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Solar Industry Strategies Rerouted by Market Conditions

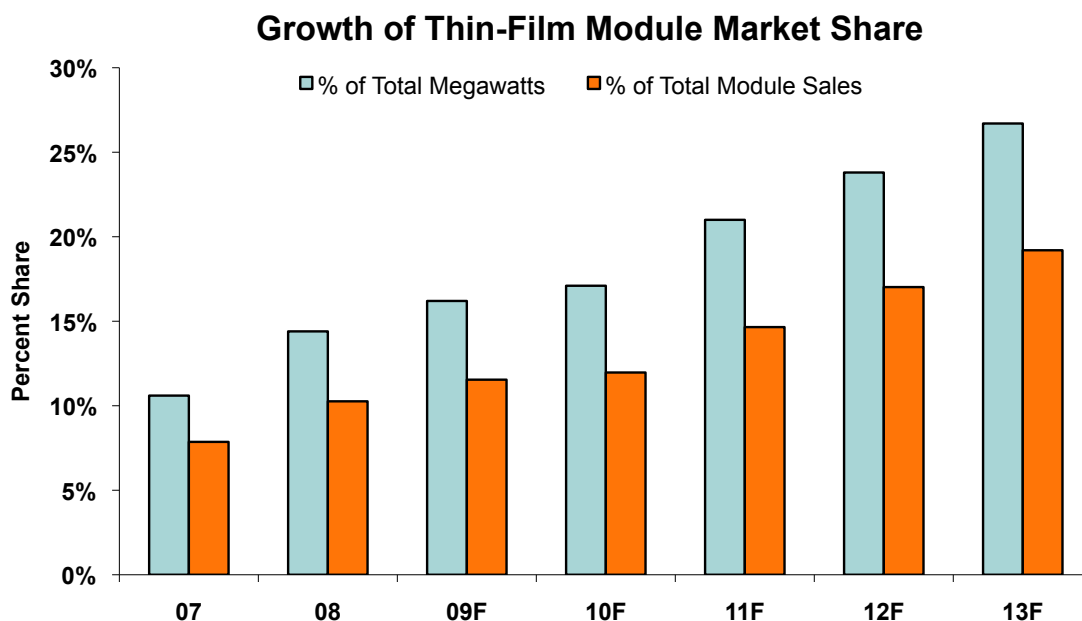
New IC Insights report shows gap widening between rooftop apps and large-scale projects

Thin-film (TF) solar panels, most notably the cadmium telluride panels made by First Solar Inc., have solidly established themselves as offering a lower price-per-installed watt than traditional solar panels made using silicon wafers. The 876 megawatts of TF modules sold in 2008 is expected to grow to 5.2 gigawatts in 2013, a compound annual growth rate of 43%, according to a new 2009 report from IC Insights, *Solar Energy: Growth Opportunities for the Semiconductor Industry*.

With this growth, the TF share of total solar photovoltaic devices sold will increase from 14% in 2008 to a forecast 27% in 2013, according to the report (Figure 1).

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Source: IC Insights

Figure 1

While TF is expected to continue gaining share, the *Solar Energy* report shows the forecast rate of growth is significantly lower than many recent solar industry forecasts. There are a number of factors behind this prediction.

TF panel makers have struggled to push panel efficiencies above about 11%, despite research-lab devices with efficiencies ranging from 16% to 20%. These higher efficiencies have been difficult to achieve in volume production, and there is little indication so far of a breakthrough in this regard.

Thus, despite their lower cost per watt, TF panels are predominantly used in large-scale ground based utility installations, where a large amount of space is available. In almost all rooftop applications, panels made with silicon-wafer-based solar cells are more attractive because their higher efficiency, ranging from 14% to 21%, means that more power can be generated for a limited rooftop area.

The political clout of electric utilities will undoubtedly draw government dollars toward large-scale solar installations. However, the *Solar Energy* report suggests that it is arguably the best use of solar technology to distribute small arrays on rooftops, close to the point of power consumption, where it reduces the costs and power losses associated with transmission and distribution lines. The better government policymakers understand this, the better the incentives should be for solar suppliers with the best rooftop products.

The *Solar Energy* report goes on to show that after several years of stellar growth—capped by a 99% growth year in 2008—the solar industry is being slammed during the current economic downturn. IC Insights believes that after a 22% drop in installed megawatts of solar PV capacity during 2009, strong growth will return in 2010, as new government incentive programs gain traction in the U.S., Asia, and Europe. But with weakened government support during 2009, seriously lean conditions are driving solar device makers to re-evaluate and re-tune their strategies for increasing the value they can deliver per dollar.

A big factor coming to the aid of wafer-based cell makers is a big increase in available polysilicon supplies in 2008, 2009, and 2010. Freed of the capacity constraints for wafers and with silicon costs dropping, wafer-based solar cell makers will concentrate on improvements in device design and manufacturing techniques that allow them to drive device efficiency up and cost-per-watt down. Several suppliers have said that they will be bringing higher-efficiency cells to market, including a number of new back-contact cell designs.

Other key findings in *Solar Energy: Growth Opportunities for the Semiconductor Industry*:

- **Pricing for solar panels will take a big step down in 2009**, and then return to moderate decreases in price per watt over the remainder of the 2009-2013 forecast period.
- **Competition is great among solar PV suppliers**, with the top supplier in 2008 holding only 9% of the market, and 13 other suppliers each with 4% or more. IC Insights expects supplier rankings to continue to change.
- **Solar-grade polysilicon will remain in oversupply** throughout the forecast period. New sources of lower-cost supplies, such as upgraded metallurgical grade (UMG) silicon, will help drive down wafer costs.
- **Equipment suppliers to the new solar device industry must re-tune their business** as device makers struggle with ballooning inventories and plummeting capacity utilization.

Report Details

Solar Energy: Growth Opportunities for the Semiconductor Industry was written to help current semiconductor manufacturers and suppliers gain a clearer understanding of solar technology and markets as they consider exploiting existing and upcoming opportunities available in the fast-growing solar PV sector. It contains five-year forecasts for photovoltaic cells, solar modules, PV pricing trends, semiconductors in solar systems, PV-production capacity, capital expenditures, and polysilicon sales for PV cells. Regional market trends along with profiles and ranking of the industry's top 15 photovoltaic device suppliers are also covered in the new report. Single-user copies of the 118-page report sells for \$2,975 with each additional copy priced at \$495. A multi-user corporate license is available for \$5,880.

About IC Insights

IC Insights, Inc., based in Scottsdale, Arizona USA, is dedicated to providing high-quality, cost-effective market research for the semiconductor industry. Founded in 1997, IC Insights offers coverage of global economic trends, the semiconductor market forecast, capital spending and fab capacity trends, product market details, and technology trends, as well as complete IC company profiles and evaluations of end-use applications driving demand for ICs.

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