



## Strategic Solar M&A Transactions

A look at Chinese dominance of the global PV market

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Recent statistics in the solar photovoltaic (PV) market reveal the greatest challenge facing manufacturers is the recent emergence and dominance of Chinese PV manufacturers in the global market. Last year, Chinese PV manufacturers increased their share of worldwide market sales to 45% from 36% in 2009. By contrast, US manufacturers experienced a drop in their worldwide market share from 58% in 2009 to only 17% in 2010. Similarly, German firms experienced a market share drop from 18% to 8% during the same period. One approach by which non-Chinese manufacturers can quickly regain their competitive position is to engage in strategic M&A transactions—specifically joint ventures (JVs) and acquisitions.

### History of the PV market

China's recent overtaking of the PV market demonstrates a departure from the historical trend where high demand for PV products in a specific country translated into increased market power for the manufacturers of that country. Starting in the early 2000s, Japan led the demand for PV products and, accordingly, Japanese producers led the market in sales. By 2004, Germany had become the biggest demand market for PV products. Not surprisingly, by 2006, three of the top four producers were German. This model, however, no longer proves to be true.

Currently, over 90% of all newly produced PV products worldwide are being exported by China to the rest of the world. For example, in 2010, Asian producers supplied approximately 40% of the German market and Chinese producers supplied approximately 37% of the US

market. Contributing factors to this recent globalization and saturation of the market include the global financial crisis in 2009, the corresponding decrease in the price of silicon and subsequent oversupply of silicon in the market, and low barriers to entry.

In addition to these factors, conditions specific to China have enabled Chinese manufacturers to penetrate the worldwide PV market more effectively. First, the low production and labor costs allow Chinese manufacturers to have lower cost margins, which has allowed them to fare better even in the face of falling sales prices. Second, the Chinese government has provided support for its domestic manufacturers with over \$30 billion in low-interest loans from state banks. These loans put Chinese manufacturing companies in an advantageous position *vis-à-vis* new and existing non-Chinese competitors.

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### Overcoming obstacles

For non-Chinese manufacturers to compete in the current marketplace, some may need to re-evaluate their current business models and cost structures. One possible solution for non-Chinese manufacturers is to engage in M&A activity, including JVs and acquisitions. Capitalizing on M&A opportunities can provide manufacturers with three important tools needed to excel in this increasingly competitive field: economies-of-scale, geographic diversification, and technology acquisition.

#### • Economies-of-scale

Given the increased numbers of lower-cost PV manufacturers that have entered the market in the past several years, one thing remains clear: manufacturers require more promising cost trajectories to remain profitable. Economies-of-scale can enable manufacturers to increase production efficiency, while reducing costs. This traditional M&A rationale is particularly relevant today given cost pressures. Manufacturing costs in China are relatively low compared to the US, Europe, and other Asian nations due to reduced labor and raw materials costs. For example, in 2010, the solar crystalline module average price was almost US\$0.50 per watt less in China than in the US and Canada, and more than US\$1 per watt less in China than in Japan and Germany.

Due to the increased price sensitivity of the PV market, this cost advantage has given Chinese companies a distinct edge in the global marketplace, resulting in a year-over-year increase in 2009 to 2010 of total cell production of 152%, and a 9% increase in worldwide market share. Not only has this advantage allowed Chinese companies to benefit from stronger margins, but it has also enabled them to increase their production facilities to be better poised for today and future growth. For non-Chinese manufacturers to vie with their Chinese counterparts, they need to form strategic partnerships to build economies-of-scale necessary to reduce product development and supply chain costs.

#### • Geographic diversification

China's ability to outpace other manufacturers has been greatly facilitated by the financial assistance and support they have received from the Chinese government. Currently, major differences exist among countries with respect to the types and duration of governmental support for solar energy. While the US, many European, and non-Chinese Asian nations provide feed-in-tariffs (FIT) for solar energy, tax credits or investment allowances, the rates for FITs differ. However, a great deal of uncertainty exists regarding the future of these programs in the US and Europe, in large part due to the debt crisis of these nations. Already, recent FIT rate cuts in

European nations, such as Germany and Italy, have been the catalyst for drastic reductions in the size of those markets over the past two years.

As a mechanism to hedge risk, non-Chinese manufacturers should consider forming partnerships or other strategic relationships with companies based in different countries to avail themselves of as many government incentive programs as possible. Also, to ensure they will continue to be able to take advantage of government assistance and support, which are vital to remaining competitive given the developing and expensive nature of the industry.

#### • Technology acquisition

Technological development remains a key component to enabling manufacturers to remain viable by:

1. Leading future development with new forms of technology;
2. Hedging risk by diversifying among different forms of technology; and
3. Reducing manufacturing costs and increasing efficiency levels.

While US and European companies have been successful in utilizing technological development to create new forms of technology and lower costs, it has come at a high R&D cost, particularly compared to Chinese counterparts. In 2009, the percentage of R&D costs against total revenues was above 2% for all major US and European producers; whereas, among the top five Chinese manufacturers, only one had R&D costs above 2%.

It will be increasingly difficult for US and European-based firms to remain competitive if they continue to invest higher percentages of their revenues in new technologies *vis-à-vis* their Chinese competitors. Partnerships through JVs or other M&A activity can offer firms the opportunity to acquire new technologies, consolidate their research, and increase efficiencies—all with the effect of reducing costs and improving performance.

### Conclusion

As the PV marketplace continues to expand, companies need to continually re-evaluate mechanisms by which they can increase profitability and market share. One effective tool to achieve these goals is through M&A activity and strategic partnerships. Partnerships allow companies to hedge risks, react more quickly to a changing marketplace, reduce costs, and improve margins. In the coming years, more non-Chinese manufacturers may benefit from the pursuit and execution of strategic JVs and acquisitions to remain competitive with their Chinese counterparts.