7.2
2011E	1.04	4.4	10.1	5.8

Source: Nomura estimates, Datastream

Sustainable competitive advantages as a quality and cost leading tier 1 poly manufacturer should support profit growth through sustained volumes and pricing despite a difficult environment, in addition to a cyclical upswing in the chemicals business. We initiate coverage with a Buy Recommendation and a EUR 130 price target.

- Near and long term growth drivers Wacker is positioned at the heart of the growth segments within renewables, with polysilicon production accounting for over 60% of 2010E EBITDA and 40% of 2010-13E EBITDA (over 80% including Siltronic) growth even under conservative assumptions on pricing and margins.
- Sustainable competitive advantages. We believe that Wacker will be able to achieve ASPs above the sector for a sustained period owing to its quality advantage among Tier 1 manufacturers. At the same time, we estimate almost a 20% production cost advantage vs the most efficient competitors, and further cost reduction potential.
- Cyclical swing While some of the cyclical earnings swing has been reflected in the share price, we expect more is yet to come especially as consensus seem split over Siltronic despite its qualities as a recovery story and near-term growth driver.
- Finances. We forecast a return to EBIT profitability in 2010, but expect stable poly and wafer margins as the company absorbs expansion costs and ASP reductions.
- Sentiment. Despite some uneasiness about poly prices, we believe that sentiment is bottoming out, but the recent hit following the publication of a raft of negative exceptionals is an opportunity, in our view.
- Valuation. Our EUR 130 price target is based on a DCF/SOP approach.

Manufacturer of Chemicals (silicones, polymers and fine chemicals), polysilicon for electronic and solar markets
Business mix: Polysilicon (13%), Fine Chemicals (2%), Siltronics (32%), Polymers (20%), Silicones(32%), Other (1%)
Geographic exposure: Germany (22%), Rest of Europe 23%, Americas (20%), Asia (32%), Other regions (3%)
Key strategic issues: Capacity build and competition, Siltronic turnaround, capital intensity

Figure 23: Nomura view on key bull and bear points

Bull points	Bear points
Growth driven by polysilicon. The company is building 15kt of new capacity over the next two years, making poly the most important growth driver of the company.	Poly prices. Falling poly prices are an overhang, but we think that the recognition of the company's competitive advantages should lead to positive share price performance as the company should have higher profitability than its peers.
High barriers to entry. Polysilicon manufacturing is a very complex process with high capital intensity. The company's proprietary reactor design that has a long record adds to this. We think that this should underpin a premium multiple. We think this should also support the company's material cost advantage over the long term.	Siltronic profitability. It will take price hikes in excess of 10% for Siltronic to return to profits, according to our estimates. The capacity balance is still soft, but some of the company's competitors are aiming for price increases above 20%-30%. We also think that the company's backward integration into silicon helps.
Attractive growth in Chemicals. Growth profile is attractive in silicones thanks to 26% capacity addition by 2012 and solid demand growth. We also believe Wacker Chemicals offer attractive growth prospect in Biologic based products	VAM overcapacity. We expect capacity addition in VAM to run ahead of demand growth and VAM prices to be under pressure, resulting in a slow recovery in Wacker Polymer margins.
Cyclical upswing. Even though there already has been a reflection of the cyclical upswing, we think more is yet to come. Despite two quarters of robust sequential volume improvement, we expect further upswing in demand boosting margins thanks to a favourable operating leverage.	Business mix. Rather than being vertically integrated across the solar chain, Wacker is integrated into chemicals, and is thus less of a pure solar name. However, this provides strong operational advantages.

Source: Nomura research

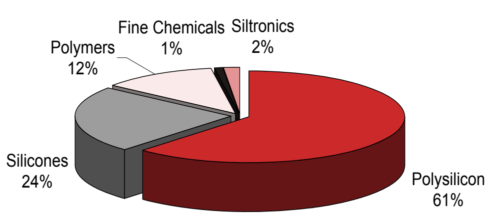
Investment points

Polysilicon drives growth

Polysilicon is the single most important growth driver, accounting for over 40% of 2011-13E EBITDA growth

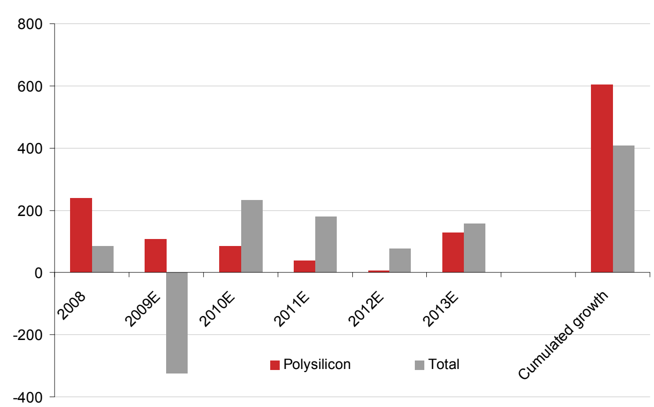
The polysilicon business is the single most important growth driver for Wacker over the medium/long term. We estimate that polysilicon accounts for over 60% of EBITDA in 2010 and for more than 100% of 2008-13 EBITDA growth. The company targets an expansion programme of 20,000t to 2012, which is the prime growth driver. With 35,000t of nameplate capacity by 2012, it should be the largest global polysilicon manufacturer along with Hemlock.

Figure 24: Polysilicon growth contribution EBITDA, 2010E



Source: Company data, Nomura estimates

Figure 25: Polysilicon EBITDA growth contribution, 2008-12E



Source: Company data, Nomura estimates

Sustainable competitive advantages drive superior returns

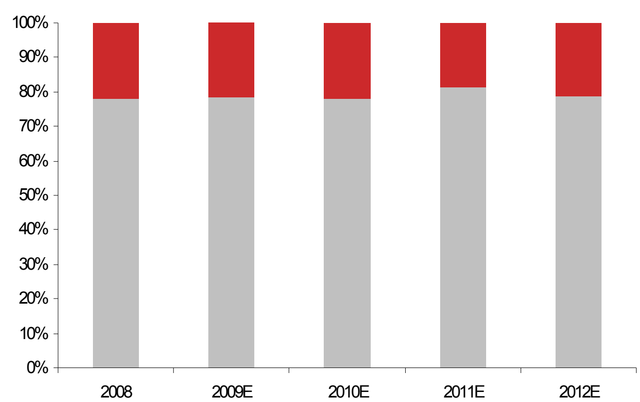
We believe that Wacker has sustainable competitive advantages that will become increasingly valuable in an environment where we see a divide between market leaders and other names. We therefore expect it be a direct beneficiary of our expected turn in volumes. As a result, we forecast long term cash flow returns c 800bps over the company's WACC, which is at the high end of the sector.

70% of expanded production contracted with prepayments

Premium pricing sustainable for longer than the rest of the sector

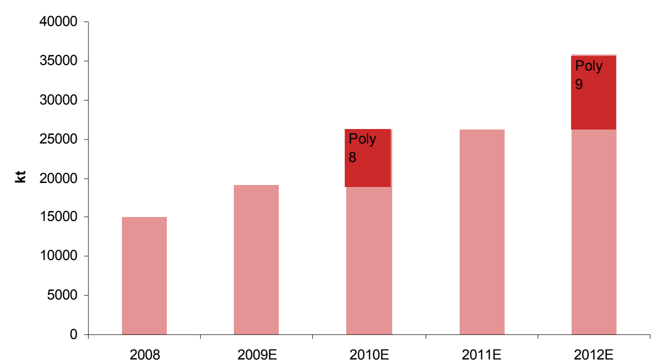
We expect poly oversupply for some time yet, along with falling poly prices (see above). But Tier 1 manufacturers will stand out in our view as Tier 1 supply still falls short of demand; we forecast total demand of 116mt for 2010 vs c90mt of Tier 1 supply. We believe that Tier 1 suppliers will sustain an advantage of reliability and quality. Wacker has 75% of its 2013 production sold out, most of which is with prepayments, and in total it has so far secured prepayments of around EUR 1bn for contracts stretching up to 2018.

Figure 26: Wacker vs Tier 1 poly manufacturers



Source: Company data, EPIA, Photon, Solarbuzz, Nomura reseach

Figure 27: Wacker capacity growth

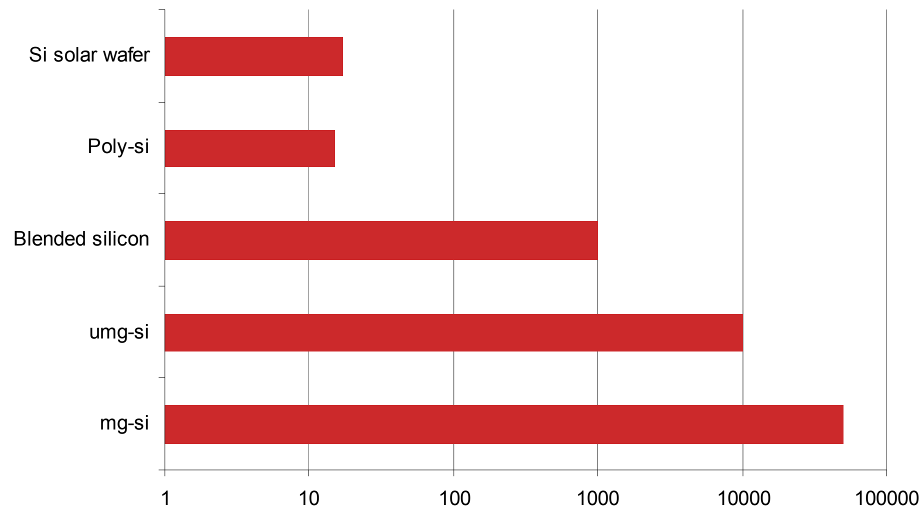


Source: Company data, Nomura research

Output quality supports premium pricing

Wacker has specific strong competitive advantages that we expect to be sustained to further support its volumes and pricing. The company's output quality is among the highest in the sector. Wacker now sells 9N grade, whereas we think the industry average is around 7-8N levels. This results in lower impurities, which in turn improves efficiencies of wafers and solar systems overall. In an environment of pricing pressure on a cost per watt basis, higher efficiency will justify higher input prices as it will lower the per watt cost of the end product.

Figure 28: Impurities in poly production



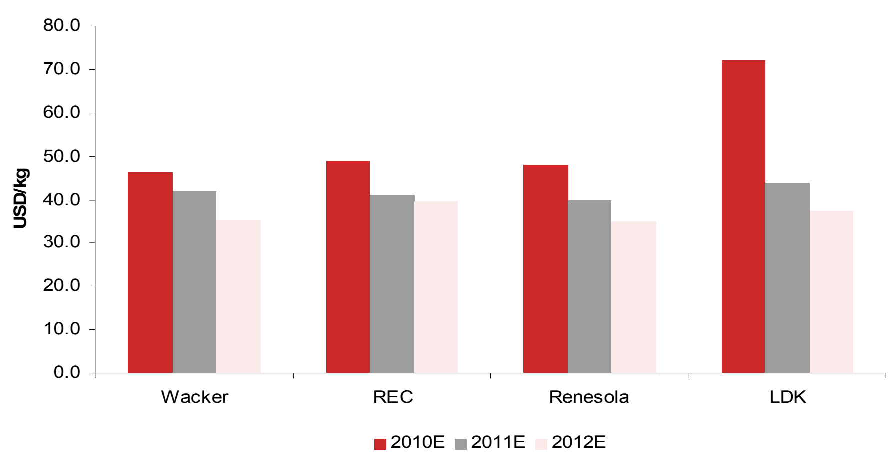
Metallurgical silicon (mg-si)/ugraded metallurgical silicon (umg-si)/polysilicon (poly-si)
Source: Wacker

We estimate production costs below US$40/kg from 2013 vs new entrant costs around US$50-70/kg and execution risk on cost targets

Exceptional cost position

We also believe that the company's costs are at the bottom end of the spectrum. We estimate production costs (post depreciation) around US$46/kg in 2010, but this is in the middle of the company's expansion track, thus will not be fully optimized. We see this coming below US$40 from 2013. The chart below shows our expectation for Wacker's production cost trajectory vs that of established and newer competitors. It is worth noting that all of these except Wacker require a material cost reduction from current levels. We believe that a number of new entrants are currently producing above US$65/kg, and our Asian colleagues believe a number of Chinese manufacturers produce at costs around US$50-70/kg.

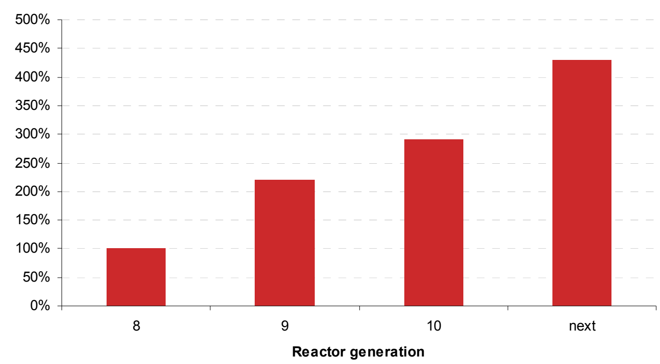
Figure 29: Production costs across poly manufacturers



Source:Company data and Nomura estimates

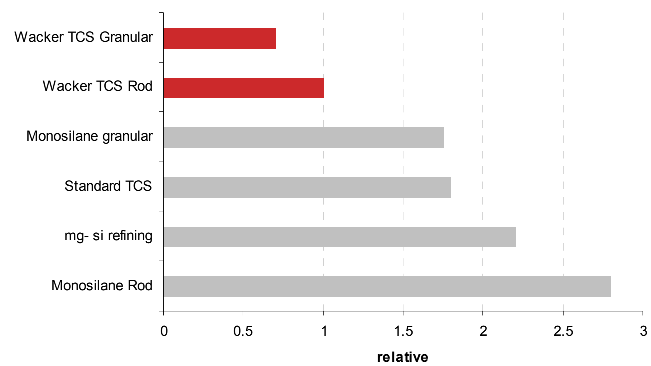
We think that the company's TCS technology allows for the lowest cost profile within the industry. The technology yields the lowest manufacturing cost compared with other processes. But beyond that, the company's advantages lie in its proprietary reactor design. The company's reactors use c 50% less electricity than typical reactors in the industry. With electricity accounting for 30% of manufacturing cost, this is material. Input synergies with, and use of, byproducts of the company's chemicals operation are another advantage. Increasing reactor yields should improve capital intensity and lower unit depreciation costs. Lastly, the company's scale as one of the largest in the industry and with high utilisation on its growing capacity also contribute to its low cost profile.

Figure 30: Reactor yield (relative)



Source: Wacker

Figure 31: Electricity consumption of poly production processes



Source: Wacker

The company's integrated production process is also important, with its in-house Trichlorosilane production using salt from its own mines. Some of the byproducts also produce synergies with the other chemicals divisions (see below). We also note the intra-upstream integration with Siltronics, the wafer business. Siltronics is completely backwards integrated into the poly production.

Wacker Chemie's activities

Wacker Chemie is a family-owned company specialising in the manufacture of chemicals (silicones, polymers and fine chemicals), polysilicon for the electronic and solar markets and silicon wafers for the electronic market. The Wacker family owns 55%. The free-float is 30%.

Wacker is an integrated chemicals company with leading share in both industrial silicones and electronic silicones. The group has a strong European position in VAM-based polymers in dispersible powders. Its Fine Chemicals division is now mainly composed of biologic products.

Figure 32: Wacker Chemie activity table

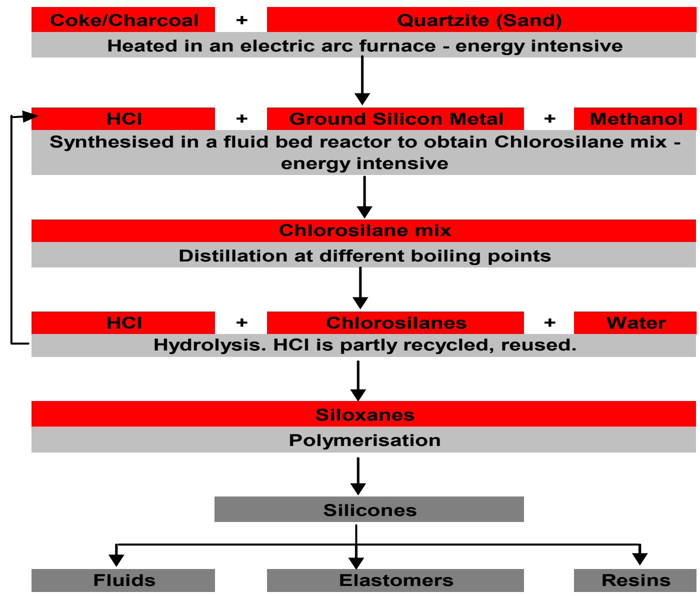
Division	Products	Applications	Competitors
Siltronics (17% of 2010e sales)	Electronic Wafers, Solar ingots	Semiconductor devices	Shin Etsu, Sumco
Silicones (31% of 2010e sales)	Silanes, silicones,Silicone fluids, emulsions, Silicones elastomers, Silicones sealants, Silicones resins, Silicas	Construction industry, paints and coating, chemicals, cosmetics, textiles, leather, paper and film, fabric, electric and electronics, insulation, mechanical engineering and metal processing, medical technology, automotive, communications, office equipment and household appliances, plastics and rubber processing, moldmaking	Dow Corning, Momentive, Shin-Etsu, Bluestar,Evonik
Polymers (19% of 2010e sales)	Polymer powders, construction dispersions, surface coating resins, polyvinyl acetates, polyvinyl alcohol solutions, solid resins, surface coating resins, polyvinyl butyrals	Construction, packaging plants, industrial coatings, pigment preparations,sound dampening, adhesives, gumbase, printing inks, textiles, automative interiors, paper and ceramics, chemicals industry	Elotex (Polymer powders), Celanese (Dispersions)
Polysilicons (30% of 2010e sales)	Hyperpure polycrystalline silicon, chlorsilanes, pyrogenic silicas	Semiconductors and photovoltaics	Hemlock, REC Solar
FineChemicals (2% of 2010e sales)	Fine chemicals, organosilanes, chiral building blocks, biologics, biotech products, basic chemicals	Cosmetics and food, household and personal care, pharmaceuticals and agrochemicals, specialty chemicals, chemicals industry	

Source: Company data, Nomura estimates

Silicone and Polysilicon value chain

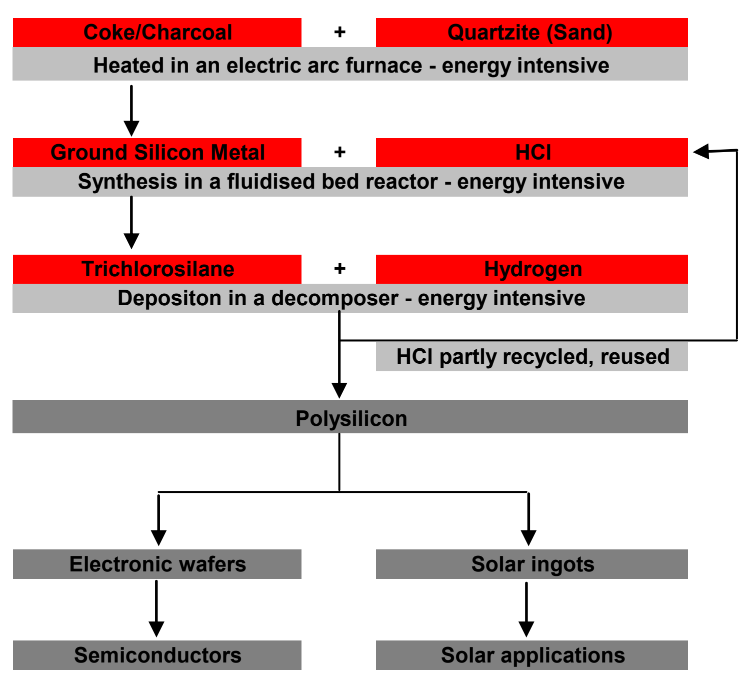
Electronic and industrial silicones start from the same building block (silicon metal) but have different manufacturing processes (Figure 33, Figure 34 and Figure 35). Both processes are highly capital intensive and energy consuming.

Figure 33: Silicones manufacturing process



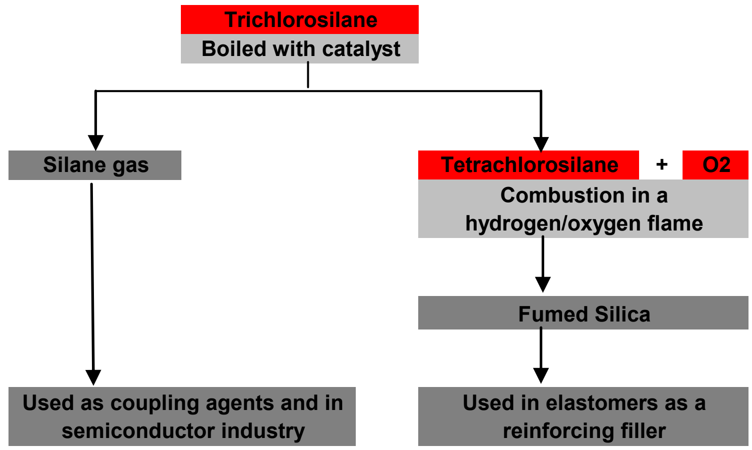
Source: Nomura research

Figure 34: Polysilicon manufacturing process



Source: Nomura research

Figure 35: Silane gas and Fumed silica manufacturing process



Source: Nomura research

Wacker: an integrated upstream silicone producer

Wacker is an integrated upstream player. It owns salt mines used for chlorine production. In Burghausen (Wacker's main site) and has access to a cost efficient energy source (thanks to a hydroelectric power plant). In Figure 36 and Figure 37, we compare Wacker's integration with its competitors in industrial silicones and polysilicons.

Figure 36: Economic value chain-Industrial Silicones

Industrial Silicons	Wacker Chemie	Wacker-Dow 51:49 JV	Dow Corning	Momentive	ShinEtsu	ASM (ShinEtsu-GE Toshiba 50:50 JV)	Blue Star	Evonik	Tokuyama
Energy	Net Buyer		Buyer	Buyer	Buyer		Buyer	Net Seller	Buyer
Silicon Metal	Buyer 200kt/yr		Buyer	Buyer	Net seller		Buyer	Buyer	Buyer
Salt	Net Seller		-	-	Balance		-	-	Buyer
Chlorine	Balance		Buyer	Buyer	Balance		Buyer	Buyer	Net seller
Caustic Soda	Seller		-	-	Seller		-	Buyer	Net seller
Methanol	Buyer		Buyer	Buyer	Net Seller		Buyer	Buyer	Buyer
Methyl Chloride	Balance		Balance	Balance	Balance		Balance	Balance	Net Seller
Chlorosilane	Net Seller		Net Sellers	Balance	Balance		Balance	Net Seller	Balance
ChlorosilaneHydrolysate ('000 mt/yr)	230		415-445	215-225	115	70	300		-
Siloxane	Net Seller		Net Seller	Net buyer	Balance		Balance	Balance	-
Fumed Silica	Seller		-		Seller		Seller	Seller	Seller
Fumed Silica capacity ('000 mt/yr)		200					6		20
Silanes	Seller		Seller	Seller	Seller			Seller	
Silicones									
Fluids	X		X	X	X		X	X	
Elastomers	X		X	X	X		X	X	
Resins	X		X	X	X		X	X	

Note: X means the company is active; Source: Company data, Nomura research

Figure 37: Economic value chain-Electronic Silicons

Electronic Silicons	Wacker Chemie	Dow Corning	REC	MEMC	Tokuyama	Shin Etsu	SUMCO
Chlorosilanes	Net Sellers	Net Sellers	Buyer	Buyer	Net Seller	Balance	-
Silane Gas	Sellers	Sellers	Sellers	Sellers	-	Sellers	-
Polysilicons	Net Sellers	Sellers	Net Sellers	Net Sellers	Seller	-	Buyers
Wafers	Sellers	-	Sellers	Sellers	-	Sellers	Sellers
Solar Cells	-	-	Net Sellers	-	-	Sellers	-
Solar Modules	-	-	Net Sellers	-	-	-	-
Solar Systems	-	-	Sellers	-	-	-	-

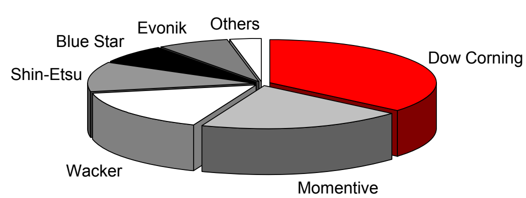
Source: Company data, Nomura research

Wacker Silicones

Industrial slicones is a relatively consolidated market with high barriers to entry (thanks to high capital intensity as well as technical expertise). Wacker is the third largest player (Figure 38) and is rapidly building up capacity (Figure 39) notably in collaboration with Dow Corning in China.

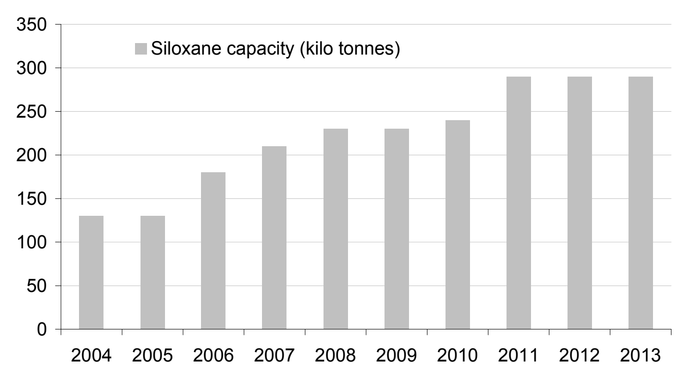
In addition to its strong cost position, Wacker Silicones has a strong position in downstream formulations, particularly in: building preservation, elastomers for transportationand energy, and pyrogenicsilica for the merchant market.

Figure 38: Silicones Market Share



Source: Company data, Nomura research

Figure 39: Wacker's Siloxane capacity



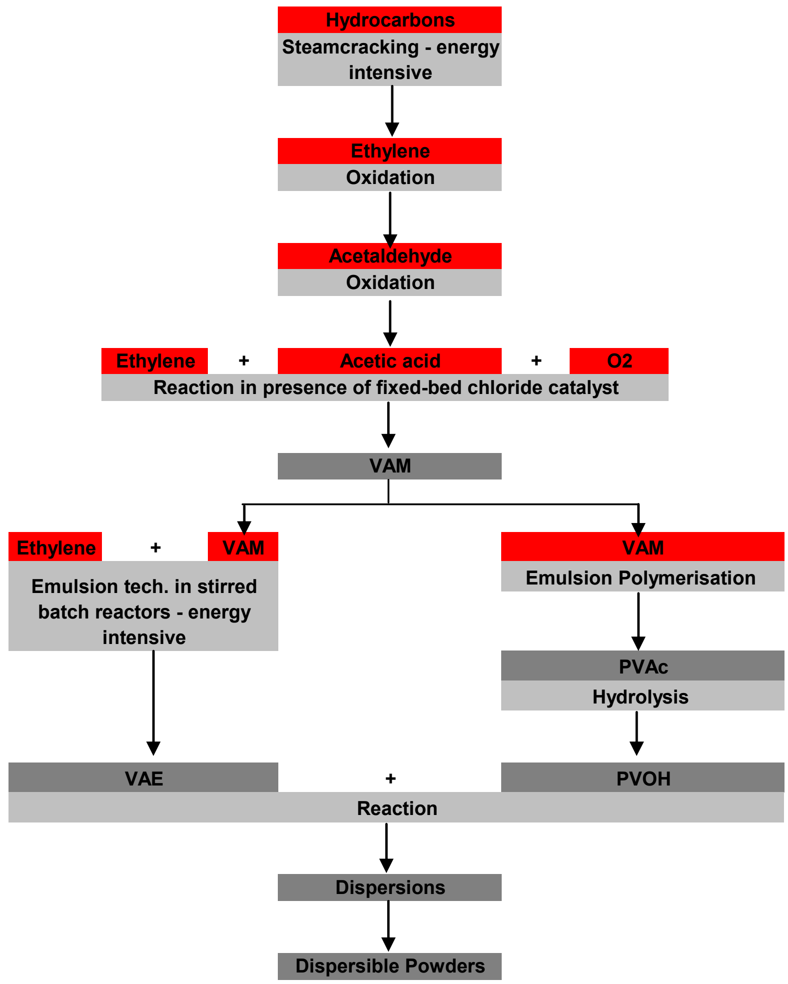
Source: Company data, Nomura research

Wacker Polymers

Like in silicones, Wacker has an attractive cost position in VAM thanks to its backward integration (close to ethylene, chlorine and energy sources). Note, however, that Wacker's acetic acid technology is based on acetaldehyde oxidation, an older, less efficient technology than Celanese's and BP's methanol carbonylation technologies. However, this is a minor issue in our view as the Celanese plant is far away from the only two large scale methanol carbonylation plants (one in Hull, UK and one in Pardies, France) and most large scale VAM plants do not have acetic acid backward integration on-site.

Wacker has the leading position downstream in Dispersible Polymer Powders (DPP) for Construction and VAE dispersions for adhesive, coatings and engineered fabrics applications.

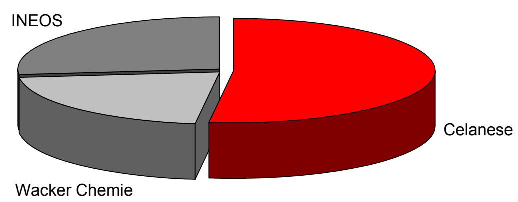
Figure 40: VAM, Dispersions' manufacturing process (acetaldehyde oxidation route)



Source: Nomura research

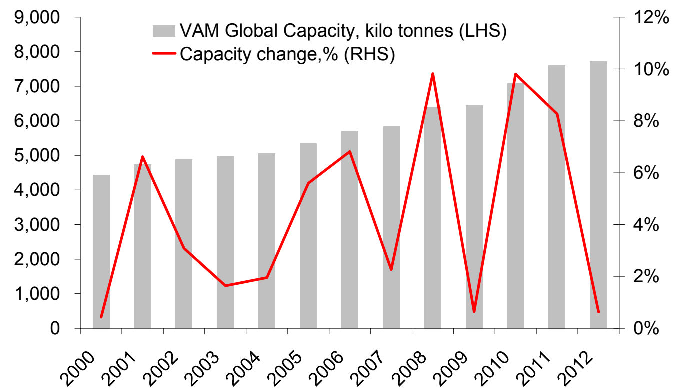
Despite Wacker's strong position in DPP, we are concerned about pricing risks in this value chain as VAM is expected to experience a significant capacity choc by end 2013 (Figure 42). We have assumed a limited margin recovery before 2013.

Figure 41: West-Europe VAM producer 2010E capacities



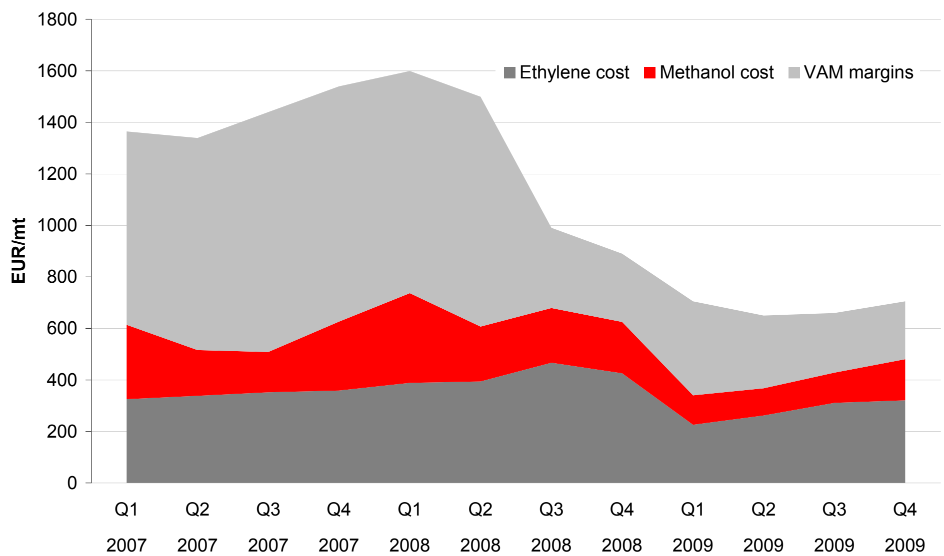
Source: ChemSystems, Nomura research

Figure 42: Global VAM capacities and growth rates



Source: ChemSystems, Nomura research

Figure 43: VAM margins



Source: CMAI, ICIS, Nomura research

Financials

There are two growth drivers: Cyclical recovery and capacity growth. Over the near term, the recovery at Siltronic is a big earnings driver. Beyond that, and over the longer term, capacity growth on the back of end market growth is the prime growth driver. We forecast the company will more than double its poly capacity to 2012. We have, however, been conservative on pricing and margins, both for poly and Siltronics over the long term and have assumed long-term margin erosion in both businesses.

On volumes, we have assumed:

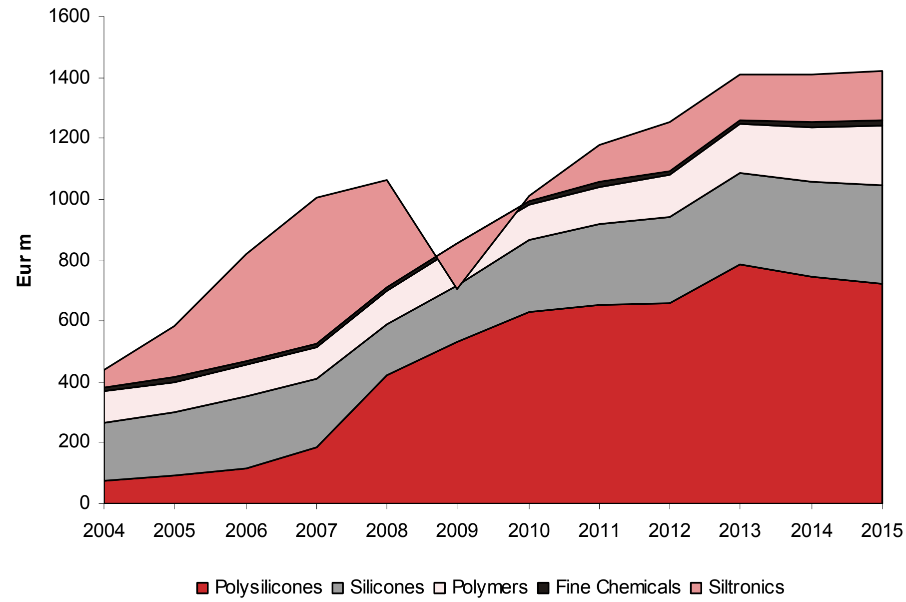
- Poly: Our 2010 forecast is based on poly capacity increasing to around 26kt and the company continuing to achieve production above nameplate capacity. We assume poly 9 coming onstream at the end of 2012, with Wacker reaching total capacity of 35kt as per the company's guidance. We assume US$78/kg 2010, US$71/kg 2011, US$52/kg 2015 ASPs on the basis of poly market prices reflecting production costs declining below the US$30/kg. But we also assume that higher quality poly will be above average as poly prices have recently declined to reflect lower quality grades coming to the market. We think that poly margins will decline by c 50bps between 2009 and 2011 as poly prices fall and new capacity is being ramped up, but assume that production cost reductions will be the driver of ASP reduction and therefore margins will continue to erode beyond 2013. On the basis of our margin and volume forecast, we anticipate a return to profitability in the later quarters of 2010.

- Siltronic: We assume a volume recovery for Siltronic from Q3 2010. We think that capacity utilisations will remain weak in the sector for the early part of this year before capacity begins to tighten later in 2010.We have assumed a 10% price increase at Siltronic for the later half of 2010 and a volume recovery around 20%.

- For Silicones, we expect volume growth to be strong in 2010 (+15%) thanks to a favourable base effect. This should mechanicaly lift EBITDA margins to pre-crisis level (17%) thanks to good operating leverage. Longer term, we forecast solid volume growth (+7% 2011-2013E) thanks to strong capacity increases. We believe pricing power to remain favourable thanks to strong consolidation and solid demand growth (+5%).

- For polymers, we expect gradual volume recovery driven by a slow improvement of construction demand. With high capacity addition in 2010-2013, we do not expect VAM margins to recover before 2014. As a consequence, we expect modest EBITDA margin recovery mid-term.

Figure 44: EBITDA growth by divisions



Source: Company data and Nomura estimates

We believe Siltronic drives earnings from the return to profitability in 2010 and 2011, while polysilicon is the prime growth driver on capacity expansion from 2012. On this basis, we forecast a 65% y-o-y swing in EBIT in 2010 vs 2009 and 20% earnings growth for 2011. Our EPS forecast is 4% above consensus in 2010 and 8% in 2011 (source: Bloomberg).

The company is cash flow negative until 2013, which is a consequence of the capacity expansion, but we still forecast net debt below 0.5x EBITDA even at the peak of capex in 2012.

Capital intensity and cash flow returns

The Silicones/Polysilicones value chains are highly capital intensive. We have shown in Figure 45 the capital intensity of the largest groups in the industry. Wacker has the highest gross assets/sales ratio in the universe which makes sense given its highest backward integration. On average, Wacker's historic cash flow returns have been close to its peers around 10%.

Figure 45: Capital Intensity

	2005	2006	2007	2008
Wacker Chemie	2.2	1.9	1.8	1.8
Shin Etsu	1.3	1.3	1.4	1.5
Dow Corning	1.2	1.2	1.3	1.4
Momentive	1.2	0.6	0.6	0.6
MEMC	0.6	0.5	0.5	0.7
REC	1.4	1.1	1.3	2.6
Average	1.3	1.1	1.1	1.5

Source: Company data, Nomura estimates

Figure 46: Operating Margins

Operating Income Margins	2000	2001	2002	2003	2004	2005	2006	2007	2008
Wacker Chemie					5.3%	9.2%	13.7%	17.2%	15.9%
Shin Etsu	14.0%	14.8%	15.3%	15.1%	15.7%	16.4%	18.5%	20.9%	19.4%
Dow Corning		2.0%	5.5%	11.9%	13.1%	19.5%	22.7%	23.8%	25.9%
Momentive						9.5%	4.2%	3.2%	0.8%
MEMC	-17.6%	-2.0%	-31.9%	8.3%	13.9%	23.5%	16.7%	29.0%	42.4%
REC					3.1%	24.5%	36.3%	39.0%	30.9%
Average	-1.8%	4.9%	-3.7%	11.8%	10.2%	17.1%	18.7%	22.2%	22.5%

Source: Company data, Nomura estimates

Figure 47: Cash flow returns

CFR	2005	2006	2007	2008
Wacker Chemie	3.1%	7.7%	10.8%	10.1%
Shin Etsu		12.7%	11.7%	10.3%
Dow Corning		15.1%	12.5%	12.6%
Momentive		6.1%	10.5%	5.0%
Average	3.1%	10.4%	11.4%	9.5%

Source: Company data, Nomura estimates

JV and associates

Wacker runs significant investments in joint ventures (Figure 48) particularly the Siltronic Samsung Wafer and Dow Corning Zhangjiang Holding JV. Wacker recently announced that it has pulled out of the Wacker Schott JV. As the investments are ongoing, net liabilities are very high (Figure 49).

Note that we have valued joint ventures on book value. We believe this is very conservative given growth prospect in Siloxanes/pyrogenic silica and wafers and the typical returns on these projects.

Figure 48: JVs and Associates

JVs and Associates	Location	Ownership	Description
Wacker Asahi Kasai Silicone.	Tokyo, Japan	50%	Founded in 1999. Involved in production of silicone products such as rubber grades, emulsions and fluids
Dow Corning (ZJG) Holding	Singapore	25%	Plant estd in 2003 in Zhangjiang, China. Currently in second phase of expansion. Plant reaches full capacity in late 2010 and will produce 210 kt/yr of siloxanes and pyrogenic silica
Wacker Dymatic (Shunde)	Guangdong, China	50%	Estd. in 2005. Produces silicone emulsions for China's textile, leather and fiber industries. Capacity ~ 35000 mt/yr
Planar Solutions	Michigan, USA	50%	Estd. In 2000. Involved in development and manufacture of CMP slurries used in microchips.
Siltronic Samsung Wafer	Singapore	50%	Estd 2008. Involved in wafer production
Wacker Schott Solar	Jena, Germany	50%	Involved in producing hyperpure plycrystalline silicone wafers for solar cells. Wacker withdrew from JV in third quarter, 2009.

Source: Company data, Nomura research

Figure 49: JVs & Associates

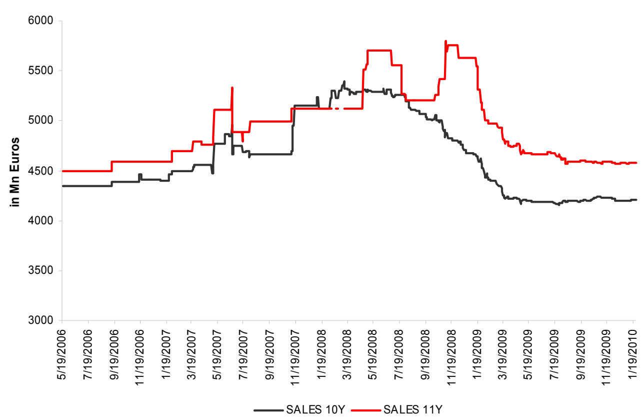
EURm	2006		2007		2008	
	Total	Wacker Share	Total	Wacker Share	Total	Wacker Share
Sales	105.8	49.1	113.2	52.6	278.7	138.2
Operating income	5.8	2.9	-30.8	-10.0	-59.2	-22.2
Result after taxes	4.9	2.4	-34.4	-10.9	-80.6	-30.5
Non current assets	216.1	73.9	684.1	280.4	1145.8	452.7
Current assets	138.9	66.3	152.1	70.0	286.6	139.6
	355	140.2	836.2	350.4	1432.4	592.3
Equity	285.7	109.6	418.4	195.2	453.7	195.0
Non current liabilities	20.6	7.6	227.2	85.8	560.2	263.7
Current liabilities	48.7	23	190.6	69.4	418.5	133.6
	355.0	140.2	836.2	350.4	1432.4	592.3

Source: Company data, Nomura research

Momentum

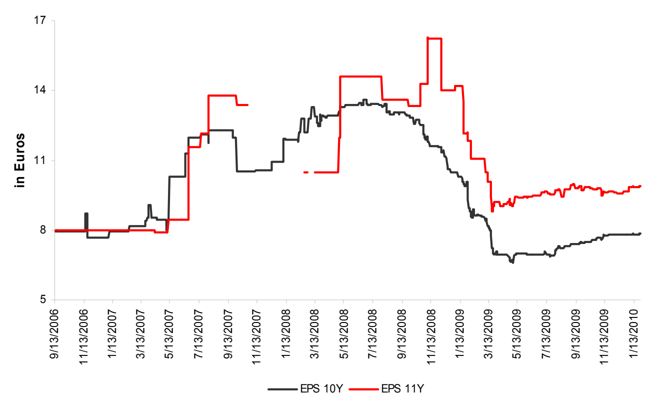
We think that sentiment is bottoming out. There is still some unease about poly prices, and some disappointment over the raft of negative exceptionals that have affected reported FY09 numbers, but we see this as an opportunity.

Figure 50: Sales momentum expectations



Source: Bloomberg, Nomura research

Figure 51: Earnings momentum expectations



Source: Bloomberg, Nomura research

Valuation

EUR 130 price target based on SOP

We have derived our EUR 130 price target on the basis of a sum-of-the-parts approach where we have valued each division on a DCF basis.

Note that the CFR assumed at the group level is lower that historic CFRs based on our assumptions for price erosions in polysilicones and siltronics. We also expect lower capital intensity (1.4x vs historical average 1.87x) thanks to lower investments next decade, capacity creep and technology improvements.

Figure 52: DCF assumptions and valuation by division

	Value	Value per Share	2011e sales	2011e EBITDA	2011e EBIT	EV/ sales 11e	EV/ EBITDA 11e	EV/ EBIT 11e
Wacker polysilicon	4404.9	88.7	1436	653	509	3.1	6.7	8.7
Wacker silicones	1664	33.5	1528	264	163	1.1	6.3	10.2
Wacker Polymers	1243	25.0	884	124	73	1.4	10.0	17.1
Wacker Fine Chemicals	126	2.5	102	13	7	1.2	9.5	17.1
Siltronics	979	43.3	892	122	30	1.1	8.0	33.1
Sum of divisions	7431	149.6	4615	1177	744	1.6	6.3	10.0

	04 - 09e EBITDA Mgin	10 - 14e EBITDA Mgin	TY EBITDA Margin	10 - 14 Gth	TY growth	TY Capex/ sales	TY GA/ sales	TY CFR
Wacker polysilicon	38.9	46.1	40.0	4.3	3.0	10.0	1.5	16.7
Wacker silicones	16.5	17.4	17.5	5.5	3.0	9.0	1.4	7.0
Wacker Polymers	18.7	15.0	14.9	4.7	2.5	8.0	1.3	6.0
Wacker Fine Chemicals	11.7	12.5	13.0	1.9	3.0	6.0	0.9	7.6
Siltronics	22.5	4.5	15.0	9.9	3.0	9.0	1.4	5.5
Wacker Chemie group	23.6	25.6	22.4	5.1	2.1	9.2	1.4	9.1

Source: Nomura estimates

Figure 53: Equity valuation and PER reconciliati

	Value	Value per Share	PER	2010E	2011E	PER 2010e	PER 2011e
Sum of divisions	7,430.7	149.6	EBIT per share	12.4	15.0	12.1	10.0
Calculated discount	-6.6	-0.1	Financial charge per share	-0.2	-0.4	37.7	14.9
Estimated EV	7,424.2	149.4	Other item per share	0.0	0.0	0.0	0.0
Adjusted Financial Net debt	-307	-6.2	PBT per share	12.2	14.6	10.9	9.2
Retained Pension deficit (surplus)	-395	-7.9	Taxes per share	-3.8	-4.7	0.0	0.0
Retained Provisions liability & other liability	-204	-4.1	EPS adjustment	0.0	0.0	0.0	0.0
Retained Minority interest	-23	-0.5	Minority Interest per share	0.0	-0.1	0.0	0.0
Adjusted associates	137	2.8	JV, associates per share	-0.7	-0.2	0.0	0.0
Equity Value	6,632.7	133.5	EPS	7.7	9.5	17.3	14.0

Source: Nomura estimates

The shares are trading on an 18% P/E discount to the close global poly peer group, which we consider unjustified given its market leading position.

We estimate that the current share price implies the company loses its premium advantage and its poly ASPs falls to US$ 50/kg this year and US$ 45/kg in 2011 with nil premium to our spot price assumptions thereafter. We think that this is too pessimistic, especially given that most competitors are still struggling with US$60/kg production costs this year and higher.

Figure 54: Wacker summary financials

P&L									Comments
Year-end Dec	[unit]	2007A	2008A	2009E	2010E	2011E	2012E	2013E	
Sales	[EUR m]	3781	4298	3755	4202	4615	4877	5253	**09E/08A: -12.6% / 5Y CAGR 4.1%**
%age growth	%	13.3%	13.7%	-12.6%	11.9%	9.8%	5.7%	7.7%	
Gross Profit	[EUR m]	1,152	1,188	1,073	1,537	1,754	1,864	2,068	**09E/08A: -9.6% / 5Y CAGR 11.7%**
%age growth	%	20.1%	3.1%	-9.6%	43.1%	14.1%	6.3%	10.9%	
Gross margin	%	30.5%	27.6%	28.6%	36.6%	38.0%	38.2%	39.4%	
EBITDA	[EUR m]	1003	1089	604	1011	1177	1255	1412	**09E/08A: -44.5% / 5Y CAGR 5.3%**
%age growth	%	27.2%	8.5%	-44.5%	67.4%	16.4%	6.6%	12.5%	
EBITDA margin	%	26.5%	25.3%	16.1%	24.1%	25.5%	25.7%	26.9%	
Depreciation	[EUR m]	(352)	(407)	(580)	(418)	(444)	(467)	(492)	
Operating Profit	[EUR m]	651	681	161	628	743	785	906	**09E/08A: -76.3% / 5Y CAGR 5.9%**
%age growth	%	42.09%	4.62%	-76.34%	289.28%	18.46%	5.64%	15.32%	
Operating Margin	%	17.2%	15.9%	4.3%	14.9%	16.1%	16.1%	17.2%	
Net financial Result	[EUR m]	(1)	(2)	(20)	(8)	(21)	(27)	(32)	
Non-Operating Income	[EUR m]								
PBT	[EUR m]	632	642	4	586	713	761	888	**09E/08A: -99.5% / 5Y CAGR 6.7%**
%age growth	%	52.1%	1.5%	-99.5%	16506.2%	21.8%	6.7%	16.7%	
PBT Margin	%	16.7%	14.9%	0.1%	13.9%	15.4%	15.6%	16.9%	
Equity Income	[EUR m]	(17)	(5)	0	0	0	0	0	
Income Tax	[EUR m]	(210)	(204)	(81)	(193)	(235)	(251)	(293)	
Tax rate	[EUR m]	33.2%	31.7%	2306.8%	33.0%	33.0%	33.0%	33.0%	
Net Income	[EUR m]	422	438	(78)	392	478	510	595	**09E/08A: -117.8% / 5Y CAGR 6.3%**
%age growth	%	35.41%	3.81%	-117.75%	-604.18%	21.76%	6.69%	16.72%	
Minority Interests	[EUR m]	(0)	1	238	(1)	(4)	(4)	(5)	
Income from Discontinued Operations	[EUR m]								
Net earnings	[EUR m]	422	439	160	391	474	505	590	**09E/08A: -63.5% / 5Y CAGR 6.1%**
%age growth	%	35.6%	4.1%	-117.2%	-618.2%	21.0%	6.7%	16.7%	
Net Profit Margin	%	11.2%	10.2%	-2.0%	9.3%	10.3%	10.4%	11.2%	

KEY SHARE DATA	[unit]	2007A	2008A	2009E	2010E	2011E	2012E	2013E
Number of Shares	[in m]	50.1	52.2	49.7	49.7	49.7	49.7	49.7
EPS	[EUR /sh]	8.42	8.43	3.23	7.88	9.53	10.17	11.87
EPS (Cont. Operations)	[EUR/sh]	8.42	8.43	3.23	7.88	9.53	10.17	11.87
DPS	[EUR /sh]	3.00	1.80	1.80	2.50	3.00	3.50	4.00
Dividend Payout	%	36%	21%	56%	32%	31%	34%	34%
BPS	[EUR/sh]	37.25	39.66	38.62	44.69	51.73	58.90	67.27

Source: Company data, Nomura estimates

Figure 55: Wacker summary financials

BALANCE SHEET									
Year-end Dec	[unit]	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
Intangible assets	[EUR m]	10	25	21	21	21	21	21	
Goodwill	[EUR m]								
Tangible assets	[EUR m]	2,123	2,660	2,755	3,193	3,571	3,993	4,346	
Financial assets	[EUR m]	268	369	210	210	210	210	210	
Total fixed assets	[EUR m]	2,402	3,053	2,986	3,424	3,802	4,225	4,577	
Inventories	[EUR m]	404	505	440	475	504	544	584	
Receivables	[EUR m]	461	467	498	561	596	644	690	
Payables	[EUR m]	242	297	220	248	264	285	305	
Working capital	[EUR m]	623	675	718	788	837	904	969	
Other assets	[EUR m]	196	263	321	321	321	321	321	
Total assets	[EUR m]	**3,310**	**4,124**	**4,761**	**5,012**	**5,331**	**5,683**	**6,124**	**09E/08A: 15.4% / 5Y CAGR 8.2%**
Share capital	[EUR m]	261	261	263	0	0	0	0	
Retained Earnings	[EUR m]	1,541	1,752	1,676	0	0	0	0	
Shareholders' funds	[EUR m]	1,866	2,083	1,940	2,243	2,596	2,957	3,378	
Minorities	[EUR m]	15	14	22	23	27	31	36	
Provisions	[EUR m]	343	488	408	358	328	328	328	
Long term liabilities	[EUR m]	164	159	355	355	355	355	355	
Short term liabilities	[EUR m]	54	114	163	163	163	163	163	
Cash & cash equivalent	[EUR m]	-367	-204	-492	-207	-84	75	71	
Net debt	[EUR m]	-149	68	26	311	434	592	589	
Other liabilities	[EUR m]	888	1,188	1,148	1,148	1,148	1,148	1,148	
Total liabilities	[EUR m]	1,444	2,041	2,109	2,314	2,387	2,516	2,513	
Total shareholders' funds & liabilities	[EUR m]	**3,310**	**4,124**	**4,761**	**5,012**	**5,331**	**5,683**	**6,124**	**09E/08A: 15.4% / 5Y CAGR 8.2%**

Cash Flow								
EURm	**2007**	**2008**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**2014E**
Net income before minority interests	422.2	438.3	-77.8	392.3	477.7	509.6	594.8	583.3
Dep'n & Amort'n	351.9	407.3	580.6	417.8	443.7	467.3	492.0	511.0
Changes in provisions	69.1	59.6	167.2	-80.0	-50.0	-30.0	0.0	0.0
Changes in deferred taxes	17.1	3.2	-2.1	0.0	0.0	0.0	0.0	0.0
Changes in the scope of consolidation								
Other non-cash gains and losses	15	-4.2	-5.3	0.0	0.0	0.0	0.0	0.0
Result from equity accounting	9.7	36.2	117.8	0.0	0.0	0.0	0.0	0.0
Changes in inventories	-3.7	-71.5	56.0	-34.5	-29.3	-40.2	-39.2	-15.4
Changes in trade receivables	-4	25.7	-37.5	-63.7	-34.7	-47.5	-46.3	-18.2
Changes in other assets	-23.1	-108.1	54.2	0.0	0.0	0.0	0.0	0.0
Changes in other liabilities	55.1	21.8	-68.0	0.0	0.0	0.0	0.0	0.0
Changes in advance payments received	413.2	197.7	62.1	28.2	15.3	21.0	20.5	8.0
CFO	**1322.5**	**1005.4**	**847.2**	**660.1**	**822.6**	**880.3**	**1021.7**	**1068.8**
Payments for intangibles and PPE	-562.5	-747.1	-773.1	-856.1	-821.4	-889.7	-844.7	-670.5
Payments related to financial assets	-120.4	-30.8						
Payments for loans at JVs		-60.3						
Proceeds from disposal of intangibles and PPE	3.7	22.3	4.0	0.0	0.0	0.0	0.0	0.0
Proceeds from disposal of associates/financial assets	0.4	3.4						
Payments related to acquisitions		-171.2	0.0	0.0	0.0	0.0	0.0	0.0
Proceeds from divestures								
Acquisition of current securities		-101.1	101.1	0.0	0.0	0.0	0.0	0.0
CFI	**-678.8**	**-1084.8**	**-668.0**	**-856.1**	**-821.4**	**-889.7**	**-844.7**	**-670.5**
Net Cash flow	**643.7**	**-79.4**	**179.1**	**-196.0**	**1.2**	**-9.5**	**177.1**	**398.3**
Dividends paid	-124.2	-149.1	-90.1	-89.4	-124.2	-149.0	-173.9	-198.7
Acquisition of treasury shares								
Sale of treasury shares								
Capital cont'n from minority interests		2.4	11.3	0.0	0.0	0.0	0.0	0.0
Dividends paid to minority interests	-0.3	-0.3						
Withdrawal of limited partnership capital	-13.9							
Change in fin liabilities	-180.5	59.3	189.4	0.0	0.0	0.0	0.0	0.0
CFF	**-318.9**	**-87.7**	**110.6**	**-89.4**	**-124.2**	**-149.0**	**-173.9**	**-198.7**
Changes in cash flow due to exchange rate fluc.	-1.2	4.8	-1.6	0.0	0.0	0.0	0.0	0.0
Changes in cash flows due to changes in scope of cons.								
Changes in cash and cash equivalents	**323.6**	**-162.3**	**288.1**	**-285.4**	**-123.0**	**-158.5**	**3.2**	**199.6**
At beginning of the year	**42.9**	**366.5**	**204.2**	**492.3**	**206.9**	**84.0**	**-74.5**	**-71.3**
At year end	**366.5**	**204.2**	**492.3**	**206.9**	**84.0**	**-74.5**	**-71.3**	**128.2**

Source: Company data, Nomura estimates

Renewable Energy Corp

Reuters:REC.OL Bloomberg REC NO

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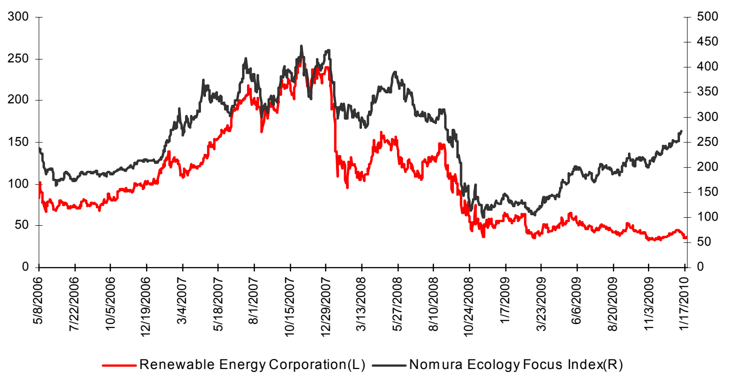
The glass is half full



Source: Bloomberg and Nomura research

Recommendation(new)	BUY	Recommendation(old)	N/A
Share Price (NOK)	33.98	Market Cap (NOK m)	22588
Sector:	Renewable Energy		

Year-end 31/12 (NOK m)	Sales	EBITDA	EBIT	Net Profit
2007A	6,642	3,172	2,588	1,333
2008A	8,191	3,279	2,529	3,064
2009E	9,000	1,754	(393)	(957)
2010E	12,316	2,960	932	558
2011E	15,263	4,708	2,797	1,773
Year-end 31/12 (NOK m)	**P/Sales**	**EV/EBITDA**	**P/E**	**P/CF**
2007A	3.37	6.1	16.8	5.5
2008A	2.74	8.7	7.3	11.3
2009E	2.49	19.7	n/m	19.1
2010E	1.82	12.6	40.2	9.9
2011E	1.47	8.2	12.6	5.9

We initiate coverage with a Buy recommendation and a NOK 46 price target. We see the current share price weakness as an opportunity: We believe that the focus will return towards long-term growth from on wafer prices and execution risk. REC should capture growth as a Tier 1 market leader with competitive advantages that will become more clear once the new fabs are up and running in late 2010.

- Upstream volume leader As a first tier upstream name, REC should benefit from recovering end market volumes and improving profitability. The company is in the middle of a significant expansion programme that should triple capacity in the next few years.
- Pessimism in the share price vs turnaround. We think that the current share price reflects the execution and price risk, whereas the company's turnaround in profitability later this year should return the focus to the long-term upside potential.
- Vertical integration We think that REC's presence across the value chain from poly to modules will get appreciated again as the trend towards integration in the sector continues and the wafer and module businesses return to profitability.
- Finances. We forecast a return to EBIT profitability in 2010, but expect stable poly and wafer margins as the company absorbs expansion costs and ASP reductions.
- Sentiment. Our forecasts are 54% and 24% below consensus in 2010 and 2011 and we expect some more adjustments to ASP expectations in wafers. But sentiment is at very low levels already.
- Valuation. Our DCF fair value is NOK 46 per share.

Manufacturer of polysilicon, solar wafers and solar modules with a target to reach 15kt of poly capacity by 2011.
Business mix: Silicon (26%), Wafers (46%), Module s(27%)
Geographic exposure: Germany (38%), Rest of Europe (19%), USA (8%), Japan (22%), Rest of Asia (13%)
Key strategic issues: Execution on capacity expansion, contract portfolio

Figure 56: Nomura view on key bull and bear points

Bull points	Bear points
Long-term pv growth prospects should lead to polysilicon demand growth as the most important earnings growth driver	Wafer prices. The wafer part of the solar value chain has so far been relatively unaffected by pricing pressure as contracts have held up. REC has guided to contract revisions for its wafer business into 2010.
Vertically integrated business models have been performing stronger in the ongoing shake-up in the solar sector and we expect this to continue to be the case as the virtues of a greater degree of flexibility and value chain penetration become evident.	Execution. Hiccups with the fab expansion in the silicon business and malfunctioning in module junction boxes have affected sentiment. But we think that this is behind the company as milestones have been delivered and the module issues fixed. It will take some time to restore reputation but we believe that confidence will return.
Cost leadership. The new FBR Moses Lake fab should position the company at the leading edge of the cost curve. We expect this to be an important competitive advantage coming to the fore from 2010.	Overhang. One of the major shareholders of REC, Hafslund Ventures, who now holds 14.2%, has recently placed 2.7% of its shares. Other major shareholders, both financial institutions and trade operators, hold 50%.

Source: Nomura research

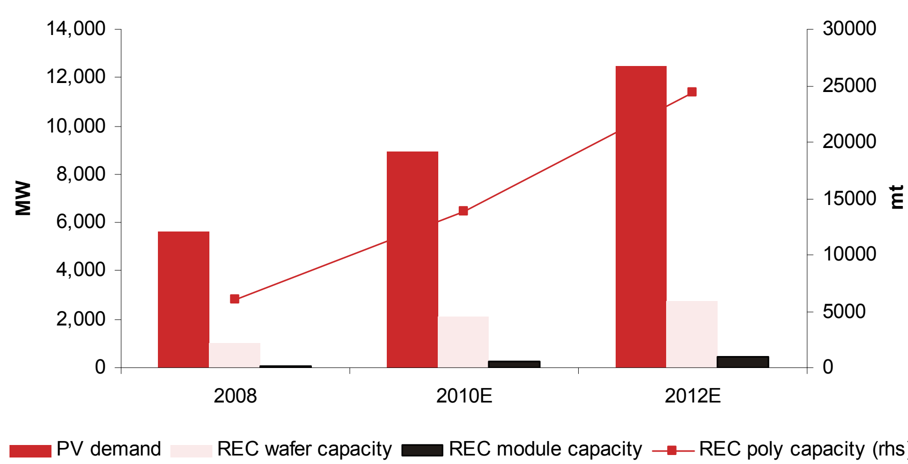
Investment points

Long-term volume growth driven by global end markets

Beneficiary of end market growth and doubling of capacity

REC's long-term prospects are strongly leveraged into global solar growth. Our global solar model suggests 21% end market CAGR to 2015. We think that the end market has gone through its trough earlier this year and is now on a solid recovery path. As pv demand is a direct driver of polysilicon demand, the company should see strong volume growth returning from Q409. REC is doubling its poly manufacturing capacity and should reach in excess of 15,000t by 2011.

Figure 57: REC capacity growth



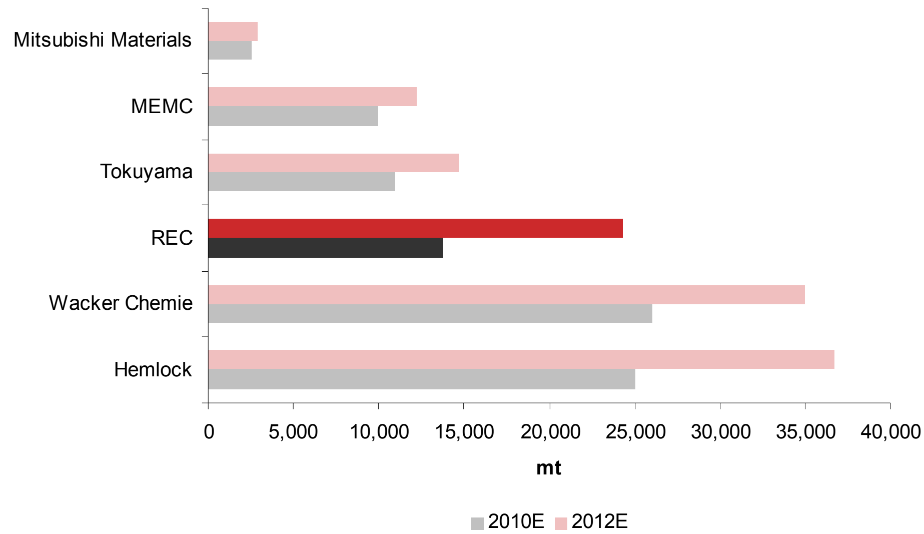
Source: Company data, EPIA, Photon, Solarbuzz, Nomura research

Leadership position

The benefit of the new fabs ramping up should come through later this year

As the third largest among the first tier global polysilicon manufacturers, REC's leadership position in the global poly market distinguishes it from others in the European solar space where market leadership is being contested by Asian low cost manufacturers. We recognise that the company's execution has been bumpy with multiple delays to its silicon III and IV plant expansion. The benefit of the ramp-up of the new fabs should come through later in 2010 and the fab's continuous process manufacturing should increase competitiveness over the long term. We perceive the level of expectations on the expansion as low and delivery will be paramount. The new reactors have the potential for meaningful cost leadership with achievable production costs below US$30/kg compared with the current US$40-50/kg.

Figure 58: REC vs close peer group of Tier 1 poly manufacturers



Source: Company data, Photon, and Nomura research

Share price reflects risks

Share price reflects pessimism on turnaround

The worst in terms of sector pressures and company-specific problems seems to be behind, although we see still some headwinds over the next months. First and foremost, the company's capacity expansion is still in the middle of a ramp-up phase after numerous problems in an unproven technology with which other major manufacturers such as Wacker have also struggled. If everything goes to plan, the company should be completing its ramp-up process during the summer.

We also think that now is the time when price pressure in the wafer segment is at its worst. So far, pricing pressure has been concentrated at the midstream level of the solar value chain, while wafer volumes and prices have held up. But throughout the wafer sector, companies are warning of contract renegotiations and pricing pressure, just as REC did at the Q3 stage. We think that the negative earnings impact will come through in 2010 but that the company's cost and volume improvement will compensate and still lead to some profitability improvement. In our view, most of this could be concentrated in the early parts of the year. We think that this is only now fully finding its way into the market consensus, but we interpret the recent share price weakness as reflective of an expectation of consensus coming down.

All in all, we see the early parts of this year as characterised by execution and margin risk but see the risk/reward relationship as attractive at the current share price. Visibility on the company's expansion as well as on its contract portfolio should improve over the year, and we think that REC's long-term growth prospects will become more appreciated. However, for that to happen, it will take positive results from the significant capacity growth programme during this year.

Financials

Capacity growth on the back of end market growth is the prime growth driver for REC. We forecast that the company will more than double its poly capacity to 2012.

On volumes, we have assumed:

- Our 2010 forecast is based on the company achieving ramp-up on its silicon III fab and a full load around the end of H1.We have left some slack for REC reaching its full capacity target and assume 15kt of capacity from Q1 11. Taking into account fab ramp-up brings us to c 10kt of silicon production for 2010. During 2011, the company should reach its 20kt capacity target.

- We forecast just over 2.1GW of wafer capacity for the end of 2010, with full utilisation achieved around Q4 10 and 1.3GW of production. This is close to 70% above the 2009 level.

- For the solar business, we have built in some extra time to the build out of the module fabs and assume full capacity around Q3 11. Solar modules should double to 253MW in 2010 on the back of the Singapore expansion. We forecast close to 750MW of module capacity in 2011 compared with the current 180MW. At a later stage, we think there could be reductions in capacity in Scandinavia, but we do not expect this before the Singapore fabs ramp up.

Our ASP assumptions are as follows:

- Poly: US$68/kg 2009, US$56/kg 2010, US$52/kg 2011, US$38/kg 2015 on the basis of poly market prices reflecting production costs declining below US$30/kg. But we also assume that higher quality poly will be priced above average as poly prices have recently declined to reflect lower quality grades coming to the market.

- Wafers: EUR 0.86/w 2009, EUR 0.65/w 2010, EUR 0.60/w 2011. This is above the level of wafer prices by Asian manufacturers, but we expect convergence to be gradual (see below). We see Asian wafer prices around USc 85-95, thus still at a considerable discount. We think the European premium will decrease but only gradually.

- Modules: EUR 1.96/w 2009, EUR 1.68/w 2010 (-15%, incorporating a skew of pricing pressure towards the beginning of the year as a reflection of the German feed-in tariff reduction), EUR 1.57/w 2011.

Despite demand weakness and price erosion, we believe the high tier poly manufacturers should be able to sustain profitability, and margins have been remarkably resilient in the poly business, with just a 20bps decline so far this year. We have based our through cycle margin assumption on a broadly stable EBIT margin, implying that the company will be able to fully offset ASP pressures and ramp-up costs through production cost advance.

We expect pricing pressure to weigh on margins in the wafer business into 2010 but forecast a return to profitability by Q3 10. While we do not think that a return to past margin levels is likely, we have assumed the company's long-term EBIT margin to recover towards 20% on the basis of lower silicon consumption, processing cost reductions and improving capacity utilisation.

The module business is the segment that is underlying our forecast EBIT loss for the group this year. We expect the segment to return to profit from 2012. The cost base of the Scandinavian manufacturing is still high, which is the main factor on margins until Singapore comes closer to full capacity, and ASPs continue to be under pressure.

Overall we forecast a return to profit on an EBIT level for 2010 at a margin of 7.6%. As the higher poly and wafer margins drive the business, we expect a return towards a long-term group EBIT margin of 30%.

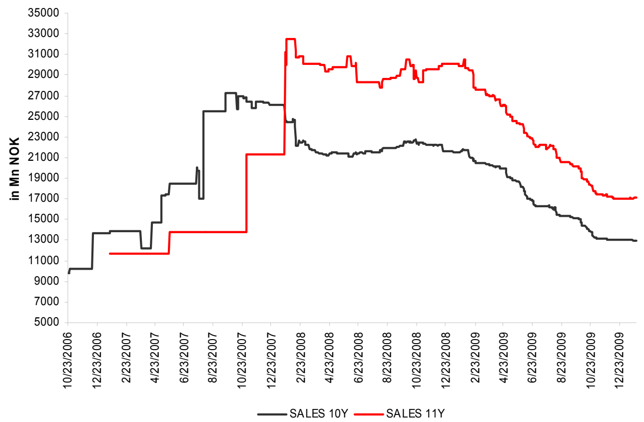
Our forecast is for EPS of NOK -1.44 for 2009 and a return to profitability next year with EPS of NOK 0.84. Between 2010 and 2015, we forecast 55% EPS CAGR.

We expect a peak in capex this year from the fab build. This is the main factor underlying our increase in net debt from NOK 6bn in 2008 to NOK 12bn in 2009 and our resulting increase in interest expenses. As a result of the capex intensive expansion, the balance sheet is strained for the next two years. We estimate net debt at 7x EBITDA 2009 and 5x 2010 and only forecast net debt to fall below 3x EBITDA in 2012. This does raise a concern over potential capital raising, especially if any major unforeseen event occurs that might further delay EBITDA contributions from the new fabs.

Momentum

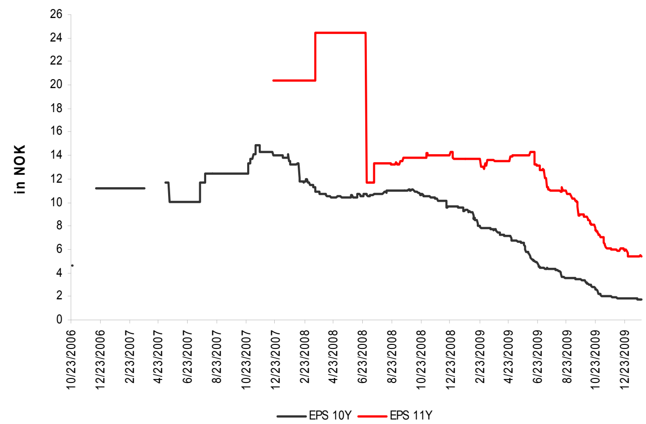
Our forecast is 16% above consensus for 2009 but 52% and 25% below a very wide range consensus in 2010 and 2011 (source: Bloomberg). We think that the Q3 disappointment, as well as a placement of one of the large shareholders, has weighed on sentiment. Our forecast is materially below consensus from top to bottom line for 2010 and 2011, and we think that ASP expectations are gradually being incorporated. While this could continue to weigh on sentiment, we think there is significant upside potential based on current levels. However, proof of execution on the fab ramps will be required to improve sentiment.

Figure 59: Sales momentum expectations



Source: Bloomberg, Nomura research

Figure 60: Earnings momentum expectations



Source: Bloomberg, Nomura research

Valuation

NOK 46 price target based on DCF

Our three-stage DCF valuation (risk-free rate 4%, equity risk premium 5.5%, beta 1.25 unlevered, WACC 9.7%) yields NOK 46 as our price target. This includes a 10-year competitive advantage period with 15% pa growth and 200bps excess return, which we consider appropriate given the growth prospects in the sector and the company's 200bps excess return that we forecast for 2015. The shares are trading at 1.1x P/B 2010E and 1.0x P/B 2011E, which is at trough values. The company's 2010E EV/sales multiple is 52% above trough but 70% below peak. The shares are trading on a 35% P/E 2011E premium to the close Asian poly peers and on a 16% premium to our peer group of European and Asian upstream, wafer and integrated solar peers.

The share price implies a poly ASP of US$ 50/kg for this year and US$ 45/kg for 2011. We think that this is too pessimistic given that we believe that new entrants' current costs are still well above the US$ 65/kg level. The share price implies 30% wafer ASP erosion for 2010 and 25% for 2011, which is above our own expectations of 25% and 8%.

Figure 61: REC summary financials

P&L										
Year-end Dec	[unit]	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**2014E**	**Comments**
Sales	[NOK m]	6642	8191	9000	12316	15263	19626	21928	23664	**09E/08A: 9.9% / 5Y CAGR 21.8%**
%age growth	%	53.3%	23.3%	9.9%	36.9%	23.9%	28.6%	11.7%	7.9%	
Gross Profit	[NOK m]	5,370	6,490	2,364	3,858	4,935	6,346	7,090	7,651	**09E/08A: -63.6% / 5Y CAGR 1.8%**
%age growth	%	49.4%	20.9%	-63.6%	63.2%	27.9%	28.6%	11.7%	7.9%	
Gross margin	%	80.4%	76.3%	26.0%	31.0%	32.0%	32.0%	32.0%	32.0%	
EBITDA	[NOK m]	3172	3279	1754	2960	4708	6657	8018	9176	**09E/08A: -46.5% / 5Y CAGR 19.6%**
%age growth	%	61.5%	3.4%	-46.5%	68.8%	59.1%	41.4%	20.4%	14.4%	
EBITDA margin	%	47.8%	40.0%	19.5%	24.0%	30.8%	33.9%	36.6%	38.8%	
Depreciation	[NOK m]	(585)	(750)	(2147)	(2028)	(1912)	(2281)	(2213)	(2332)	
Operating Profit	[NOK m]	2588	2529	(393)	932	2797	4376	5805	6844	**09E/08A: -115.6% / 5Y CAGR 18.1%**
%age growth	%	64.36%	-2.28%	-115.56%	-336.94%	199.96%	56.48%	32.65%	17.90%	
Operating Margin	%	39.0%	30.9%	-4.4%	7.6%	18.3%	22.3%	26.5%	28.9%	
Net financial Result	[NOK m]	251.08	149.35	-123.15	-203.81	-349.57	-687.64	-1017.95	-898.03	
Non-Operating Income	[NOK m]									
PBT	[NOK m]	1977	4379	(957)	797	2532	3795	4920	6113	**09E/08A: -121.9% / 5Y CAGR 2.4%**
%age growth	%	165.8%	121.4%	-121.9%	-183.3%	217.8%	49.9%	29.6%	24.2%	
PBT Margin	%	29.6%	51.5%	-10.5%	6.4%	16.4%	19.1%	22.2%	25.6%	
Equity Income	[NOK m]	(816)	1703	(426)	0	0	0	0	0	
Income Tax	[NOK m]	(644)	(1314)	0	(239)	(760)	(1139)	(1476)	(1834)	
Tax rate	[NOK m]	32.6%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	
Net Income	[NOK m]	1333	3064	(957)	558	1773	2657	3444	4279	**09E/08A: -131.2% / 5Y CAGR 2.4%**
%age growth	%	191%	130%	-131%	-158%	218%	50%	30%	24%	
Minority Interests	[NOK m]	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	
Income from Discontinued Operations	[NOK m]	0	0	0	0	0	0	0	0	
Net earnings	[NOK m]	1333	3064	(957)	558	1773	2657	3444	4279	**09E/08A: -131.2% / 5Y CAGR 2.4%**
%age growth	%	191%	130%	-131%	-158%	218%	50%	30%	24%	
Net Profit Margin	%	20.0%	36.0%	-10.5%	4.5%	11.5%	13.4%	15.5%	17.9%	

KEY SHARE DATA	[unit]	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**2014E**
Number of Shares (Million shares)	[in m]	494.3	494.3	664.8	664.8	664.8	664.8	664.8	664.8
EPS	[NOK /sh]	2.70	6.20	-1.44	0.84	2.67	4.00	5.18	6.44
EPS (Cont. Operations)	[NOK /sh]	2.70	6.20	-1.44	0.84	2.67	4.00	5.18	6.44

Source: Company data, Nomura estimates

Figure 62: REC summary financials

BALANCE SHEET												
Year-end Dec	[unit]	2004A	2005A	2006A	2007A	2008A	2009E	2010E	2011E	2012E	2013E	Comments
Intangible assets	[NOK m]	29	259	255	256	477	0	0	0	0	0	
Goodwill	[NOK m]	200	635	792	799	917	0	0	0	0	0	
Tangible assets	[NOK m]	784	3,361	4,644	7,635	19,438	28,657	31,607	34,322	36,998	40,324	
Financial assets	[NOK m]	27	96	54	351	406	391	460	545	652	785	
Total fixed assets	[NOK m]	1,040	4,352	5,745	9,041	21,237	29,048	32,066	34,867	37,650	41,110	
Inventories	[NOK m]	208	348	508	655	1,670	1,819	2,489	2,776	3,173	3,545	
Receivables	[NOK m]	190	710	995	1,020	2,220	2,319	2,489	3,084	3,768	3,988	
Payables	[NOK m]	(213)	(655)	(660)	(1,335)	(3,058)	(2,728)	(3,111)	(3,855)	(3,966)	(4,210)	
Working capital	[NOK m]	184	402	844	340	832	1,409	1,867	2,005	2,975	3,323	
Other assets	[NOK m]	66	60	52	1,183	4,535	4,109	4,109	4,109	4,109	4,109	
Total assets	[NOK m]	1,403	5,002	6,703	10,795	26,644	36,000	39,476	42,414	46,168	49,976	09E/08A: 35.1% / 5Y CAGR 13.4%
Share capital	[NOK m]	1,042	1,040	9,044	9,043	9,043	13,381	13,381	13,381	13,381	13,381	
Retained Earnings	[NOK m]	218	1,592	2,714	7,469	6,512	7,070	8,843	11,499	14,944	19,223	
Shareholders' funds	[NOK m]	876	1,258	10,637	11,757	16,512	19,893	20,451	22,224	24,880	28,325	
Minorities	[NOK m]	49	0	0	0	0	0	0	0	0	0	
Provisions	[NOK m]	0	0	0	0	0	0	0	0	0	0	
Long term liabilities	[NOK m]	575	2,055	2,498	2,313	5,157	12,891	12,891	12,891	12,891	12,891	
Short term liabilities	[NOK m]	221	154	146	484	1,439	1,200	3,053	4,093	5,374	6,730	
Cash & cash equivalent	[NOK m]	(415)	(668)	(7,418)	(5,816)	(507)	(2,028)	(963)	(838)	(1,022)	(2,014)	
Net debt	[NOK m]	382	1,541	(4,773)	(3,019)	6,088	12,063	14,981	16,147	17,243	17,607	
Other liabilities	[NOK m]	148	1,966	350	1,150	2,659	2,659	2,659	2,659	2,659	2,659	
Total liabilities	[NOK m]	544	3,744	(3,933)	(962)	10,131	16,107	19,025	20,190	21,287	21,651	
Total shareholders' funds & liabilities	[NOK m]	1,469	5,002	6,703	10,795	26,644	36,000	39,476	42,414	46,168	49,976	09E/08A: 35.1% / 5Y CAGR 13.4%

CASH FLOW												
Year-end Dec	[unit]	2004A	2005A	2006A	2007A	2008A	2009E	2010E	2011E	2012E	2013E	Comments
EBIT	[NOK m]	40	601	1,574	2,588	2,529	(393)	932	2,797	4,376	5,805	09E/08A: -115.6% / 5Y CAGR 18.1%
Depreciation	[NOK m]	(101)	(229)	(390)	585	750	2,147	2,028	1,912	2,281	2,213	
Change in Provisions	[NOK m]	0	0	0	0	0	0	0	0	0	0	
Change in Working capital	[NOK m]	0	(217)	(442)	504	(492)	(578)	(457)	(138)	(970)	(349)	
Tax	[NOK m]	2	(26)	(286)	(644)	(1,314)	0	(239)	(760)	(1,139)	(1,476)	
Other movements	[NOK m]	0	0	0	0	0	0	0	0	0	0	
Operating cash flow	[NOK m]	(59)	129	457	3,032	1,473	1,176	2,264	3,810	4,548	6,193	09E/08A: -20.2% / 5Y CAGR 33.3%
Capex	[NOK m]	0	0	0	(4,302)	(9,748)	(11,366)	(4,978)	(4,626)	(4,958)	(5,539)	
Disposals	[NOK m]	0	0	0	0	0	0	0	0	0	0	
Cash flow from investing activities	[NOK m]	0	0	0	(4,302)	(9,748)	(11,366)	(4,978)	(4,626)	(4,958)	(5,539)	09E/08A: 16.6% / 5Y CAGR -10.7%
New project finance	[NOK m]	0	0	0	0	0	0	0	0	0	0	
Interest	[NOK m]	(51)	(139)	16	251	149	(123)	(204)	(350)	(688)	(1,018)	
Dividends	[NOK m]	0	0	0	0	0	0	0	0	0	0	
Minority dividends	[NOK m]	0	0	0	0	0	0	0	0	0	0	
Dividends received	[NOK m]	0	0	0	0	0	0	0	0	0	0	
Cash flow from financing activities	[NOK m]	(51)	(139)	16	251	149	(123)	(204)	(350)	(688)	(1,018)	
	[NOK m]											
Net change in cash	[NOK m]	(110)	(10)	472	(1,018)	(8,126)	(5,975)	(2,918)	(1,166)	(1,097)	(364)	09E/08A: -26.5% / 5Y CAGR -46.3%

Source: Company data, Nomura estimates

PV Crystalox

Reuters:PVCS.L Bloomberg PVCS LN

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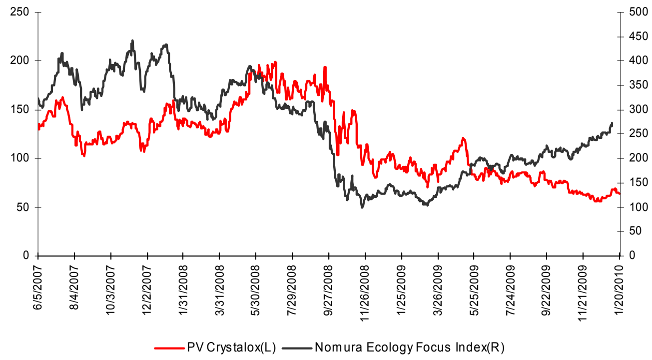
Low cost quality



Source: Bloomberg and Nomura research

Recommendation(new)	BUY	Recommendation(old)	N/A
Share Price (GBp)	54	Market Cap (GBP m)	223
Sector:	Renewable Energy		

Year-end 31/12 (€m)	Sales	EBITDA	EBIT	Net Profit
2007A	263	72	67	47
2008A	274	147	143	103
2009E	228	51	38	28
2010E	215	45	30	22
2011E	225	49	35	26

Year-end 31/12 (€m)	P/Sales	EV/EBITDA	P/E	P/CF
2007A	0.87	1.7	4.6	3.4
2008A	0.84	1.0	2.2	2.5
2009E	1.01	2.8	8.3	4.6
2010E	1.07	2.7	10.3	5.7
2011E	1.02	1.9	8.7	5.5

As a cost leader with a long record, we think that PV Crystalox can withstand the sector headwinds, and emerge with sustained long-term earnings growth. We initiate coverage with a Buy recommendation and a 78p price target.

- Cost leadership. PV Crystalox outsources 70% of its wafer production to Japan and is increasing its in-house poly production with a cost target at the low end of the sector. We think that this enables it to pass down more ASP erosion than its peers and sustain profitability in a commoditised part of the value chain.
- Long record with high quality customers. The company's 20+ year record and its high quality customer portfolio should mitigate some of the impact of contract renegotiations that are ongoing across the sector.
- Finances. We forecast a return to margin expansion and earnings growth from 2011, with 2009-13E EPS CAGR of 8.6%
- Sentiment is weak owing to overcapacity in the wafer sector and weak earnings at competitors.
- Valuation. Our DCF fair value is 78p per share.

Solar wafer manufacturer with in house poly production
Business mix: Wafers 100%
Geographic exposure: Japan (56%), Rest of Asia (11%), Germany (28%), Rest of Europe (2%), USA(3%)
Key strategic issues: Intense competition and impact on the company's contract portfolio. Execution on poly production.

PV Crystalox

Figure 63: Nomura view on key bull and bear points

Bull points	Bear points
Low cost business model with 70% subcontracted wafer production volumes and increasing share of in-house poly production at a cost level at the low end of the sector.	Wafer prices. The wafer part of the solar value chain has so far been relatively unaffected by pricing pressure as contracts have held up despite overcapacity. REC has guided to contract revisions for its wafer business into 2010 and LDK also seems to be discounting.
Long record. The company's 20 year experience in the sector not only provides it with standing with its quality customers, but also yields competitive advantages such as higher manufacturing output parameters and steps ahead on the ongoing learning curve.	Customer concentration. PV Crystalox derives 80% of sales from its five largest customers. We believe Q-Cells, which is actively aiming to reduce its wafer costs, is one of those customers.

Source: Nomura research

Investment points

Long record at a commoditised part of the value chain

Long-standing track record in commoditised business

As a wafer manufacturer, PV Crystalox's is operating in a highly commoditised business segment in the solar value chain, where we expect high levels of pricing pressure over the near term. But with more than a 20-year record of high quality customer and supplier relationships, we think that the company will be able to mitigate the impact of contract adjustments through working out flexible schedules with its customers and also negotiating successfully on its own supply volumes. We think that contract renegotiations, volume postponements and price adjustments will be an ongoing feature in 2010 and management has confirmed that it is seeing deferrals.

Beyond this, the company's long-standing experience is also likely to procure it with the ability to produce a highly competitive output and stay a step ahead of the industry learning curve over the long term.

Business model of cost leadership

Outsourced production model should allow for pass through of ASP pressures

We think that PV Crystalox can reach a highly competitive cost point over time and that even now the current cost base is competitive with a poly input price that we estimate around US$52/kg at current exchange rates. This is just below the current average long-term contract market price, and probably below the price achieved by a number of competitors. The expanding internal production should further reduce feedstock costs: Management aims for fully loaded poly production costs of cUS$53/kg for 2010 and below US$40/kg in 2011 on its new internal production in Bitterfeld. With this, we see the company at the leading end of the industry procurement spectrum. High yield levels, along with a subcontracting model for 70% of the wavering, lead to flexible processing costs with a low capital intensity model. The company's subcontracting is in Japan, and we think that PV Crystalox will stand out among its peers as being able to pass down its own ASP erosion that we expect for the sector.

Financials

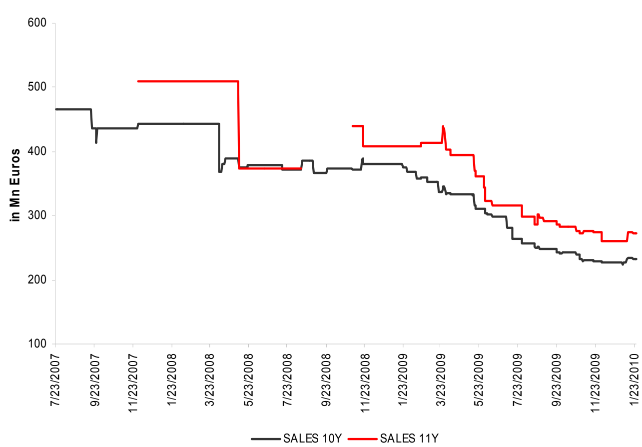
We have reflected the industry environment and our expectation of ongoing pricing pressure in the wafer segment through our forecast capacity utilisation below full load, at c60%, and 21% 10 vs 09 ASP erosion. We are aware that wafer prices have held up better than expected in 2009 and we expect back-end loaded reductions to be reported for 2009. This, and the unwinding of a premium price wafer sales/premium poly supply contract, is reflected in our 22% ASP decline in H2 09 vs H1 09, leading to sales falling by 17% 09E vs 08 and the operating margin reducing by tw- thirds to 16.5%. We forecast a 73% earnings decline as the difficult sector backdrop is taking its toll. 2010 is another year of declining earnings despite capacity utilisation returning above the 75% level leading to our forecast c20% ASP erosion and our cautious assumptions on cost reductions. We expect earnings growth to resume from 2011, as a result of top-line growth and margin expansion as the company passes through our long-term 5% pa ASP decline, while the impact of improving poly cost from the in-house manufacturing and yield improvement comes through.

The company has a very strong balance sheet with our forecast net cash of EUR 85m and positive free cash flow exceeding EUR 20m pa from 2011.

Momentum

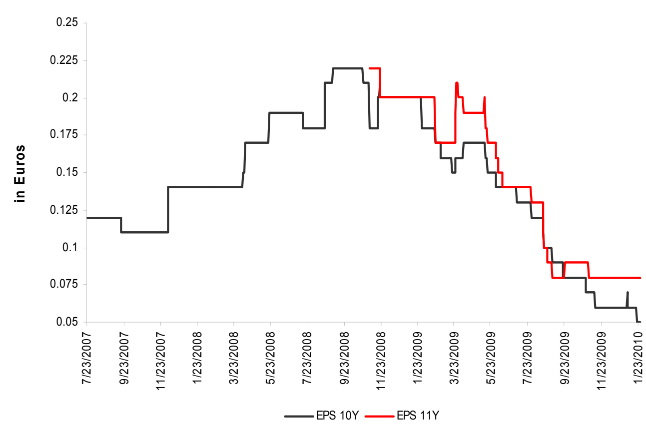
Our forecast is above consensus for 2009 and in line for 2010. We think that wafer pricing pressure and the disappointments at competitor LDK have weighed on sentiment, but we think that improving volumes should lead to an uptick in sentiment.

Figure 64: Sales momentum expectations



Source: Bloomberg, Nomura research

Figure 65: Earnings momentum expectations



Source: Bloomberg, Nomura research

Valuation

78p price target

Our three-stage DCF (risk-free rate 4%, equity risk premium 5.5%, beta 1.5 unlevered, WACC 10.9%) yields a 78p price target. This includes a 10-year competitive advantage period with 8% pa growth and 100bps excess return, which we rate appropriate given the sector's growth prospects and our forecast of the company's 1500bp+ excess return for 2015.

The shares are trading at 0.9x P/B 2010E at an 18% discount to the larger upstream solar stocks. We think that the P/B is very low, in particular given its relatively low fab model, owing to outsourcing. While some degree of multiple discount to larger peers is likely to persist, execution on the long-term growth potential should narrow the difference.

Figure 66: PV Crystalox summary financials

P&L										
Year-end Dec	[unit]	**2006A**	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
Sales	[EUR m]	242	263	274	228	215	225	235	249	**09E/08A: -16.9% / 5Y CAGR -1.9%**
%age growth	%	0.0%	8.7%	4.0%	-16.9%	-5.6%	4.5%	4.5%	6.2%	
Gross Profit	[EUR m]	69	95	132	103	97	90	94	88	**09E/08A: -22.1% / 5Y CAGR -7.9%**
%age growth	%	0.0%		38.9%	-22.1%	-5.6%	-7.1%	4.5%	-7.1%	
Gross margin	%	28.5%	35.9%	48.0%	45.0%	45.0%	40.0%	40.0%	35.0%	
EBITDA	[EUR m]	54	72	147	51	45	49	56	57	**09E/08A: -65.1% / 5Y CAGR -17.3%**
%age growth	%	0.0%		103.3%	-65.1%	-12.9%	9.7%	13.6%	2.0%	
EBITDA margin	%	22.2%	27.4%	53.5%	22.5%	20.7%	21.7%	23.6%	22.7%	
Depreciation	[EUR m]	(5)	(5)	(4)	(13)	(14)	(14)	(14)	(13)	
Operating Profit	[EUR m]	48	67	143	38	30	35	42	43	**09E/08A: -73.5% / 5Y CAGR -21.3%**
%age growth	%	0.00%		111.53%	-73.49%	-20.48%	15.79%	20.00%	3.24%	
Operating Margin	%	19.8%	25.5%	51.8%	16.5%	13.9%	15.4%	17.7%	17.2%	
Net financial Result	[EUR m]	0.69	3.27	4.44	1.62	1.77	2.76	3.78	4.98	
Non-Operating Income	[EUR m]									
PBT	[EUR m]	49	71	147	39	32	38	46	48	**09E/08A: -73.2% / 5Y CAGR -20.0%**
%age growth	%	0.0%		108.0%	-73.2%	-19.3%	18.0%	21.3%	5.6%	
PBT Margin	%	20.1%	26.7%	53.4%	17.2%	14.7%	16.6%	19.3%	19.2%	
Equity Income	[EUR m]	0	0	0	0	0	0	0	0	
Income Tax	[EUR m]	(17)	(24)	(44)	(12)	(10)	(11)	(14)	(14)	
Tax rate	[EUR m]	35.5%	33.6%	29.9%	30.0%	30.0%	30.0%	30.0%	30.0%	
Net Income	[EUR m]	32	47	103	28	22	26	32	34	**09E/08A: -73.2% / 5Y CAGR -20.1%**
%age growth	%	0.00%		119.70%	-73.23%	-19.27%	18.02%	21.25%	5.60%	
Minority Interests	[EUR m]	0	0	(0)	(0)	(0)	(0)	(0)	(0)	
Income from Discontinued Operations	[EUR m]	0	0	0	0	0	0	0	0	
Net earnings	[EUR m]	32	47	103	28	22	26	32	34	**09E/08A: -73.2% / 5Y CAGR -20.1%**
%age growth	%	0.0%		119.7%	-73.2%	-19.3%	18.0%	21.3%		
Net Profit Margin	%	13.0%	17.7%	37.4%	12.1%	10.3%	11.6%	13.5%	13.4%	

Table 2:

KEY SHARE DATA	[unit]	2006A	2007A	2008A	2009E	2010E	2011E	2012E	2013E
Number of Shares	[in m]	392.1	375.0	416.7	416.7	416.7	416.7	416.7	416.7
EPS	[EUR /sh]	0.08	0.12	0.25	0.07	0.05	0.06	0.08	0.08
EPS (Cont. Operations)	[EUR/sh]	0.08	0.12	0.25	0.07	0.05	0.06	0.08	0.08

Source:Company data, Nomura estimates

Figure 67: PV Crystalox summary financials

BALANCE SHEET										
Year-end Dec	[unit]	2006A	2007A	2008A	2009E	2010E	2011E	2012E	2013E	Comments
Intangible assets	[EUR m]	0	0	0	0	0	0	0	0	
Goodwill	[EUR m]	0	0	0	0	0	0	0	0	
Tangible assets	[EUR m]	14	35	111	121	117	114	112	111	
Financial assets	[EUR m]	0	0	0	0	0	0	0	0	
Total fixed assets	[EUR m]	14	35	111	121	117	114	112	111	
Inventories	[EUR m]	14	21	24	37	32	27	24	25	
Receivables	[EUR m]	75	62	76	46	43	45	47	50	
Payables	[EUR m]	(16)	(22)	(30)	(23)	(22)	(23)	(24)	(25)	
Working capital	[EUR m]	73	61	71	60	54	50	47	50	
Other assets	[EUR m]	7	18	59	59	59	59	59	59	
Total assets	[EUR m]	97	117	247	246	237	230	225	227	**09E/08A: -0.6% / 5Y CAGR -1.7%**
Share capital	[EUR m]	8	82	82	82	82	82	82	82	
Retained Earnings	[EUR m]	113	165	168	184	202	227	254	284	
Shareholders' funds	[EUR m]	84	191	245	248	263	282	307	334	
Minorities	[EUR m]	0	0	0	0	0	0	0	0	
Provisions	[EUR m]	0	0	0	0	0	0	0	0	
Long term liabilities	[EUR m]	2	0	0	0	0	0	0	0	
Short term liabilities	[EUR m]	53	40	16	15	15	15	15	15	
Cash & cash equivalent	[EUR m]	(62)	(148)	(97)	(100)	(125)	(151)	(181)	(206)	
Net debt	[EUR m]	(6)	(108)	(81)	(85)	(110)	(136)	(166)	(191)	
Other liabilities	[EUR m]	18	33	83	83	83	83	83	83	
Total liabilities	[EUR m]	13	(75)	3	(2)	(26)	(52)	(82)	(107)	
Total shareholders' funds & liabilities	[EUR m]	97	117	247	246	237	230	225	227	**09E/08A: -0.6% / 5Y CAGR -1.7%**

CASH FLOW										
Year-end Dec	[unit]	2006A	2007A	2008A	2009E	2010E	2011E	2012E	2013E	Comments
EBIT	[EUR m]	48	67	143	38	30	35	42	43	**09E/08A: -73.5% / 5Y CAGR -21.3%**
Depreciation	[EUR m]	0	5	4	13	14	14	14	13	
Change in Provisions	[EUR m]	0	0	0	0	0	0	0	0	
Change in Working capital	[EUR m]	(73)	12	(10)	11	5	4	3	(3)	
Tax	[EUR m]	(17)	(24)	(44)	(12)	(10)	(11)	(14)	(14)	
Other movements	[EUR m]	0	0	0	0	0	0	0	0	
Operating cash flow	[EUR m]	(42)	61	93	50	40	42	44	39	**09E/08A: -45.8% / 5Y CAGR -15.8%**
Capex	[EUR m]	(4)	(26)	(80)	(23)	(11)	(11)	(12)	(13)	
Disposals	[EUR m]	0	0	0	0	0	0	0	0	
Cash flow from investing activities	[EUR m]	(4)	(26)	(80)	(23)	(11)	(11)	(12)	(13)	**09E/08A: -71.4% / 5Y CAGR -31.0%**
New project finance	[EUR m]	0	0	0	0	0	0	0	0	
Interest	[EUR m]	1	3	4	2	2	3	4	5	
Dividends	[EUR m]	0	0	19	25	7	8	6	7	
Minority dividends	[EUR m]	0	0	0	0	0	0	0	0	
Dividends received	[EUR m]	0	0	0	0	0	0	0	0	
Cash flow from financing activities	[EUR m]	1	3	23	26	8	11	10	12	
	[EUR m]									
Net change in cash	[EUR m]	(45)	38	(1)	4	25	26	30	25	**09E/08A: -420.7% / 5Y CAGR -279.2%**

Source:Company data, Nomura estimates

Renesola

Reuters:SOLA.L Bloomberg SOLA LN

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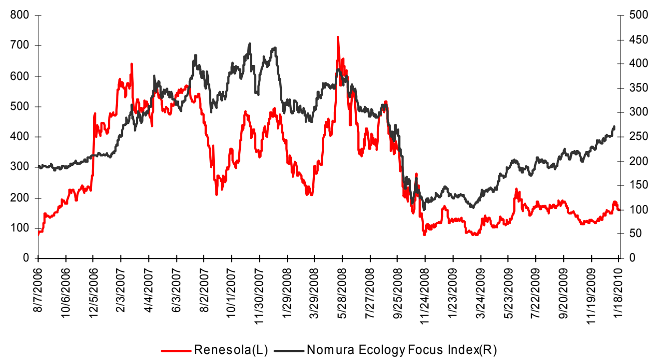
China with an edge



Source: Bloomberg and Nomura research

Recommendation(new)	BUY	Recommendation(old)	N/A
Share Price (GBp)	158	Market Cap (GBP m)	272
Sector:	Renewable Energy		

Year-end 31/12 (USD m)	Sales	EBITDA	EBIT	Net Profit
2007A	249	48	43	43
2008A	670	(33)	(49)	(55)
2009E	496	(42)	(70)	(55)
2010E	905	112	77	48
2011E	939	148	104	69
Year-end 31/12 (USD m)	**P/Sales**	**EV/EBITDA**	**P/E**	**P/CF**
2007A	1.74	12.5	5.8	n/m
2008A	0.40	n/m	n/m	n/m
2009E	0.55	n/m	n/m	10.3
2010E	0.30	7.5	9.1	5.4
2011E	0.29	5.3	6.3	3.6

As a new entrant with China-based manufacturing and a low cost business model, Renesola has the attraction of being positioned competitively with the potential of becoming a leading wafer manufacturer. High legacy poly costs being cleared should produce an earnings swing this year. Even though some of the short-term earnings momentum has been reflected, we see further long-term upside. We initiate coverage with a Buy rating and a 190p price target.

- Competitive advantages from low cost business model. The company's location in China and its ambitious cost targets position it as a potential cost leader in an industry where cost leadership will be the most important competitive advantage for some time.
- Long-term strategy could be industry shaping. Renesola is developing a strategy of long-term partnerships with European module manufacturers with what we believe to be the aim of becoming a subcontractor for module manufacturing. We think it is possible that the industry moves towards such structures, and if successful, this strategy could procure Renesola a valuable first mover advantage.
- Finances. We forecast a return to profitability in 2010 on the elimination of legacy costs and improving volumes. We have assumed that processing cost savings will make up for ASP reductions.
- Sentiment. Sentiment has already improved materially after the Q3 beat and now reflects the return to profitability.
- Valuation. Our DCF fair value is 173p and our price target is 190p based on a blend of multiples and DCF.

Manufacturer of solar wafers with solar cell and module manufacturing.
Business mix: Wafers (100%)
Geographic exposure: China (56.4%), Rest of Asia (39.3%), Germany (5.6%) Others (0.7%)
Key strategic issues: Execution on low cost strategy and downstream integration

Renesola

Figure 68: Nomura view on key bull and bear points

Bull points	Bear points
Low cost location. Renesola's Chinese manufacturing secures a low cost base in order to be a cost leader. Along with ambitious cost reduction targets, the company could become a cost leader.	Wafer prices. Pricing pressure at the wafer end being the strongest over the short term, the company faces considerable ASP erosion. But we think that its cost model will allow it to more than compensate.
Increasing downstream integration. The recent downstream acquisition of JC Solar transforms the company into a vertically integrated solar name.	Short record. With a short record and an ambitious expansion strategy as well as the build of inhouse poly manufacturing, execution risk is high. Its record is relatively short and the new downstream strategy could risk irritation by the company's customers owing to perceived competition.
New entrant with potential to capture market share. Its market position has strong attractions as a new entrant with the ability for effectively competing with established names in a sector that structurally moves towards Chinese manufacturers. With already strong customer relations with major solar names, it could establish itself as a global market leader in the wafer segment.	Customer concentration. The company's largest five customers account for c 65% of revenues, with SunPower representing over 30% of sales.

Source: Nomura research

Investment points

Low cost new entrant with increasing vertical integration

Chinese location provides competitive cost advantage along with decreasing input costs

Renesola is one of those new entrants in the solar sector that we would classify as second tier Chinese names. The company benefits from its competitive advantage of its Chinese location and a low cost model that we think qualifies it as a serious force in the solar upstream sector. The company targets total module costs of US$1.10/w by 2010 and further improvement from there over the long term; it also targets in-house poly production below US$40/kg within the next 12 months as well as an average 30-35% unit process cost reduction by the end of 2010. At this point, the majority of sales are in Asia, which is where we see manufacturing shifting increasingly. With this, we think that the company is well positioned to capture market share from higher cost European competitors.

Vertical integration and ambitions to white label for European manufacturers anticipate sector trends

It has added a vertical integration strategy with the recent acquisition of Chinese module manufacturer JC Solar. With this, it hopes to secure volumes for its wafer production and improve margins. On its own, we have some concerns as to Renesola's ability to achieve market penetration given its lack of channel penetration and strong brand versus its European competitors. Competition from first tier Chinese manufacturers is also likely to be intense. Over the longer term, however, it is pursuing what we consider to be an intriguing business model: it aims to leverage its wafer customer relationships into module OEM business towards an outsourcing of module production for higher cost European manufacturers. We see the opportunity in the context of a gradual displacement of higher cost European manufacturers via Asian low cost production, and think that there is a likelihood of white labeling emerging. This is a longer term prospect and there is risk that its customers perceive competitive threats, along with the usual suite of execution risk on diversifying the business and new module expansion. But, if successful, it could position it as a first mover. All in all, we see the downstream integration as positive albeit with execution risk.

Earnings swing and long-term growth

2010 will bring an earnings swing

It has been suffering from a competitive disadvantage from its legacy of very high cost poly inventory for most of 2009. Its early 2009 poly cost was US$139/kg as the company pursues a spot market rather than contract procurement policy. The latter should now be a benefit, and we think that its poly cost will be around US$65/kg in Q1 10 and decrease further. As the high cost inventory is cleared, and the benefit of more competitive in-house poly production begins to come through, it should produce an earnings swing from 2010 (see below). We see compelling long-term growth potential that could drive share price upside, but this requires execution.

Financials

Our model is based on the following assumptions

- Poly cost: We assume a poly price of US$57/kg for 2010, US$43/kg for 2011 and poly consumption of 6g/w, in line with the company's current operating performance. This implies an average silicon cost of US$0.34/w for 2010 and US$0.26/w in 2011 compared with the US$0.53/win 2009. Our assumption is partly driven by falling spot market prices (Renesola secures its volumes on the spot market) and partly by the company's improving in-house production cost profile.

- Processing costs: We have assumed that the company can achieve its target of US$0.36/w processing costs by the end of 2010 and expect further cost savings as the company should be able to match ASP declines.

- ASPs We forecast a wafer ASP of US$0.76/w for 2010 and US$0.69/w for 2011.

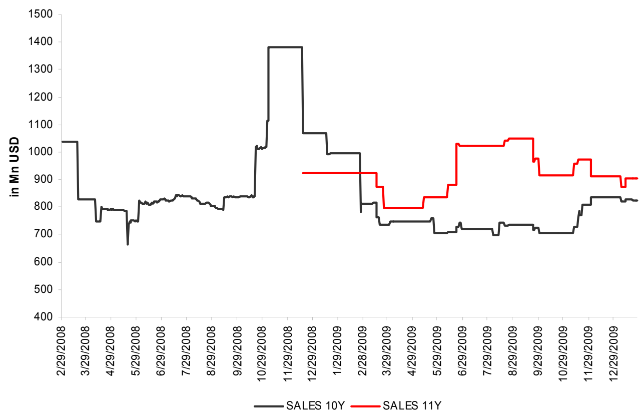
The company's most important earnings swing factor is the elimination of its legacy high cost poly. This and the company's targeted process cost reduction underly our expectation of a 500bps improvement in 2010 vs 2009 in gross margins and the return to being EBIT and net income positive. Over the long term, we expect the company to benefit from poly cost reductions to the low US$30s and as a cost leader at least be able to offset ASP erosion, if not more. On this basis, we forecast 28% EPS CAGR in 2010-15.

Renesola is highly leveraged as a result of its expansion capex. However, we forecast net debt will return towards 3.6x EBITDA 2010 and fall below 3x from 2011 as capex slows as the main capital intensive expansion, poly production, is completed.

Momentum

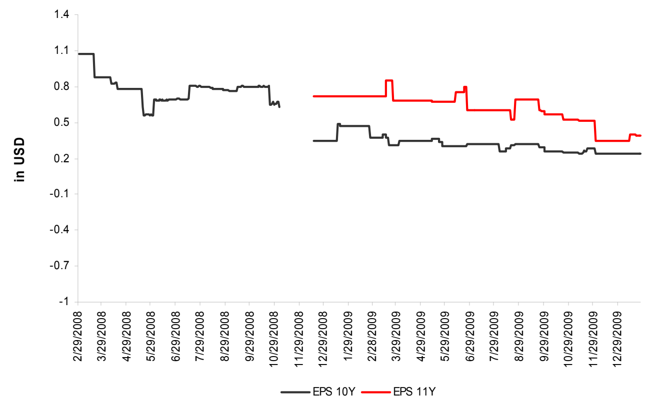
Sentiment has materially improved since the company's Q3 beat. Expectations seem to have risen that the inventory problem will soon be cleared, the cost advantage will come back into focus and vertical integration will bear fruit.

Figure 69: Sales momentum expectations



Source: Bloomberg, Nomura research

Figure 70: Earnings momentum expectations



Source: Bloomberg, Nomura research

Valuation

190p price target

The current share price implies failure on the cost reduction targets

Our 190p price target is derived from a blend of our three-stage DCF methodology (risk-free rate 4%, equity risk premium 5.5%, beta 1.7 unlevered, WACC 12.4%) and peer group multiples. For those, we have used P/E and P/B multiples for 2010E and 2011E for the close global upstream and integrated peers. According to our estimates, the share price implies failure on execution: we calculate that it implies the company will not meet its poly production target as well as that it will be unable to achieve any processing cost reductions up to 2012, thus bearing the full brunt of ASP reductions on its margins. We admit there is some risk to the poly production target, but even in case of failure, we think that the company will be able to source on the spot market at a lower cost than the high US$40s/kg over the long term implied in the share price.

Figure 71: Renesola valuation parameters

	P/E 10	**P/E 11**	**P/B 10**	**P/B 11**	**EV/S 10**	**EV/S 11**	**DCF**	**Average**
Peer group								
LDK	10.9	9.3	1.08	0.96	1.15	1.04		
REC			1.10	1.01				
PVCS	10.6	9.0	0.90	0.84	0.6	0.4		
SWV	14.1	11.2	1.34	1.20	1.35	1.06		
Average	**11.9**	**9.8**	**1.1**	**1.0**	**1.0**	**0.8**		
Renesola parameter	0.28	0.40	2.58	2.99	905	939		
Fair value	**204.1**	**245.4**	**178.3**	**187.4**	**185.0**	**158.4**	**172**	**190**

Source: Bloomberg consensus, Nomura estimates for SWV, REC and PVCS

Figure 72: Renesola summary financials

P&L										
Year-end Dec	[unit]	**2006A**	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
Sales	[USD m]	84	249	670	496	905	939	1088	1239	**09E/08A: -26.0% / 5Y CAGR 13.1%**
%age growth	%	1558.2%	195.1%	169.3%	-26.0%	82.6%	3.6%	16.0%	13.8%	
Gross Profit	[USD m]	25	53	(14)	32	149	178	214	236	**09E/08A: -321.4% / 5Y CAGR -275.2%**
%age growth	%	1652.6%		-126.7%	-321.4%	368.8%	19.6%	20.7%	10.2%	
Gross margin	%	29.3%	21.5%	-2.1%	26.0%	31.0%	32.0%	32.0%	32.0%	
EBITDA	[USD m]	23	48	-33	-42	112	148	187	205	**09E/08A: 26.2% / 5Y CAGR -244.1%**
%age growth	%	3718.7%		-169.3%	26.2%	-369.8%	31.3%	26.8%	9.4%	
EBITDA margin	%	27.2%	19.1%	-4.9%	-8.4%	12.4%	15.7%	17.2%	16.5%	
Depreciation	[USD m]	(1)	(4)	(16)	(28)	(36)	(44)	(56)	(62)	
Operating Profit	[USD m]	22	43	(49)	(70)	77	104	131	143	**09E/08A: 44.4% / 5Y CAGR -224.1%**
%age growth	%	3596.81%		-211.70%	44.38%	-209.42%	35.60%	25.77%	9.27%	
Operating Margin	%	26.4%	17.4%	-7.2%	-14.1%	8.5%	11.1%	12.0%	11.5%	
Net financial Result	[USD m]	-0.02	-2.58	-10.09	-16.41	-13.89	-13.52	-12.09	-12.16	
Non-Operating Income	[USD m]									
PBT	[USD m]	23	37	(62)	(86)	63	90	119	131	**09E/08A: 40.1% / 5Y CAGR -216.2%**
%age growth	%	3837.2%		-267.6%	40.1%	-172.6%	44.1%	31.2%	10.2%	
PBT Margin	%	26.8%	14.8%	-9.2%	-17.4%	6.9%	9.6%	10.9%	10.5%	
Equity Income	[USD m]	0	0	0	0	0	0	0	0	
Income Tax	[USD m]	3	6	2	32	(14)	(21)	(27)	(30)	
Tax rate	[USD m]	-12.0%	-16.7%	3.9%	37.0%	23.0%	23.0%	23.0%	23.0%	
Net Income	[USD m]	25	43	(54)	(54)	48	70	91	101	**09E/08A: 0.6% / 5Y CAGR -213.2%**
%age growth	%	2024.57%		-225.93%	0.65%	-188.74%	44.08%	31.21%	10.15%	
Minority Interests	[USD m]	0	0	(1)	(1)	(1)	(1)	(1)	(1)	
Income from Discontinued Operations	[USD m]	0	0	5	0	0	0	0	0	
Net earnings	[USD m]	25	43	(55)	(55)	48	69	91	100	**09E/08A: 0.6% / 5Y CAGR -212.7%**
%age growth	%	2024.6%		-227.7%	0.6%	-186.0%	44.8%	31.6%	10.2%	
Net Profit Margin	%	30.0%	17.3%	-8.2%	-11.1%	5.2%	7.3%	8.3%	8.1%	

KEY SHARE DATA	[unit]	**2006A**	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**
Number of Shares	[in m]	80.0	100.0	127.1	172.6	172.6	172.6	172.6	172.6
EPS	[USD /sh]	0.32	0.43	-0.43	-0.32	0.28	0.40	0.52	0.58
EPS (Cont. Operations)	[USD/sh]	0.32	0.43	-0.43	-0.32	0.28	0.40	0.52	0.58

Source: Company data, Nomura estimates

Figure 73: Renesola summary financials

BALANCE SHEET										
Year-end Dec	[unit]	**2006A**	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
Intangible assets	[USD m]	0	0	0	0	0	0	0	0	
Goodwill	[USD m]	0	0	0	0	0	0	0	0	
Tangible assets	[USD m]	24	144	355	550	623	626	619	601	
Financial assets	[USD m]	0	0	0	0	0	0	0	0	
Total fixed assets	[USD m]	24	144	355	550	623	626	619	601	
Inventories	[USD m]	45	111	193	158	181	188	218	248	
Receivables	[USD m]	1	9	43	79	91	94	98	93	
Payables	[USD m]	(6)	(13)	(50)	(74)	(91)	(94)	(98)	(105)	
Working capital	[USD m]	22	100	115	163	181	188	218	235	
Other assets	[USD m]	24	59	179	79	79	79	79	79	
Total assets	[USD m]	79	315	685	828	919	929	952	952	**09E/08A: 20.9% / 5Y CAGR 6.8%**
Share capital	[USD m]	48	51	348	418	418	418	418	418	
Retained Earnings	[USD m]	66	11	(44)	4	72	163	263	374	
Shareholders' funds	[USD m]	73	126	382	397	444	513	603	703	
Minorities	[USD m]	0	9	0	1	2	3	3	4	
Provisions	[USD m]	0	0	0	0	0	0	0	0	
Long term liabilities	[USD m]	0	146	172	258	258	258	258	258	
Short term liabilities	[USD m]	15	72	192	320	256	185	136	140	
Cash & cash equivalent	[USD m]	(10)	(53)	(118)	(205)	(98)	(87)	(106)	(211)	
Net debt	[USD m]	5	165	245	373	416	356	287	187	
Other liabilities	[USD m]	1	15	58	58	58	58	58	58	
Total liabilities	[USD m]	6	180	303	430	473	414	345	245	
Total shareholders' funds & liabilities	[USD m]	79	315	685	828	919	929	952	952	**09E/08A: 20.9% / 5Y CAGR 6.8%**

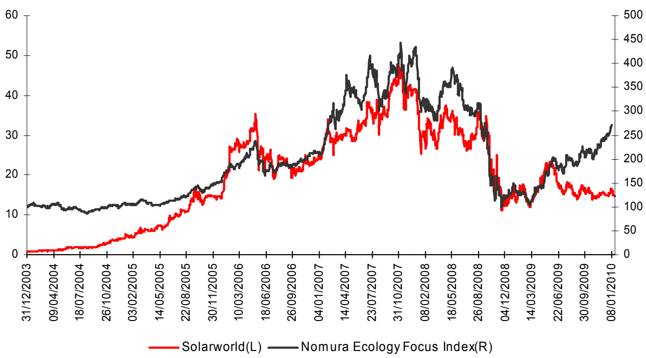
CASH FLOW										
Year-end Dec	[unit]	**2006A**	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
EBIT	[USD m]	22	43	(49)	(70)	77	104	131	143	**09E/08A: 44.4% / 5Y CAGR -224.1%**
Depreciation	[USD m]	1	4	16	28	36	44	56	62	
Change in Provisions	[USD m]	0	0	0	0	0	0	0	0	
Change in Working capital	[USD m]	(22)	(78)	(14)	(48)	(18)	(7)	(30)	(18)	
Tax	[USD m]	3	6	2	32	(14)	(21)	(27)	(30)	
Other movements	[USD m]	0	0	0	100	0	0	0	0	
Operating cash flow	[USD m]	3	(24)	(45)	42	80	120	130	157	**09E/08A: -194.0% / 5Y CAGR -228.5%**
Capex	[USD m]	(18)	(101)	(208)	(223)	(109)	(47)	(49)	(45)	
Disposals	[USD m]	0	0	0	0	0	0	0	0	
Cash flow from investing activities	[USD m]	(18)	(101)	(208)	(223)	(109)	(47)	(49)	(45)	**09E/08A: 7.1% / 5Y CAGR -26.5%**
New project finance	[USD m]	0	0	0	0	0	0	0	0	
Interest	[USD m]	(0)	(3)	(10)	(16)	(14)	(14)	(12)	(12)	
Dividends	[USD m]	0	0	0	0	0	0	0	0	
Minority dividends	[USD m]	0	0	0	0	0	0	0	0	
Dividends received	[USD m]	0	0	0	0	0	0	0	0	
Cash flow from financing activities	[USD m]	(0)	(3)	(10)	(16)	(14)	(14)	(12)	(12)	
	[USD m]									
Net change in cash	[USD m]	(14)	(128)	(263)	(127)	(43)	60	69	100	**09E/08A: -51.6% / 5Y CAGR -182.4%**

Source:Company data, Nomura estimates

Solarworld

Reuters: SWVG.DE Bloomberg SWV GR Catharina Saponar, CFA, +44 207 102 1231, csaponar@nomura.com

Survivor at what price?



Source: Bloomberg and Nomura research

Recommendation(new)	REDUCE	Recommendation(old)	REDUCE
Share Price (Eur)	12.54	Market Cap (Eur m)	1400
Sector:	Renewable Energy		

Year-end 31/12 (€m)	Sales	EBITDA	EBIT	Net Profit
2007A	699	241	199	113
2008A	900	315	260	148
2009E	1,018	254	174	94
2010E	1,182	269	182	99
2011E	1,629	310	216	124
Year-end 31/12 (€m)	**P/Sales**	**EV/EBITDA**	**P/E**	**P/CF**
2007A	1.98	5.3	12.3	nm
2008A	1.54	4.2	9.3	nm
2009E	1.36	6.0	14.7	11.3
2010E	1.17	5.9	14.0	7.0
2011E	0.85	5.5	11.2	12.5

Although we expect the share price to be driven by the prospect of long-term survivorship and improving sentiment in the solar sector, we retain our Reduce recommendation. We think that there is long-term structural margin pressure to which the company is not immune, and an uncertain bottom line. We have further reduced our earnings forecasts on more pricing pressure and reduce our price target accordingly to EUR 12.

- Survivor at the high end. We think that Solarworld is a likely survivor despite its higher cost base and that the share price will continue to perform as a benchmark for the sector.
- Uncertainty over margins. We think that margins for the company are highly uncertain as competition puts pressure on module margins and shrinks the European vs Asian wafer price premium on the company's upstream business. Long term, secular margin decline could compensate for much of the company's volume growth.
- Germany. We expect that this year's feed-in tariff reductions will keep pricing pressure at high levels, but we expect continued strong volumes, which should benefit Solarworld more than others.
- Finances. We have slightly adjusted our margin forecast for 2009 and reduced our 2010 forecast for higher ASP erosion. This leads us to decrease our EPS forecasts by 6% for 2009 and by 7% for 2010. .
- Sentiment is still very volatile between upbeat, now recovering volumes and very negative on the company's earnings momentum. We expect this to continue in a volatile industry background.
- Valuation. Our DCF fair value is EUR 10.60 per share and our price target is EUR 12.

Manufacturer of solar modules, cells and wafers with in house poly manufacturing.
Business mix: Wafer (19%), Cells (2%), Trade (80%)
Geographic exposure: Germany (46%), Rest of Europe (33%), Asia (12%), USA (8%) and other (1%)
Key strategic issues: Profitability in a context of intense competition across the company's business segments.

Solarworld

Figure 74: Nomura view on key bull and bear points

Bull points	Bear points
Survivor. Order momentum has been improving sequentially over the past quarters and management expects further improvement in orders into 2010.	Waver prices. We estimate Solarworld's wafer prices at a 5%-10% premium to its European competitors and a larger premium to Asian product. Despite solid contracts, we see pricing pressure hurting margins.
Capacity growth outside Germany. The company's most important expansion in the US and South Korea should both improve the company's cost base and access to new markets. We think that the company can only keep up its German capacity if it continues to sell at premium prices.	Structural cost disadvantage. We think that Solarworld's manufacturing cost base is materially above that of its Chinese competitors despite its increasing degree of automation. Ongoing success of the premium price strategy is therefore crucial for profitability and survival.
German volume strength. We expect Germany to stay one of the largest global solar markets this year and next, and Solarworld's strong market penetration means it should continue to see strong base volumes and an expansion of its international presence.	Long-term margin uncertainty. Given the intensity of competition and structural changes in the sector, long-term through cycle margins are very uncertain for all parts of the business and could still materially decline from current levels.

Source:Nomura research

Investment points

A likely survivor

Likely survivor at the high end – but success of the premium strategy is vital

Solarworld is one of the few companies in the sector that has maintained and achieved its guidance in a difficult year. We think that the company's vertical integrated business implies more cost flexibility than some of its competitors, enhanced by its growing share of Asian and US production and a likely rising level of automation. All in all, we believe that Solarworld benefits from a small amount of cost advantage vs its European competitors even though it is unlikely to be competitive with Chinese manufacturers. Adding an arguably unrivalled channel penetration and brand advantage in Germany makes the company one of the likely few surviving European market leaders in the market. It is important to note that continuous success of the premium strategy is vital for the company as we think that it can otherwise not support its cost structure.

Margins under pressure

Volume growth does not feed through to earnings

We think that there is risk of large chunks of the company's volume growth not coming through the bottom line owing to near-term and structural margin pressure. In the module business, we see margin pressure from low cost competition. As far as wafers are concerned, management stated in its previous conference call that its wafer ASPs are around the EUR 0.96/w level, in line with our 2009 estimate. However, this is materially above Asian and European peers. We think that, while European wafer manufacturers have been selling at a premium, this premium will gradually reduce. At the same time, Asian wafer prices are coming down (see above regarding REC, PV Crystaloxx, Renesola). Solarworld could thus see wafer pricing pressure on various levels. We think that the company has solid contracts and wafer prices have held up. But it seems that pricing pressure is now moving from the module and cell towards the wafer end. Solarworld could have an escape route through channelling its wafers into its modules. But given the pricing pressure even with the company's premium pricing, this will only transpose margin pressure to another segment within the company.

Our confidence in Solarworld's ability to adjust its cost base through optimising manufacturing locations, increasing automation and other means has increased given management comments. We also think that its ability to secure high capacity utilisations (partly through pricing) will help, but we believe that this will only offset price declines.

Germany and beyond imply possibility of good 2010 growth

Beneficiary of German volume growth in 2010

Given our expectation of ongoing strong demand in Germany, Solarworld should continue to capture volumes in 2010. In the event of a H2 10 feed-in tariff reduction, we would expect a strong Q2, while in the event of a 2011 reduction we would expect a very strong H2 10. Solarworld should be one of the major beneficiaries of this demand strength.

Financials

Our 2009 sales forecast is in line with the company's recently preannounced EUR 1.1bn guidance. We have lowered our margin expectations for 2009, which leads to a forecast 9% decrease for EBIT and a 15% EPS decrease. For 2010, we have reduced our assumptions for ASPs and margins. We now forecast 15% y-o-y ASP erosion in the wafer and module business. Despite higher capacity, this feeds through to a 15% EPS fall.

Solarworld has issued a seven-year bond EUR 400 recently with a 6.15% coupon, which we think could be to fund its expansion plans. We think this will be well perceived as it increases the company's financial flexibility.

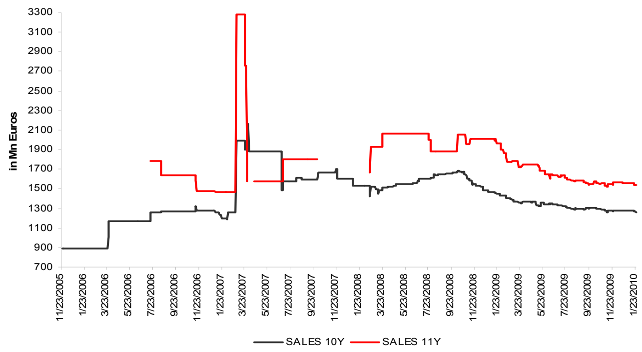
Figure 75: Revised financial estimates

	2009		2010		2011	
Eurm	**Old**	**New**	**Old**	**New**	**Old**	**New**
Sales	1018	1018	1225	1182	1493	1629
EBIT	190	174	202	182	243	216
EPS (Eur)	0.97	0.84	1.04	0.88	1.35	1.11

Source: Nomura estimates

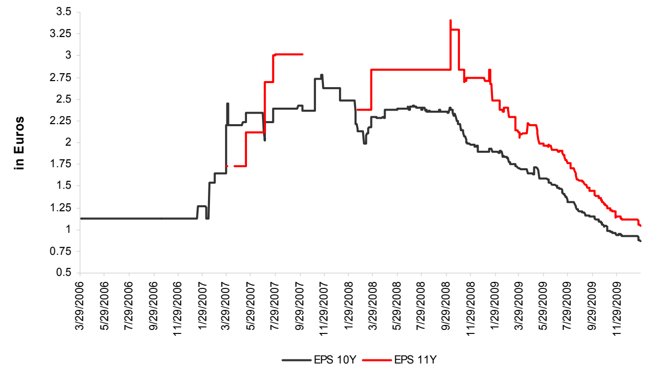
Momentum

Figure 76: Sales momentum expectations



Source: Bloomberg, Nomura research

Figure 77: Earnings momentum expectations



Source: Bloomberg, Nomura research

Valuation

EUR 12 price target

As a result of our new forecasts, our three-stage DCF valuation (risk-free rate 4%, equity risk premium 5.5%, beta 1.36 based on the company's unlevered beta owing to its net cash position, WACC 9.2%) decreases to EUR 10.60. This includes a 10-year competitive advantage period with 15% pa growth and 20% excess return, which we consider appropriate given the growth prospects in the sector and the company's 1,250bp excess return that we forecast for 2015. Our price target, which is derived from our DCF and a blend of peer multiples, is EUR 12 (previously EUR 15.30).

Figure 78: Solarworld price target

	2010			2011			Average
	P/E	P/S	P/B	P/E	P/S	P/B	
YGE	14.07	0.78	1.87	11.27	0.33	1.69	
JASO	15.2	1.082	1.1	11.3	0.9	0.95	
SOLF	11.5			10			
TSL	12.0	1.1	1.7	11.6	1.039	1.5	
STP	21.2	1.25	1.63	15.5	1.05	1.45	
MOT	24.6	1.7	2.3	15.3	1.5	2.3	
Asia avg	16.43	1.18	1.72	12.49	0.96	1.58	
Europe avg				17.37	1.30	1.57	
Upstream avg	2.77	1.05	0.66	2.34	0.95	0.52	
Weight							
Asia avg	0.5	0.5	0.5	0.5	0.5	0.5	
Europe avg	0	0	0	0.3	0.3	0.3	
Upstream avg	0.5	0.5	0.5	0.2	0.2	0.2	
Weighted multiple	9.60	1.12	1.19	11.92	1.06	1.37	
Implied by peer group	8.5	11.8	11.0	13.2	15.5	14.1	12.4
Historic SWV:							
Peak	30						
Trough	6.3						
Average	15						
Implied by historic multiple	13.2						13.2
Nomura DCF							10.6
Grand Average							**12.1**

Source: Nomura restimates

Figure 79: Solarworld summary financials

P&L									
Year-end Dec	[unit]	2007A	2008A	2009E	2010E	2011E	2012E	2013E	Comments
Sales	[EUR m]	699	900	1018	1182	1629	2102	2384	09E/08A: 13.1% / 5Y CAGR 21.5%
%age growth	%		28.8%	13.1%	16.1%	37.8%	29.0%	13.4%	
Gross Profit	[EUR m]	396	506	565	655	903	1,165	1,322	09E/08A: 11.6% / 5Y CAGR 21.2%
%age growth	%		27.8%	11.6%	16.1%	37.8%	29.0%	13.4%	
Gross margin	%	54.3%	52.7%	50.0%	50.0%	50.0%	50.0%	50.0%	
EBITDA	[EUR m]	241	315	254	269	310	352	382	09E/08A: -19.4% / 5Y CAGR 3.9%
%age growth	%		30.8%	-19.4%	5.8%	15.4%	13.3%	8.7%	
EBITDA margin	%	34.5%	35.0%	25.0%	22.7%	19.1%	16.7%	16.0%	
Depreciation	[EUR m]	(42)	(55)	(81)	(87)	(94)	(107)	(119)	
Operating Profit	[EUR m]	199	260	174	182	216	245	263	09E/08A: -33.2% / 5Y CAGR 0.2%
%age growth	%		30.77%	-33.25%	4.57%	19.03%	13.48%	7.25%	
Operating Margin	%	27.3%	27.1%	15.4%	13.8%	12.0%	10.5%	9.9%	
Net financial Result	[EUR m]	-17.87	-7.61	-19.68	-24.38	-28.98	-42.52	-68.57	
Non-Operating Income	[EUR m]								
PBT	[EUR m]	176	188	134	141	177	192	184	09E/08A: -28.6% / 5Y CAGR -0.4%
%age growth	%		6.8%	-28.6%	5.1%	25.2%	8.9%	-4.2%	
PBT Margin	%	24.1%	19.6%	11.9%	10.8%	9.8%	8.3%	7.0%	
Equity Income	[EUR m]	(3)	(56)	(17)	(13)	(8)	(8)	(8)	
Income Tax	[EUR m]	(65)	(53)	(40)	(42)	(53)	(58)	(55)	
Tax rate	[EUR m]	37.0%	28.4%	30.0%	30.0%	30.0%	30.0%	30.0%	
Net Income	[EUR m]	113	148	94	99	124	135	129	09E/08A: -36.5% / 5Y CAGR -2.7%
%age growth	%		30.61%	-36.55%	5.14%	25.25%	8.92%	-4.23%	
Minority Interests	[EUR m]	0	0	0	0	0	0	0	
Income from Discontinued Operations	[EUR m]	2	13	0	0	0	0	0	
Net earnings	[EUR m]	113	148	94	99	124	135	129	09E/08A: -36.5% / 5Y CAGR -2.7%
%age growth	%		30.6%	-36.5%	5.1%	25.2%	8.9%	-4.2%	
Net Profit Margin	%	15.5%	15.4%	8.3%	7.5%	6.8%	5.8%	4.9%	

KEY SHARE DATA	[unit]	2007A	2008A	2009E	2010E	2011E	2012E	2013E
Number of Shares (Million shares)	[in m]	111.7	111.7	111.7	111.7	111.7	111.7	111.7
EPS	[EUR /sh]	1.01	1.33	0.84	0.88	1.11	1.21	1.15
EPS (Cont. Operations)	[EUR/sh]	0.00	0.00	0.84	0.88	1.11	1.21	1.15
DPS	[EUR /sh]							
Dividend Payout	%							
BPS	[EUR/sh]	6.18999284	7.5284193	8.3685823	9.25191404	10.358254	11.563324	12.717458

Source: Company data, Nomura estimates

Figure 80: Solarworld summary financials

BALANCE SHEET										
Year-end Dec	[unit]	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**2014E**	**Comments**
Intangible assets		0	0	0	0	0	0	0	0	
Goodwill		0	0	0	0	0	0	0	0	
Tangible assets		350	575	794	943	1,065	1,192	1,205	1,215	
Financial assets		22	31	27	25	22	20	18	16	
Total fixed assets		371	606	822	967	1,087	1,212	1,223	1,231	
Inventories		350	524	621	655	831	1,002	1,111	1,219	
Receivables		113	71	79	92	112	128	145	160	
Payables		-32	-70	-79	-92	-126	-163	-185	-203	
Working capital		431	525	621	655	817	967	1,071	1,175	
Other assets		17	22	5	-8	-17	-25	-33	-41	
Total assets		879	1,214	1,509	1,676	1,949	2,216	2,323	2,427	**09E/08A: 24.3% / 5Y CAGR 13.9%**
Share capital		112	112	112	112	112	112	112	112	
Retained Earnings		427	520	619	743	877	1,006	1,121	1,264	
Shareholders' funds		692	841	935	1,034	1,157	1,292	1,421	1,535	
Minorities		0	0	0	0	0	0	0	0	
Provisions		23	29	34	39	54	70	79	87	
Long term liabilities		621	675	700	700	700	700	700	700	
Short term liabilities		75	103	80	62	127	354	909	1,812	
Cash & cash equivalent		-793	-836	-642	-561	-491	-602	-1,188	-2,110	
Net debt		-97	-58	139	201	336	453	421	403	
Other liabilities		231	358	358	358	358	358	358	358	
Total liabilities		188	373	574	643	792	924	902	891	
Total shareholders' funds & liabilities		879	1,214	1,509	1,676	1,949	2,216	2,323	2,427	**09E/08A: 24.3% / 5Y CAGR 13.9%**

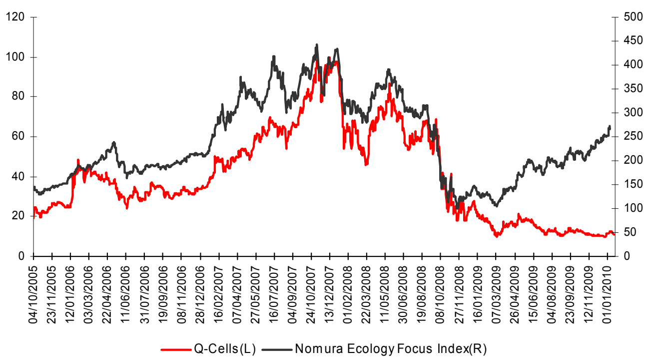
CASH FLOW										
Year-end Dec	[unit]	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**2014E**	**Comments**
EBIT		199	260	174	182	216	245	263	275	**09E/08A: -33.2% / 5Y CAGR 0.2%**
Depreciation		42	55	81	87	94	107	119	120	
Change in Provisions		4	6	5	5	15	16	9	8	
Change in Working capital		-149	-94	-96	-34	-161	-151	-104	-104	
Tax		-65	-53	-40	-42	-53	-58	-55	-49	
Other movements		0	0	0	0	0	0	0	0	
Operating cash flow		31	174	122	198	111	159	233	249	**09E/08A: -29.7% / 5Y CAGR 6.0%**
Capex		-120	-273	-299	-236	-217	-233	-132	-131	
Disposals		0	0	0	0	0	0	0	0	
Cash flow from investing activities		-120	-273	-299	-236	-217	-233	-132	-131	**09E/08A: 9.4% / 5Y CAGR -13.5%**
New project finance		0	0	0	0	0	0	0	0	
Interest		-18	-8	-20	-24	-29	-43	-69	-101	
Dividends		0	0	0	0	0	0	0	0	
Minority dividends		0	0	0	0	0	0	0	0	
Dividends received		0	0	0	0	0	0	0	0	
Cash flow from financing activities		-18	-8	-20	-24	-29	-43	-69	-101	
Net change in cash		-107	-107	-197	-63	-135	-117	32	18	**09E/08A: 83.4% / 5Y CAGR -178.5%**

Source:Company data, Nomura estimates

Q-Cells

Reuters: QCEG.DE Bloomberg QCE GR Catharina Saponar, CFA, +44 207 102 1231, csaponar@nomura.com

Left out of the recovery



Recommendation(new)	REDUCE	**Recommendation(old)**	REDUCE
Share Price (Eur)	10.06	**Market Cap (Eur m)**	1141
Sector:	Renewable Energy		

Year-end 31/12 (€m)	Sales	EBITDA	EBIT	Net Profit
2007A	859	222	197	148
2008A	1,251	251	205	191
2009E	936	(81)	(274)	(958)
2010E	1,208	185	62	18
2011E	1,607	220	102	43
Year-end 31/12 (€m)	**P/Sales**	**EV/EBITDA**	**P/E**	**P/CF**
2007A	1.34	5.2	7.2	182.5
2008A	0.92	6.5	6.0	21.1
2009E	1.23	nm	nm	nm
2010E	0.95	9.2	65.3	12.4
2011E	0.72	7.6	26.9	6.8

Source: Bloomberg and Nomura research

Even though the stock is trading close to all-time lows, we do not see the earnings recovery as strong enough to drive the share price. Positive sector news flow will centre on end market volumes, but this is unlikely to generate more than short-term movement, in our view, while structural issues remain an overhang.

- Left behind in the recovery. We see Q-Cells as not fully benefitting from the end market recovery owing to its legacy overhang until later in the year, by which time the very high rates of demand growth may return to a more normal level.
- Structural challenges. Despite our expectations for a turnaround and earnings swing, we see the company as challenged by lack of vertical integration and structural cost disadvantages.
- Finances. We forecast a return to profitability in 2010 with EPS of 0.31 from our 2009 loss per share of EUR 8.30.
- Sentiment is at rock bottom levels but we see little catalyst for improvement over the near term. Short-term news flow could, however, lead to strong share price reactions given the high level of short interest in the stock.
- Valuation. Our DCF fair value is EUR 9.40 per share (previously EUR 9.30).

Manufacturer of solar cells with thin film module investments and a solar park development business.
Business mix: Cells (74%), Q-cells International (25%), New Technologies (1%)
Geographic exposure: Germany (29%), Rest of Europe (46%), Asia (14%), Africa (4%), N.America (6%), Rest of World (1%)
Key strategic issues: Profitability in a context of intense competition across the company's business segments.

Q-Cells

Figure 81: Nomura view on key bull and bear points

Bull points	Bear points
Turnaround. The company's restructuring programme and elimination of legacy costs should deliver an earnings swing, but we do not expect this before mid 2010.	Ongoing pricing pressure. We expect ASPs to continue to slide on the back of subsidies reduction, albeit at a slower pace than in 2009. But this will pose an additional challenge for a recovery of profits.
Malaysia capacity ramp-up. The first lines have been ramped up and should reach full load soon with a more competitive cost point. More could come if end markets stay strong, but the cost point is still above that of low cost competitors for some time.	Structural cost disadvantage. We think that Q-Cells's manufacturing cost base is materially above that of its Chinese competitors despite its ramp-up in Malaysia.
Technology advancement. 17% cell efficiency is Q-Cell's next step. The higher efficiency will make up for higher costs until competitors catch up. A faster innovation cycle might speed this up.	Project business risks. The project business is working capital intensive and entails financing and execution risk.
Improving end markets. We expect German demand strength to continue this year and new markets to develop, which should bring volume uplift for the sector and help to enable the company to get towards full load. However, this will depend upon the company being competitive on pricing.	Long-term margin uncertainty. Given the intensity of competition and structural changes in the sector, long-term through cycle margins are very uncertain and could still materially decline from current levels, especially as there is a risk of commoditisation at the cell end.

Source:Nomura research

Investment points

Missing the recovery

Legacy overhang means the recovery is unlikely to produce an earning swing before later 2010

While end markets have been recovering very strongly since Q3 09, Q-Cells's investors will not have reaped the benefit. According to our estimates, Q-Cells is missing the most important early parts of the recovery. While it is getting the benefit of volumes through higher capacity utilisations, it is old capacity with very high costs that has been ramped up, with what we think are very low margins. Meanwhile, the company is still in the midst of its restructuring programme and efforts to remove legacy costs. While it is ramping up more competitive capacity in Malaysia, the Malaysian cost point is still above that of the company's Chinese competitors. Reaching full load, which is required for the EUR 0.18/w cost target, will take well into Q1 10 for the first lines, and into Q2/3 10 for the subsequent ones, meaning that the average unit cost will still be above EUR 0.2/w compared with c EUR 0.15-0.17/w at the Chinese manufacturers. We expect the company to lose market share resulting from its capacity closures because its new capacity is unlikely to offset this. Thus it might also not have the same scale benefits as others with more aggressive expansion plans. We think that this results in Q-Cells being largely left out of the ongoing recovery as it will likely not produce an earnings swing on the back of end market strength for at least another quarter.

Strategic positioning still difficult

Still lacking downstream access

While Q-Cells's focus has been an advantage in the past, it is now proving a weakness, given that cells are becoming more commoditised and input cost stickiness favours vertical integration. We see the cell end as being squeezed between upstream and downstream. We think that, despite the entry into project development, downstream (although important to secure volumes) is still a weakness for Q-Cells. Project development as the vehicle into downstream volumes not only misses out on the all important rooftop market, but also bears its own risks with regards to project execution, heavy working capital requirement and cash collection.

Financials

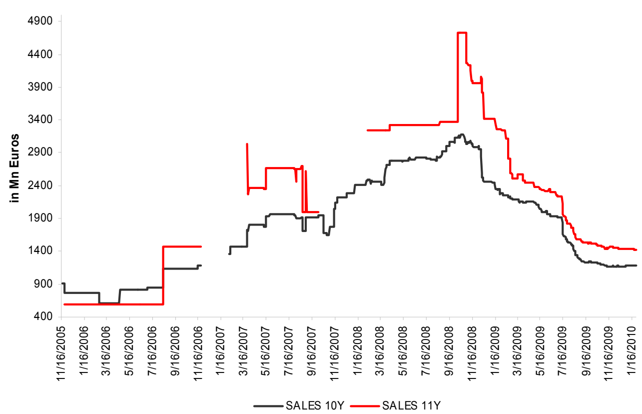
We forecast a net loss of EUR 8.44 per share for 2009 on the well flagged one-off costs and margin decline. For 2010, we expect a return to profitability on the basis of our assumed 20% improvement in material cost and over 40% conversion cost reduction on increasing load in Malaysia. But we expect that this will not fully come through before Q2 at best. We have assumed a long-term through cycle EBIT margin of 6.8% in the cell business. If the project business development goes to plan, this could become the larger profit driver than the cell business. But we are cautious on the amount of execution risk involved.

We expect the company to return to positive cash flows in 2010 on its return to profitability, and as we have at this stage not built in any material expansion capex. This leaves net debt at 3.0x EBITDA 2010E, which we consider at the limit, but the ratio will fall below 2.5x in 2011, according to our forecasts.

Momentum

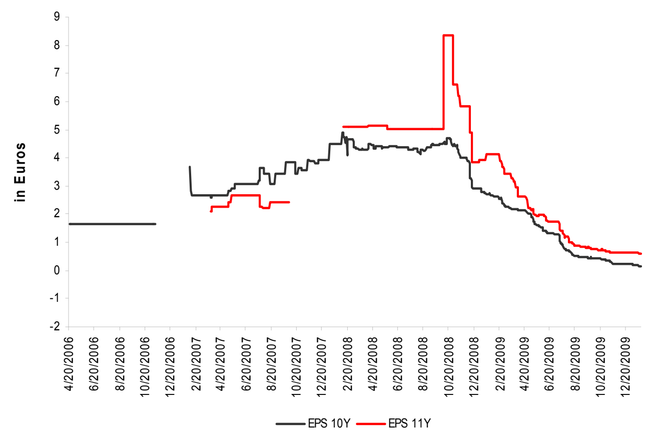
Momentum appears to have reached a bottom. We think that sentiment has reached such a low level that it can hardly go lower. Q-Cells still tops the European list of stocks with the highest short interest. While we see few catalysts to change sentiment in the near term, any, even marginally positive, news flow could lead to strong share price movements on short covering.

Figure 82: Sales momentum expectations



Source: Bloomberg, Nomura research

Figure 83: Earnings momentum expectations



Source: Bloomberg, Nomura research

Valuation

Our three-stage DCF valuation (risk-free rate 4%, equity risk premium 5.5%, beta 1.85 unlevered, WACC 11.9%) yields EUR 9.40 as our price target (previously EUR 9.30). This includes a 10-year competitive advantage period with 10% pa growth and 60bps excess return.

Figure 84: Q-Cells summary financials

P&L									
Year-end Dec	[unit]	2007A	2008A	2009E	2010E	2011E	2012E	2013E	Comments
Sales	[EUR m]	859	1251	936	1208	1607	2067	2713	**09E/08A: -25.2% / 5Y CAGR 16.7%**
% age growth	%		45.7%	-25.2%	29.0%	33.1%	28.6%	31.2%	
Gross Profit	[EUR m]	343	451	266	410	563	725	951	
Gross margin	%	39.1%	33.5%	26.0%	31.0%	32.0%	32.0%	32.0%	
EBITDA	[EUR m]	222	251	-81	185	220	262	309	**09E/08A: -132.3% / 5Y CAGR 4.3%**
% age growth	%		13.0%	-132.3%	-328.8%	18.7%	18.8%	18.3%	
EBITDA margin	%	25.8%	20.0%	-8.7%	15.4%	13.7%	12.7%	11.4%	
Depreciation	[EUR m]	(25)	(46)	(193)	(123)	(118)	(115)	(107)	
Operating Profit	[EUR m]	197	205	(274)	62	102	146	202	**09E/08A: -233.6% / 5Y CAGR -0.3%**
% age growth	%		4.11%	-233.65%	-122.74%	63.72%	43.39%	38.05%	
Operating Margin	%	22.5%	15.2%	-26.7%	4.7%	5.8%	6.5%	6.8%	
Net financial Result	[EUR m]	-6.60	-23.20	-31.40	-27.48	-31.16	-28.35	-30.62	
Non-Operating Income	[EUR m]								
PBT	[EUR m]	210	225	(961)	18	50	93	140	**09E/08A: -526.9% / 5Y CAGR -9.0%**
PBT Margin	%	23.9%	16.7%	-93.8%	1.4%	2.9%	4.1%	4.7%	
Equity Income	[EUR m]	9	9	(2)	(2)	(2)	(2)	(2)	
Income Tax	[EUR m]	(64)	(38)	0	(4)	(12)	(21)	(32)	
Tax rate	%	30.5%	16.8%	18.0%	23.0%	23.0%	23.0%	23.0%	
Net Income	[EUR m]	146	187	(961)	14	39	71	108	**09E/08A: -613.3% / 5Y CAGR -10.4%**
% age growth	%		28.46%	-613.33%	-101.44%	180.38%	84.49%	51.36%	
Minority Interests	[EUR m]	3	3	3	4	4	4	4	
Income from Discontinued Operations	[EUR m]	0	0	0	0	0	0	0	
Net earnings	[EUR m]	148	191	(958)	18	43	75	112	**09E/08A: -602.6% / 5Y CAGR -10.1%**
% age growth	%		28.4%	-602.6%	-101.8%	142.4%	76.6%	48.6%	
Net Profit Margin	[EUR m]	16.9%	14.2%	-93.5%	1.3%	2.4%	3.3%	3.8%	

KEY SHARE DATA	[unit]	2007A	2008A	2009E	2010E	2011E	2012E	2013E
Number of Shares	[in Mn]	113.5	113.5	113.5	113.5	113.5	113.5	113.5
EPS	[EUR]	1.40	1.70	-8.44	0.16	0.38	0.66	0.99
EPS (Cont. Operations)	[EUR]	1.35	1.69	-8.44	0.16	0.38	0.66	0.99

Source: Company data, Nomura estimates

Figure 85: Q-Cells summary financials

BALANCE SHEET									
Year-end Dec	[unit]	2007A	2008A	2009E	2010E	2011E	2012E	2013E	Comments
Intangible assets	[EUR m]	40	48	0	0	0	0	0	
Goodwill	[EUR m]	3	4	0	0	0	0	0	
Tangible assets	[EUR m]	366	665	912	875	854	795	732	
Financial assets	[EUR m]	1,207	1,125	-59	-73	-92	-115	-143	
Total fixed assets	[EUR m]	1,617	1,842	854	802	762	680	589	
Inventories	[EUR m]	94	217	256	291	352	408	446	
Receivables	[EUR m]	121	181	225	291	299	340	416	
Payables	[EUR m]	-56	-80	-123	-132	-158	-204	-267	
Working capital	[EUR m]	159	318	359	450	493	543	594	
Other assets	[EUR m]	342	410	408	406	404	401	399	
Total assets	[EUR m]	2,118	2,579	1,681	1,718	1,719	1,686	1,643	**09E/08A: -34.8% / 5Y CAGR -8.6%**
Share capital	[EUR m]	111	114	114	114	114	114	114	
Retained Earnings	[EUR m]	1,291	333	351	394	469	581	715	
Shareholders' funds	[EUR m]	1,823	1,847	889	907	949	1,025	1,137	
Minorities	[EUR m]	11	30	26	22	18	14	10	
Provisions	[EUR m]	7	8	8	11	14	18	24	
Long term liabilities	[EUR m]	404	424	819	819	819	819	819	
Short term liabilities	[EUR m]	11	227	50	-103	-164	-243	-238	
Cash & cash equivalent	[EUR m]	-414	-177	-331	-157	-137	-167	-329	
Net debt	[EUR m]	1	474	537	558	517	408	252	
Other liabilities	[EUR m]	271	214	214	214	214	214	214	
Total liabilities	[EUR m]	284	702	766	789	751	647	496	
Total shareholders' funds & liabilities	[EUR m]	2,118	2,579	1,681	1,718	1,719	1,686	1,643	**09E/08A: -34.8% / 5Y CAGR -8.6%**

CASH FLOW									
Year-end Dec	[unit]	2007A	2008A	2009E	2010E	2011E	2012E	2013E	Comments
EBIT	[EUR m]	197	205	-274	62	102	146	202	**09E/08A: -233.6% / 5Y CAGR -0.3%**
Depreciation	[EUR m]	25	46	93	123	118	115	107	
Change in Provisions	[EUR m]	7	1	-0	2	4	4	6	
Change in Working capital	[EUR m]	-159	-159	-40	-91	-43	-51	-51	
Tax	[EUR m]	-64	-38	0	-4	-12	-21	-32	
Other movements	[EUR m]	0	0	100	0	0	0	0	
Operating cash flow	[EUR m]	6	55	-121	93	169	194	232	**09E/08A: -322.9% / 5Y CAGR 33.6%**
Capex	[EUR m]	-249	-434	-441	-86	-97	-57	-45	
Disposals	[EUR m]	0	0	530	0	0	0	0	
Cash flow from investing activities	[EUR m]	-249	-434	89	-86	-97	-57	-45	**09E/08A: -120.6% / 5Y CAGR -36.6%**
New project finance	[EUR m]	0	0	0	0	0	0	0	
Interest	[EUR m]	-7	-23	-31	-27	-31	-28	-31	
Dividends	[EUR m]	0	0	0	0	0	0	0	
Minority dividends	[EUR m]	0	0	0	0	0	0	0	
Dividends received	[EUR m]	0	0	0	0	0	0	0	
Cash flow from financing activities	[EUR m]	-7	-23	-31	-27	-31	-28	-31	
Net change in cash	[EUR m]	-249	-403	-64	-21	41	109	157	**09E/08A: -84.2% / 5Y CAGR -182.8%**

Source: Company data, Nomura estimates

Conergy

Reuters: CGYG.DE,Bloomberg CGY GR

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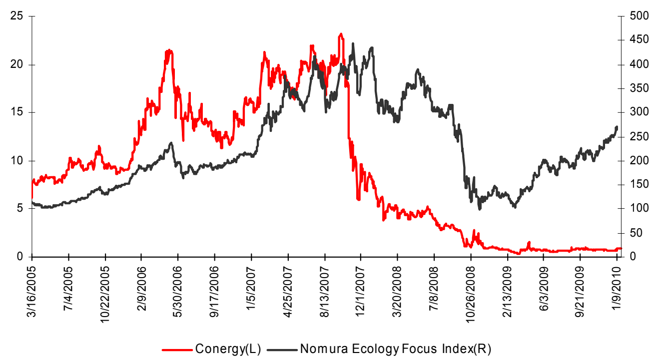
Too risky



Source: Bloomberg and Nomura research

Recommendation(new)	REDUCE	Recommendation(old)	N/A
Share Price (Eur)	0.78	Market Cap (Eur m)	310.5
Sector:	Renewable Energy		

Year-end 31/12 (€m)	Sales	EBITDA	EBIT	Net Profit
2007A	790	(205)	(213)	(249)
2008A	984	(198)	(213)	(308)
2009E	559	(45)	(70)	(94)
2010E	701	24	2	(22)
2011E	865	60	33	7
Year-end 31/12 (€m)	**P/Sales**	**EV/EBITDA**	**P/E**	**P/CF**
2007A	0.40	nm	nm	nm
2008A	0.32	nm	nm	nm
2009E	0.56	nm	nm	20.8
2010E	0.45	26.5	nm	9.2
2011E	0.36	10.1	45.2	5.4

We think that business model weakness weighs more than the potential for a turnaround story. Even in the event of a successful turnaround, we think that neither growth nor profitability will be strong enough to underpin the current share price. A change in the shareholder structure could be critical if the current majority shareholder Commerzbank exited the company and became less inclined to continue waving covenant compliance on the syndicated load. We initiate coverage with a Reduce recommendation and a EUR 0.5 price target.

- Vulnerable business model. We think that the company's business model following the restructuring, while having the attraction of being downstream weighted, lacks competitive advantages such as strong branding, channel penetration or barriers to entry. We also think that the model implies higher than average regulatory and working capital risk.
- Survival depends on negotiation. With banking covenants currently waived but refinancing of a EUR 250m syndicated facility due for July 2010, the company's survival depends on its ability to secure further covenant waivers and a new facility.
- Finances. We forecast a net loss for 2009 and 2010 with rising net debt until a 2010 peak at 370% gearing. The company is in breach of its banking covenants and its ability to negotiate further waivers and refinancing is crucial for survival.
- Sentiment Our forecast is 26% below consensus for 2009 and 50% for 2010. We expect some temporary improvement in sentiment on the back of end market strength but are unsure as to the longevity.
- Valuation. Our DCF price target is EUR 0.5 per share.

Solar system integrator and project developer with 250MW of production capacity in Germany.
Business mix: *PV (96%), Components (3%), EPURON (Projects) 1%*
Geographic exposure: *Germany 29%, Rest of Europe (49%) RoW 21%*
Key strategic issues: *Execution on restructuring and return to profitability; debt refinancing; sustainable business model*

Figure 86: Nomura view on key bull and bear points

Bull points	Bear points
Downstream exposure. Following the restructuring of the business, Conergy now sees itself as downstream focused. We see downstream as an attractive area in the solar value chain through which investors can gain exposure to end market strength and to which the systems wholesale business is geared.	Balance sheet. Conergy is in breach of its banking covenants and its ability to negotiate waivers and obtain refinancing for its EUR 250m revolving facility are crucial for the company's survival. Commerzbank, one of the banks of the credit syndicate, is also Conergy's largest shareholder.
Potential for a turnaround story. Conergy is arguably the turnaround story in the sector that comes from the lowest levels. If successful, this could deliver 68% EPS CAGR between 2011 and 2015 once the company returns to profitability.	Little room for growth. Given the strained finances, we see little scope for Conergy to grow through capacity expansion or take on a more substantial pipeline of projects. It could grow its secondary systems wholesale business, but we argue this carries lower margins than systems from own production.
Potential for take over. MEMC	
Growing exposure to new markets. Conergy is targeting the US, the Middle East and Asia as new growth regions for its solar project business. We think all of those regions offer promising growth potential. Asia-Pacific and the Middle East contributed c 15% of revenues in 2009.	Low barriers to entry and regulatory risk. We see the solar project business in particular as characterised by low barriers to entry. We also think that barriers to entry in the wholesale business are low, even though management asserts otherwise as far as large-scale wholesale and installation is concerned. We see the solar project business as more exposed to regulatory risk than other areas in the solar sector as past examples suggest that tariff adjustments can happen fast and in large size.

Source: Nomura research

Investment points

Business model challenged

Low barriers to entry in attractive rooftop installation market, while financing holds back large system installation

With the ongoing restructuring of the business, Conergy is now focusing on solar downstream as its core business. This comprises system integration, installation and solar project development but also wholesaling of modules and systems. While we consider the downstream market attractive as end market demand has recovered, we still see major uncertainty overshadowing the business of the company. We think that the rooftop segment is likely to see the strongest levels of demand, and we see barriers to entry beyond branding as low. We think that first tier brands will sustain some advantage, but barriers to entry becoming much lower very quickly. The same applies to wholeselling. Barriers to entry are slightly higher for larger systems integration and project development. But here we think the tight financing is still holding back demand to a degree that makes us estimate very little short-term contribution to Conergy's business mix. With our view that a feed-in tariff reduction for ground mounted systems in Germany is highly likely, an improvement of financing from 2010 is likely to have limited impact on the company's top line. In 2008, Germany accounted for 35% of revenues and 48% so far in 2009.

Uncompetitive internal production

It is also important to keep in mind that according to our estimate, Conergy's internal cell and production accounts for around 70% of components and systems eventually sold. During the first half of the year, we believe that the company could have operated at around 20%-25% capacity utilisation. Beyond weak demand, we attribute this to a lack of competitiveness of the company's production base in Germany when compared with low cost product that has come onto the market. According to the company, capacity utilisation has since improved now to close to full load, but this is in the context of an exceptionally strong market and we doubt that the company's cost base is fully competitive.

Major balance sheet issues

In breach of banking covenants; Commerzbank as an underwriter and shareholder has been reported to aim to sell its stake

Conergy is one of those within the sector with the weakest financials. We estimate 2009 net gearing close to 300% and a further increase in 2010 until gearing peaks at 370%. Our forecast shows net debt at 13x EBITDA 2010 before falling to 4.8x in 2011. The company is still in breach of its banking covenants. The last quarterly test in December 2009 was waived, and the next one is due at the end of March 2010. The company also has a EUR 250m revolving facility that needs to be refinanced by July 2010. Refinancing negotiations are ongoing but create major uncertainty over the company's outlook. Investors might gain some comfort from the fact that Commerzbank, which is one of the major lending banks of the syndicate, is also the largest shareholder with a 37% holding. But then, according to recent press reports (source: Handelsblatt), Commerzbank is looking to sell its stake. Robert Bosch as well as Asian and US companies are quoted as potential new investors. This news flow implies risk to the company's covenant negotiations, even though it could also keep take-over speculation alive.

Financials

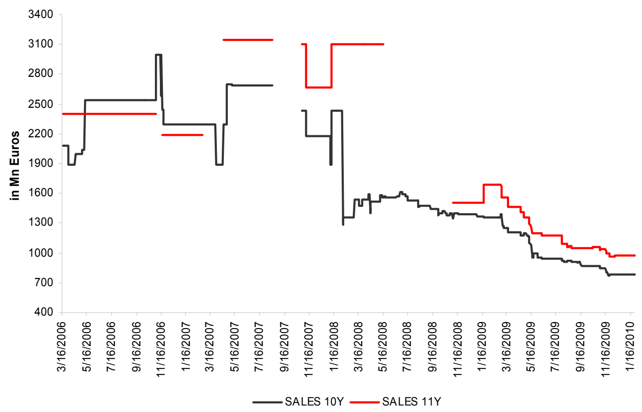
We have assumed that capacity utilisation and system sales will have improved at the end of 2009 on the back of demand strength in the sector. As a result of the higher level of sales, we have assumed some loss reduction at year-end. Our overall forecast is for an EBITDA loss of EUR 45m, EBIT loss of EUR 70m, and despite a reduction in interest expenses EPS of EUR –0.24. For 2010, we expect 25% revenue growth on the basis of y-o-y improving end market demand, leading to higher system sales and component production, albeit not yet full capacity utilisation. We still expect project sales to be challenging, especially if feed-in tariffs in Germany are reduced from H2 (see above). We expect the components business to return to profitability from Q4 09 and thus be returning to a 10% EBIT margin for 2010. This is the main driver for our forecast EUR 1.6m positive EBIT in 2010 for the group, despite our expectation for a loss for the first quarters of 2010 in the pv (systems and projects) business. However, interest expenses still lead to a net loss of EUR 0.06 per share. On a net basis, we forecast a return to profit by 2011.

We expect a very significant reduction in working capital resulting from cash collection in the project business and working down of inventories. Despite this and minimal levels of capex as the company has shelved its expansion plans with the restructuring, we still forecast negative free cash flow for 2009 and 2010. This is likely to lead to net debt increasing further from EUR 303m at the end of September 09. Given the amount of balance sheet strain with c300% gearing between 2009/10 and net debt at 13x EBITDA 2010E, the company's ability to negotiate further covenant waivers and a refinancing of its credit facility (see above) are crucial to Conergy's survival.

Momentum

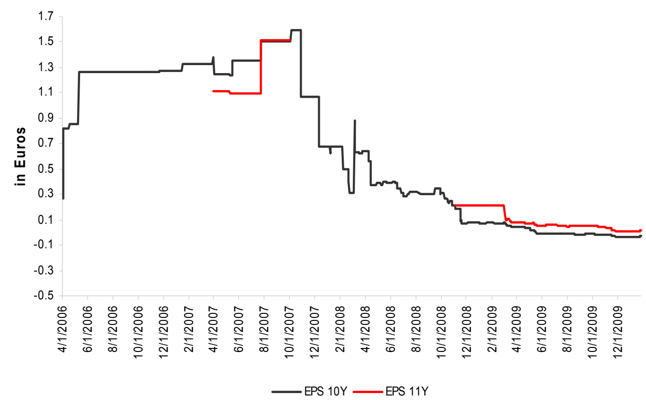
Our forecast is 26% below consensus for 2009 and 20% for 2010. While earnings revisions may have bottomed out for 2009, we are less sure about 2010. Temporarily we expect some improvement in sentiment from the resolution of the MEMC dispute and broader sector demand strength, but other sector peers will benefit more according to our expectation. Take-over speculation following reports that Commerzbank might seek to sell its stake (see above) could lift sentiment.

Figure 87: Sales momentum expectations



Source: Bloomberg, Nomura research

Figure 88: Earnings momentum expectations



Source: Bloomberg, Nomura research

Valuation

EUR 0.5 price target

Our EUR 0.5 price target is based on our three-stage DCF methodology with a WACC of 11.4% (risk free rate 4.0%, beta 1.4 unlevered, no competitive advantage period). Conergy trades on the lowest EV/sales multiple within the solar segment, at 0.9 x 2010E and 0.7x 2011E vs 1.7x and 1.5x for the solar segment average. We see this as reflecting the loss-making nature of the business over the short term. Conversely, its 2011E EV/EBITDA and P/E multiples are 23% and 75% above the solar cell and module segment average.

Figure 89: Conergy summary financials

P&L									
Year-end Dec	[unit]	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
Sales	[EUR m]	790	984	559	701	865	960	1091	**09E/08A: -43.2% / 5Y CAGR 2.1%**
%age growth	%		24.5%	-43.2%	25.4%	23.5%	10.9%	13.6%	
Gross Profit	[EUR m]	101	126	72	90	111	123	140	**09E/08A: -43.2% / 5Y CAGR 2.1%**
%age growth	%		24.9%	-43.2%	25.4%	23.5%	10.9%	13.6%	
Gross margin	%	12.8%	12.8%	12.8%	12.8%	12.8%	12.8%	12.8%	
EBITDA	[EUR m]	-205	-198	-45	24	60	78	95	**09E/08A: -77.1% / 5Y CAGR -186.4%**
%age growth	%		-3.7%	-77.1%	-152.0%	154.1%	31.3%	21.5%	
EBITDA margin	%	-26.0%	-20.1%	-8.1%	3.4%	6.9%	8.2%	8.7%	
Depreciation	[EUR m]	8	15	25	22	27	31	35	
Operating Profit	[EUR m]	(213)	(213)	(70)	2	33	47	60	**09E/08A: -67.1% / 5Y CAGR -177.7%**
%age growth	%		-0.38%	-67.05%	-102.24%	1982.81%	45.39%	26.54%	
Operating Margin	%	-27.0%	-21.6%	-12.5%	0.2%	3.8%	4.9%	5.5%	
Net financial Result	[EUR m]	(22)	(68)	(22)	(22)	(22)	(20)	(18)	
Non-Operating Income	[EUR m]								
PBT	[EUR m]	(235)	(280)	(92)	(21)	11	27	42	**09E/08A: -67.1% / 5Y CAGR -168.6%**
%age growth	%		19.2%	-67.1%	-77.5%	-153.0%	148.0%	55.5%	
PBT Margin	%	-29.7%	-28.5%	-16.5%	-3.0%	1.3%	2.8%	3.9%	
Equity Income	[EUR m]	0	0	0	0	0	0	0	
Income Tax	[EUR m]	22	27	0	0	(3)	(7)	(11)	
Tax rate	[EUR m]	9.4%	9.6%	9.6%	25.0%	25.0%	25.0%	25.0%	
Net Income	[EUR m]	(248)	(307)	(92)	(21)	8	20	32	**09E/08A: -69.9% / 5Y CAGR -163.6%**
%age growth	%		23.58%	-69.88%	-77.49%	-139.73%	147.98%	55.52%	
Minority Interests	[EUR m]								
Income from Discontinued Operations	[EUR m]								
Net earnings	[EUR m]	(249)	(308)	(94)	(22)	7	19	31	**09E/08A: -69.6% / 5Y CAGR -163.0%**
%age growth	%		23.9%	-69.6%	-76.4%	-131.5%	175.6%	59.3%	
Net Profit Margin	%	-31.5%	-31.3%	-16.8%	-3.2%	0.8%	2.0%	2.8%	

Table 2:

KEY SHARE DATA	[unit]	2007A	2008A	2009E	2010E	2011E	2012E	2013E
Number of Shares	[in m]	32.7	65.3	398.1	398.1	398.1	398.1	398.1
EPS	[EUR /sh]	-7.57	-4.67	-0.24	-0.06	0.02	0.05	0.08
EPS (Cont. Operations)	[EUR/sh]	-7.57	-4.67	-0.24	-0.06	0.02	0.05	0.08

Source:Company data, Nomura estimates

Figure 90: Conergy summary financials

BALANCE SHEET									
Year-end Dec	[unit]	2007A	2008A	2009E	2010E	2011E	2012E	2013E	Comments
Intangible assets	[EUR m]	42	30	30	30	30	30	30	
Goodwill	[EUR m]								
Tangible assets	[EUR m]	209	204	188	180	171	159	145	
Financial assets	[EUR m]	14	8	8	8	8	8	8	
Total fixed assets	[EUR m]	265	242	227	219	209	197	184	
Inventories	[EUR m]	346	246	196	196	216	240	251	
Receivables	[EUR m]	215	121	84	84	87	96	98	
Payables	[EUR m]	(282)	(111)	(84)	(91)	(112)	(115)	(131)	
Working capital	[EUR m]	278	255	196	189	190	221	218	
Other assets	[EUR m]	98	31	31	31	31	31	31	
Total assets	[EUR m]	691	608	533	518	510	528	512	**09E/08A: -12.4% / 5Y CAGR -3.4%**
Share capital	[EUR m]	35	398	398	398	398	398	398	
Net profit	[EUR m]								
Shareholders' funds	[EUR m]	125	197	104	84	92	112	144	
Minorities	[EUR m]								
Provisions	[EUR m]	8	44	45	49	52	56	60	
Long term liabilities	[EUR m]	120	87	70	82	61	55	3	
Short term liabilities	[EUR m]	358	231	231	231	231	231	231	
Cash & cash equivalent	[EUR m]	(63)	(28)	5	5	4	3	3	
Net debt	[EUR m]	415	290	306	308	288	283	230	
Other liabilities	[EUR m]	118	67	67	67	67	67	67	
Total liabilities	[EUR m]	563	411	428	435	418	416	368	
Total shareholders' funds & liabilities	[EUR m]	688	608	533	518	510	528	512	**09E/08A: -12.4% / 5Y CAGR -3.4%**

CASH FLOW									
Year-end Dec	[unit]	2007A	2008A	2009E	2010E	2011E	2012E	2013E	Comments
EBIT	[EUR m]	(213)	(213)	(70)	2	33	47	60	**09E/08A: -67.1% / 5Y CAGR -177.7%**
Depreciation	[EUR m]	8	15	25	22	27	31	35	
Change in Provisions	[EUR m]	8	36	1	4	3	4	4	
Change in Working capital	[EUR m]	(278)	23	60	6	(1)	(30)	3	
Tax	[EUR m]	22	27	0	0	(3)	(7)	(11)	
Other movements	[EUR m]	0	0	0	0	0	0	0	
Operating cash flow	[EUR m]	(453)	(113)	15	34	59	45	92	**09E/08A: -113.4% / 5Y CAGR -196.0%**
Capex	[EUR m]	(199)	(35)	(11)	(14)	(17)	(19)	(22)	
Disposals	[EUR m]	0	0	2	0	0	0	0	
Cash flow from investing activities	[EUR m]	(199)	(35)	(9)	(14)	(17)	(19)	(22)	**09E/08A: -73.4% / 5Y CAGR -8.8%**
New project finance	[EUR m]	0	0	0	0	0	0	0	
Interest	[EUR m]	(22)	(68)	(22)	(22)	(22)	(20)	(18)	
Dividends	[EUR m]	0	0	0	0	0	0	0	
Minority dividends	[EUR m]	0	0	0	0	0	0	0	
Dividends received	[EUR m]	0	0	0	0	0	0	0	
Cash flow from financing activities	[EUR m]	(22)	(68)	(22)	(22)	(22)	(20)	(18)	
	[EUR m]								
Net change in cash	[EUR m]	(673)	(215)	(16)	(2)	20	6	52	**09E/08A: -92.4% / 5Y CAGR -175.4%**

Source: Company data, Nomura estimates

Solon

Reuters:SOOG.DE, Bloomberg SOO1 GR

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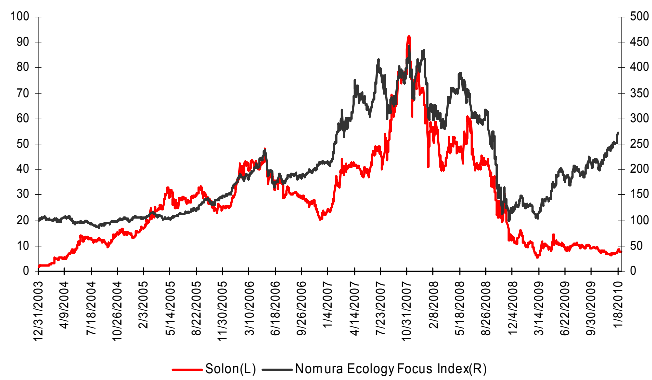
Not strong enough



Source: Bloomberg and Nomura research

Recommendation(new)	REDUCE	**Recommendation(old)**	N/A
Share Price (Eur)	6.39	**Market Cap (Eur m)**	80
Sector:	Renewable Energy		

Year-end 31/12 (€m)	Sales	EBITDA	EBIT	Net Profit
2007A	515	43	35	38
2008A	875	73	58	33
2009E	373	(80)	(101)	(110)
2010E	542	24	0	(17)
2011E	554	35	21	4
Year-end 31/12 (€m)	**P/Sales**	**EV/EBITDA**	**P/E**	**P/CF**
2007A	0.16	4.6	1.8	nm
2008A	0.10	6.4	2.6	nm
2009E	0.23	n/m	nm	0.8
2010E	0.16	19.0	nm	10.0
2011E	0.15	13.1	20.4	2.3

While the company's business model implies growth, it will take more than another year for a return to profitability despite an improving sector backdrop. We are concerned that the company's strained finances might not allow it to build up strength in some of the downstream areas in the solar value chain where it is attractively positioned. We initiate coverage with a Reduce recommendation and a EUR 4.5 price target.

- Undifferentiated model in attractive part of the value chain. We see the company as exposed to a commoditised part of the value chain in one of its core businesses, solar modules. The other, EPC contracting and park development while attractive for its downstream access, might become increasingly crowded as competitors integrate vertically.

- Balance sheet strain. With net debt at 15x 2010E EBITDA, the company's strained balance sheet not only limits growth, but interest costs eliminate almost 100% of operating earnings over the next two years.

- Finances. We forecast a net loss of EUR 8.8 per share for 2009 and EUR 1.32 for 2010. Our forecast 45% y-o-y revenue growth in 2010 is in line with guidance for mid double digit-revenue growth, as is our EBIT break-even for 2010.

- Sentiment is still at very low levels and we expect it to stay there until it becomes clear that the company can turn sector growth into profitability and restore its balance sheet.

- Valuation. Our fair value is EUR 4.5 per share based on average peer group multiples.

Manufacturer of solar modules with 450MW of capacity; solar EPC contractor and solar park developer
Business mix: Components (Modules) c63%,Systems(EPC/parks) c37%
Geographic exposure: Germany (24%), Other EU (75%), RoW (2%)
Key strategic issues: Return to profitability, module competition, pipeline growth and execution, financial structure

Solon

Figure 91: Nomura view on key bull and bear points

Bull points	Bear points
Relationships with major developers and framework agreements should imply a high degree of quality than average for the company's solar park pipeline. **Downstream access** is a point of differentiation in a competitive market. The company's system sales business has some channel penetration.	**Low barriers to entry.** We see both of the company's core businesses, module manufacturing and park development as characterised by low barriers to entry. **Strained balance sheet.** With over 140% gearing, the company's tight balance sheet could be an obstacle to growth in the solar park business, which is highly capital intensive.

Source: Nomura research

Investment points

Business model offers little uniqueness

Undifferentiated business model with module manufacturing and project development

Solon's core business is the manufacturing of solar modules, sale of solar systems and an EPC and development activity of solar parks. The latter business accounts for about 50% of revenues.

Uncompetitive in house production

Just less than 10% of the company's module manufacturing capacity dates from around 2006/07, which leads us to believe that it is now uncompetitive. The company aims for a management buyout of these facilities or failing that closure (with potential extraordinary costs, in our view). The remaining capacity is newer, from 2007/08 and should therefore have a more competitive cost structure. Most of it is in Germany with a small proportion in the US. But we still think that it will not be able to match Asian low cost prices. We think that module sales will recover into next year on the back of demand strength in Germany. The company has very recently announced that it has reservations exceeding 30MW of modules for Q1 10, but even though being positive, prorated capacity utilisation would at this amount stand below 60% as opposed to competitors who are producing at capacity limits. We think that Solon has neither a clear enough cost or brand leadership to stand out in a highly competitive environment and we thus prefer other downstream names.

The project business is a potential high growth area. Solon has framework agreements with major utilities that should deliver growth of a high quality pipeline. Beyond Statkraft in Europe, Solon has a relationship with PG&E who has a 250MW pipeline in California. While those relationships are a point of distinction, we see the development and EPC market as one with relatively low barriers to entry and think that major industrials could become strong competitors. We think that increased activity of new entrants is likely as vertical integration is becoming a feature of the sector and Solon might not be able to quickly enough build out strength given its tight balance sheet. We also think that the heavy working capital requirements of the business pose a risk considering the balance sheet, as evidenced by the cash collection problems during 2009. Once long-term refinancing is in place (see below), this might become less of an issue, but it will be a feature during at least the early parts of 2010, in our view.

Both core businesses are characterised by low margin levels, which are unlikely to change over the long term, and overall we forecast one of the lowest levels of profitability among the solar peer group for Solon. With module margins unlikely to exceed 6% and system and project margins converging to a similar level, we forecast that the group EBIT margin will not rise materially above 4% over our forecast horizon.

Financials

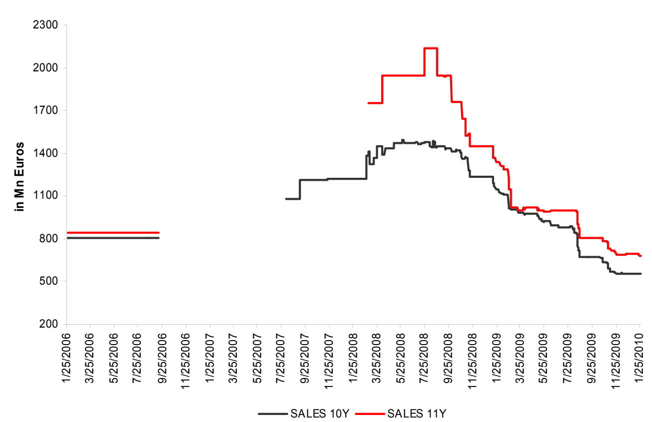
On the basis of low levels of capacity utilisation and some but slow pick-up in the project business, we forecast that Solon will be loss making until Q2 10 in both of its core businesses. For 2010 overall, we forecast break-even on an EBIT level, in line with guidance, but still a net loss and EPS of EUR 1.36. We have not assumed any long-term manufacturing capacity expansion given the tight balance sheet (see below) but some pipeline growth each year. Our growth forecast is based on the company gradually achieving full load on its module manufacturing and building on its pipeline with the systems business achieving margins c200bps in excess of the module business. We have assumed just over 10% ASP erosion for 2010 and c5% pa thereafter in line with the sector. On this basis, we forecast a long-term through cycle group EBIT margin around 4% and a return to net profits by 2011.

The company's balance sheet is tight with 140% gearing in 2009 and leverage rising until 2012 with a 170% peak according to our forecast. We estimate net debt at 15x EBITDA in 2010. This could make the negotiations for a restructuring of the short-term, more expensive, credit lines into a long-term structure more difficult and the fact that negotiations with 10 banks are postponed into Q1 could provide evidence.

Momentum

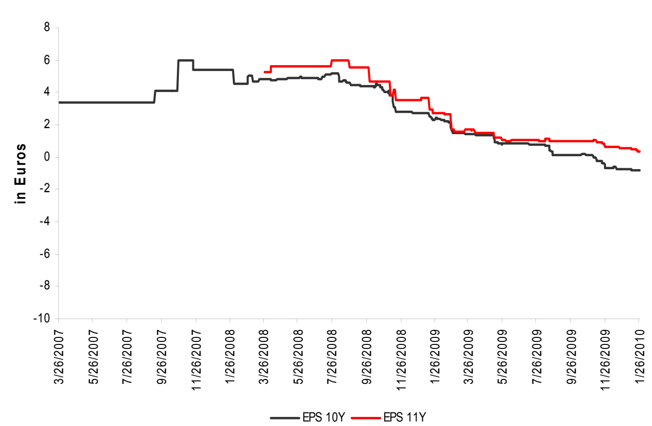
Our forecast is slightly above consensus for 2009 but below for 2010 and 2011. Momentum of earnings revisions is still negative and we think that sentiment is negative despite sector market strength as Solon will not likely see the benefit coming through its earnings soon.

Figure 92: Sales momentum expectations



Source: Bloomberg, Nomura research

Figure 93: Earnings momentum expectations



Source: Bloomberg, Nomura research

Valuation

EUR 4.5 price target

Our price target of EUR 4.5 is based on a blended mix of peer group multiples. We have used solar manufacturers (modules/cells), renewables developers and systems integrators as the closest peer group. We have taken the small and medium European segment as our closest comps. Because of the loss-making nature and the current high gearing of the company, only EV/sales, and a 2011E P/E are meaningful, in our opinion.

Figure 94: Solon peer group valuation

	EV/Sales 2009E	EV/Sales 2010E	EV/Sales 2011E	P/E 2011E
Peer group				
Solarworld	1.5	1.4	1.1	11.4
Q-Cells	1.8	1.4	1.0	27.3
Phoenix Solar*	0.5	0.4	0.3	8.4
Solarfabrik*	0.3	0.3		25.0
Conergy	1.0	0.8		47.1
Centrosolar*	0.6	0.5		8.1
Colexon*	2.0	1.1		25.4
Sunways*				8.5
Payom Solar*				7.0
SAG*				9.0
Average	1.1	0.8	0.80	17.7
Solon implied fair value	**4.3**	**4.6**	**3.2**	**5.9**
Average	**4.5**			

*Source: *Bloomberg, Nomura restimates*

Figure 95: Solon summary financials

P&L									
Year-end Dec	[unit]	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
Sales	[EUR m]	515	875	373	542	554	647	703	**09E/08A: -57.4% / 5Y CAGR -4.3%**
%age growth	%	29.8%	70.1%	-57.4%	45.2%	2.4%	16.8%	8.6%	
Gross Profit	[EUR m]	107	177	21	71	69	80	103	**09E/08A: -88.4% / 5Y CAGR -10.2%**
%age growth	%	29.3%	65.4%	-88.4%	246.1%	-3.1%	16.8%	28.7%	
Gross margin	%	20.7%	20.2%	5.5%	13.1%	12.4%	12.4%	14.7%	
EBITDA	[EUR m]	43	73	-80	24	35	42	46	**09E/08A: -210.5% / 5Y CAGR -8.6%**
%age growth	%	74.3%	67.5%	-210.5%	-129.7%	46.3%	20.2%	10.6%	
EBITDA margin	%	8.4%	8.3%	-21.5%	4.4%	6.3%	6.5%	6.6%	
Depreciation	[EUR m]	8	15	21	23	14	17	18	
Operating Profit	[EUR m]	35	58	(101)	0	21	25	28	**09E/08A: -274.9% / 5Y CAGR -13.4%**
%age growth	%	41.51%	64.11%	-274.94%	-100.34%	5922.60%	22.63%	11.88%	
Operating Margin	%	6.8%	6.6%	-27.1%	0.1%	3.7%	3.9%	4.0%	
Net financial Result	[EUR m]	(8)	(10)	(25)	(24)	(23)	(22)	(22)	
Non-Operating Income	[EUR m]								
PBT	[EUR m]	46	55	(130)	(19)	6	15	19	**09E/08A: -334.8% / 5Y CAGR -19.5%**
%age growth	%	101.1%	19.2%	-334.8%	-85.5%	-130.5%	155.8%	26.8%	
PBT Margin	%	9.0%	6.3%	-34.8%	-3.5%	1.0%	2.3%	2.7%	
Equity Income	[EUR m]	19	11	(0)	5	8	11	12	
Income Tax	[EUR m]	(8)	(23)	19	2	(2)	(5)	(6)	
Tax rate	[EUR m]	17.3%	40.7%	-15.0%	-10.0%	28.0%	32.0%	33.0%	
Net Income	[EUR m]	38	33	(110)	(17)	4	10	13	**09E/08A: -436.7% / 5Y CAGR -17.5%**
%age growth	%	166.05%	-14.60%	-436.74%	-84.60%	-124.43%	141.55%	24.90%	
Minority Interests	[EUR m]								
Income from Discontinued Operations	[EUR m]								
Net earnings	[EUR m]	38	33	(110)	(17)	4	10	13	**09E/08A: -436.6% / 5Y CAGR -17.5%**
%age growth	%	166.1%	-14.6%	-436.6%	-84.6%	-124.5%	141.3%	24.9%	
Net Profit Margin	%	7.4%	3.7%	-29.5%	-3.1%	0.7%	1.5%	1.8%	

KEY SHARE DATA	[unit]	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**
Number of Shares	[in m]	12.5	12.5	12.5	12.5	12.5	12.5	12.5
EPS	[EUR /sh]	3.72	2.61	-8.82	-1.36	0.33	0.80	1.00
EPS (Cont. Operations)	[EUR/sh]	3.38	2.35	-8.82	-1.36	0.33	0.80	1.00

Source: Company data, Nomura estimates

Figure 96: Solon summary financials

BALANCE SHEET											
Year-end Dec	[unit]	2005A	2006A	2007A	2008A	2009E	2010E	2011E	2012E	2013E	Comments
Intangible assets	[EUR m]	15	29	29	29	29	29	29	29	29	
Goodwill	[EUR m]										
Tangible assets	[EUR m]	18	22	57	190	163	162	167	172	174	
Financial assets	[EUR m]	29	36	145	154	151	156	164	176	188	
Total fixed assets	[EUR m]	62	88	231	373	342	347	360	376	391	
Inventories	[EUR m]	31	103	151	179	104	116	116	123	127	
Receivables	[EUR m]	39	78	134	251	168	190	183	194	204	
Payables	[EUR m]	(19)	(50)	(64)	(91)	(67)	(81)	(78)	(84)	(84)	
Working capital	[EUR m]	52	130	221	339	205	225	222	233	246	
Other assets	[EUR m]	28	48	96	93	93	93	93	93	93	
Total assets	[EUR m]	149	267	550	808	643	668	678	706	733	09E/08A: -20.4% / 5Y CAGR -1.9%
Share capital	[EUR m]	(3)	9	13	13	13	13	13	13	13	
Net profit	[EUR m]										
Shareholders' funds	[EUR m]	77	116	364	376	266	249	253	263	275	
Minorities	[EUR m]	(0)	(0)	(0)	0	(0)	(0)	(0)	(0)	(0)	
Provisions	[EUR m]	3	3	9	15	11	14	14	14	14	
Long term liabilities	[EUR m]	43	41	230	197	197	197	197	197	197	
Short term liabilities	[EUR m]	24	80	35	186	180	213	212	225	236	
Cash & cash equivalent	[EUR m]	(14)	(9)	(150)	(4)	(49)	(42)	(36)	(32)	(27)	
Net debt	[EUR m]	53	112	115	379	328	368	373	391	406	
Other liabilities	[EUR m]	13	35	61	31	31	31	31	31	31	
Total liabilities	[EUR m]	71	151	186	432	378	419	425	443	458	
Total shareholders' funds & liabilities	[EUR m]	149	267	550	808	643	668	678	706	733	09E/08A: -20.4% / 5Y CAGR -1.9%

CASH FLOW											
Year-end Dec	[unit]	2005A	2006A	2007A	2008A	2009E	2010E	2011E	2012E	2013E	Comments
EBIT	[EUR m]	15	25	35	58	(101)	0	21	25	28	09E/08A: -274.9% / 5Y CAGR -13.4%
Depreciation	[EUR m]	0	0	8	15	21	23	14	17	18	
Change in Provisions	[EUR m]	3	0	5	7	(4)	2	0	0	(0)	
Change in Working capital	[EUR m]	(52)	(78)	(91)	(118)	134	(20)	3	(11)	(13)	
Tax	[EUR m]	(5)	(9)	(8)	(23)	19	2	(2)	(5)	(6)	
Other movements	[EUR m]	0	0	0	0	36	0	0	0	0	
Operating cash flow	[EUR m]	(40)	(62)	(51)	(61)	105	9	37	26	27	09E/08A: -272.4% / 5Y CAGR -185.0%
Capex	[EUR m]	0	0	(46)	(96)	(30)	(23)	(19)	(22)	(20)	
Disposals	[EUR m]	0	0	0	0	0	0	0	0	0	
Cash flow from investing activities	[EUR m]	0	0	(46)	(96)	(30)	(23)	(19)	(22)	(20)	09E/08A: -69.0% / 5Y CAGR -26.7%
New project finance	[EUR m]	0	0	0	0	0	0	0	0	0	
Interest	[EUR m]	(1)	(2)	(8)	(10)	(25)	(24)	(23)	(22)	(22)	
Dividends	[EUR m]	0	0	0	0	0	0	0	0	0	
Minority dividends	[EUR m]	0	0	0	0	0	0	0	0	0	
Dividends received	[EUR m]	0	0	0	0	0	0	0	0	0	
Cash flow from financing activities	[EUR m]	(1)	(2)	(8)	(10)	(25)	(24)	(23)	(22)	(22)	
	[EUR m]										
Net change in cash	[EUR m]	(41)	(63)	(105)	(167)	50	(39)	(5)	(18)	(15)	09E/08A: -130.0% / 5Y CAGR -38.0%

Source:Company data, Nomura estimates

Solar Millennium

Reuters:S2MG.DE, Bloomberg S2M GR

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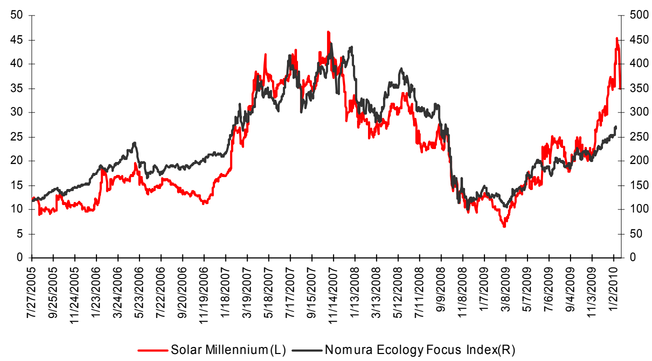
Concentrated growth



Source: Bloomberg and Nomura research

Recommendation(new)	BUY	Recommendation(old)	N/A
Share Price (Eur)	33.3	Market Cap (Eur m)	416
Sector:	Renewable Energy		

Year-end 31/12 (€m)	Sales	EBITDA	EBIT	Net Profit
2008A	32	12	11	6
2009E	201	44	44	31
2010E	284	66	60	42
2011E	430	90	80	57
Year-end 31/12 (€m)	**P/Sales**	**EV/EBITDA**	**P/E**	**P/CF**
2008A	12.40	37.0	64.2	13.5
2009E	1.98	10.4	13.0	nm
2010E	1.40	7.0	9.4	26.2
2011E	0.92	5.0	6.9	14.1

We view Solar Millennium's focus on solar thermal as very attractive on the basis of the growth prospects for the technology. We see attractive earnings growth as pipeline execution momentum picks up, and see the recent share price weakness following negative press comments as offering some attractions. We initiate coverage with a Buy recommendation and a EUR 45 price target.

- Focused on high growth technology across the value chain. Solar Millennium is solely geared to solar thermal with involvement across the value chain as it develops, designs, constructs and sells solar thermal plants. Its 1GW+ pipeline should procure growth over the long term in a high growth and economically viable segment within solar.

- Forecasting challenges. The company's business is very complex owing to a high degree of project complexity and resulting low transparency of revenue contribution of each project step. This results in a high degree of forecasting uncertainty, compounded by the risk of timing on financial closure steps. We think transparency needs to increase for a next leg of share price performance.

- Finances. Our forecast for 2010 sales is below the company's 09/10 guidance for 50% y-o-y growth as we build in some slack. We forecast 12% EPS CAGR 2010-15.

- Sentiment has significantly improved with the sale of Andasol 3 and now reflects execution on the near-term projects, in our view.

- Valuation. Our DCF fair value is EUR 45 per share.

Designer and developer of solar thermal power plants
Business mix: Project Development (11%), Technology (18%), Construction of Power Plants(17%),Project financing(53%)
Geographic exposure: Germany (99%), Europe (1%)
Key strategic issues: Execution on capacity expansion, contract portfolio

Figure 97: Nomura view on key bull and bear points

Bull points	Bear points
Growth technology. Solar thermal is the most viable technology for large scale solar deployment, in our view. We see the strong growth outlook as a prime share price driver for Solar Millennium	Transparency. Forecasting revenue development is extremely difficult given the low level of transparency despite management's efforts. The recent press criticism relating to accounting irregularities is a reflection of this, although this is something that management has strenuously denied.
Strong construction and utility partners. The company is in partnership with strong construction partners and has a good record of partnering with major utilities as financing partners. This enables the company to pursue a strong pipeline of project development and share risk and cost as well as building paths towards project sales.	Cost advantage vs pv has decreased. Following the strong decline in pv module prices, the cost differential of solar thermal vs pv has decreased. But higher load factors, potential for co-firing and greater scalability remain attractions of solar thermal.
Integration across the value chain. Solar Millennium is involved with solar thermal projects.	Technology risk. The technology has still to reach is full potential for cost reduction and large deployment.

Source: Nomura research

Investment points

High growth segment with strong attractions within solar

Geared to solar thermal growth

We see solar thermal power generation as one of the most promising segments within the solar sector. Solar thermal is the best technology for utility scale projects that are being built in increasing number and scale. We think that, next to wind, solar thermal/CSP (concentrating solar power) is the technology that is most adept to deliver fast renewables build-out for ambitious renewables targets. As solar energy is combined with a conventional steam turbine, the technology lends itself to co-firing and can therefore achieve much higher load factors and more favourable economics than pv. We estimate that production costs for solar thermal plants are c 20-30% below those of pv before accounting for a potential cost reduction roadmap. For more details on solar thermal, see the Appendix. Solar Millennium mainly operates in the parabolic trough technology.

Large projects drive growth

>1 GW pipeline

The company has a pipeline of at least 725MWW of large scale projects in the US with construction of the first project expected to start this year and the majority being commissioned 2012/13 and onwards. This will lead to revenue and profits growth on a percentage of completion and milestone basis from 2010. Beyond that, the company envisages further development in Spain, the Middle East, Africa, Australia and Asia. Over the long term, Solar Millennium is a partner in the Desertec Initiative, the single largest known solar project. Given its good record as a developer and investor, we expect it to take on a major role in the development of the project. The project is likely for 2013/14 and beyond, but may bring strong long-term growth.

Complexity and transparency

Lack of transparency and dependence on financing

The size of the project requires large scale financing, often in complex structures. Solar Millennium relies on utility partners for parts of the financing. The challenge of obtaining financing is steep as past delays have shown. This in turn affects the growth trajectory of the company as progress steps are conditioned on financing.

At the same time, it is very difficult to forecast the company's revenues owing to the complex project structure and low degree of transparency of revenues for each project stage. Management is forthcoming, but more transparency would be welcomed.

Financials

Solar Millennium earns revenues and profits through projects moving through the different stages of development up to the sale of projects. It receives success fees on a milestone basis, sells technology and also collects EPC revenues from its own and third party projects. The company also targets revenues from power plant investment, ie earnings contributions from stakes in power plants, but we see this as small for the time being. Solar Millennium enters into partnerships with utilities and other financing partners who may enter the project at various stages. Typically, the later a partner enters, the higher the return for Solar Millennium. We forecast 12% EPS CAGR for 2010-15.

We have built our model on a project based approach through all the stages of the company's business. The table below shows the timeline of the company's projects.

Figure 98: Solar Millennium pipeline

	2008	2009E	2010E	2011E	2012E	2013E
Andasol 3						
Development	x					
Technology	x					
Construction		x	x	x		
Project financing	x	x				
Ibesol						
Development	x	x				
Technology		x				
Construction		x	x	x		
Project financing		x	x	x		
Egypt						
Development						
Technology	x	x	x	x		
Construction						
Project financing						
US projects						
Development		x	x	x		
Technology			x	x	x	
Construction				x	x	x
Project financing			x	x	x	x

Source: Company data, Nomura estimates

With the company's entry into the EPC business, the weight of construction revenues is likely to materially increase from this year. Andasol 3 is the first project to generate significant construction revenues. The US projects will further increase the proportion.

Figure 99: Revenue split

	2006	2007	2008	2009E	2010E	2011E	2012E	2013E
Project Development	30%	37%	39%	11%	7%	5%	4%	5%
Technology	8%	24%	59%	18%	14%	16%	18%	18%
Construction of Power Plants	0%	0%	0%	17%	60%	61%	57%	61%
Project Financing	63%	39%	2%	54%	18%	18%	20%	16%

Source: Company data, Nomura estiimates

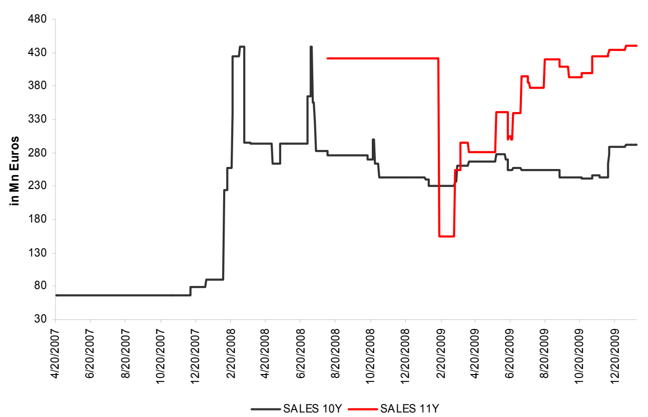
While it is strongly revenue generative, margins in the construction business are much lower than in the other parts of the business. The project finance business (financing, sales of stakes etc.) generates the highest margins, up to 50% EBIT margins, while we assume an EBIT margin in the construction business of c 5%. As a result, our EBIT margin declines to 15% by 2011E from 28% in 2008. This still entails 37% 2010E vs 2009E EBIT growth. This feeds directly through to earnings growth despite an increasing tax rate owing to a higher share of EPC rather than tax free project finance profits. We forecast 38% EPS growth 2010 vs 2009.

Owing to its financial partner strategy, the company is able to maintain a strong balance sheet, which is imperative for it to secure financing for its projects. We forecast 40% net gearing for 2009, net debt of 1.4x EBITDA in 2009 and 0.9x in 2010.

Momentum

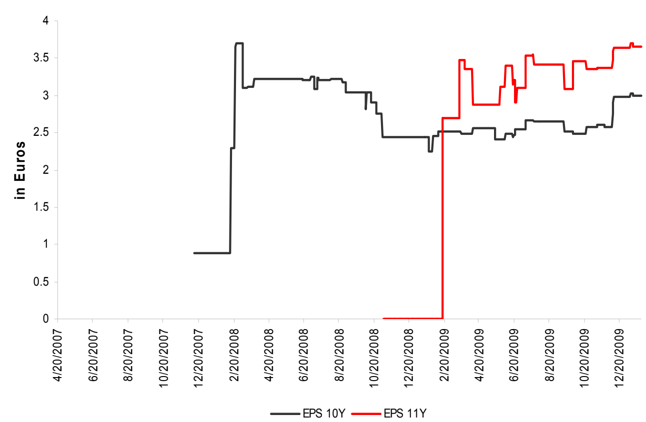
We think that sentiment is improving on the back of the Andasol 3 sale and expect it to tick up further as the company delivers milestones on its next projects. We do, however, note that sentiment can be volatile if there is perceived uncertainty on the next steps of financial closures. A recent press article claiming accounting irregularities relating to the company's financing has dented sentiment, but the company has denied this. We think sentiment will recover from this.

Figure 100: Sales momentum expectations



Source: Bloomberg, Nomura research

Figure 101: Earnings momentum expectations



Source: Bloomberg, Nomura research

Valuation

EUR 45 price target

Our three-stage DCF valuation (risk-free rate 4%, equity risk premium 5.5%, beta 1.02 unlevered, WACC 9.1%) yields a EUR 45 price target. This includes a 10-year competitive advantage period with 8% pa growth and 300bps excess return, which we consider appropriate given the growth prospects in the sector and the company's 1300bp excess return that we forecast for 2015. The shares are trading on a P/E of 6.8x 2011E, which is the lowest in our global universe aside from Trina despite arguably a higher level of stability with regards to standalone economics of the company's technology than most of the sector. We see this as an attractive point to enter the stock.

Figure 102: Solar Millennium summary financials

P&L											
Year-end Dec	[unit]	**2006A**	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**2014E**	**Comments**
Sales	[EUR m]	18	31	32	201	284	430	468	507	537	**09E/08A: 527.4% / 5Y CAGR 73.7%**
%age growth	%	0.0%	74.6%	2.9%	527.4%	41.5%	51.2%	8.9%	8.3%	5.9%	
Gross Profit	[EUR m]	20	30	27	109	154	207	226	214	226	**09E/08A: 301.5% / 5Y CAGR 51.1%**
%age growth	%	0.0%		-8.6%	301.5%	41.5%	34.4%	8.9%	-5.3%	5.9%	
Gross margin	%	96.2%	88.2%	68.2%	45.0%	45.0%	40.0%	40.0%	35.0%	35.0%	
EBITDA	[EUR m]	13	17	12	44	66	90	100	102	108	**09E/08A: 280.8% / 5Y CAGR 54.3%**
%age growth	%	0.0%		-30.4%	280.8%	49.4%	36.0%	10.8%	2.1%	5.5%	
EBITDA margin	%	73.0%	53.8%	36.4%	22.1%	23.3%	21.0%	21.4%	20.1%	20.1%	
Depreciation	[EUR m]	(0)	(0)	(0)	(1)	(6)	(10)	(11)	(12)	(13)	
Operating Profit	[EUR m]	13	16	11	44	60	80	89	90	95	**09E/08A: 288.3% / 5Y CAGR 51.4%**
%age growth	%	0.00%		-31.48%	288.33%	37.32%	32.84%	11.59%	0.78%	5.32%	
Operating Margin	%	60.1%	48.9%	28.3%	18.1%	17.5%	15.4%	15.8%	14.7%	14.6%	
Net financial Result	[EUR m]	-2.23	-3.44	-3.27	-7.70	-5.76	-5.42	-5.12	-2.24	0.23	
Non-Operating Income	[EUR m]										
PBT	[EUR m]	11	13	8	36	54	75	84	88	95	**09E/08A: 350.5% / 5Y CAGR 61.5%**
%age growth	%	0.0%		-38.5%	350.5%	51.1%	36.9%	12.9%	4.3%	8.3%	
PBT Margin	%	49.6%	38.7%	20.1%	14.9%	15.9%	14.4%	14.9%	14.4%	14.7%	
Equity Income	[EUR m]	0	0	0	0	0	0	0	0	0	
Income Tax	[EUR m]	(0)	1	(2)	(5)	(12)	(17)	(21)	(22)	(24)	
Tax rate	[EUR m]	4.3%	-8.1%	22.7%	15.0%	22.0%	23.0%	25.0%	25.0%	25.0%	
Net Income	[EUR m]	10	14	6	31	42	57	63	66	71	**09E/08A: 395.4% / 5Y CAGR 60.5%**
%age growth	%	0.00%		-56.03%	395.41%	38.68%	35.15%	9.94%	4.29%	8.32%	
Minority Interests	[EUR m]	0	0	(0)	(0)	(0)	(0)	(0)	(0)	(0)	
Income from Discontinued Operations	[EUR m]	0	0	0	0	0	0	0	0	0	
Net earnings	[EUR m]	10	14	6	31	42	57	63	66	71	**09E/08A: 396.3% / 5Y CAGR 60.6%**
%age growth	%	0.0%		-56.1%	396.3%	38.7%	35.2%	9.9%	4.3%	8.3%	
Net Profit Margin	%	47.5%	41.8%	15.5%	12.6%	12.4%	11.1%	11.2%	10.8%	11.0%	

KEY SHARE DATA	[unit]	2006A	2007A	2008A	2009E	2010E	2011E	2012E	2013E	2014E
Number of Shares	[in m]	0.0	0.0	11.6	12.5	12.5	12.5	12.5	12.5	12.5
EPS	[EUR /sh]	0.00	1.20	0.53	2.45	3.40	4.59	5.05	5.27	5.71
EPS (Cont. Operations)	[EUR/sh]	0.00	0.00	0.00	2.64	3.40	4.59	5.05	5.27	5.71

Source: Company data, Nomura estimates

Figure 103: Solar Millennium summary financials

BALANCE SHEET										
Year-end Dec	[unit]	**2006A**	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
Intangible assets	[EUR m]	0	0	2	0	0	0	0	0	
Goodwill	[EUR m]	0	0	0	0	0	0	0	0	
Tangible assets	[EUR m]	0	1	3	4	4	1	(2)	(5)	
Financial assets	[EUR m]	39	22	72	72	72	72	72	73	
Total fixed assets	[EUR m]	40	23	77	76	76	73	70	67	
Inventories	[EUR m]	3	3	12	24	41	62	68	73	
Receivables	[EUR m]	19	39	14	61	86	114	113	122	
Payables	[EUR m]	(0)	(2)	(3)	(5)	(7)	(10)	(11)	(12)	
Working capital	[EUR m]	22	40	23	80	120	166	169	183	
Other assets	[EUR m]	18	20	86	86	86	86	86	86	
Total assets	[EUR m]	80	84	188	250	293	342	348	365	**09E/08A: 32.9% / 5Y CAGR 14.2%**
Share capital	[EUR m]	10	10	13	13	13	13	13	13	
Retained Earnings	[EUR m]	28	34	64	107	164	227	293	365	
Shareholders' funds	[EUR m]	28	40	101	131	174	231	294	360	
Minorities	[EUR m]	0	0	0	0	0	0	0	0	
Provisions	[EUR m]	2	5	5	6	7	8	8	9	
Long term liabilities	[EUR m]	60	101	114	171	171	171	171	171	
Short term liabilities	[EUR m]	0	0	1	10	16	12	12	12	
Cash & cash equivalent	[EUR m]	(13)	(65)	(81)	(117)	(123)	(129)	(186)	(236)	
Net debt	[EUR m]	47	35	34	64	64	54	(4)	(53)	
Other liabilities	[EUR m]	2	2	44	44	44	44	44	44	
Total liabilities	[EUR m]	52	44	87	119	119	110	53	5	
Total shareholders' funds & liabilities	[EUR m]	80	84	188	250	293	342	348	365	**09E/08A: 32.9% / 5Y CAGR 14.2%**

CASH FLOW										
Year-end Dec	[unit]	**2006A**	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
EBIT	[EUR m]	13	16	11	44	60	80	89	90	**09E/08A: 288.3% / 5Y CAGR 51.4%**
Depreciation	[EUR m]	0	0	0	1	6	10	11	12	
Change in Provisions	[EUR m]	2	3	0	1	1	1	1	1	
Change in Working capital	[EUR m]	(22)	(18)	17	(57)	(40)	(46)	(3)	(14)	
Tax	[EUR m]	(0)	1	(2)	(5)	(12)	(17)	(21)	(22)	
Other movements	[EUR m]	0	0	0	0	0	0	0	0	
Operating cash flow	[EUR m]	(7)	2	27	(17)	15	28	76	67	**09E/08A: -162.3% / 5Y CAGR 19.6%**
Capex	[EUR m]	0	0	0	(6)	(9)	(13)	(14)	(15)	
Disposals	[EUR m]	0	0	0	0	0	0	0	0	
Cash flow from investing activities	[EUR m]	0	0	0	(6)	(9)	(13)	(14)	(15)	
New project finance	[EUR m]	0	0	0	0	0	0	0	0	
Interest	[EUR m]	(2)	(3)	(3)	(8)	(6)	(5)	(5)	(2)	
Dividends	[EUR m]	0	0	0	0	0	0	0	0	
Minority dividends	[EUR m]	0	0	0	0	0	0	0	0	
Dividends received	[EUR m]	0	0	0	0	0	0	0	0	
Cash flow from financing activities	[EUR m]	(2)	(3)	(3)	(8)	(6)	(5)	(5)	(2)	
	[EUR m]									
Net change in cash	[EUR m]	(9)	(1)	24	(31)	0	10	57	50	**09E/08A: -227.0% / 5Y CAGR 15.5%**

Source: Company data, Nomura estimates

Abengoa

Reuters:ABG.MC, Bloomberg ABG SM

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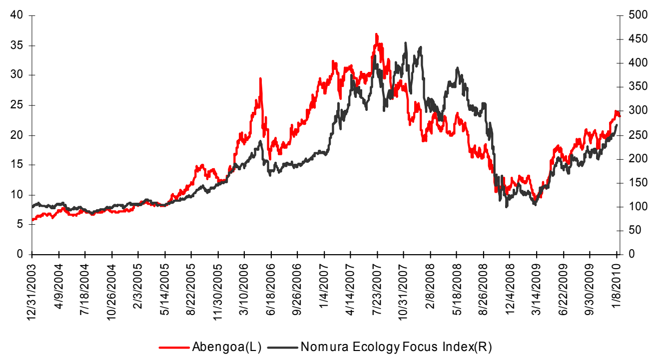
Improving outlook already reflected



Source: Bloomberg and Nomura research

Recommendation(new)	BUY	Recommendation(old)		N/A
Share Price (Eur)	22	Market Cap (Eur m)		1990
Sector:	Renewable Energy			

Year-end 31/12 (€m)	Sales	EBITDA	EBIT	Net Profit
2007A	2,683	323	233	120
2008A	3,145	459	296	140
2009E	3,968	623	416	159
2010E	4,936	734	479	185
2011E	5,341	897	515	201
Year-end 31/12 (€m)	**P/Sales**	**EV/EBITDA**	**P/E**	**P/CF**
2007A	0.73	14.6	19.9	3.6
2008A	0.62	11.8	17.1	1.7
2009E	0.49	10.3	12.3	3.0
2010E	0.39	9.6	10.5	2.8
2011E	0.36	8.2	9.7	2.4

According to our estimates, Abengoa's attractive growth prospects from the build-out of its solar thermal pipeline as well as the margin recovery in biofuels are reflected in the current share price. For a further leg up, we feel that investors would have to get more comfortable with financing. We initiate coverage with a Neutral recommendation and a EUR 25 price target.

- Solar growth in attractive technology segment The company's c2GW solar thermal pipeline provides attractive growth with more development potential as the company may develop new markets beyond its current focus regions in Spain and the US.
- Biofuels We have doubts over the viability of biofuels and long-term volatility of profits. But the company's positioning in the key markets in Europe, the US and Brazil gives it a stronger position than most of its peers.
- Attractive traditional businesses. Abengoa's construction and IT business should deliver stable cash flows to fund the company's growth businesses. Beyond that, the in-house construction expertise gives it a margin advantage in particular in the solar thermal business. Abengoa also has exposure to long-term growth areas such as desalination and smart grids.
- Finances. We see financing as the biggest challenge given the scale of the solar thermal capex over the next years and the company's high leverage. This is likely to result in further bond issuance.
- Sentiment has strongly improved on the back of the economic recovery but was affected negatively by the recent convertible.
- Valuation. Our price target is EUR 25.

Designer and developer of solar thermal power plants
Business mix: Solar (1.15%), Bioenergy (15%), Environment (6.4%) ,Information technology (7.4%), Industrial Engineering & Construction (70%)
Geographic exposure: USA & Canada (17%), EU (24%), Latin America (39%), Others (20%)
Key strategic issues: Execution on capacity expansion, contract portfolio

Abengoa

Figure 104: Nomura view on key bull and bear points

Bull points	Bear points
Solar thermal exposure. Solar thermal is one of the most promising solar technologies with significant potential for large scale deployment. This should be one of the major growth and share price drivers for Abengoa as a leader in the field.	Biofuels may be perceived as being dead before coming to life, given that blending quotas only produce limited demand growth, governments are split over them, and electric vehicles may render biofuels obsolete. With its global span, Abengoa is, however, better positioned than many of its peers.
Stable cash flows from traditional businesses. Abengoa's construction and IT businesses are weighted towards high growth areas in energy and agriculture. This, and the transmission business, should provide cash flow for growth in other areas.	Heavy financing requirement for solar thermal. Given the scale of its solar thermal projects, large financing is required. The recent convertible issue was perceived as unfavourable owing to the high cost of equity.
Scale. Abengoa has scale in all of its businesses, which should bring higher profitability and a competitive advantage for large scale tenders, especially important in solar thermal.	Leverage. We estimate net debt around 7x for 2009 and above 7x for 2010. The bulk of this is non recourse project finance, but it still makes for a riskier finance profile and high interest expenses. Excluding non recourse debt, the company's net debt/EBITDA is c 0.5-0.75x the maximum allowed in the company's syndicated corporate credit covenant.
Smart grid exposure. Abengoa has exposure to smart grid technologies through Tevent as well as through the construction and engineering business, which positions it in one of the new growth areas in renewable energy.	Many moving parts. With exposure ranging from solar over biofuels to desalination and construction, there are many moving parts in the business. This, along with a degree of uncertainty over the timing of solar thermal projects, makes forecasting the business difficult.

Source: Nomura research

Investment points

Pioneer in a high growth segment with strong attractions within solar.

Geared to solar thermal growth as leading developer, designer and operator

Abengoa is one of the leading developers and operators of concentrating solar power (CSP) and solar thermal plant alongside its solar pv operations. The company will have 81MW of plant with tower technology in operation and a pipeline close to 2GW. It is a pioneer in many respects: It has put the first two tower technology CSP plants into operation, is behind the largest plant currently under development and has the first hybrid technology plant under construction. We see solar thermal as a highly promising technology that should deliver very large scale solar projects at favourable economics and we expect the segment to be one of the strong growth sectors within the solar space globally (see below). The company has secured pre registration of c 600MW of projects in Spain, which should bring stable growth to 2012. The new regulatory regime, which has fixed feed-in tariffs of EUR 269/MWh, has removed uncertainty and Abengoa is, in our view, one of the major beneficiaries of Spanish CSP build. Beyond that, the company has 530MW of large scale projects with (Power Purchase Agreements) PPAs in the US, which we expect to come in after 2012. The 500MW+ early stage pipeline should provide long-term growth projects with good confidence in execution. Abengoa is a founding member in the Desertec Initiative, which is the largest known solar project at this stage. The project is likely for a 2013/14 and beyond horizon and there are many challenges associated with it (see below), but it may bring strong long-term growth. We find recent news of longer than expected planning not surprising but expectations are low given the long time scale.

Figure 105: Abengoa CSP pipeline

Location		Name	MW	Stage	Financing	Likely commissioning
Spain		Solnova	50	Construction	x	2010
		Solnova	50	Construction	x	2010
		Solnova	50	Construction	x	2010
	Helio Energy		2 x 50	Permits/construction	--	2012
	Cordoba	Solacor	2 x 50	Permits	--	2012
	Ciudad Real	Helios	2 x 50	Permits	--	2012
	Extremadura	Solaben	2 x 50	Permits	--	2012
	Extremadura	Solaben	2 x 50	Permits	--	2013
Algeria	CCGT/CSP		150	Construction	x	2011
US	Arizona	Solana	280	Permits	--	2013
	California, PG&E	Mojave	250	Permits	--	2014

Source: Company data, Nomura research

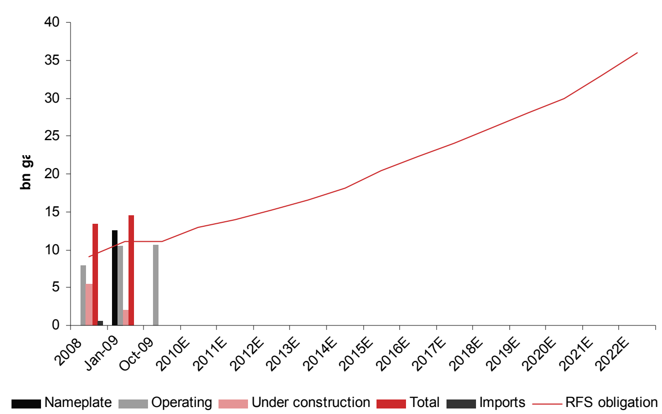
Bioenergy

Biofuels capacity growth is an earnings driver, but margins are very volatile

Abengoa's biofuel capacity build is one of the growth drivers over the next two years with plant coming onstream in Europe and the US with over 1000 ml in 2010. Globally, Abengoa will have over 3200 ml/y of capacity. The company is better positioned than many of its peers, with a presence in the most important markets: in Europe, the US and Brazil. As it has acquired scale early, it has been able to be early in the development of second generation biomass and currently has three R&D plants in operation.

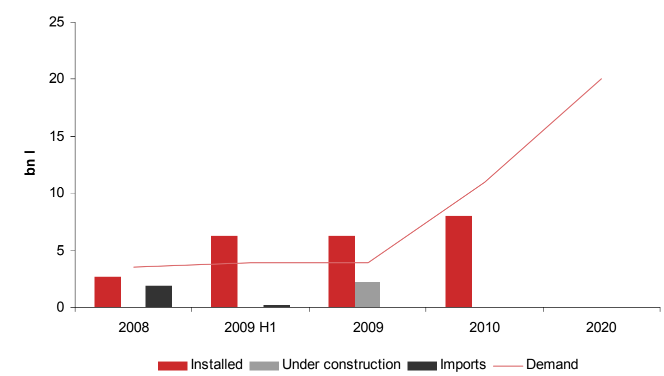
With rising oil prices and lower agricultural commodities, the company's ethanol margins have been improving. Growing ethanol demand on the back of European and American blending quotas should further improve profitability and underpin volume growth from the company's new capacity. The supply demand balance has markedly improved in Europe and the US with plant shutdowns and lower imports as a result of a tight Brazilian market. But there is still overcapacity even in the US and European markets, which we think will take another couple of years to clear.

Figure 106: Ethanol supply-demand balance, US



Source: RFA

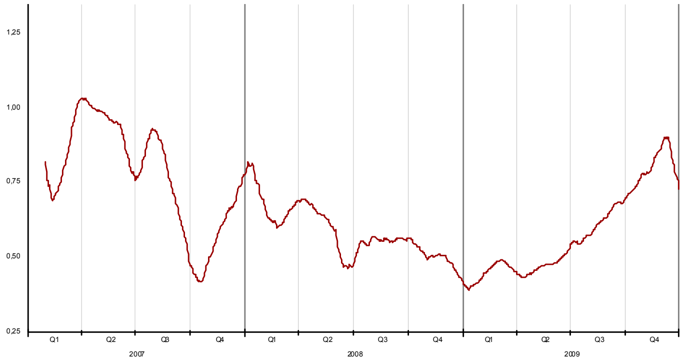
Figure 107: Ethanol supply-demand balance, Europe



Source: ebio

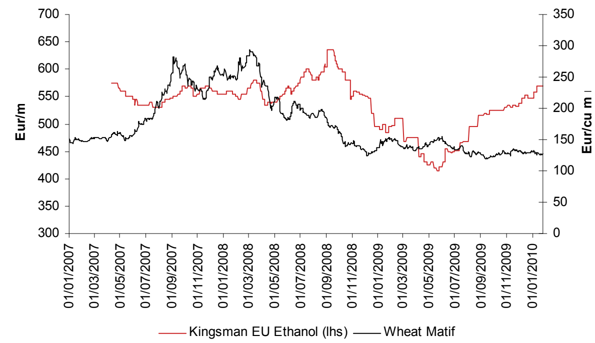
Margins have turned as prices have firmed globally owing to a more favourable supply-demand balance and stronger oil prices. At the same time, prices for the key agricultural input commodities are likely to stay stable as the DOE predicts good harvests and good supply. Its increasing scale should also contribute to some margin improvement. As a result, we expect ethanol margins to stay strong, even though we note the volatile nature of long-term ethanol margins.

Figure 108: Ethanol crush spread



Source: CBOT, Bloomberg, Abengoa

Figure 109: Europe ethanol vs wheat



Source: Bloomberg

Abengoa also sells sugar directly into the market, which provides it with pricing arbitrage opportunities.

We have many doubts over first generation biofuels. Apart from capacity balances, these relate to a structural disadvantage of European producers vs Brazil, sustainability issues and the potential for scaling. Most of these are well understood, in our view. Second generation biofuels are therefore seen as the only way forward in biofuels, if any. Furthermore, we have some concern that electric vehicles pose a large long-term threat to biofuels and therefore think that the business will continue to be considered as a more marginal part with doubts overhanging.

Environmental services not turning around yet

Environmental services turnaround not there yet, but long-term attractive exposure to desalination

Management is still cautious as to profitability in the environmental services business. We think that it will still take awhile for industrial waste treatment to recover. Over the longer term, Abengoa's expertise in desalination positions it as a leader along with the major names in one of the strong growth segments within the water and environment theme. The company's current portfolio comprises at least five large desalination plants for 2010 and 2011.

Engineering and Construction

Engineering construction provides stable earnings and synergies with solar thermal

Abengoa's engineering and construction business is one of its strong pillars and longest standing division. The company is among the leading international power and transmission contractors. The division provides not only stable earnings but also synergies with the solar thermal and desalination businesses that require strong construction expertise. Especially for solar thermal, the integration entails higher margins as the company is involved with in-house expertise across all stages of the value chain. Abengoa is also contemplating carbon capture and sequestration (CCS) projects as well as energy efficiency as new growth areas.

Financials

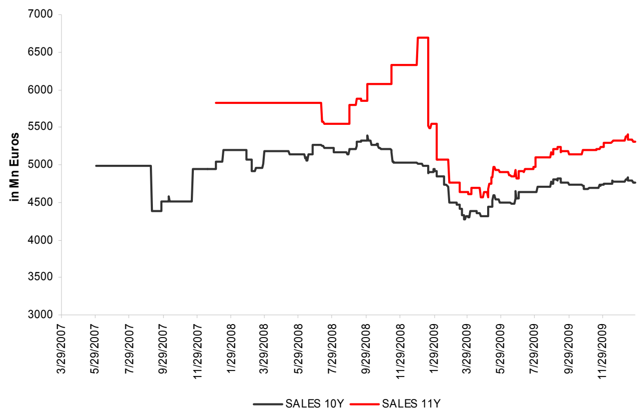
We have based our forecast on the company's project pipelines in its different divisions. Solar thermal projects in Spain, the US and the Middle East are likely to be a growth driver, as will be increased ethanol volumes from the company's capacity build. For this year, our forecast is based on the three 50MW Solnova projects getting commissioned as well as the two US and Rotterdam biofuels plant. We have assumed that the company can commission c 100—200MW of CSP plant in line with our view on its pipeline development by project (see above for our assumed commissioning). A CSP plant can generate an EBITDA margin of around 80%, but according to our forecast Abengoa is not achieving this level yet as the company will be in build mode across our forecast horizon. Management is still cautious about environmental services, and we have assumed that growth will return from 2010 on the basis of the cyclical nature of industrial waste treatment but also driven by new desalination tenders. We expect growth in the engineering and construction business to be driven this year by new transmission lines and over the long term by in-house services for solar thermal as well as by the energy business. Our 2010E EBIT margin declines slightly by 80bps in 2010 vs 2009 as we assume lower utilisation rates of the new plant and some contraction in the engineering business. Beyond 2012, our forecast suggests a stable EBITDA margin of around 10% as lower margins at new build compensate for margin expansion of operational plant. This feeds through to 39% y-o-y EPS growth in 2009 on an adjusted basis and 16% in 2010.

We see financing as one of the challenges for the company. Our forecast operating cash flow of EUR 642m for 2009E and EUR 646m for 2010E does not cover the company's EUR 1bn+ pa capex outlay. We forecast net debt of 7x EBITDA 2009E and above 7x for 2010E. Adjusted for non recourse debt, net debt would be around 3.1x EBITDA 2010E according to our estimate compared with 2.0x as per management's estimate and 3x as per the covenant of the company's syndicated credit facility. The build-out of the solar thermal pipeline entails heavy financing requirement. Abengoa stated at the end of last year that bank financing is still difficult and that it would go to the markets, with bond issues possibly as much as EUR 1bn. The company has avoided equity issuance, but it has resorted to several convertible issues, which we think has negatively affected sentiment. There is the option of selling further stakes in Telvent (IT) as the company focuses on its core businesses, but this depends on market conditions.

Momentum

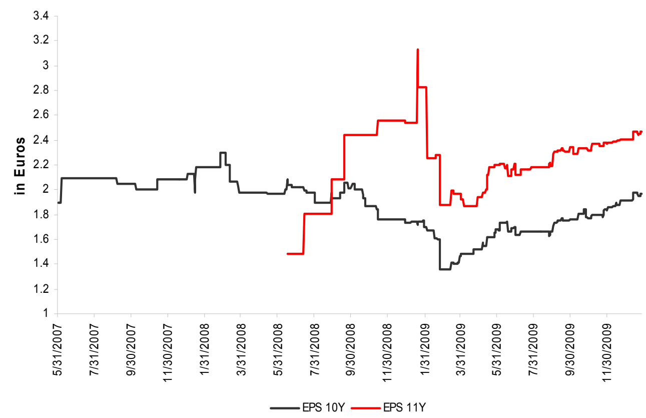
Sentiment has improved on the back of the economic recovery and prospects for the latter to lift earnings in the more traditional businesses. Besides that, improving margins in the bioenergy business and an increasing focus on high growth renewables business, in particular solar thermal, contribute to that. However, the recent convertibles issue has dented sentiment.

Figure 110: Sales momentum expectations



Source: Bloomberg, Nomura research

Figure 111: Earnings momentum expectations



Source: Bloomberg, Nomura research

Valuation

Given the diversified nature of the company, we have based our fair value on a sum-of-the-parts approach as shown below. We have valued the solar business at our estimated market value of EUR 6,000/kW that we have applied to our risked pipeline for solar thermal. To this we have added the value of the pv business. We have used our global biofuels peer group as the basis for the bioenergy business. For the engineering and construction business, our peer group is made up of Spanish and European construction companies with a heavy focus on power, transmission and renewables. Our EV/EBITDA multiple is based on the average of our European environmental services peers that are active in global waste, water and desalination. This yields EUR 25.

Figure 112: Abengoa sum-of-the-parts valuation

	EV	% of EV	EV per share	Method
Solar	1,755	*23%*	19	Plant based valuation applied to risked pipeline: Eur 6000/kW solar thermal plus pv
Bioenergy	1,134	*15%*	13	Peer group EV/EBITDA 7x 2010
Engineering and Construction	3,048	*40%*	34	8x EV/EBITDA 2010 (construction/transmission/pow er/renew ables)
InformationTechnology (Telvent)	1,180	*16%*	13	8.2x EV/EBITDA 2010 of close peer group
Environmental Services (Befesa)	933	*12%*	10	7.5x EV/EBITDA 2010
Corporate/eliminations	-441	*-6%*	-5	5x EV/EBITDA 2010
Total EV	**7,609**	*100%*	84	
Net debt, provisions, minorities	-5,379			
Market value	**2,230**			
Nr of shares	90			
Eur per share	**25**			

Source: Nomura restimates

EUR 25 price target based on SOP/DCF

We have backed up our sum-of-the parts with our three-stage DCF valuation (risk-free rate 4%, equity risk premium 5.5%, beta 1.0 unlevered, WACC 9.0%). This yields EUR 22. This includes a 5-year competitive advantage period with 10% pa growth and 500bps excess return, which we consider appropriate given the growth prospects in the sector and the company's 550bp excess return that we forecast for 2015. Our price target is EUR 25.

Figure 113: Abengoa summary financials

P&L											
Year-end Dec	[unit]	2006A	2007A	2008A	2009E	2010E	2011E	2012E	2013E	2014E	Comments
Sales	[EUR m]	2680	2683	3145	3968	4936	5341	5874	6588	7387	**09E/08A: 26.2% / 5Y CAGR 15.9%**
%age growth	%	0.0%	0.1%	17.2%	26.2%	24.4%	8.2%	10.0%	12.2%	12.1%	
Gross Profit	[EUR m]	1,034	802	411	595	740	801	881	988	1,108	**09E/08A: 44.8% / 5Y CAGR 19.2%**
%age growth	%	0.0%	-22.4%	-48.7%	44.8%	24.4%	8.2%	10.0%	12.2%	12.1%	
Gross margin	%	38.6%	29.9%	13.1%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	
EBITDA	[EUR m]	288	323	459	623	734	897	1071	1242	1477	**09E/08A: 35.6% / 5Y CAGR 22.0%**
%age growth	%	0.0%	12.2%	42.2%	35.6%	17.9%	22.2%	19.4%	15.9%	18.9%	
EBITDA margin	%	10.7%	12.0%	14.6%	15.7%	14.9%	16.8%	18.2%	18.8%	20.0%	
Depreciation	[EUR m]	(69)	(90)	(163)	(207)	(255)	(383)	(475)	(576)	(683)	
Operating Profit	[EUR m]	219	233	296	416	479	515	596	666	794	**09E/08A: 40.4% / 5Y CAGR 17.6%**
%age growth	%	0.00%	6.47%	26.90%	40.38%	15.32%	7.34%	15.81%	11.71%	19.23%	
Operating Margin	%	8.2%	8.7%	9.4%	10.5%	9.7%	9.6%	10.1%	10.1%	10.7%	
Net financial Result	[EUR m]	(100)	(148)	(234)	(213)	(236)	(250)	(252)	(251)	(237)	
Non-Operating Income	[EUR m]										
PBT	[EUR m]	135	110	12	215	256	279	361	436	582	**09E/08A: 1745.9% / 5Y CAGR 106.4%**
%age growth	%	0.0%	-18.5%	-89.4%	1745.9%	19.1%	9.0%	29.4%	20.8%	33.4%	
PBT Margin	%	5.0%	4.1%	0.4%	5.4%	5.2%	5.2%	6.2%	6.6%	7.9%	
Equity Income	[EUR m]	8	20	(59)	0	0	0	0	0	0	
Income Tax	[EUR m]	(13)	(10)	115	(22)	(31)	(34)	(51)	(61)	(82)	
Tax rate	[EUR m]	9.9%	9.2%	-988.2%	10.0%	12.0%	12.0%	14.0%	14.0%	14.0%	
Net Income	[EUR m]	122	100	127	194	226	246	311	375	501	**09E/08A: 52.7% / 5Y CAGR 24.2%**
%age growth	%	0.00%	-17.81%	27.03%	52.67%	16.45%	8.95%	26.50%	20.77%	33.37%	
Minority Interests	[EUR m]										
Income from Discontinued Operations	[EUR m]										
Net earnings	[EUR m]	100	120	140	159	185	201	255	308	411	**09E/08A: 13.1% / 5Y CAGR 17.0%**
%age growth	%	0.0%	20.0%	16.6%	13.1%	16.4%	9.0%	26.5%	20.8%	33.4%	
Net Profit Margin	%	3.7%	4.5%	4.5%	4.0%	3.7%	3.8%	4.3%	4.7%	5.6%	

KEY SHARE DATA	[unit]	2006A	2007A	2008A	2009E	2010E	2011E	2012E	2013E	2014E
Number of Shares	[in m]	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5
EPS	[EUR /sh]	1.11	1.08	1.26	1.76	2.04	2.23	2.82	3.40	0.00

Source:Company data, Nomura estimates

Figure 114: Abengoa summary financials

BALANCE SHEET											
Year-end Dec	[unit]	2006A	2007A	2008A	2009E	2010E	2011E	2012E	2013E	2014E	Comments
Intangible assets	[EUR m]	623	1,091	1,057	1,454	1,552	1,649	1,746	1,844	1,955	
Goodwill	[EUR m]										
Tangible assets	[EUR m]	640	821	1,035	1,820	2,553	2,971	3,200	3,415	3,544	
Financial assets	[EUR m]	628	766	1,018	1,031	1,043	1,058	1,076	1,098	1,124	
Total fixed assets	[EUR m]	1,891	2,678	3,110	4,305	5,148	5,678	6,022	6,357	6,623	
Inventories	[EUR m]	151	220	316	476	592	641	705	791	886	
Receivables	[EUR m]	982	1,088	1,343	1,587	1,974	2,136	2,349	2,635	2,955	
Payables	[EUR m]	1,661	2,000	2,868	3,195	3,603	3,739	3,935	4,216	4,580	
Working capital	[EUR m]	(528)	(693)	(1,209)	(1,131)	(1,037)	(961)	(881)	(791)	(739)	
Other assets	[EUR m]	1,147	2,297	3,282	3,282	3,282	3,282	3,282	3,282	3,282	
Total assets	[EUR m]	**2,739**	**4,451**	**5,592**	**6,865**	**7,803**	**8,408**	**8,832**	**9,258**	**9,576**	**09E/08A: 22.8% / 5Y CAGR 10.6%**
Share capital	[EUR m]	23	23	23	25	25	25	25	25	25	
Retained Earnings	[EUR m]	228	317	404	562	747	949	1,204	1,511	1,922	
Shareholders' funds	[EUR m]	541	797	627	821	1,047	1,292	1,603	1,979	2,479	
Minorities	[EUR m]	151	181	221	256	296	340	396	464	554	
Provisions	[EUR m]	72	135	199	317	395	427	470	527	591	
Long term liabilities	[EUR m]	1,830	3,746	4,317	4,317	4,317	4,317	4,317	4,317	4,317	
Short term liabilities	[EUR m]	961	668	504	554	1,020	1,321	1,369	1,341	1,076	
Cash & cash equivalent	[EUR m]	(1,028)	(1,659)	(1,334)	(424)	(254)	(229)	(206)	(185)	(167)	
Net debt	[EUR m]	1,762	2,755	3,487	4,448	5,083	5,409	5,481	5,473	5,227	
Other liabilities	[EUR m]	136	491	964	964	964	964	964	964	964	
Total liabilities	[EUR m]	2,197	3,653	4,965	6,044	6,756	7,115	7,229	7,279	7,097	
Total shareholders' funds & liabilities	[EUR m]	**2,738**	**4,451**	**5,592**	**6,865**	**7,803**	**8,408**	**8,832**	**9,258**	**9,576**	**09E/08A: 22.8% / 5Y CAGR 10.6%**

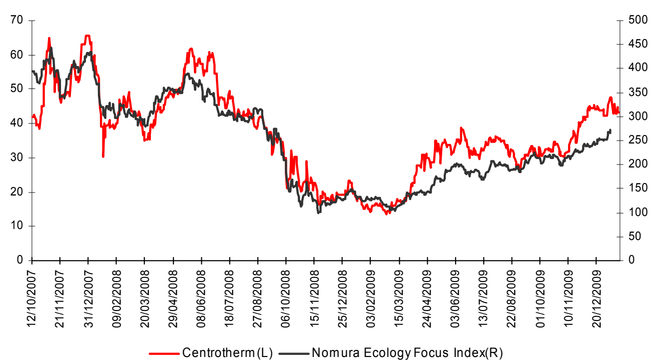
CASH FLOW											
Year-end Dec	[unit]	2006A	2007A	2008A	2009E	2010E	2011E	2012E	2013E	2014E	Comments
EBIT	[EUR m]	219	233	296	416	479	515	596	666	794	**09E/08A: 40.4% / 5Y CAGR 17.6%**
Depreciation & Amortization	[EUR m]	0	90	163	207	255	383	475	576	683	
Change in Provisions	[EUR m]	72	63	64	118	77	32	43	57	64	
Change in Working capital	[EUR m]	528	165	516	(78)	(94)	(75)	(80)	(90)	(52)	
Tax	[EUR m]	(13)	(10)	115	(22)	(31)	(34)	(51)	(61)	(82)	
Other movements	[EUR m]	0	0	0	0	0	0	0	0	0	
Operating cash flow	[EUR m]	806	541	1,154	642	686	821	983	1,147	1,407	**09E/08A: -44.4% / 5Y CAGR -0.1%**
Capex	[EUR m]	0	(1,348)	(1,629)	(1,389)	(1,086)	(897)	(802)	(889)	(923)	
Disposals	[EUR m]	0	0	0	0	0	0	0	0	0	
Cash flow from investing activities	[EUR m]	0	(1,348)	(1,629)	(1,389)	(1,086)	(897)	(802)	(889)	(923)	**09E/08A: -14.7% / 5Y CAGR -11.4%**
New project finance	[EUR m]	0	0	0	0	0	0	0	0	0	
Interest	[EUR m]	(100)	(148)	(234)	(213)	(236)	(250)	(252)	(251)	(237)	
Dividends	[EUR m]	0	0	0	0	0	0	0	0	0	
Minority dividends	[EUR m]	0	0	0	0	0	0	0	0	0	
Dividends received	[EUR m]	0	0	0	0	0	0	0	0	0	
Cash flow from financing activities	[EUR m]	(100)	(148)	(234)	(213)	(236)	(250)	(252)	(251)	(237)	
	[EUR m]										
Net change in cash	[EUR m]	706	(955)	(709)	(960)	(635)	(327)	(71)	7	246	**09E/08A: 35.5% / 5Y CAGR -139.8%**

Source: Company data, Nomura estimates

Centrotherm

Reuters: CTNG.DE Bloomberg CTN GR Catharina Saponar, CFA, +44 207 102 1231, csaponar@nomura.com

Defensive exposure to aggressive growth



Recommendation(new)	BUY	Recommendation(old)	BUY
Share Price (Eur)	39.95	Market Cap (Eur m)	837
Sector:	Renewable Energy		

Year-end 31/12 (€m)	Sales	EBITDA	EBIT	Net Profit
2007A	166	21	21	14
2008A	375	57	43	35
2009E	526	75	56	43
2010E	621	89	66	50
2011E	756	107	81	61
Year-end 31/12 (€m)	**P/Sales**	**EV/EBITDA**	**P/E**	**P/CF**
2007A	5.12	32.4	29.6	nm
2008A	2.27	12.3	19.5	27.4
2009E	1.62	9.4	20.0	29.3
2010E	1.37	7.8	17.1	15.6
2011E	1.13	6.3	14.0	13.6

Source: Bloomberg and Nomura research

Centrotherm stands out in the equipment sector as one of the few companies with growth and as having the highest quality order book. We expect the company's market leading products to support further order momentum this year and reiterate our Buy recommendation.

- Centrotherm is one of the few equipment manufacturers to grow this year on the back of its high quality order book of c EUR 1bn. Order momentum has improved sequentially throughout 2009, and we expect further uptick this year.
- Market leader with a high end product. The company's equipment covers the highest percentage of available solar capex spend across the production value chain with high end quality. This should support its market share lead as integration becomes more important along with industry leading output parameters.
- A hedge against pricing pressure from a high proportion of packaged solutions and fab concepts should hold up margins.
- Finances. We forecast 26% revenue CAGR and 22% earnings CAGR for 2008-11. For this year, we forecast 40% sales and 36% earnings growth.
- Sentiment seems to be improving as the order book is becoming stronger.
- Valuation. Our DCF fair value is EUR 40 per share. Our price target of EUR 50 is derived from a blend of our DCF and peer group multiples. We estimate that Centrotherm is trading on the lowest EV/sales multiple in the sector. The company's EV/sales, P/E and P/B are 50%, 57% and 36% below peak multiples.

Manufacturer of solar cell production equipment, turnkey lines and conversion reactors for solar silicon production. Fab concepts.
Business mix: Silicon (43%), solar cell/thin film (57%)
Geographic exposure: Asia (67.2%), Germany (13.7%), rest of Europe (13.4%) and other (5.5%)
Key strategic issues: Growth of market leadership edge through technology advancement and new thin-film products

Centrotherm

Figure 115: Nomura view on key bull and bear points

Bull points	Bear points
Order momentum been improving sequentially over the past quarters and management expects further improvement in orders into 2010.	**Risk of equipment market saturation.** We perceive some concerns that there might be limits to incremental capacity build as the Asian market is more saturated with capacity and as the incremental technology steps achievable become smaller. But this is where we see high end equipment as standing out. The company's single equipment may return as a stronger driver.
Future growth from thin film. The company's recent milestone in its first CIGS production lends credibility to Centrotherm's long-term thin film ambitions.	**Risk of low cost competition.** We think that there is some risk of low cost equipment providers, but our view is that market conditions require high-end equipment for large parts of the market
Early indications of recovery. Management has stated that it has seen some early indications of recovery with new enquiries and project starts since Q3. But we think it is unlikely that this feeds through to firm orders before later in 2010.	**Lumpy orders.** Orders are lumpy, especially in silicon. This can lead to strong fluctuations in quarterly order intake.

Source: Nomura research

Investment points

Strong visibility from order backlog and further growth

Strong visibility from backlog and improving order momentum

The current order backlog of EUR 1bn expected by management for the year-end underpins almost two years of revenues – this stands out among the equipment peers. Order momentum has also improved sequentially over the past quarters, and we expect order momentum to further improve as Asian poly, cell and module manufacturers continue to expand capacity. We think that the company's business will be driven by replacement as well as expansion of capacity. The polysilicon business in particular will be a revenue driver with very lumpy orders, in our view. We think that the high weight of the silicon in the order book is a comfort factor as well, as the customers tend to be well capitalised and execute on their projects. Overall, we see Centrotherm as the equipment supplier with the highest quality order book.

Financials

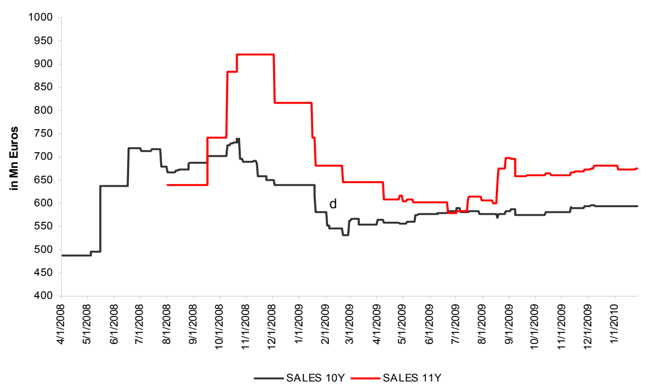
Based on the current order book, we forecast 26% revenue CAGR in 2008-11. The silicon segment is the strongest growth driver with revenues multiplying more than threefold this year, while we forecast 15% revenue growth in the cells and thin-film segment for 2009. As the growth is largely driven by the higher-margin silicon segment, we estimate this translates into 28% EBIT CAGR. We think margins will slightly decrease because of the increased weight of components over services but still expect 17% EBIT margin in the silicon and 10% in the cells/thin-film segments versus 17.6% and 10.9% in 2008. As we have built in some increase into Centrotherm's cost of debt and effective tax rate, we forecast net income CAGR of 23% in 2008-11.

The company's balance sheet is very strong with a c. EUR 140m net cash position, which we expect to stay stable as the company's 50%+ level of cash conversion compensates for working capital requirement and capex spend.

Momentum

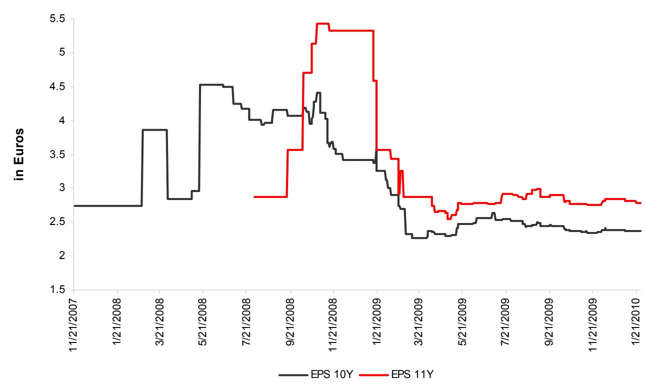
Whereas earnings momentum is unchanged this year, it seems to have bottomed out for 2010. We think strong order book growth is the main driving factor.

Figure 116: Sales momentum expectations



Source: Bloomberg, Nomura research

Figure 117: Earnings momentum expectations



Source: Bloomberg, Nomura research

Valuation

EUR 50 price target

Our three-stage DCF valuation (risk-free rate 4%, equity risk premium 6.5%, beta 1.36 based on the company's unlevered beta owing to its net cash position, WACC 9.5%) yields EUR 40. This includes a 10-year competitive advantage period with 15% pa growth and 20% excess return, which we consider appropriate given the growth prospects in the sector and the company's 1,250bp excess return that we forecast for 2015. Blending this with an average of close peer group multiples, yields EUR 50 as our price target (previously EUR 38).

Figure 118: Centrotherm valuation

	P/E		EV/Sales		P/B		DCF	Average
Peer group	**2010**	**2011**	**2010**	**2011**	**2010**	**2011**		
Roth & Rau	18.1	13.9	1.3	1.0	1.6	1.5		
Manz Automation			1.9	1.5	1.5	1.4		
Meyer Burger	27.3	19.4	2.5	2.0	2.7	2.4		
Average	**23**	**17**	**2**	**2**	**2**	**2**		
Implied fair value	**53**	**48**	**62**	**62**	**38**	**39**	**39**	**49**

Source: Nomura estimates

The shares are trading at 1.4 EV/sales and 2.1 P/B 2010E, which is above trough values, but represent the best value in the sector. While the EV/SALES multiple stands at a 40% discount to its close competitors, we believe the P/B premium is because of the higher service weight of its business. Centrotherm is trading on a 5% 2010E P/E discount to Roth & Rau who we see as its closest peer.

Figure 119: Centrotherm summary financials

P&L										
Year-end Dec	[unit]	**2006A**	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
Sales	[EUR m]	109	166	375	526	621	756	865	923	**09E/08A: 58.1% / 5Y CAGR 22.6%**
%age growth	%	0.0%	53.1%	125.4%	40.4%	18.0%	21.8%	14.4%	6.7%	
Gross Profit	[EUR m]	28	48	111	158	186	227	260	277	**09E/08A: 8.7% / 5Y CAGR 13.8%**
Gross margin	%	25.9%	29.1%	29.6%	30.0%	30.0%	30.0%	30.0%	30.0%	
	%									
EBITDA	[EUR m]	11	21	57	75	89	107	126	137	
%age growth	%	0.0%	89.5%	167.5%	31.2%	17.6%	20.9%	17.3%	8.7%	**09E/08A: 73.4% / 5Y CAGR 22.9%**
EBITDA margin	%	10.5%	12.9%	15.3%	14.3%	14.3%	14.2%	14.6%	14.8%	
Depreciation	[EUR m]	(0)	(0)	(14)	(19)	(22)	(26)	(32)	(37)	
Operating Profit	[EUR m]	11	21	43	56	66	81	94	100	
%age growth	%	0.00%	87.14%	105.81%	28.94%	18.17%	22.81%	15.19%	6.92%	**09E/08A: 14.7% / 5Y CAGR 16.9%**
Operating Margin	%	10.4%	12.7%	11.6%	10.7%	10.7%	10.8%	10.8%	10.9%	
Net financial Result	[EUR m]	0	0	3	4	4	4	5	5	
Non-Operating Income	[EUR m]									
PBT	[EUR m]	11	22	49	60	71	86	99	106	
%age growth	%	0.0%	89.3%	127.4%	23.3%	16.8%	22.4%	14.9%	7.2%	**09E/08A: 20.6% / 5Y CAGR 18.2%**
PBT Margin	%	10.5%	13.0%	13.1%	11.5%	11.4%	11.4%	11.5%	11.5%	
Equity Income	[EUR m]	0	0	2	1	1	1	1	1	
Income Tax	[EUR m]	(4)	(7)	(15)	(18)	(21)	(26)	(30)	(32)	
Tax rate	[EUR m]	37.0%	34.1%	29.9%	30.0%	30.0%	30.0%	30.0%	30.0%	
Net Income	[EUR m]	7	14	34	42	49	60	69	74	
%age growth	%	0.00%	98.02%	142.05%	23.05%	16.81%	22.39%	14.91%	7.24%	**09E/08A: 27.1% / 5Y CAGR 18.8%**
Minority Interests	[EUR m]	(51)	(1)	0	0	0	0	0	0	
Income from Discontinued Operations	[EUR m]	0	0	0	0	0	0	0	0	
Net earnings	[EUR m]	(44)	14	35	43	50	61	70	75	
%age growth	%	0.0%	-131.1%	154.0%	23.0%	16.8%	22.4%	14.9%	7.2%	**09E/08A: 26.8% / 5Y CAGR 18.7%**
Net Profit Margin	%	-40.4%	8.2%	9.2%	8.1%	8.0%	8.0%	8.1%	8.1%	

KEY SHARE DATA	[unit]	**2006A**	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**
Number of Shares (Million shares)	[in m]	6275.0	9997.0	16.8	21.2	21.2	21.2	21.2	21.2
EPS	[EUR /sh]	0.94	1.36	2.06	2.01	2.35	2.87	3.30	3.54

Source: Company data, Nomura estimates

Figure 120: Centrotherm summary financials

BALANCE SHEET											
Year-end Dec	[unit]	**2006A**	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**		**Comments**
Intangible assets	[EUR m]	4	6	228	224	222	223	224	227		
Goodwill	[EUR m]										
Tangible assets	[EUR m]	0	4	44	63	82	105	128	148		
Financial assets	[EUR m]	5	0	2	3	3	4	5	6		
Total fixed assets	[EUR m]	9	11	274	290	308	332	357	382		
Inventories	[EUR m]	1	1	23	38	45	54	62	66		
Receivables	[EUR m]	18	56	118	162	191	233	266	284		
Payables	[EUR m]	(11)	(28)	(83)	(108)	(127)	(155)	(178)	(189)		
Working capital	[EUR m]	8	30	58	92	108	132	151	161		
Other assets	[EUR m]	15	43	69	69	69	69	69	69		
Total assets	[EUR m]	32	83	402	450	485	533	577	612		**09E/08A: 12.1% / 5Y CAGR 8.8%**
Share capital	[EUR m]	1	16	21	21	21	21	21	21		
Retained Earnings	[EUR m]	0	1	14	57	106	167	237	312		
Shareholders' funds	[EUR m]	7	162	318	360	409	469	538	612		
Minorities	[EUR m]	0	1	(0)	(1)	(1)	(2)	(3)	(4)		
Provisions	[EUR m]	5	3	14	19	22	27	31	33		
Long term liabilities	[EUR m]	0	2	27	27	27	27	27	27		
Short term liabilities	[EUR m]	0	7	11	11	11	11	11	11		
Cash & cash equivalent	[EUR m]	(3)	(163)	(181)	(174)	(192)	(209)	(237)	(278)		
Net debt	[EUR m]	(3)	(154)	(142)	(141)	(158)	(175)	(204)	(246)		
Other liabilities	[EUR m]	23	69	171	171	171	171	171	171		
Total liabilities	[EUR m]	2	(151)	(128)	(122)	(136)	(148)	(173)	(213)		
Total shareholders' funds & liabilities	[EUR m]	32	83	402	450	485	533	577	612		**09E/08A: 12.1% / 5Y CAGR 8.8%**

CASH FLOW											
Year-end Dec	[unit]	**2006A**	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**		**Comments**
EBIT	[EUR m]	11	21	43	56	66	81	94	100		**09E/08A: 28.9% / 5Y CAGR 18.2%**
Depreciation	[EUR m]	0	0	14	19	22	26	32	37		
Change in Provisions	[EUR m]	0	3	10	5	3	5	4	2		
Change in Working capital	[EUR m]	(8)	(22)	(29)	(33)	(17)	(24)	(19)	(10)		
Tax	[EUR m]	(4)	(7)	(15)	(18)	(21)	(26)	(30)	(32)		
Other movements	[EUR m]	0	0	0	0	0	0	0	0		
Operating cash flow	[EUR m]	(1)	(4)	25	29	54	63	81	97		**09E/08A: 18.0% / 5Y CAGR 31.5%**
Capex	[EUR m]	(0)	(6)	(38)	(34)	(40)	(49)	(56)	(60)		
Disposals	[EUR m]	0	0	0	0	0	0	0	0		
Cash flow from investing activities	[EUR m]	(0)	(6)	(38)	(34)	(40)	(49)	(56)	(60)		**09E/08A: -9.5% / 5Y CAGR 9.7%**
New project finance	[EUR m]	0	0	0	0	0	0	0	0		
Interest	[EUR m]	0	0	3	4	4	4	5	5		
Dividends	[EUR m]	0	0	0	0	0	0	0	0		
Minority dividends	[EUR m]	51	1	(0)	(0)	(0)	(0)	(0)	(0)		
Dividends received	[EUR m]	0	0	0	0	0	0	0	0		
Cash flow from financing activities	[EUR m]	51	1	3	4	3	4	4	5		
Net change in cash	[EUR m]	50	(9)	(10)	(2)	17	17	29	42		**09E/08A: -84.3% / 5Y CAGR -233.4%**

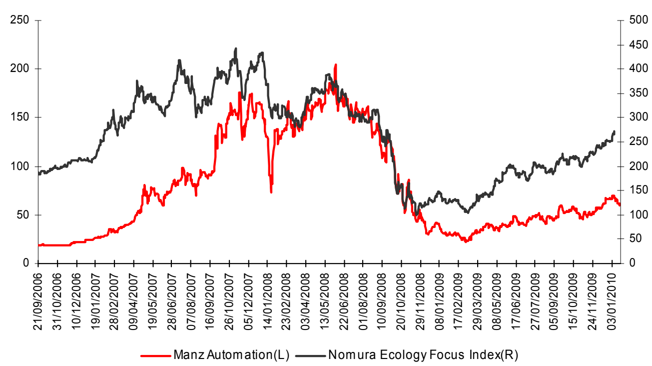
Source: Company data, Nomura estimates

Manz Automation

Reuters: M5ZG.DE Bloomberg M5Z GR

Catharina Saponar, CFA, +44 207 102 1231, csaponar@nomura.com

High multiple low visibility



Source: Bloomberg and Nomura research

Recommendation(new)	REDUCE	Recommendation(old)	REDUCE
Share Price (Eur)	66	Market Cap (Eur m)	296
Sector:	Renewable Energy		

Year-end 31/12 (€m)	Sales	EBITDA	EBIT	Net Profit
2008A	237	34	28	20
2009E	84	(8)	(12)	(12)
2010E	130	10	6	4
2011E	155	18	13	9
Year-end 31/12 (€m)	**P/Sales**	**EV/EBITDA**	**P/E**	**P/CF**
2008A	1.21	7.0	12.6	nm
2009E	3.40	nm	nm	310.1
2010E	2.19	24.5	66.2	nm
2011E	1.84	13.2	30.3	14.8

We think that the share price is discounting too much optimism on a 2010 recovery and future growth potential from lithium ion batteries. Even with a sizeable recovery built into our numbers and some growth contribution from lithium ion batteries, our price target of EUR 30 implies c50% downside. We estimate that Manz is the most expensive stock in the equipment subsector with the lowest visibility. We reiterate our Reduce recommendation.

- Low visibility. While the share price has been anticipating a 2010 recovery on order news flow, we think that a meaningful recovery will be back-end weighted in 2010.

- Exposure to a-si thin film. About 40% of the company's order book relates to thin film, of which the bulk is to (a-si), which we consider as the segment with the lowest visibility as a result of reduced competitiveness from falling silicon prices.

- Financials. We forecast a 60% decline in sales this year. Even with some margin recovery in the later versus early quarters of this year, we forecast a net loss per share of EUR -2.63. We have built in a recovery for 2010, but need to see order flow improve.

- Sentiment is likely to remain weak until there is a clear return to quarterly profitability and improvement in orders. We think that lithium ion battery related news flow could improve sentiment on a short-term basis.

- Valuation. Our DCF fair value is EUR 30 (previously EUR 32). Manz trades on the highest P/E (30x 2011E, a 60% premium to the equipment average) and a 17% EV/sales discount to the equipment average, which we think is reflective of its low visibility.

Develops automation equipment for production of Si solar cells and thin-film modules. Metallisation, automation, quality control and laser process technology.
Business mix: Photovoltaic (49%), LCD (32%) and AICO (19%)
Geographic exposure: Germany (24.2%), rest of Europe (8.64%), USA (5.22%), other (61%), other (1%)
Key strategic issues: Single equipment focus and dependency on thin film. R&D focus to compensate.

Manz Automation

Figure 121: Nomura view on key bull and bear points

Bull points	Bear points
Potential for consolidation. Manz is focused on single equipment back end processes. As the sector tends towards vertical integration and broader offerings, Manz could be a part of M&A. The company has a strategic cooperation agreement with Roth & Rau.	Thin film exposure. We are particularly concerned about the exposure to AMAT who is struggling with order weakness. Beyond that, we believe there are competitive threats to a-si.
Lithium Ion battery exposure. The company has announced it is stepping up development of lithium ion battery development and it has a partnership with Evonic and Daimler among others. This could drive the share price if expectations on growth in the segment materialise and the company succeeds in developing a competitive product	Limited cost flexibility as the company ha exhausted most of its flexibility from temporary workers.
Early indications of recovery. Management has stated that it has seen some early indications of recovery with new enquiries and project starts since Q309, but we think that it is unlikely that this feeds through to firm orders before later in 2010.	Single equipment focus on the back end. The company lacks depth across the available capex span, which is in our view a disadvantage as the sector increasingly trends towards integration. However, this could also lead to the company taking part in consolidation.

Source: Nomura research

Investment points

Too early to call the recovery

Late recovery name

Even though we sense a recovery coming through the sector and there are some indications of interest picking up for Manz, we think that order momentum is still very weak in the company's single equipment business. Meanwhile, we do not expect a recovery in thin film orders either as the rapid decline in crystalline module prices that is still ongoing can in our view only exacerbate the competitive demise of amorphous silicon thin film where Manz's current focus lies.

We have built a sizeable recovery into our numbers for 2010, and even then we are 43% below consensus EPS (source Bloomberg). We perceive a risk of consensus downgrades. We estimate that for the anticipated recovery to materialise Manz would have to generate an order book almost twice the end Q3 level of EUR 78m as we estimate that its 2009 sales will deplete the existing order backlog. The announced orders of EUR 15m in December for H1 10 deliveries are positive, but much more needs to come through, in our opinion. We think that this is a steep challenge given that we believe that single equipment will not recover until late 2010.

Could it be a consolidation story?

Potential consolidation story

Manz's back end focus and single equipment centred business contrasts with the sector moving towards integration, presence across the solar capex chain and turnkey products. Recent M&A in the sector has trended towards integration, which could suggest that Manz may take part in consolidation in the sector. Manz and Roth & Rau have a strategic cooperation agreement that helps increase the companies throughout the stages of production capex spend.

Financials

We have brought our forecasts in line with most recent guidance of revenues of EUR 80-85m. Given a strong Q4, we have assumed some reactivation of orders and place our forecast at the high end of the range. Management's forecast for a return to profitability also points to a stronger Q4. Nevertheless, based on our expected 65%y-o-y sales decline, we forecast a net loss close to EUR 12m or EUR -2.63 per share for 2009.

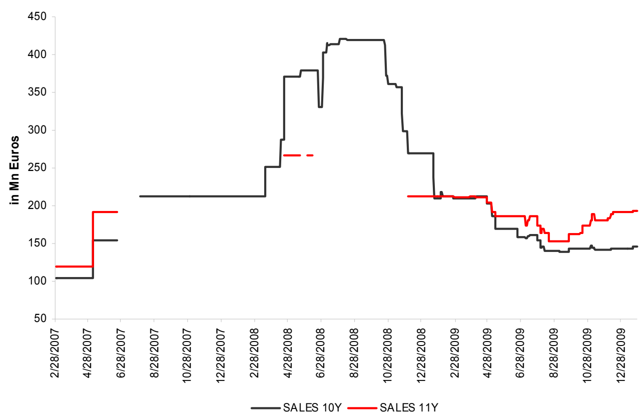
For 2010 we have built in a return to profitability on the basis of recovering volumes. However, our forecast is significantly below consensus (see above).

The balance sheet is solid with c EUR 45m net cash, which should enable the company to go through with its approach of riding through the downturn while preparing for the next leg up through a build-up of R&D this year.

Momentum

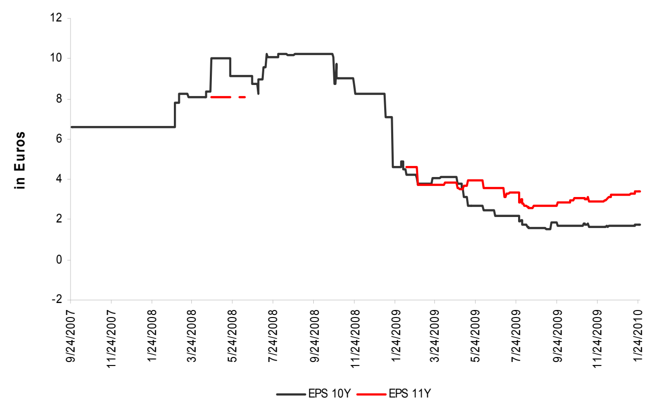
Earnings momentum is still very weak for this year and next, and we think sentiment will remain weak until an improvement in orders leads to higher visibility and there are some clear indications that the company will return to profitability. News flow on the company's involvement in lithium ion batteries brought an uptick in sentiment earlier in 2009 and further developments could drive positive momentum.

Figure 122: Sales momentum expectations



Source: Bloomberg, Nomura research

Figure 123: Earnings momentum expectations



Source: Bloomberg, Nomura research

Valuation

EUR 30 price target

Our three-stage DCF valuation (risk-free rate 4%, equity risk premium 5.5%, beta 1.55 based on the company's unlevered beta owing to its net cash position, WACC 11%) yields EUR 30 (previously EUR 32). Adding a 10-year competitive advantage period with 15% pa growth and 300bp excess return in line with our 2015 return forecast adds another EUR 5 per share.

We estimate that the shares are trading on the least expensive P/B multiple in the sector, at 1.5x 2010E but on a 17% EV/S 2010E premium to the sector. But we see this as a reflection of the lack of visibility. Manz trades on the highest P/E (30x 2011E, a 60% premium to the equipment average) multiple of the equipment space.

Figure 124: Manz Automation summary financials

P&L									
Year-end Dec	[unit]	2007A	2008A	2009E	2010E	2011E	2012E	2013E	Comments
Sales	[EUR m]	71	237	84	130	155	170	189	**09E/08A: -64.5% / 5Y CAGR -4.4%**
%age growth	%	0.0%	232.0%	-64.5%	55.3%	18.6%	10.1%	11.0%	
Gross Profit	[EUR m]	36	112	40	63	74	81	90	**09E/08A: -64.3% / 5Y CAGR -4.1%**
%age growth	%		212.2%	-64.3%	57.0%	18.2%	10.0%	11.0%	
Gross margin	%	43.4%	46.1%	46.1%	46.1%	46.1%	46.1%	46.1%	
EBITDA	[EUR m]	12	34	-8	10	18	23	27	**09E/08A: -122.4% / 5Y CAGR -4.1%**
%age growth	%		191.5%	-122.4%	-234.3%	77.4%	24.9%	21.7%	
EBITDA margin	%	16.3%	14.3%	-9.0%	7.8%	11.7%	13.3%	14.5%	
Depreciation	[EUR m]	(2)	(5)	(4)	(4)	(5)	(6)	(6)	
Operating Profit	[EUR m]	10	28	(12)	6	13	17	21	**09E/08A: -140.9% / 5Y CAGR -5.7%**
%age growth	%		183.14%	-140.87%	-152.71%	117.64%	27.59%	24.49%	
Operating Margin	%	12.2%	11.8%	-13.4%	4.5%	8.3%	9.6%	10.8%	
Net financial Result	[EUR m]	0.49	-0.28	0.79	0.88	0.53	0.94	1.45	
Non-Operating Income	[EUR m]								
PBT	[EUR m]	11	28	(11)	7	14	18	23	**09E/08A: -138.8% / 5Y CAGR -4.5%**
%age growth	%		168.2%	-138.8%	-162.6%	99.7%	29.8%	26.2%	
PBT Margin	%	12.8%	11.7%	-12.7%	5.1%	8.6%	10.1%	11.5%	
Equity Income	[EUR m]	0	0	(0)	(0)	(0)	(0)	(0)	
Income Tax	[EUR m]	(2)	(7)	0	(2)	(4)	(5)	(6)	
Tax rate	%	21.9%	25.8%	25.8%	25.8%	25.8%	25.8%	25.8%	
Net Income	[EUR m]	8	21	(11)	5	10	13	17	**09E/08A: -152.3% / 5Y CAGR -4.5%**
%age growth	%		154.60%	-152.29%	-146.46%	99.72%	29.81%	26.22%	
Minority Interests	[EUR m]	0	(1)	(1)	(1)	(1)	(1)	(1)	
Income from Discontinued Operations	[EUR m]	0	0	0	0	0	0	0	
Net earnings	[EUR m]	8	20	(12)	4	9	12	16	**09E/08A: -158.3% / 5Y CAGR -4.7%**
%age growth	%		145.0%	-158.3%	-136.6%	118.1%	32.3%	27.9%	
Net Profit Margin	%	10.0%	8.4%	-13.6%	3.2%	5.9%	7.0%	8.1%	

KEY SHARE DATA	[unit]	2007A	2008A	2009E	2010E	2011E	2012E	2013E
Number of Shares	[in m]	4.0	4.5	4.5	4.5	4.5	4.5	4.5
EPS	[EUR /sh]	2.40	5.04	-2.63	0.96	2.10	2.78	3.55
EPS (Cont. Operations)	[EUR/sh]	2.40	5.04	-2.63	0.96	2.10	2.78	3.55

Source: Company data, Nomura estimates

Figure 125: Manz Automation summary financials

BALANCE SHEET									
Year-end Dec	[unit]	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
Intangible assets	[EUR m]	6	21	0	0	0	0	0	
Goodwill	[EUR m]	0	22	0	0	0	0	0	
Tangible assets	[EUR m]	3	16	16	19	22	25	28	
Financial assets	[EUR m]	1	3	3	3	3	2	2	
Total fixed assets	[EUR m]	10	62	19	22	25	28	30	
Inventories	[EUR m]	15	33	50	48	40	39	39	
Receivables	[EUR m]	23	101	58	81	88	88	98	
Payables	[EUR m]	(5)	(24)	(10)	(16)	(19)	(21)	(24)	
Working capital	[EUR m]	32	110	98	113	109	106	114	
Other assets	[EUR m]	2	3	3	3	3	3	3	
Total assets	[EUR m]	44	177	164	181	181	181	191	**09E/08A: -7.2% / 5Y CAGR 1.6%**
Share capital	[EUR m]	4	4	4	4	4	4	4	
Retained Earnings	[EUR m]	33	21	25	35	47	63	81	
Shareholders' funds	[EUR m]	53	182	170	174	184	196	212	
Minorities	[EUR m]	0	10	10	11	12	13	14	
Provisions	[EUR m]	4	8	4	7	8	9	10	
Long term liabilities	[EUR m]	2	5	5	5	5	5	5	
Short term liabilities	[EUR m]	0	13	13	13	13	13	13	
Cash & cash equivalent	[EUR m]	(33)	(66)	(63)	(53)	(65)	(80)	(87)	
Net debt	[EUR m]	(32)	(48)	(46)	(36)	(47)	(62)	(69)	
Other liabilities	[EUR m]	15	14	14	14	14	14	14	
Total liabilities	[EUR m]	(9)	(15)	(16)	(4)	(14)	(28)	(35)	
Total shareholders' funds & liabilities	[EUR m]	43	177	164	181	181	181	191	**09E/08A: -7.2% / 5Y CAGR 1.6%**

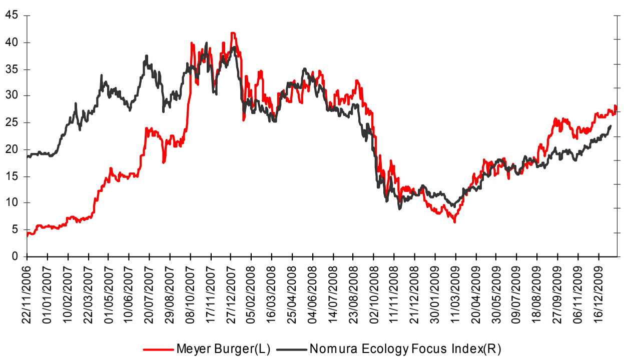
CASH FLOW									
Year-end Dec	[unit]	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
EBIT	[EUR m]	10	28	(12)	6	13	17	21	**09E/08A: -140.9% / 5Y CAGR -5.7%**
Depreciation	[EUR m]	8	15	4	4	5	6	6	
Change in Provisions	[EUR m]	4	5	(4)	2	1	1	1	
Change in Working capital	[EUR m]	(32)	(78)	13	(15)	4	3	(8)	
Tax	[EUR m]	(2)	(7)	0	(2)	(4)	(5)	(6)	
Other movements	[EUR m]	0	0	0	0	0	0	0	
Operating cash flow	[EUR m]	(13)	(37)	1	(4)	19	22	15	**09E/08A: -102.5% / 5Y CAGR -183.3%**
Capex	[EUR m]	(7)	(59)	(4)	(7)	(8)	(8)	(9)	
Disposals	[EUR m]	0	0	0	0	0	0	0	
Cash flow from investing activities	[EUR m]	(7)	(59)	(4)	(7)	(8)	(8)	(9)	**09E/08A: -93.0% / 5Y CAGR -31.7%**
New project finance	[EUR m]	0	0	0	0	0	0	0	
Interest	[EUR m]	0	(0)	1	1	1	1	1	
Dividends	[EUR m]	0	0	0	0	0	0	0	
Minority dividends	[EUR m]	0	0	0	0	0	0	0	
Dividends received	[EUR m]	0	0	0	0	0	0	0	
Cash flow from financing activities	[EUR m]	0	(0)	1	1	1	1	1	
	[EUR m]								
Net change in cash	[EUR m]	(20)	(97)	(2)	(10)	12	14	8	**09E/08A: -100.0% / 5Y CAGR -4.5%**

Source: Company data, Nomura estimates

Meyer Burger

Reuters: MBTN.S Bloomberg MBTN SW Catharina Saponar, CFA, +44 207 102 1231, csaponar@nomura.com

Market leader going for more



Source: Bloomberg and Nomura research

Recommendation(new)	NEUTRAL	**Recommendation(old)**	NEUTRAL
Share Price (CHF)	27.4	**Market Cap (Eur m)**	1222
Sector:	Renewable Energy		

Year-end 31/12 (CHFm)	Sales	EBITDA	EBIT	Net Profit
2008A	461	84	58	59
2009E	411	49	25	23
2010E	460	62	37	32
2011E	537	81	54	45
Year-end 31/12 (CHFm)	**P/Sales**	**EV/EBITDA**	**P/E**	**P/CF**
2008A	2.61	13.9	13.1	1.9
2009E	2.93	23.0	38.0	16.6
2010E	2.62	18.2	27.2	38.2
2011E	2.24	13.4	19.3	12.4

The company's attractions as market leader in wafer sawing equipment are in our view reflected in the current share price. For a further leg up, we think increased firm order momentum is required. We see the company's drive towards vertical integration as reflective of a sector trend and reiterate our Neutral recommendation.

- Towards becoming a vertically integrated supplier. The merger with 3S should be transformational in that it brings vertical integration across the solar capex chain, a trend that we think will continue. Meyer Burger is now becoming one of the largest suppliers to the solar cell and module industry with what we perceive to be an improved customer base; yet more could still come, in our opinion.

- Some order revival. We think that H2 should see some revival of previously postponed orders. This should lead in an improvement of order momentum from the SFR 99m in H1.

- Financials. We have fine-tuned our forecasts and increase our sales projections by 12% for 2009 and 16% for 2010. But as margins decline, we still expect earnings to decline 60% for 2009 as we see limited scope for cost reductions. Over the 2009-12 period, we forecast 36% earnings CAGR as revenues and margins recover. We expect a further increase in working capital.

- Sentiment. We think a material improvement in order intake and increase in confidence in order realisation is required for a further improvement in weak sentiment.

- Valuation. Our DCF fair value is SFR 26.

Manufacturer of cutting equipment for wafer manufacturing with 40% global market share.
Business mix: 100% wafer manufacturing equipment
Geographic exposure: Europe (20%), Asia/Oceania (78%), Americas (2%)
Key strategic issues: Execution on technology roadmap. Long-term threat from kerf-free wafering

Meyer Burger

Figure 126: Nomura view on key bull and bear points

Bull points	Bear points
Market leader in essential process step towards turnkey business with increasing penetration of the production line should continue to drive volumes in 2010. This should bring volumes and long-term margin improvement.	Order visibility. Management has stated that visibility is still limited in 2010, which means that the early parts of the year could still be characterised by an absence of margin and working capital improvement.
Indications of interest by Asian manufacturers. Management has confirmed a high level of interest of Asian customers. We think this is underpinned by ongoing capacity expansion, but the key challenge is conversion into firm orders.	Limited cost flexibility as the company has exhausted most of its flexibility from temporary workers.
Potential for more activity on vertical integration. There could be more momentum as the sector consolidates and Meyer Burger might still aim to increase vertical integration further.	Risk from kerf-free wafering is a long-term risk that may be mitigated through development of own technology.

Source: Nomura research

Investment points

Towards vertical integration

3S merger is a step of transformation

Meyer Burger has taken radical steps on the back of the merger with 3S. While synergies are limited, we see the deal bringing vertical integration and scale. Meyer Burger is active in the upstream end at the wafering level through its sawing equipment focus, while 3S's core focus is in module manufacturing with strength in soldering and lamination. 3S also offers production lines and crystalline and thin film panels for rooftops and building integrated (BIPV) products. This should allow the company to access a broader range of customers and become the second-largest equipment manufacturer after Centrotherm. We think Meyer Burger has strengthened its position in a consolidating industry. The company still lacks some steps within the solar value chain, and we could see more deals in order to complete the product offering.

Order revival in the context of limited visibility

Improving order momentum but still limited visibility for 2010

We think that the pace of order intake should pick up from the low levels in H1 (just SFR 99m) as we continue to see Asian manufacturers building capacity and end market volumes recover. But management has indicated at the H1 stage that visibility remains limited into 2010. We think that conversion of a high level of indications into firm orders is still a challenge.

Financials

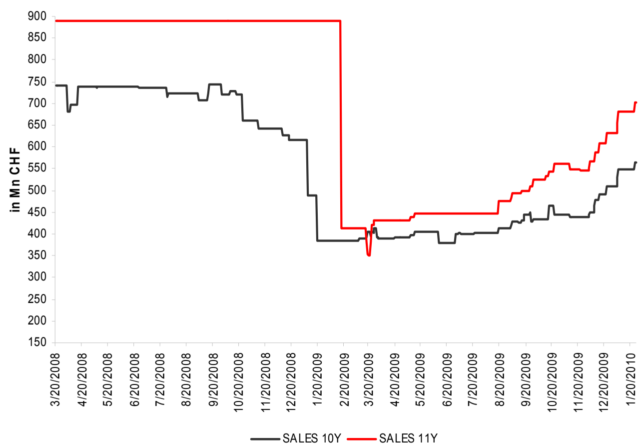
We have increased our sales forecasts on our expectation of an uptick in order momentum by 12% and 16% for 2009 and 2010. We assume a 20% y-o-y volume reduction and 1.5% y-o-y ASP decline in 2009. This implies just above a 90% order backlog conversion as we prefer to assume further postponements. Our forecast 12% y-o-y sales growth in 2010 requires a recovery of incoming orders from Q4 09. We have adjusted our margin forecast for the switch to IFRS and expansion cost, but still assume a 600bp y-o-y EBITDA margin decline for 2009. There could be some margin upside from the announced SFR 20m synergies from the 3S merger. This feeds through to a 60% decline in earnings this year. In 2009-12 we forecast 36% earnings CAGR as revenues and margins recover.

Despite better than expected working capital management, we still expect rising working capital. We forecast inventories, net of prepayments, to increase by almost 20% as we assume that a reduction in prepayments outweighs the effect of a reduction in inventories from lower sales. Although we calculate that the above will result in working capital accounting for 30% of total assets, we forecast the company to maintain its net cash position.

Momentum

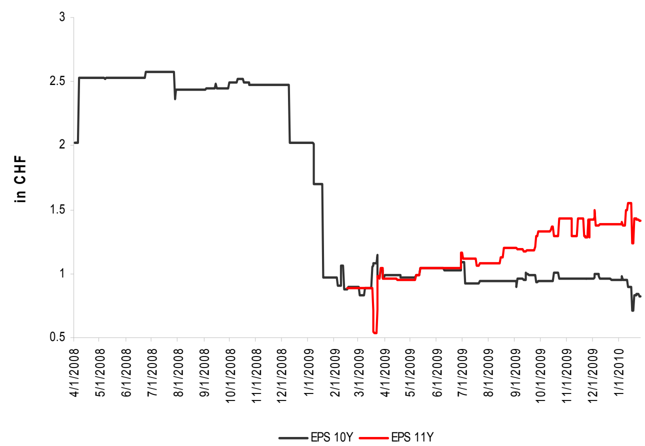
Sentiment has improved through H2 09 and with the 3S transaction. We think further improvement will require more momentum in firm orders.

Figure 127: Sales momentum expectations



Source: Bloomberg, Nomura research

Figure 128: Earnings momentum expectations



Source: Bloomberg, Nomura research

Valuation

SFR 26 price target

Our SFR 26 price target (adjusted for the new number of shares and updated from SFR 170 following our forecast update and housekeeping changes to our DCF assumptions in line with the rest of the sector) is based on our three-stage DCF methodology with a risk-free rate of 4%, equity risk premium of 5.5% and a WACC of 9.2%. This includes a five-year competitive advantage period, with 10% excess return, which is reflective of our view on risk from kerf-free wafering.

Figure 129: Meyer Burger summary financials

P&L Year-end Dec	[unit]	2006A	2007A	2008A	2009E	2010E	2011E	2012E	2013E	Comments
Sales	[CHF m]	84	209	461	411	460	537	630	771	**09E/08A: -10.9% / 5Y CAGR 10.8%**
%age growth	%	0.0%	150.4%	120.5%	-10.9%	12.0%	16.7%	17.3%	22.4%	
Gross Profit	[CHF m]	40	86	184	152	175	209	246	301	**09E/08A: -17.3% / 5Y CAGR 10.4%**
%age growth	%	0.0%	116.1%	113.1%	-17.3%	15.0%	19.8%	17.3%	22.4%	
Gross margin	%	47.8%	41.2%	39.8%	37.0%	38.0%	39.0%	39.0%	39.0%	
EBITDA	[CHF m]	9	28	84	49	62	81	101	123	**09E/08A: -41.6% / 5Y CAGR 7.9%**
%age growth	%	0.0%	206.4%	203.6%	-41.6%	26.0%	29.7%	25.1%	22.4%	
EBITDA margin	%	10.9%	13.3%	18.3%	12.0%	13.5%	15.0%	16.0%	16.0%	
Depreciation	[CHF m]	(1)	(3)	(27)	(24)	(25)	(27)	(32)	(37)	
Operating Profit	[CHF m]	8	25	58	25	37	54	69	86	**09E/08A: -56.1% / 5Y CAGR 8.5%**
%age growth	%	0.00%	211.67%	130.14%	-56.11%	46.40%	44.81%	29.19%	24.80%	
Operating Margin	%	9.6%	12.0%	12.5%	6.1%	8.0%	10.0%	11.0%	11.2%	
Net financial Result	[CHF m]	(0)	6	14	2	3	3	4	7	
Non-Operating Income	[CHF m]									
PBT	[CHF m]	8	32	73	28	42	58	76	97	**09E/08A: -61.8% / 5Y CAGR 5.8%**
%age growth	%	0.0%	302.8%	130.0%	-61.8%	49.2%	40.6%	29.9%	27.4%	
PBT Margin	%	9.4%	15.2%	15.8%	6.8%	9.0%	10.9%	12.0%	12.5%	
Equity Income	[CHF m]	0	1	1	1	2	2	3	4	
Income Tax	[CHF m]	(2)	(5)	(15)	(6)	(10)	(15)	(19)	(24)	
Tax rate	[CHF m]	23.5%	16.9%	20.1%	20.0%	25.0%	25.0%	25.0%	25.0%	
Net Income	[CHF m]	6	26	58	22	31	44	57	72	**09E/08A: -61.8% / 5Y CAGR 4.5%**
%age growth	%	0.00%	337.30%	121.06%	-61.76%	39.91%	40.55%	29.95%	27.39%	
Minority Interests	[CHF m]									
Income from Discontinued Operations	[CHF m]									
Net earnings	[CHF m]	6	26	59	23	32	45	58	74	**09E/08A: -61.8% / 5Y CAGR 4.5%**
%age growth	%	0.0%	369.7%	124.9%	-61.8%	39.9%	40.6%	29.9%	27.4%	
Net Profit Margin	%	6.7%	12.6%	12.8%	5.5%	6.9%	8.3%	9.2%	9.6%	

KEY SHARE DATA	[unit]	2006A	2007A	2008A	2009E	2010E	2011E	2012E	2013E
Number of Shares	[in m]	0.0	3.0	3.0	31.9	31.9	31.9	31.9	31.9
EPS	[CHF /sh]	0.94	1.36	2.06	0.71	0.99	1.40	1.82	2.31

Source: Company data, Nomura estimates

Figure 130: Meyer Burger summary financials

BALANCE SHEET										
Year-end Dec	[unit]	**2006A**	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
Intangible assets	[CHF m]	1	1	82	68	53	39	25	9	
Goodwill	[CHF m]									
Tangible assets	[CHF m]	6	11	22	26	36	47	58	72	
Financial assets	[CHF m]	1	2	1	2	4	6	8	12	
Total fixed assets	[CHF m]	7	14	105	96	93	92	91	92	
Inventories	[CHF m]	11	26	16	19	56	63	70	86	
Receivables	[CHF m]	11	13	54	51	61	65	76	93	
Payables	[CHF m]	(15)	(46)	(19)	(18)	(28)	(32)	(38)	(46)	
Working capital	[CHF m]	7	(7)	51	52	89	95	108	132	
Other assets	[CHF m]	8	18	36	36	36	36	36	36	
Total assets	[CHF m]	23	25	192	184	218	223	236	261	**09E/08A: -4.0% / 5Y CAGR 6.3%**
Share capital	[CHF m]	1	1	2	2	2	2	2	2	
Retained Earnings	[CHF m]	18	37	76	98	130	174	232	306	
Shareholders' funds	[CHF m]	51	70	147	169	200	243	299	370	
Minorities	[CHF m]	0	0	18	17	16	15	13	10	
Provisions	[CHF m]	4	9	39	49	57	66	76	88	
Long term liabilities	[CHF m]	1	1	7	5	5	5	5	5	
Short term liabilities	[CHF m]	4	0	5	7	7	7	7	7	
Cash & cash equivalent	[CHF m]	(43)	(67)	(44)	(83)	(88)	(135)	(189)	(247)	
Net debt	[CHF m]	(38)	(67)	(32)	(72)	(76)	(124)	(177)	(235)	
Other liabilities	[CHF m]	7	13	38	38	38	38	38	38	
Total liabilities	[CHF m]	(34)	(57)	7	(23)	(19)	(58)	(101)	(147)	
Total shareholders' funds & liabilities	[CHF m]	23	25	192	184	218	223	236	261	**09E/08A: -4.0% / 5Y CAGR 6.3%**

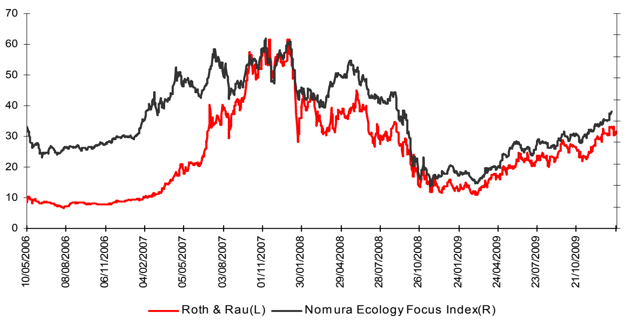
CASH FLOW										
Year-end Dec	[unit]	**2006A**	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
EBIT	[CHF m]	8.0	25.0	57.5	25.2	37.0	53.5	69.1	86.3	**09E/08A: -56.1% / 5Y CAGR 8.5%**
Depreciation	[CHF m]	1.1	2.8	26.9	24.1	25.2	27.1	31.7	37.1	
Change in Provisions	[CHF m]	4.3	5.1	29.7	10.0	7.5	9.5	9.9	12.4	
Change in Working capital	[CHF m]	-7.5	14.3	-57.5	-1.9	-36.7	-5.8	-13.3	-24.2	
Tax	[CHF m]	-1.8	-5.4	-14.7	-5.6	-10.4	-14.6	-19.0	-24.2	
Other movements	[CHF m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Operating cash flow	[CHF m]	4.0	41.8	42.0	51.9	22.5	69.7	78.5	87.3	**09E/08A: 23.4% / 5Y CAGR 15.8%**
Capex	[CHF m]	-3.4	-8.9	-18.9	-13.6	-20.7	-24.2	-28.4	-34.7	
Disposals	[CHF m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Cash flow from investing activities	[CHF m]	-3.4	-8.9	-18.9	-13.6	-20.7	-24.2	-28.4	-34.7	**09E/08A: -28.2% / 5Y CAGR 12.9%**
New project finance	[CHF m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Interest	[CHF m]	-0.1	5.9	14.4	1.7	2.9	3.1	4.0	6.6	
Dividends	[CHF m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Minority dividends	[CHF m]	0.4	0.0	-1.0	-0.4	-0.5	-0.8	-1.0	-1.3	
Dividends received	[CHF m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Cash flow from financing activities	[CHF m]	0.3	5.9	13.4	1.3	2.4	2.4	3.0	5.3	
Net change in cash	[CHF m]	0.9	38.8	36.5	39.6	4.2	47.9	53.2	58.0	**09E/08A: 8.6% / 5Y CAGR 9.7%**

Source: Company data, Nomura estimates

Roth & Rau

Reuters: R8RG.DE Bloomberg R8R GR Catharina Saponar, CFA, +44 207 102 1231, csaponar@nomura.com

Late recovery



Source: Bloomberg and Nomura research

Recommendation(new)	NEUTRAL	Recommendation(old)	NEUTRAL
Share Price (Eur)	30.4	Market Cap (Eur m)	420
Sector:	Renewable Energy		

Year-end 31/12 (€m)	Sales	EBITDA	EBIT	Net Profit
2007A	218	64	14	12
2008A	250	64	29	23
2009E	192	28	17	14
2010E	231	39	26	22
2011E	265	45	33	29
Year-end 31/12 (€m)	**P/Sales**	**EV/EBITDA**	**P/E**	**P/CF**
2007A	1.89	5.5	35.2	70.8
2008A	1.64	5.0	17.7	nm
2009E	2.15	11.7	29.5	19.1
2010E	1.78	7.9	18.5	13.7
2011E	1.55	6.0	14.2	10.8

Roth and Roth could be a late recovery name with its focus on single equipment by large manufacturers given that we expect single equipment to stay subdued this year. We reiterate our Neutral recommendation.

- Weak order book still affecting 2010. We estimate that the current order book only underpins about 50% of both our own and consensus sales expectations. Order momentum needs to pick up significantly over the year even for base revenues to be reached before new growth can take effect.
- A shift in business mix, with a growing weight of turnkey orders and increasing coverage of the production line should lead to margin improvement.
- A nascent thin-film business, with a focus on Cadmium Telluride (CdTe) technologies positions the company in a segment with long-term growth potential, in our opinion.
- Financials. From our 32% expected pv volume decline, we forecast a c40% earnings decline this year. We have adjusted our profitability forecast and reduce our 2009 EPS forecast by 26% while our 2010 forecast stays broadly unchanged. We expect a return to growth from next year with earnings at an overall 6% CAGR in 2009-14
- Sentiment is still weak and, in our view, likely to stay so until orders pick up.
- Valuation. Our DCF fair value is EUR 29. We estimate that the shares are trading on a 12% EV/sales premium to Centrotherm as the closest peer, despite lower visibility. Both companies trade in line with each other on a 13.9x (R&R) and 13.7 (Centrotherm) 2011E P/E.

Manufacturer of solar equipment and turnkey lines for solar cells and thin- film production. Components and plasma process equipment for coating of solar cells.
Business mix: Photovoltaic (71% si/thin film), Plasma (8%), other (21%)
Geographic exposure: Germany (13.5%), Europe (33%), USA (4%), Asia (49.4%), other (0.2%)
Key strategic issues: Shifting business mix towards turnkey and need to increase penetration of the production line. Thin Film.

Roth & Rau

Figure 131: Nomura view on key bull and bear points

Bull points	Bear points
Shifting business mix towards turnkey business with increasing penetration of the production line should continue to drive volumes in 2010. This should bring volumes and long-term margin improvement.	Weak order book. Order intake and the quality of the existing order book are still weak. Even though we expect some improvement, this will still be a risk for 2010.
Thin film. The company's new CdTe turnkey offering is within the most promising near term segment of thin film and could lead to new order flow this year.	Narrow focus. While Roth and Rau is focused on its core strength; the sector seems to be shifting towards broader product offerings, which bears a risk of market share loss for Roth & Rau.

Source: Nomura research

Investment points

Late recovery name

Late recovery name

We think that Roth & Rau will recover at the tail end of the sector owing to its focus on single equipment that is driven by established market names with limited capex budgets. We think that this will still become evident in 2010.

The weak order book of 2009 on the back of weak single equipment spend by manufacturers has, as expected, translated into weak revenues and profits for most of the year. While there seems to be some improvement in order momentum, we still think that order intake is slow. The company has announced one turnkey order of EUR 68m and a few orders from Chinese customers in December of cEUR 14m compared with a total of EUR 83m over the first nine months. But so far this is not enough to underpin both our own and consensus revenue expectations (we estimate the year-end backlog at about 50% of our current 2010 revenue forecast), thus more 2010 revenue effective order intake is still required. We think that there are interest and indications, but order conversion still seems slow. Meanwhile, we think that the order book quality still implies risk of postponements.

Thin film

Roth & Rau is the only manufacturer to offer full CdTe turnkey lines. Management has stated that it is in contract negotiations. But the company's expectations for its first orders seem to have been pushed from late 2009 to early 2010. In our view, thin film growth is pushed out vs expectations as the rapid decline in poly prices has improved poly-si module competitiveness.

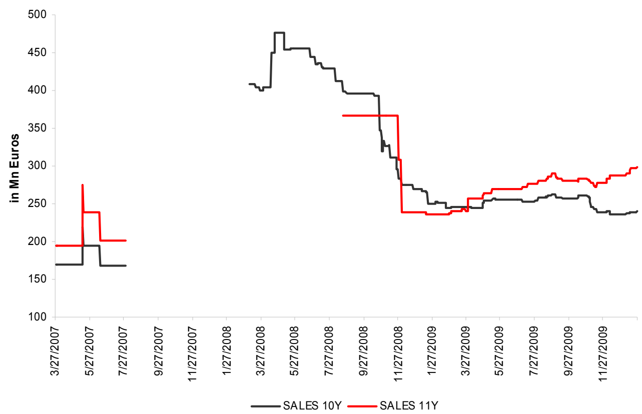
Financials

Our EUR 192m revenue forecast for 2009 is based on a 32% volume decline as the weak order situation has been feeding through to revenues later in the year. We expect a volume recovery in 2010 but think it will more likely have an impact in the later parts of the year. We have reduced our EBIT margin forecasts for 2009 and 2010, from 11.0% for 2009 to 8.3% and from 11.3% in 2010 to 10.2%. Our 2009 EPS forecast is reduced from EUR 1.35 to EUR 1.0, whereas our 2010 forecast stays broadly stable at EUR 1.60.

Momentum

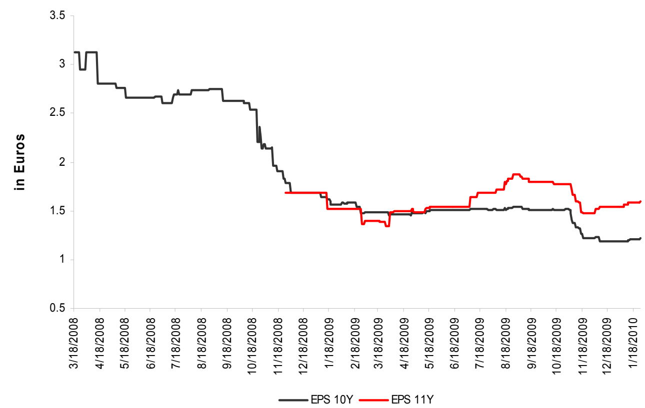
Earnings momentum is still weak with little prospect for upwards revisions, in our view, until the order book situation improves. We think this is unlikely to occur before later this year.

Figure 132: Sales momentum expectations



Source: Bloomberg, Nomura research

Figure 133: Earnings momentum expectations



Source: Bloomberg, Nomura research

Valuation

EUR 29 price target

Our three-stage DCF valuation (risk-free rate 4%, equity risk premium 5.5%, beta 1.3 based on the company's unlevered beta owing to its net cash position, WACC 8.9%) yields EUR 29 as our price target (from previously EUR 22 as we have updated our WACC inputs in line with our current assumptions for the sector). This includes a 10-year competitive advantage period from 2015 at 15% growth and 10% excess return based on the company's leading-market position. We calculate that the shares are trading at the low end of the peer group with an 8% P/E 2011E discount to the equipment sector average. We estimates that it trades at a 12% P/sales premium to Centrotherm as the closest peer, despite lower visibility, which is supported by the fact that both companies trade in line with each other on a 13.9x (R&R) and 13.7 (Centrotherm) 2011E P/E, as well as the fact that Centrotherm has a higher service components of its earnings.

Figure 134: Roth & Rau summary financials

P&L									
Year-end Dec	[unit]	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
Sales	[EUR m]	218	250	192	231	265	299	333	**09E/08A: -23.4% / 5Y CAGR 5.9%**
%age growth	%		14.9%	-23.4%	20.5%	15.0%	12.8%	11.3%	
Gross Profit	[EUR m]	99	45	34	41	48	54	60	**09E/08A: -23.4% / 5Y CAGR 5.9%**
%age growth	%		-54.8%	-23.4%	20.5%	15.0%	12.8%	11.3%	
Gross margin	%	45.6%	17.9%	17.9%	17.9%	17.9%	17.9%	17.9%	
EBITDA	[EUR m]	64	64	28	39	45	50	54	**09E/08A: -23.4% / 5Y CAGR 5.9%**
%age growth	%	0.0%	0.6%	-56.6%	38.4%	16.6%	11.1%	8.3%	
EBITDA margin	%	29.4%	25.7%	14.6%	16.7%	17.0%	16.7%	16.3%	
Depreciation	[EUR m]	8	15	11	13	12	11	11	
Operating Profit	[EUR m]	14	29	17	26	33	39	44	**09E/08A: -23.4% / 5Y CAGR 5.9%**
%age growth	%		106.31%	-39.15%	47.93%	29.94%	17.37%	11.13%	
Operating Margin	%	6.4%	11.4%	8.3%	10.2%	11.6%	12.0%	12.0%	
Net financial Result	[EUR m]	1	4	2	4	6	8	11	
Non-Operating Income	[EUR m]								
PBT	[EUR m]	15	32	19	30	39	46	54	**09E/08A: -23.4% / 5Y CAGR 5.9%**
%age growth	%		110.9%	-41.6%	58.9%	32.1%	18.5%	17.1%	
PBT Margin	%	6.9%	12.7%	9.7%	12.8%	14.7%	15.5%	16.3%	
Equity Income	[EUR m]	0	(1)	(1)	(1)	(1)	(0)	(0)	
Income Tax	[EUR m]	(3)	(9)	(5)	(7)	(10)	(12)	(16)	
Tax rate	[EUR m]	22.6%	27.1%	25.0%	25.0%	26.0%	27.0%	30.0%	
Net Income	[EUR m]	12	23	14	22	29	34	38	**09E/08A: -23.4% / 5Y CAGR 5.9%**
%age growth	%		98.45%	-39.84%	58.87%	30.37%	16.91%	12.28%	
Minority Interests	[EUR m]	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
Income from Discontinued Operations	[EUR m]	0	0	0	0	0	0	0	
Net earnings	[EUR m]	12	23	14	22	29	34	38	**09E/08A: -23.4% / 5Y CAGR 5.9%**
%age growth	%		97.3%	-40.1%	59.5%	30.6%	17.0%	12.3%	
Net Profit Margin	%	5.4%	9.2%	7.2%	9.5%	10.8%	11.2%	11.3%	

Table 2:

KEY SHARE DATA	[unit]	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**
Number of Shares	[in m]	0.0	13.8	13.8	13.8	13.8	13.8	13.8
EPS	[EUR /sh]	1.22	1.82	1.00	1.60	2.08	2.44	2.74
EPS (Cont. Operations)	[EUR/sh]	1.22	1.82	1.00	1.60	2.08	2.44	2.74

Source: Company data, Nomura estimates

Figure 135: Roth & Rau summary financials

BALANCE SHEET									
Year-end Dec	[unit]	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
Intangible assets	[EUR m]	5	27	37	42	42	42	42	
Goodwill	[EUR m]								
Tangible assets	[EUR m]	9	21	26	23	22	21	22	
Financial assets	[EUR m]	0	11	11	10	10	9	9	
Total fixed assets	[EUR m]	14	60	73	75	73	72	73	
Inventories	[EUR m]	12	29	23	28	32	36	40	
Receivables	[EUR m]	48	106	105	111	111	114	117	
Payables	[EUR m]	(45)	(45)	(34)	(42)	(48)	(54)	(60)	
Working capital	[EUR m]	16	90	94	97	96	96	97	
Other assets	[EUR m]	0	2	2	2	2	2	2	
Total assets	[EUR m]	31	153	170	175	171	171	172	**09E/08A: 11.4% / 5Y CAGR 2.4%**
Share capital	[EUR m]	3	14	14	14	14	14	14	
Retained Earnings	[EUR m]	2	6	20	42	71	104	142	
Shareholders' funds	[EUR m]	83	206	220	243	271	305	343	
Minorities	[EUR m]								
Provisions	[EUR m]	3	8	10	12	13	15	17	
Long term liabilities	[EUR m]	1	4	4	4	4	4	4	
Short term liabilities	[EUR m]	0	1	1	1	1	1	1	
Cash & cash equivalent	[EUR m]	(63)	(92)	(177)	(282)	(421)	(596)	(810)	
Net debt	[EUR m]	(61)	(87)	(85)	(105)	(139)	(175)	(213)	
Other liabilities	[EUR m]	0	11	11	11	11	11	11	
Total liabilities	[EUR m]	(52)	(54)	(51)	(68)	(100)	(135)	(171)	
Total shareholders' funds & liabilities	[EUR m]	31	152	170	174	171	170	172	**09E/08A: 11.4% / 5Y CAGR 2.4%**

CASH FLOW									
Year-end Dec	[unit]	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
EBIT	[EUR m]	14	29	17	26	33	39	44	**09E/08A: -39.1% / 5Y CAGR 8.8%**
Depreciation	[EUR m]	8	15	11	13	12	11	11	
Change in Provisions	[EUR m]	3	5	2	2	2	2	2	
Change in Working capital	[EUR m]	-16	-75	-4	-3	1	0	-1	
Tax	[EUR m]	-3	-9	-5	-7	-10	-12	-16	
Other movements	[EUR m]	0	0	0	0	0	0	0	
Operating cash flow	[EUR m]	6	-35	21	30	38	39	39	**09E/08A: -161.4% / 5Y CAGR -202.1%**
Capex	[EUR m]	-9	-13	-25	-15	-10	-10	-12	
Disposals	[EUR m]	0	0	0	0	0	0	0	
Cash flow from investing activities	[EUR m]	-9	-13	-25	-15	-10	-10	-12	**09E/08A: 90.1% / 5Y CAGR -2.3%**
New project finance	[EUR m]	0	0	0	0	0	0	0	
Interest	[EUR m]	1	4	2	4	6	8	11	
Dividends	[EUR m]	0	0	0	0	0	0	0	
Minority dividends	[EUR m]	0	0	0	0	0	0	0	
Dividends received	[EUR m]	0	0	0	0	0	0	0	
Cash flow from financing activities	[EUR m]	1	4	2	4	6	8	11	
	[EUR m]								
Net change in cash	[EUR m]	-2	-44	-2	20	34	36	38	**09E/08A: -96.4% / 5Y CAGR -197.2%**

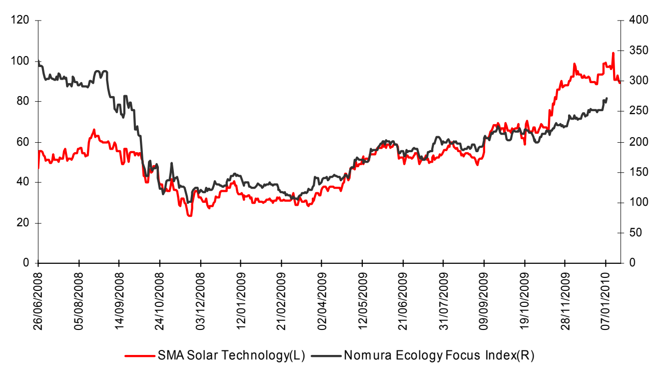
Source: Company data, Nomura estimates

SMA Solar Technology

Reuters: S92G.DE Bloomberg S92 GR

Catharina Saponar, CFA, +44 207 102 1231, csaponar@nomura.com

More growth



Source: Bloomberg and Nomura research

Recommendation(new)	BUY	**Recommendation(old)**	BUY
Share Price (Eur)	86.91	**Market Cap (Eur m)**	3016
Sector:	Renewable Energy		

Year-end 31/12 (€m)	Sales	EBITDA	EBIT	Net Profit
2007A	327	75	59	37
2008A	682	176	167	120
2009E	889	232	218	156
2010E	1,107	288	262	187
2011E	1,468	346	307	218
Year-end 31/12 (€m)	**P/Sales**	**EV/EBITDA**	**P/E**	**P/CF**
2007A	8.75	37.9	77.9	91.8
2008A	4.20	15.3	24.0	22.8
2009E	3.22	11.6	18.4	21.4
2010E	2.58	9.3	15.3	16.3
2011E	1.95	7.5	13.1	13.8

SMA's direct leverage to end market volumes should drive revenues and profits well into 2010 and beyond. We reiterate our Buy recommendation

- SMA should continue to benefit from end market strength in Germany and also capture new volume growth from its new fab in the US. The company's flexible capacity model has shown its merits with capacity growth coming through much faster than expected.

- There is little low cost competition in the market, and the ASP dynamics are, in our view, more positive than those of the solar segment at the moment.

- Financials. We forecast 20% CAGR of revenues in 2009-12 and 15% CAGR of earnings in 2009-12 as margins decrease due to competition.

- Sentiment is strong on the back of the very strong volumes in the sector. German regulation poses some risk, which has been evident in the recent weakness following negative news flow on German feed-in tariffs.

- Valuation. Our DCF fair value is EUR 110. We estimate the shares are trading on a c10% discount to the equipment sector (when excluding Manz) on a 13x 2011E P/E. We see the P/sales and P/B premium to the sector as a reflection of the low-fab business model, high cash conversion of sales and earnings, but also the unique direct exposure to solar growth as a market leader.

Manufacturer of inverters and monitoring systems for solar applications.
Business mix: *PV-Medium Power (71%), PV-High Power (10%), Railway (1.3%), Electronics (18%)*
Geographic exposure: *Germany (59.2%), Europe (30.2%), other (10.6%)*
Key strategic issues: *Fast adaptation to demand changes and technology advance in order to underpin market leadership*

SMA Solar Technology

Figure 136: Nomura view on key bull and bear points

Bull points	Bear points
End market strength should continue to drive volumes in 2010.	Regulatory uncertainty in Germany. The likely reduction of feed-in tariffs in Germany beyond the scope of the EEG creates a climate of uncertainty. But we don't think that this will lead to a material decline in the market as even counting on substantial reduction returns will be attractive, in our view. Meanwhile, other markets such as Italy, France and the US develop.
Flexible low fab model. This is now showing the benefits, with the company being able to ramp up new capacity as a response to market demand much faster than expected.	Risk of new entrants. At this point, SMA has IP for a number of elements, among others its wireless technology. Over time, new entrants could arrive, but we also think that SMA's high quality and strong branding should protect its position. There could be pressure on margins but we have already built in margin decline.

Source: Nomura research

Investment points

Driven by end market strength

Geared to a volume recovery

We think that SMA should continue to perform strongly as it is directly leveraged to end market volumes. Volumes should pick up further in 2010, on our expectation of global pv installations growing by 47%, with Germany staying strong ahead of either an H2 10/ H1 11 or large H1 11 feed-in tariff reduction. Beyond that, the company is already picking up volume in the US and should further grow its US volumes as the new fab ramps up.

SMA is expanding capacity at a rate that may allow it to reach its long-term target much faster than anticipated. It could reach 10000MW of capacity around 2012, compared with just above 2000MW at the end of 2008.

Financials

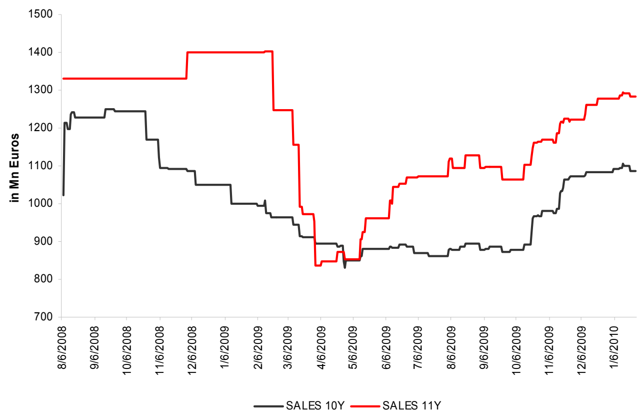
We forecast EUR 888m revenues for 2009 or 30% y-o-y growth on the basis of demand strength in Germany. We see this as leading to a 24.5% EBIT margin on the back of very high capacity utilisation as the company has announced temporary measures to increase capacity. This is at the high end of management's guidance of 23-25%. Our 2009 and 2010 EPS forecast is 2% and 5% above consensus (source: Bloomberg). We forecast 15% EPS CAGR 2009-14.

We believe the company's c.70% cash conversion rate and stable capex outlook imply that very strong free cash flow will further increase its net cash position.

Momentum

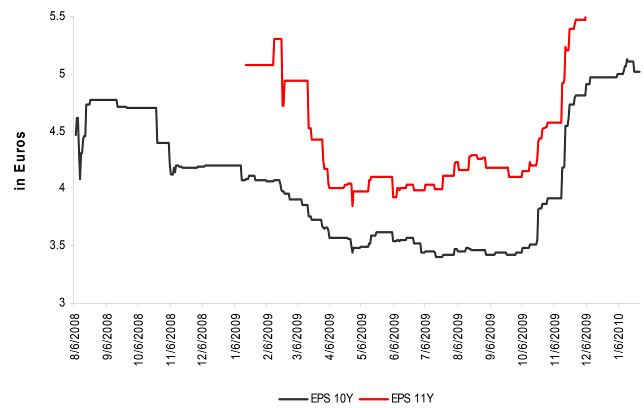
Positive sentiment is further reinforced by the company's capacity upgrade and market strength. Sentiment is among the strongest within the solar sector, even though we note some dent on the back of the recent news flow with regards to earlier than expected feed-in tariff reductions in Germany.

Figure 137: Sales momentum expectations



Source: Bloomberg, Nomura research

Figure 138: Earnings momentum expectations



Source: Bloomberg, Nomura research

Valuation

Our three-stage DCF valuation (risk-free rate 4%, equity risk premium 5.5%, beta 1.2 based on the company's unlevered beta owing to its net cash position, WACC 8.6%) yields EUR 110 as our price target. This includes a 10-year competitive advantage period with exit growth prospects of the global solar sector, which we expect to be a CAGR of 20-25% pa from 2010 to 2025, our forecast for the company's 35% ROIC in 2015 and its market-leadership position that should allow it to sustain at least this level of competitive advantage.

While we calculate the shares are trading on a 10% discount to the equipment sector on P/E (when excluding Manz which trades on a much higher P/E), other multiples such as P/sales and P/B are at a premium. We see this as a reflection of the low-fab business model, low capital intensity and high cash conversion of sales and earnings, but also the direct exposure to solar growth as a market leader.

Figure 139: SMA Solar Technology summary financials

P&L									
Year-end Dec	[unit]	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
Sales	[EUR m]	327	682	889	1107	1468	1658	1734	**09E/08A: 30.4% / 5Y CAGR 20.5%**
%age growth	%	69.7%	108.2%	30.4%	24.6%	32.5%	12.9%	4.6%	
Gross Profit	[EUR m]	123	254	329	410	543	613	641	**09E/08A: 29.6% / 5Y CAGR 20.4%**
Gross margin	%	37.6%	37.2%	37.0%	37.0%	37.0%	37.0%	37.0%	
EBITDA	[EUR m]	75	176	232	288	346	377	394	**09E/08A: 31.9% / 5Y CAGR 17.4%**
%age growth	%	76.7%	134.0%	31.9%	23.8%	20.3%	8.9%	4.4%	
EBITDA margin	%	23.0%	25.8%	26.1%	26.0%	23.6%	22.7%	22.7%	
Depreciation	[EUR m]	(16)	(9)	(15)	(25)	(39)	(44)	(46)	
Operating Profit	[EUR m]	59	167	218	262	307	332	348	**09E/08A: 30.1% / 5Y CAGR 15.8%**
%age growth	%	77.45%	182.28%	30.10%	20.45%	17.16%	8.16%	4.65%	
Operating Margin	%	18.1%	24.6%	24.5%	23.7%	20.9%	20.1%	20.1%	
Net financial Result	[EUR m]	(0)	4	4	4	4	4	4	
Non-Operating Income	[EUR m]								
PBT	[EUR m]	59	171	222	267	312	337	352	**09E/08A: 29.9% / 5Y CAGR 15.5%**
%age growth	%	77.9%	189.2%	29.9%	20.0%	16.9%	8.0%	4.6%	
PBT Margin	%	18.1%	25.1%	25.0%	24.1%	21.2%	20.3%	20.3%	
Equity Income		0	0	0	0	0	0	0	
Income Tax	[EUR m]	(22)	(52)	(67)	(80)	(93)	(101)	(106)	
Tax rate	%	37.9%	30.2%	30.0%	30.0%	30.0%	30.0%	30.0%	
Net Income	[EUR m]	37	120	156	187	218	236	247	**09E/08A: 30.2% / 5Y CAGR 15.6%**
%age growth	%	79.61%	225.09%	30.16%	19.97%	16.89%	8.05%	4.59%	
Minority Interests	[EUR m]	0	0	0	0	0	0	0	
Income from Discontinued Operations	[EUR m]	0	0	0	0	0	0	0	
Net earnings	[EUR m]	37	120	156	187	218	236	247	**09E/08A: 30.2% / 5Y CAGR 15.6%**
%age growth	%	79.6%	225.1%	30.2%	20.0%	16.9%	8.0%	4.6%	
Net Profit Margin	%	11.2%	17.5%	17.5%	16.9%	14.9%	14.2%	14.2%	

KEY SHARE DATA	[unit]	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**
Number of Shares	[in Mn]	34.7	34.7	34.7	34.7	34.7	34.7	34.7
EPS	[EUR]	1.06	3.44	4.48	5.38	6.29	6.79	7.10
EPS (Cont. Operations)	[EUR]	1.06	3.44	4.48	5.38	6.29	6.79	7.10
DPS	[EUR]		1.00	1.10	1.21	1.33	1.46	1.61
Dividend Payout	%		29%	25%	22%	21%	22%	23%
BPS	[EUR]	1.86	8.09	11.57	15.85	20.93	26.39	32.03

Source: Company data, Nomura estimates

Figure 140: SMA Solar Technology summary financials

BALANCE SHEET									
Year-end Dec	[unit]	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
Intangible assets	[EUR m]	1.9	5.5	14.0	24.4	37.8	52.5	67.2	
Goodwill	[EUR m]								
Tangible assets	[EUR m]	31.3	94.1	164.4	250.5	303.9	344.3	379.3	
Financial assets	[EUR m]	1.7	23.6	23.6	23.6	23.6	23.6	23.6	
Total fixed assets	[EUR m]	33.2	99.7	178.4	274.9	341.8	396.8	446.5	
Inventories	[EUR m]	47.6	75.3	115.5	144.0	193.7	223.8	242.7	
Receivables	[EUR m]	26.7	27.4	44.4	60.9	80.7	91.2	95.3	
Payables	[EUR m]	(14.6)	(21.3)	(26.7)	(38.8)	(54.3)	(66.3)	(69.3)	
Working capital	[EUR m]	59.7	81.4	133.3	166.1	220.2	248.7	268.7	
Other assets	[EUR m]	0.0	343.0	343.0	343.0	343.0	343.0	343.0	
Total assets	[EUR m]	95.8	207.6	338.2	467.5	588.4	671.9	741.7	**09E/08A: 62.9% / 5Y CAGR 29.0%**
Share capital	[EUR m]	4.0	34.7	34.7	34.7	34.7	34.7	34.7	
Retained Earnings	[EUR m]	60.4	126.9	247.7	396.2	572.3	761.9	957.6	
Shareholders' funds	[EUR m]	64.4	280.8	401.6	550.1	726.2	915.8	1,111.5	
Minorities	[EUR m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Provisions	[EUR m]	15.2	37.8	57.8	58.7	67.5	74.6	78.0	
Long term liabilities	[EUR m]	11.0	20.2	20.2	20.2	20.2	20.2	20.2	
Short term liabilities	[EUR m]	29.6	60.4	60.4	60.4	60.4	60.4	60.4	
Cash & cash equivalent	[EUR m]	(52.8)	(240.7)	(250.9)	(271.0)	(335.1)	(448.1)	(577.5)	
Net debt	[EUR m]	(12.2)	(160.1)	(170.3)	(190.4)	(254.5)	(367.6)	(497.0)	
Other liabilities	[EUR m]	26.9	46.6	46.6	46.6	46.6	46.6	46.6	
Total liabilities	[EUR m]	3.1	(122.3)	(112.6)	(131.7)	(187.0)	(293.0)	(419.0)	
Total shareholders' funds & liabilities	[EUR m]	95.8	207.6	338.2	467.5	588.4	671.9	741.7	**09E/08A: 62.9% / 5Y CAGR 29.0%**

CASH FLOW									
Year-end Dec	[unit]	**2007A**	**2008A**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**	**Comments**
EBIT	[EUR m]	59.3	167.4	217.8	262.3	307.3	332.4	347.9	**09E/08A: 30.1% / 5Y CAGR 15.8%**
Depreciation and Amortization	[EUR m]	16.0	8.8	14.6	25.4	38.8	44.4	45.7	
Change in Provisions	[EUR m]	3.5	22.6	19.9	0.9	8.8	7.1	3.4	
Change in Working capital	[EUR m]	(25.2)	(21.7)	(51.9)	(32.8)	(54.0)	(28.5)	(20.0)	
Tax	[EUR m]	(22.4)	(51.6)	(66.7)	(80.0)	(93.5)	(101.0)	(105.7)	
Other movements	[EUR m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Operating cash flow	[EUR m]	31.2	125.5	133.7	175.8	207.4	254.4	271.3	**09E/08A: 6.6% / 5Y CAGR 16.7%**
Capex	[EUR m]	(21.2)	(73.9)	(93.3)	(121.8)	(105.7)	(99.5)	(95.3)	
Disposals	[EUR m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Cash flow from investing activities	[EUR m]	(21.2)	(73.9)	(93.3)	(121.8)	(105.7)	(99.5)	(95.3)	**09E/08A: 26.2% / 5Y CAGR 5.2%**
New project finance	[EUR m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Interest	[EUR m]	(0.1)	3.7	4.5	4.3	4.3	4.3	4.3	
Dividends	[EUR m]	0.0	0.0	(34.7)	(38.2)	(42.0)	(46.2)	(50.8)	
Minority dividends	[EUR m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Dividends received	[EUR m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Cash flow from financing activities	[EUR m]	(0.1)	3.7	(30.2)	(33.9)	(37.7)	(41.9)	(46.5)	
Net change in cash/net debt	[EUR m]	10	55	10	20	64	113	129	**09E/08A: -81.5% / 5Y CAGR 18.5%**

Source: Company data, Nomura estimates

Appendix: Solar thermal power generation

Concentrated solar power (CSP) technologies use heat to run gas/steam turbines or Stirling engines. There can be additional heat storage mechanisms in media such as molten salts and concrete. CSP systems require four basic components for functioning:

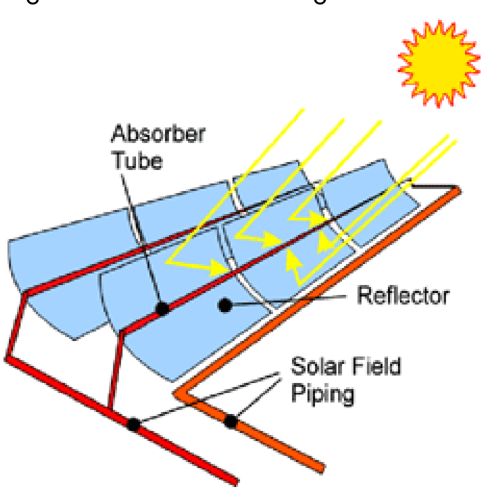
- Concentrator
- Receiver
- Form of heat transfer media or storage
- Power conversion

A broad classification of technologies is as follows:

Parabolic troughs

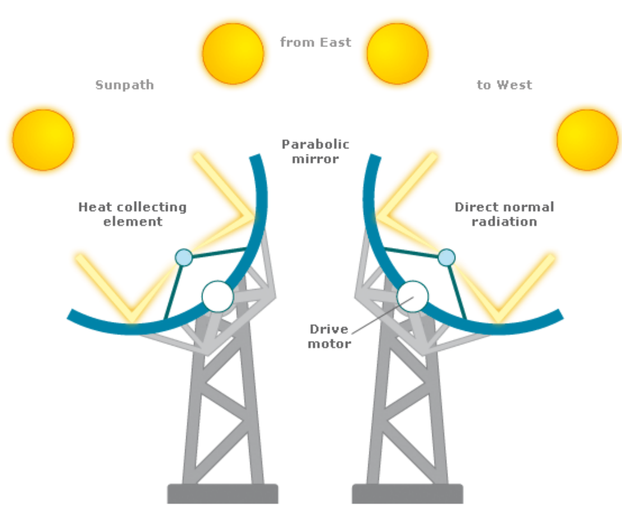
The key components of troughs constitute receivers, reflector mirrors and turbine technology. A parabolic trough solar collector concentrates the solar rays onto a "receiver". The collectors are mounted on a single-axis tracking system that enables flexible movement to direct rays onto the receiver. The receiver constitutes an evacuated absorber tube that is heated to a temperature of up to 400 degrees Celsius. The tube contains a heat transfer fluid, usually a synthetic mineral oil. In the power generation section, heat is transferred to a steam boiler, creating steam to drive the turbines. Certain design disadvantages have affected the efficiency achieved by the parabolic trough plants. Maintaining metallic flexible joints that can resist the extreme temperatures is a design difficulty. Malfunctioning in one segment of the plant can cause closing down of one entire series of mirrors. Also, usage of separate transfer and storage media creates working inefficiencies.

Figure 141: Parabolic troughs



Source: Abengoa Solar

Figure 142: Parabolic troughs

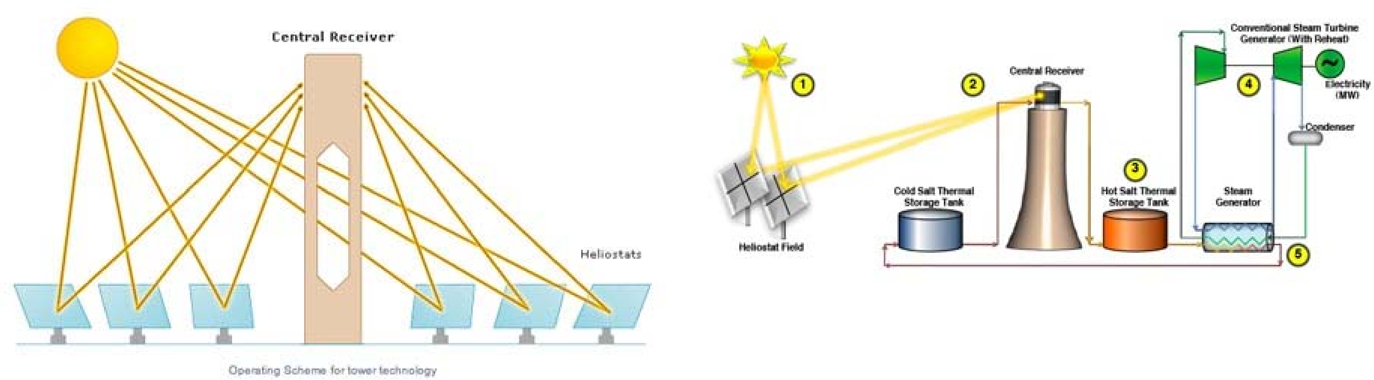


Source: Abengoa Solar

Towers and Heliostats

The Tower technology primarily constitutes two components: heliostats and the receivers. Heliostats consist of mirrors supported on solar tracking systems that direct sunlight onto a central tower. A central receiver converts water into steam without using an intermediate transfer fluid. This helps in generating higher operating temperatures and higher efficiencies. The tower technology is superior to the trough technology primarily with regards to higher operating temperatures. This leads to more efficient and longer storage capabilities using molten salt or any other media. Higher efficiency is key to achieving cost reduction as it enables usage of higher powered turbines. Higher operating temperatures bring with them higher maintenance costs as all components of the system require higher tolerance and more cooling. The double axis tracking systems require increased automation control versus parabolic troughs.

Figure 143: Tower technology



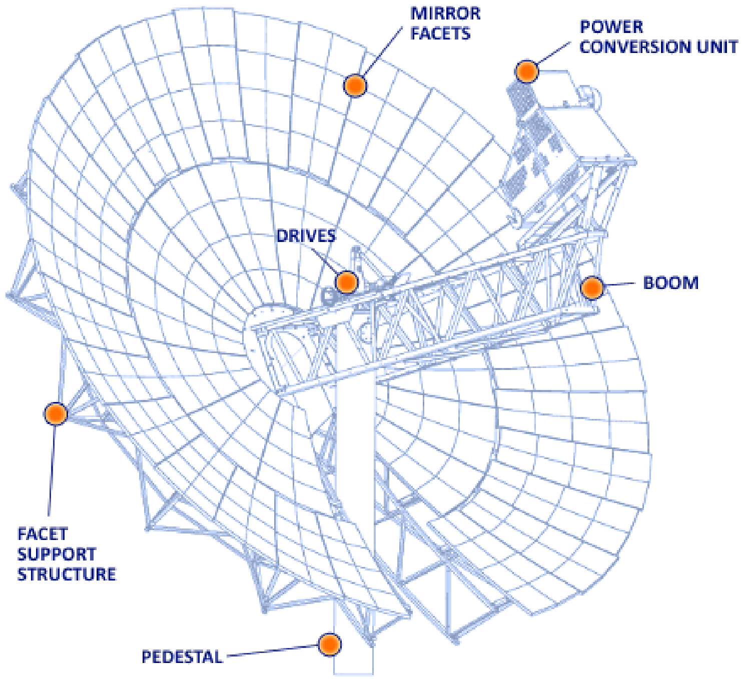
Source: Abengoa Solar

Abengoa's PS10 is the first commercial single tower structure based on this technology. Brightsource and eSolar are other industry names in the segment.

Dish/Stirling Engine Systems

The Dish Stirling engine systems use a solar concentrator to concentrate on a heat engine fixed at the focal point of the concentrator. This engine is closed cycle, converting solar thermal energy into grid quality electricity without the usage of water/steam or any other heat transfer substance. The heat directly pressurises hydrogen gas in the receiver, thus powering the turbine. Dish systems can be easily combined with natural gas to provide continuous power generation. The structure is highly modular and has recorded high efficiencies of about 30%. They present a high convenience factor as they can be installed on unleveled ground. Lower investment and installation costs are offset by lower efficiency and low process temperatures observed in these systems. Lower costs materialise on account of efficiency in land use, high scalability and simple design. The Linear Fresnel technology is said to cost 50-60% of the costs of a parabolic trough technology.

Figure 144: Sterling dishes



Source: Sterling energy system

The main technology developers are Infinia and Stirling Energy Systems.

Projects in the pipeline:

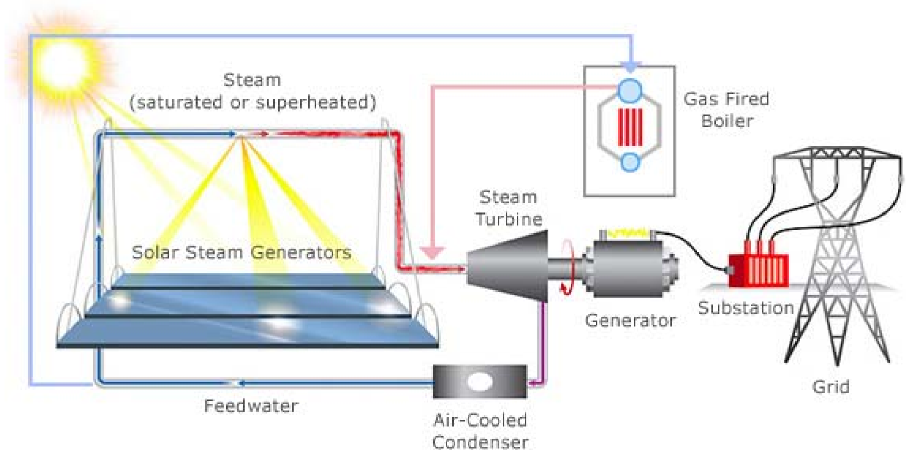
- Novatec Biosol – 30MW plant in Murcia, Southern Spain
- Solar Power Group – 15MW hybrid plant in Libya
- A 100MW plant in Jordan

Linear Fresnel reflector

Linear Fresnel systems are low cost alternatives to the parabolic trough systems. Certain salient design differences exist in spite of the similar functioning mechanism. The absorber is fixed above a field of horizontal mirrors that ca operate collectively or individually. This eliminates design complexity as flexible joints for the absorber tubes need not be created. Lower investment and installation costs are offset by lower efficiency and low process temperatures observed in these systems. Lower costs materialise on account of efficiency in land use, high scalability and simple design.

The Linear Fresnel technology is said to costs 50-60% of the costs of a parabolic trough technology.

Figure 145: Linear Fresnel reflector



Source:Ausra

Ausra has been the primary technology developer, having established two demonstration projects in California (5MW) and Australia (3MW). But the company does not yet have commercially established and viable plants. SkyFuel is a new entrant in this segment with its trademark Linear Power Tower technology (LPT) with commercial deployment of its technology scheduled for 2012.

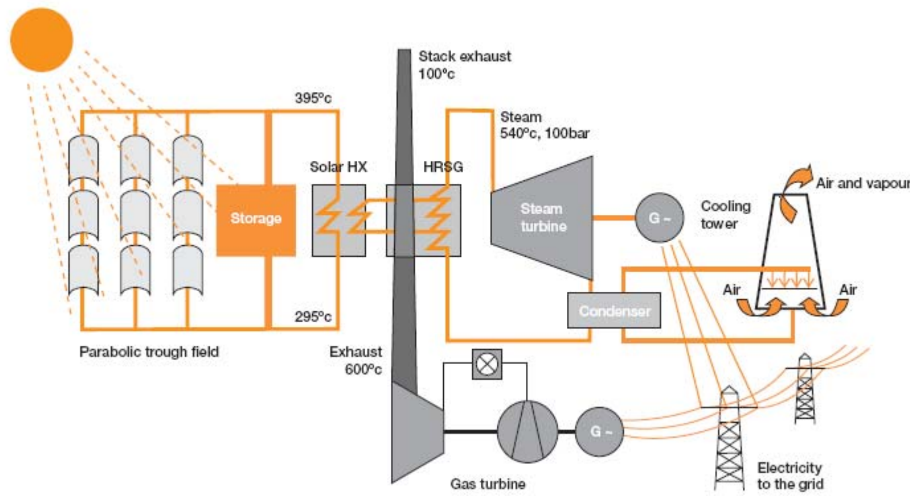
Projects in the pipeline:

- Novatec Biosol – 30MW plant in Murcia, Southern Spain
- Solar Power Group – 15MW hybrid plant in Libya
- A 100MW plant in Jordan

Integrated Solar/Combined Cycle Systems

Integrated systems or hybrid plants combine solar thermal technology with conventional fuels where the conventional fuel can be alternated with solar power.

Figure 146: Hybrid solar thermal generation



Source: Greenpeace

Key names/projects

Three ISCC plants have been initiated this year:

- 25MW system at Hassi R'mel in Algeria by Abengoa subsidiary Abener
- 20MW system Ain-Beni-Mathar in Morocco by Abengoa subsidiary Abener
- 75MW system to be operated by FPL at the Martin gas plant. It has appointed Lauren engineers for the development

Heat storage technologies

One of the big attractions of solar thermal is the ability to store energy. Storage mechanisms and technologies are primarily dependent on key features of the SEGS such as the process heat temperatures, modularity and potential loss of heat and power of the turbines.

Storage can be either direct or indirect. Indirect systems use synthetic oils/fluids that transfer heat to other storage substances such molten salts, ceramics, concrete or phase-changing salt mixtures.

There is also direct storage systems technology that is commercially implemented in the PS10 plant in Spain, storing the steam generated in high pressure containers. This methodology provides limited capacity for storage and involves high investment and maintenance costs.

Storage provides optionality through load management, production scheduling and potential for higher load factors, all of which improve economics.

Figure 147: Solar thermal deployment

Technology	Installed Capacity	Approximate capacity, under construction and proposed
Parabolic trough	500	>10,000
Solar Tow er	40	3000
Fresnel	5	500
Dish	0.5	1,000

	Parabolic Trough	Central Receiver	Parabolic Dish	Fresnel Linear Reflector
Typical Size of the plant			5 to 50kW	5-100MW
Process Heat (degrees Celsius)	350-550	>1000		<300
Total Capacity Built (MW)	500	40	0.5	5
Capacity Under Development (MW)	> 10000	3000	500	1000
Companies	Acciona, ACS, Abengoa, Sener, Solar Millennium, SkuFuel, Solel, Solare XXI	Abengoa, Brightsource Energy, SolarReserve, eSolar	Stirling Energy Systems, Infinia, Brayton energy, Schlaich Bergermann	Ausra, MAN/SPC, Novatec/Biosol, SkyFuel
Modularity	HIGH	MODERATE	HIGH	LOW

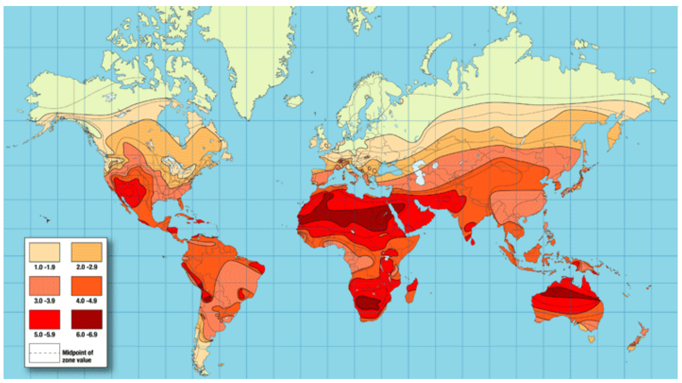
Source: Greenpeace, Nomura research

Growth and economics

Vast growth potential

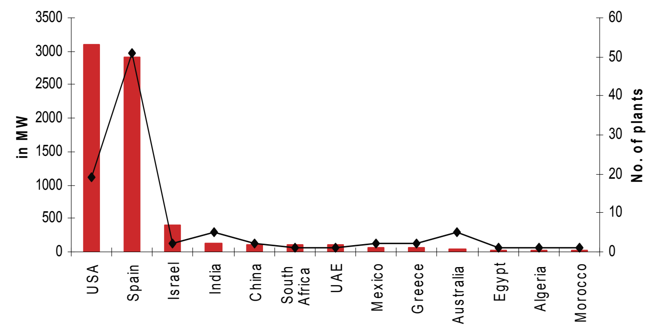
Solar thermal could be the strongest growth segment within solar with forecasts currently suggesting 860GW of capacity by 2050 (source: Greenpeace/Estela). This could imply annual installations of 12GW in moderate scenarios. Total capacity under construction stands at 984MW with the announced capacity under development at 7463MW. 12.6GW of projects are in the global pipeline, 1.4GW of which have secured financing. According to the below forecasts, CSP will account for 3-3.6% of global energy requirements in 2030 and 8.5-11.8% by 2050. (Source: NEF, CSP Outlook 2009 by Greenpeace).

Figure 148: Solar irradiation



Source: NEF, Greenpeace

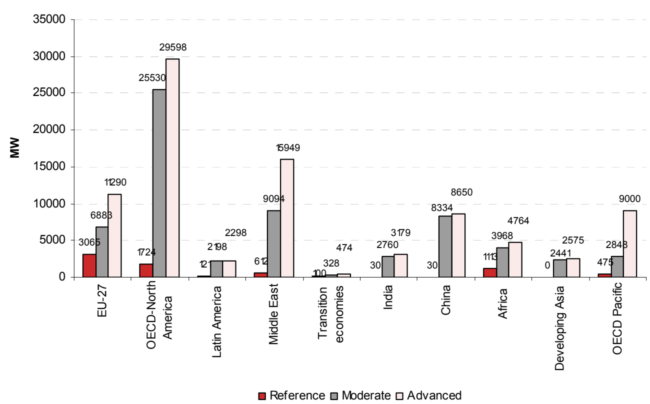
Figure 149: Solar thermal projects by region



Source: NEF, Greenpeace

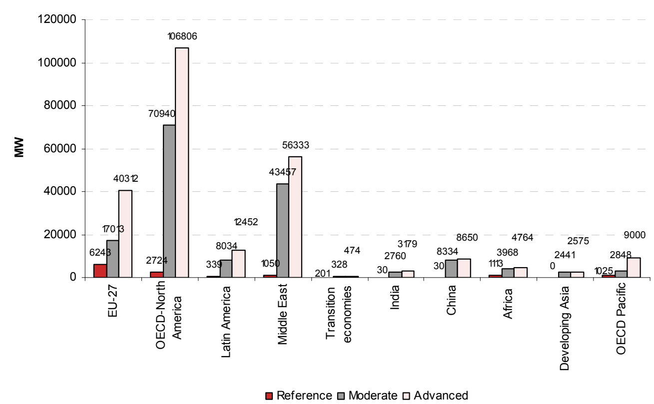
Spain is likely to be the first immediate growth market, followed by the US, Asia and the Middle East. Currently, about 88% of the projects under construction are in Spain.

Figure 150: 2020 scenario for solar thermal capacity



Source: NEF, Greenpeace

Figure 151: 2030 scenario for solar thermal capacity



Source: NEF, Greenpeace

Spain was first to introduce feed-in tariffs for Solar Thermal Energy Generating Systems in 2002, and the government has recently approved up to 2400MW of new projects. The tariff as set by the Royal Decree 661 provides a fixed guaranteed rate of EUR 0.27/kWh or a premium of EUR 0.25/kWh above the pool price, maintaining a cap of EUR 0.34/kWh. Though this tariff was intended towards the development of 500MW of projects by 2010, a substantially larger number of projects may be granted this tariff as per the announcement of new approvals in November. Projects are required to be pre-registered. 56 CSP projects adding up to 2339MW out of a total of 9050MW to be governed by the Royal Decree 6/2009 have been entered into the register. According to a CSP development roadmap published by the government recently, 861MW of capacity will come online by end of 2010, exceeding the set target of 490MW. The government has also approved an additional 500MW every year till 2012 and 540MW in 2013. The limitation on the size of the projects to 10-50MW in order to secure the benefits of the feed-in tariff incentivises the implementation of molten salt thermal storage and use of natural gas as a back-up.

Figure 152: CSP projects in Spain

	Technology	Status	Start Year	Owner	Developer	Turbine Capacity	Tariff rate
Alvarado I	Parabolic trough	Under Construction	2009	Acciona	Acciona	50	27
Andasol -1(AS-1)	Parabolic trough	Operational	2008	Solar Millennium(25%), ACS/Cobra Group (75%)	ACS/Cobra Group	49.9	27
Andasol -2(AS-2)	Parabolic trough	Under Construction	2009	Solar Millennium(25%), ACS/Cobra Group (75%)	ACS/Cobra Group	49.9	27
Andasol - 4(AS-4)	Parabolic trough	Under development	2009	ACS/Cobra Group (100%)	ACS/Cobra Group	49.9	27
Arcosol 50 (Valle 1)	Parabolic trough	Under development	2009	Torresol	Torresol	49.9	
EL REBOSO II	Parabolic trough	Under Construction	2011	Bogaris (100%)	Bogaris	50	32.2
EL REBOSO III	Parabolic trough	Under Contract	2012	Bogaris (100%)	Bogaris	50	Next RD
Extresol-1(EX-1)	Parabolic trough	Under Construction		ACS/Cobra Group (100%)	ACS/Cobra Group	49.9	27
Extresol-2(EX-2)	Parabolic trough	Under Construction		ACS/Cobra Group (100%)	ACS/Cobra Group	49.9	27
Extresol-3(EX-3)	Parabolic trough	Under Development		ACS/Cobra Group (100%)	ACS/Cobra Group	49.9	27
Gemasolar Thermosolar Plant(Gemasolar)	Power tower	Under Construction	2012	MASDAR (40%),Sener (60%)	Torresol Energy	17	
Helios I	Parabolic trough	Under Construction		Caja Castilla La Mancha Corporación, S.A. (5%), Fundo de Capital de Risco Energias Renováveis-Caixa Capital (5%), HYPERION (10%), Hypesol Energy Holding, S.L. (80%)	Helios I HYPERION Energy Investments	49.9	27
Helios II	Parabolic trough	Under Construction				49.9	27
Ibersol Cuidad Real (Puertollano)	Parabolic trough	Under Construction	2009	IBERCAM (Iberdrola Renovables Castilla-La Mancha) (90%), IDAE (10%)	IBERCAM (Iberdrola Renovables Castilla-La Mancha)	50	Market price with premium system
La Dehesa	Parabolic trough	Under Construction	2010	Renovables SAMCA (100%)	Renovables SAMCA	49.9	RD661/07, POOL+premium option
La Florida	Parabolic trough	Under Construction	2011	Renovables SAMCA (100%)	Renovables SAMCA	49.9	RD661/07, POOL+premium option
Lebrija 1(LE-1)	Parabolic trough	Under Construction	2010	Solel Solar Systems, LTD. (50%), V	Solucia Renovables	49.9	27
Majadas I	Parabolic trough	Under Construction	2011	Acciona	Acciona	50	27
Manchasol-1(MS-1)	Parabolic trough	Under Construction	2010	ACS/Cobra Group (100%)	ACS/Cobra Group	49.9	27
Manchasol-2(MS-2)	Parabolic trough	Under Development	2010	ACS/Cobra Group (100%)	ACS/Cobra Group	49.9	27
Palma del Rio I	Parabolic trough	Under Development	2010	Acciona	Acciona	50	27
Palma del Rio II	Parabolic trough	Under Development	2011	Acciona	Acciona	50	27
Planta Solar 10 (PS10)	Power tower	Operational	2007	Abengoa Solar	Abengoa Solar	11	27.1188
Palnta Solar 20(PS20)	Power tower	Operational	2009	Abengoa Solar	Abengoa Solar	20	27.1188
Puerto Errado 1 (PE1)	Linear Fresnel ref	Operational	2008	Novatec Solar España	Novatec Solar España		26.9375
Solnova 1	Parabolic trough	Under Construction	2009	Abengoa Solar	Abengoa Solar	50	27.1188
Solnova 2	Parabolic trough	Under Construction	2009	Abengoa Solar	Abengoa Solar	50	27.1188
Solnova 3	Parabolic trough	Under Construction	2010	Abengoa Solar	Abengoa Solar	50	27.1188
Vallesol 50 (Valle 2)	Parabolic trough	Under Construction		Torresol	Torresol	49.9	

Source: SolarPACES, NRE

Even though the US has the longest track record with projects operational since the 1980s, growth has stalled and is only now returning. We think that the cash grant scheme should contribute materially to the revival of the market.

Figure 153: CSP projects in the US

	Technology	Status	Start Year	Owner	Developer	Turbine Capacity
Saguaro Power Plant	Parabolic trough	Operational	2006	Arizona Public Service (100%)	Arizona Public Service	1
Solana	Parabolic trough	Under Development		Abengoa Solar		280
Kimberlina	Linear Fresnel reflector	Operational	2008	Ausra(100%)	Ausra	5
SEGS-I	Parabolic trough	Operational	1985	Cogentrix (100%)	Luz	13.8
SEGS-II	Parabolic trough	Operational	1985	Cogentrix (100%)	Luz	30
SEGS-III	Parabolic trough	Operational	1986	NextEra(50%)	Luz	30
SEGS-IV	Parabolic trough	Operational	1989	NextEra(38%)	Luz	30
SEGS-V	Parabolic trough	Operational	1989	NextEra(46%)	Luz	30
SEGS-VI	Parabolic trough	Operational	1989	NextEra(41%)	Luz	30
SEGS-VII	Parabolic trough	Operational	1989	NextEra(50%)	Luz	30
SEGS-VIII	Parabolic trough	Operational	1989	NextEra(50%)	Luz	80
SEGS-IX	Parabolic trough	Operational	1990	NextEra(50%)	Luz	80
Martin Next Generation Solar Energy Cente	Parabolic trough	Under construction	2010	FPL (100%)	FPL	75
Nevada Solar One	Parabolic trough	Operational	2007	Acciona	Acciona	72

Source: SolarPACES

Africa, the Middle East and Asia could become focus regions of development as well, given their land resources and solar irradiation levels.

Economics

Solar thermal is more economic than pv power at the moment. We estimate generation costs between EUR 120-200, depending on capex levels and solar irradiation. Our estimates are laid out in the table below. We have assumed some uplift for storage in our calculation for plant but have balanced this with higher capex. There could be further uplift on economics beyond our current estimate from storage.

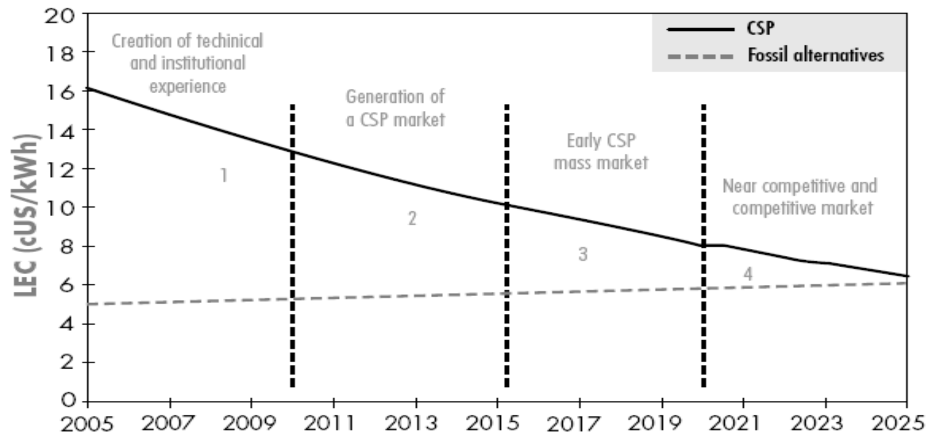
Figure 154: Solar thermal economics

Capital Investment (Eur/kW)	Eur/kW	4500	4500	4501	5500	5500	5501	6000	6000	6000
		Europe	Southern Europe/US	Deserts	Europe	Southern Europe/US	Deserts	Europe	Southern Europe/US	Deserts
Capacity	MW	50	50	51	50	50	51	50	50	51
Load Factor	%	25%	30%	40%	25%	30%	40%	30%	35%	45%
Annual Power Generation	MWh	109500	131400	178704	109500	131400	178704	131400	153300	201042
Lifetime	years	25	25	26	25	25	26	25	25	26
Total Capex	Eur m	225	225	229.551	275	275	280.551	300	300	306
Gearing	%	70%	70%	70%	70%	70%	70%	70%	70%	70%
Interest rate	%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%
Annual Depreciation	Eur m	9.0	9.0	8.8	11.0	11.0	10.8	12.0	12.0	11.8
Annual Interest Costs	Eur m	8.7	8.7	8.8	10.6	10.6	10.8	11.6	11.6	11.8
O&M costs	Eur m	3.38	3.38	3.44	4.13	4.13	4.21	4.50	4.50	4.59
Fuel Costs	Eur m	0	0	1	0	0	1	0	0	1
Annual Costs	Eur m	21.0	21.0	22.1	25.7	25.7	26.8	28.1	28.1	29.1
Cost/MWh	Eur /MWh	192	160	124	235	196	150	213	183	145

Source: Nomura research

This compares with estimates of EUR 140-180/MWh by Desertec, who also believes that there is a roadmap for cost reduction towards EUR 40-60/MWh with growth in scale and installations.

Figure 155: Potential cost reduction roadmap for solar thermal



Source: World Bank/GEF

THE DESERTEC INDUSTRIAL INITIATIVE (DII)

The Desertec Industrial Initiative is an ambitious project to develop solar thermal energy in the Sahara desert in Northern Africa with an aim to produce 15% of the European energy requirements. The development of the project is being overseen by TREC (the Trans Mediterranean Renewable Energy Cooperation—10 countries from MENA, 10 European nations and 2 non-EUMENA countries, namely Australia and Pakistan), which aims at boosting the generation of electricity and desalination of plants using solar thermal energy and transmission of the same via HVDC transmission lines through the Middle East and North African (MENA) region. This project eventually aims at tapping the wind energy potential in the Saharan deserts.

Figure 156: Founders of the Desertec Initiative

Country	Company	Activities
Germany	Deutsche Bank	Financing
	E.ON	Utility
	HSH Nordbank	Financing
	MAN Solar Millenni	Design/Construction/Operation of CSP plants
	Munich RE	Financing
	M+W Zander	Electronics solutions, incl to the CSP industry
	RWE	Utility
	SCHOTT	Manufacturer of the receivers used in CSP plants
	Siemens	Highly competitive globally in HVDC and power generation turbines
Switzerland	ABB	Global top market share in HVDC
Spain	Abengoa Solar	Design/Construction/Operation of CSP plants
Algeria	Cevital	Algerian food manufacturer

Source: Desertec website

With the current roll-out strategy, the project is expected to start delivering electricity from 2015 if a 2-3year planning period is maintained. But planning delays have already started and we think that the time frame is highly uncertain. The project faces many challenges, among which are:

- transmission: The project anticipates the development of a 100GW EUMENA wide super grid with high voltage direct current (HVDC) infrastructure versus the conventional alternating current (AC) grid; and

- regulation, politics and cooperation: There will be many questions to be resolved with regards to transmission ownership and regulation, political stability of the region, off-take arrangements between countries, remuneration and many more.

We think that this is a potentially exciting futuristic project that will keep producing news flow for the sector and keep interest very much alive.

Analyst Certification:

We, Catharina Saponar and Jean De Watteville, hereby certify (1) that the views expressed in this Industry Report accurately reflect our personal views about any or all of the subject securities or issuers referred to in this Industry Report, (2) no part of our compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this Industry Report and (3) no part of our compensation is tied to any specific investment banking transactions performed by Nomura Securities International, Inc., Nomura International plc or any other Nomura Group company.

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Important Disclosures:

Mentioned Company	Ticker	Price	Price Date	Stock / Sector Rating
Abengoa	ABG.MC	EUR 21.92	29 Jan 2010	Neutral / Neutral
Centrotherm Photovoltaics AG	CTNG.DE	EUR 39.95	27 Jan 2010	Buy / Neutral
Conergy AG	CGYG.DE	EUR 0.79	29 Jan 2010	Reduce / Neutral
Manz Automation AG	M5ZG.DE	EUR 61.00	27 Jan 2010	Reduce / Neutral
Meyer Burger AG	MBTN.S	SFR 26.50	27 Jan 2010	Neutral / Neutral
PV Crystalox Solar Plc	PVCS.L	55.8p	29 Jan 2010	Buy / Neutral
Q-Cells	QCEG.DE	EUR 9.90	27 Jan 2010	Reduce / Neutral
Renesola	SOLA.L	144p	29 Jan 2010	Buy / Neutral
Renewable Energy Corporation ASA	REC.OL	NOK 34.75	29 Jan 2010	Buy / Neutral
Roth & Rau AG	R8RG.DE	EUR 28.98	27 Jan 2010	Neutral / Neutral
SMA Solar Technology AG	S92G.DE	EUR 81.84	27 Jan 2010	Buy / Neutral
Solar Millennium AG	S2MG.DE	EUR 32.19	29 Jan 2010	Buy / Neutral
Solarworld AG	SWVG.DE	EUR 12.25	27 Jan 2010	Reduce / Neutral
Solon AG	SOOG.DE	EUR 5.99	29 Jan 2010	Reduce / Neutral
Wacker Chemie AG	WCHG.DE	EUR 95.20	29 Jan 2010	Buy / Neutral

All share prices mentioned are closing prices unless otherwise stated.

Rating and target price changes

	Rating		**Target Price**	
	Old	**New**	**Old**	**New**
ABG.MC	Not Rated	Neutral	N/A	EUR 25.00
CTNG.DE	No change	No change	EUR 38.00	EUR 50.00
CGYG.DE	Not Rated	Reduce	N/A	EUR 0.50
M5ZG.DE	No change	No change	EUR 32.00	EUR 30.00
MBTN.S	No change	No change	SFR 171.00	SFR 26.00
PVCS.L	Not Rated	Buy	N/A	78p
QCEG.DE	No change	No change	EUR 9.30	EUR 9.40
SOLA.L	Not Rated	Buy	N/A	190p
REC.OL	Not Rated	Buy	N/A	NOK 46.00
R8RG.DE	No change	No change	EUR 22.00	EUR 29.00
S2MG.DE	Not Rated	Buy	N/A	EUR 45.00
SWVG.DE	No change	No change	EUR 15.30	EUR 12.00
SOOG.DE	Not Rated	Reduce	N/A	EUR 45.00
WCHG.DE	Not Rated	Buy	N/A	EUR 130.00

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As at 31 December 2009.

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The rating system is a relative system indicating expected performance against a specific benchmark identified for each individual stock. Analysts may also indicate absolute upside to price target defined as (fair value - current price)/current price, subject to limited management discretion. In most cases, the fair value will equal the analyst's assessment of the current intrinsic fair value of the stock using an appropriate valuation methodology such as discounted cash flow or multiple analysis, etc.

Stocks:

- A rating of "1", or **"Buy"**, indicates that the analyst expects the stock to outperform the Benchmark over the next 12 months.
- A rating of "2", or **"Neutral"**, indicates that the analyst expects the stock to perform in line with the Benchmark over the next 12 months.
- A rating of "3", or **"Reduce"**, indicates that the analyst expects the stock to underperform the Benchmark over the next 12 months.
- A rating of **"RS-Rating Suspended"** indicates that the rating and target price have been suspended temporarily to comply with applicable regulations and/or firm policies in certain circumstances including when Nomura is acting in an advisory capacity in a merger or strategic transaction involving the company.

Benchmarks are as follows: **United States:** S&P 500, MSCI World Technology Hardware & Equipment; **Europe:** Please see valuation methodologies for explanations of relevant benchmarks for stocks (accessible through the left hand side of the Nomura Disclosure web page: http://www.nomura.com/research); **Global Emerging Markets (ex-Asia):** MSCI Emerging Markets ex-Asia.

Sectors:

A **"Bullish"** stance, indicates that the analyst expects the sector to outperform the Benchmark during the next 12 months.
A **"Neutral"** stance, indicates that the analyst expects the sector to perform in line with the Benchmark during the next 12 months.
A **"Bearish"** stance, indicates that the analyst expects the sector to underperform the Benchmark during the next 12 months.

Benchmarks are as follows: **United States:** S&P 500; **Europe:** Dow Jones STOXX® 600; **Global Emerging Markets (ex-Asia):** MSCI Emerging Markets ex-Asia.

Explanation of Nomura's equity research rating system for Asian companies under coverage ex Japan published from 30 October 2008 and in Japan from 6 January 2009:

Stocks:

Stock recommendations are based on absolute valuation upside (downside), which is defined as (Price Target – Current Price) / Current Price, subject to limited management discretion. In most cases, the Price Target will equal the analyst's 12-month intrinsic valuation of the stock, based on an appropriate valuation methodology such as discounted cash flow, multiple analysis, etc.

- A rating of "1", or "**Buy**" recommendation indicates that potential upside is 15% or more.
- A rating of "2", or "**Neutral**" recommendation indicates that potential upside is less than 15% or downside is less than 5%.
- A rating of "3", or "**Reduce**" recommendation indicates that potential downside is 5% or more.
- A rating of "**RS**" or "**Rating Suspended**" indicates that the rating and target price have been suspended temporarily to comply with applicable regulations and/or firm policies in certain circumstances including when Nomura is acting in an advisory capacity in a merger or strategic transaction involving the subject company.
- Stocks labeled as "**Not rated**" or shown as "**No rating**" are not in Nomura's regular research coverage.

Sectors:

A "**Bullish**" rating means most stocks in the sector have (or the weighted average recommendation of the stocks under coverage is) a positive absolute recommendation.
A "**Neutral**" rating means most stocks in the sector have (or the weighted average recommendation of the stocks under coverage is) a neutral absolute recommendation.
A "**Bearish**" rating means most stocks in the sector have (or the weighted average recommendation of the stocks under coverage is) a negative absolute recommendation.

Explanation of Nomura's equity research rating system in Japan published prior to 6 January 2009 (and ratings in Europe, Middle East and Africa, US and Latin America published prior to 27 October 2008):

Stocks:

- A rating of "1", or **"Strong buy"**, indicates that the analyst expects the stock to outperform the Benchmark by 15% or more over the next six months.
- A rating of "2", or **"Buy"**, indicates that the analyst expects the stock to outperform the Benchmark by 5% or more but less than 15% over the next six months.
- A rating of "3", or **"Neutral"**, indicates that the analyst expects the stock to either outperform or underperform the Benchmark by less than 5% over the next six months.
- A rating of "4", or **"Reduce"**, indicates that the analyst expects the stock to underperform the Benchmark by 5% or more but less than 15% over the next six months.
- A rating of "5", or **"Sell"**, indicates that the analyst expects the stock to underperform the Benchmark by 15% or more over the next six months.
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A **"Neutral"** stance, indicates that the analyst expects the sector to perform in line with the Benchmark during the next six months.
A **"Bearish"** stance, indicates that the analyst expects the sector to underperform the Benchmark during the next six months.

Benchmarks are as follows: **Japan**: TOPIX; **United States**: S&P 500, MSCI World Technology Hardware & Equipment; **Europe**, by sector — *Hardware/Semiconductors*: FTSE W Europe IT Hardware; *Telecoms*: FTSE W Europe Business Services; *Business Services*: FTSE W Europe; *Auto & Components*: FTSE W Europe Auto & Parts; *Communications equipment*: FTSE W Europe IT Hardware; **Ecology Focus:** Bloomberg World Energy Alternate Sources; **Global Emerging Markets:** MSCI Emerging Markets ex-Asia.

Explanation of Nomura's equity research rating system for Asian companies under coverage ex Japan published prior to 30 October 2008:

Stocks:

Stock recommendations are based on absolute valuation upside (downside), which is defined as (Fair Value - Current Price)/Current Price, subject to limited management discretion. In most cases, the Fair Value will equal the analyst's assessment of the current intrinsic fair value of the stock using an appropriate valuation methodology such as Discounted Cash Flow or Multiple analysis etc. However, if the analyst doesn't think the market will revalue the stock over the specified time horizon due to a lack of events or catalysts, then the fair value may differ from the intrinsic fair value. In most cases, therefore, our recommendation is an assessment of the difference between current market price and our estimate of current intrinsic fair value. Recommendations are set with a 6-12 month horizon unless specified otherwise. Accordingly, within this horizon, price volatility may cause the actual upside or downside based on the prevailing market price to differ from the upside or downside implied by the recommendation.

- A rating of "1", or "**Strong buy**" recommendation indicates that upside is more than 20%.
- A rating of "2", or "**Buy**" recommendation indicates that upside is between 10% and 20%.
- A rating of "3", or "**Neutral**" recommendation indicates that upside or downside is less than 10%.
- A rating of "4", or "**Reduce**" recommendation indicates that downside is between 10% and 20%.
- A rating of "5", or "**Sell**" recommendation indicates that downside is more than 20%.

Sectors:

A "**Bullish**" rating means most stocks in the sector have (or the weighted average recommendation of the stocks under coverage is) a positive absolute recommendation.
A "**Neutral**" rating means most stocks in the sector have (or the weighted average recommendation of the stocks under coverage is) a neutral absolute recommendation.
A "**Bearish**" rating means most stocks in the sector have (or the weighted average recommendation of the stocks under coverage is) a negative absolute recommendation.

Price targets

Price targets, if discussed, reflect in part the analyst's estimates for the company's earnings. The achievement of any price target may be impeded by general market and macroeconomic trends, and by other risks related to the company or the market, and may not occur if the company's earnings differ from estimate

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