

## Media Release

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# Solar industry – Stormy weather will give way to sunnier periods

The photovoltaics (PV) industry is going through a transition phase: global subsidy programmes are being trimmed back, the polysilicon shortage is easing and the market share of thin-film modules is growing significantly, thanks to cost advantages. The solar industry's overriding goal of generating energy at competitive prices – without any form of state subsidy – now seems within reach. This would signal the achievement of grid parity and allow demand to grow to unprecedented levels. Bank Sarasin forecasts average global growth rates of 48% for the PV market up to 2012, with the global market volume of newly installed PV systems rising from 4 gigawatts in 2008 to 125 gigawatts in 2020. Large-scale solar energy systems are playing a key role and are therefore likely to be increasingly financed directly by electricity utilities. At the same time the market for solar collectors is likely to remain volatile for the time being.

Bank Sarasin has just published a new report from its Sustainability Research team entitled “Solar energy 2008 – Stormy weather will give way to sunnier periods”. This report compares and assesses the prospects for technologies, markets and companies in the field of solar energy, and for the three main fields of application: photovoltaics, solar thermal energy and concentrating solar power (CSP). It sets out to identify the solar technologies of the future, and which companies are best equipped to master the new challenges.

### Thin-film technologies are gaining market share

The report pays particular attention to thin-film technologies, which take less material to produce, and to promising new markets. The expansion plans are impressive: according to Bank Sarasin's estimates, these technologies will be able to increase their market share from 12% at present to 23% in 2012. Although they currently have a comparatively low efficiency in the region of 7-11%, this is likely to be compensated by lower costs and a steeper learning curve. The five most promising companies for the future are First Solar, Sharp, Calyxo (Q-Cells), United Solar Ovonic and Sunfilm.

### Swiss solar market still modest

Despite new rules (KEV) on feed-in tariffs for renewable energy fed into the grid, the Swiss market is only growing at around 30% per year, which is significantly lower than the global market. “With better conditions on the domestic market, I am convinced that the Swiss solar industry could put its research efforts and excellent technological know-how to far more effective use”, comments Matthias Fawer, author of the latest Sarasin Solar Report. “A strong domestic market is helpful for acquiring practical experience which can then be used to expand a company's international presence. If support for renewables is limited in any way, it tends to impede the positive ongoing development of the domestic market in the long term. This has already been clearly shown in Italy and Spain.” Mechanisms which operate without any cap on capacity, but apply steady degression of remuneration rates for new installations, could be a better idea. This would provide an additional incentive for the development of competitive cost structures. The Swiss solution has already integrated this. “However, an expansion of volumes is essential for driving down costs more rapidly. Politicians therefore need to reconsider any cap on solar energy capacity”, says Fawer “with a view to rounding off cost-of-covering remuneration schemes for renewable energy fed into the grid.”

### **Italy and the Czech Republic: attractive new markets**

In order for growth in the PV industry to continue at such a high level, new markets other than the traditionally dominant mature markets of Germany, Japan, the USA and Spain need to be developed in future. For large-scale PV installations, the market focus will shift in 2009 away from Spain and Germany, towards Italy and the Czech Republic. Greece and France could also develop into new and exciting markets. This essentially provides broader support for the solar market, and is crucial for the continuous growth of the industry.

### **Outlook for 2009 overshadowed by the market situation**

In view of the credit crisis, the signs of a slowdown in real economic growth and changes in the overall conditions for the PV industry, Bank Sarasin expects newly installed PV capacity of only 4.8 GW in 2009, equivalent to a growth rate of 17%. The market is expected to pick up again as of 2010, so that average annual growth over the period 2007 to 2012 will be in the region of 48%. In Europe, however, average growth will only be 34% per year over the same period. By 2020 Sarasin expects the global market volume to rise to 125 GW in newly installed PV systems. This is equivalent to an annual average growth rate of 28% over the period 2012 to 2020.

### **Electricity utilities will be key drivers for large-scale solar systems**

Concentrating solar power (CSP) systems have established themselves as a low-cost technology for centralised electricity generation. However, they are coming under increasing competitive pressure from large-scale PV systems. But there are different fields of application for both technologies. Sarasin forecasts a cumulative CSP power station capacity of 5.5 GW by 2012. This is equivalent to an annual average growth rate of 44%. As the credit crunch drags on, the ability of CSP installations to gain financing is becoming increasingly important. A growing number of electricity utility companies are likely to enter the market in future. They can benefit from the mounting trend towards infrastructure investments, and they also have access to cheaper financing thanks to their superior size and credit rating.

### **Solar thermal power – no extra boost from the global climate debate**

Solar collectors, which contribute the most energy of all solar technologies, achieved a global growth rate of 16% in 2007. Sarasin forecasts average growth in the region of 20-25% up to 2020. While the Chinese solar collector market continues to enjoy dynamic growth even without any state subsidy, the European market is very volatile. Newly installed solar collector capacity fell by 9% in Europe in 2007. Despite the wide debate about climate change and high energy costs, the pace of market growth has not picked up so far.

### **Solar companies – strong growth potential and low debt levels are important**

Solid financing for solar companies is essential in these turbulent times. Q-Cells, REC and First Solar are the best positioned in this respect. By contrast, many Chinese companies have excessively high levels of debt. In general, however, conventional industrial companies are showing increasing interest in solar energy companies, as the latest takeover of Ersol by Bosch demonstrates.

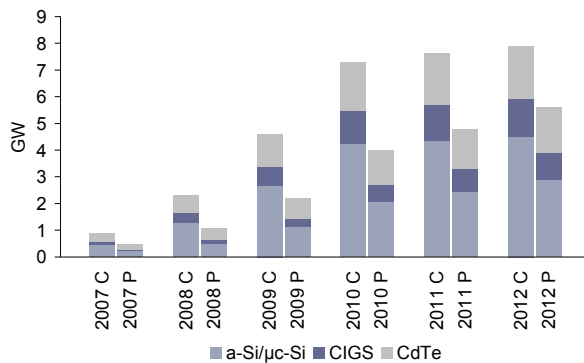
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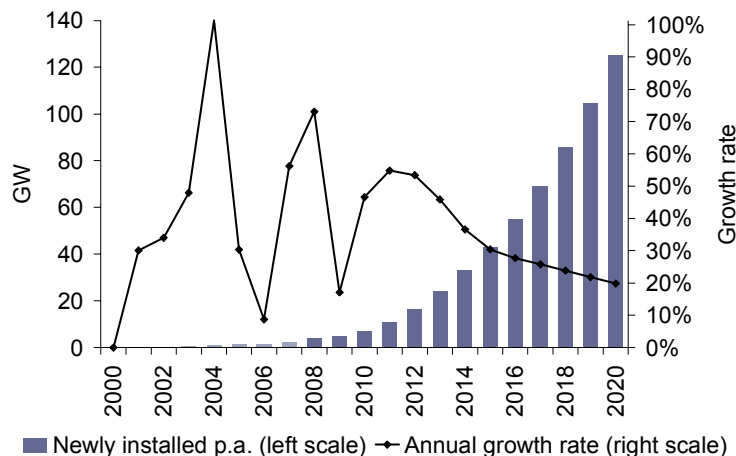
### Thin-film photovoltaics – a growth driver for the future

Thin-film modules with a capacity of approximately 460 MW were produced in 2007. This is equivalent to more than 12% of total PV module production. Around 60% of thin-film producers use amorphous/micromorphous (a-Si/ $\mu$ c-Si) technology, 30% copper indium (gallium) diselenide (CIS/CIGS) technology and 10% cadmium telluride (CdTe) technology. The expansion plans for thin-film technologies are very ambitious. Sarasin expects production to expand to approximately 1 GW in 2008 and 5.6 GW in 2012. This is equivalent to an annual average growth rate of 65%. The a-Si/ $\mu$ c-Si technology will account for around half the total production volume of 4 GW by 2010. By then, some companies could manage to close the gap with the current market leader, First Solar.



### Sarasin's long-term forecast for the global PV market (newly installed capacity p.a. in GW)

After a difficult year in 2009, the solar industry will emerge stronger from the challenging environment. If costs really can be cut by more than 10% annually, the projected growth scenario is perfectly viable. Achieving grid parity in the first key markets such as Italy, California and Japan would provide an enormous boost to the PV industry from 2010 onwards.





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