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U.S., Chinese, and Taiwanese Solar-Cell Makers Gain Ground

Japan's major PV suppliers slip in ranking that shows total output of devices up 70%

Japan's suppliers of solar photovoltaic cells and panels, which dominated the industry for many years, slipped in the supplier rankings in 2008, according to a new 2009 report from IC Insights, *Solar Energy: Growth Opportunities for the Semiconductor Industry*. The 2008 top 10 solar ranking contains two suppliers based in Japan, three in China, two in Taiwan, two in Germany, and one in the U.S. (Figure 1).

Sharp Corp. was the No. 1 PV device supplier in 2006 and for several years before that. In 2007, Germany's Q-Cells AG and China's Suntech Power Holdings Co. Ltd. overtook Sharp, according to IC Insights' figures. In 2008, First Solar Inc., a U.S.-based supplier of thin-film PV panels made with cadmium telluride, blew past both Sharp and Suntech, pushing Sharp down to No. 4 in the 2008 rankings, which are based on the peak-megawatt value of the PV devices produced and sold by each supplier.

The totals include PV cells, and in the thin-film case, PV panels. Cell-based panels are not included to avoid counting cells twice. First Solar's MW TF panel sales increased a stunning 144% in 2008, boosting it to the No. 2 position. For its part, Sharp has stated extremely ambitious plans for expansion of its capacity to manufacture and sell silicon-based TF panels over the near term. If successful, Sharp could quickly make up for lost ground.

Sharp was not the only Japanese supplier whose position declined in the 2008 ranking. Kyocera Corp. slipped from the No. 5 spot in 2007 to No. 6 in 2008. Sanyo, which was No. 7 in the 2007 ranking, did not make IC Insights' top 10 ranking in 2008. Mitsubishi also dropped in the ranking.

Future PV device rankings are expected to show significant changes due to the small increments that separate many of the top players. The top four suppliers all achieved marketshares (based on MW sales) between 8.0% and 9.5%. A second tier of suppliers was formed by those ranked No. 5 through No. 10, all having between 4% and 5% marketshare, and with several additional suppliers close on their heels.

MORE INFORMATION CONTACT

Jeremy Young
Author, IC Insights'
Solar Energy Report
Phone: +1-516-808-3282
Email: jyoung4@optonline.net

2008 Top 10 Photovoltaic Device Suppliers

2008 Rank	2007 Rank	PV Supplier	HQ	2007 % of Total MW	2008 % of Total MW	08/07 % Change	2007 % of Total \$	2008 % of Total \$	08/07 % Change
1	1	Q-Cells	Germany	10.9%	9.4%	48%	14.5%	12.2%	43%
2	4	First Solar	U.S.	5.8%	8.3%	144%	6.2%	9.0%	147%
3	2	Suntech	China	10.2%	8.2%	37%	9.0%	7.2%	36%
4	3	Sharp Corp.	Japan	9.0%	8.0%	51%	8.0%	7.3%	56%
5	6	Motech	Taiwan	4.9%	4.8%	67%	4.1%	4.0%	70%
6	5	Kyocera	Japan	5.7%	4.6%	37%	5.0%	4.0%	38%
7	10	JA Solar	China	3.7%	4.6%	108%	4.6%	5.8%	117%
8	9	Yingli Green Energy	China	4.0%	4.5%	93%	3.3%	3.8%	95%
9	12	Gintech Energy	Taiwan	3.1%	4.4%	144%	2.6%	3.6%	141%
10	8	Solar World	Germany	4.7%	4.0%	44%	4.9%	3.8%	32%
Top 10 Total				62.0%	60.8%	67%	62.0%	60.6%	67%
Others				38.0%	39.2%	75%	38.0%	39.4%	77%
Cell & TF Panel PV Total				3.57GW	6.0 GW	70%	\$8.1 B	\$13.85B	71%

Source: IC Insights, company reports

Figure 1

Changing rank within these tiers is statistically inevitable, and it is entirely possible for a supplier to move quickly from the second tier to the first, as First Solar demonstrated in 2008.

Other than First Solar, the risers in the top 10 list were exclusively suppliers based in China or Taiwan. Although China's Suntech slipped from No. 2 to No. 3 on MW growth below that of the total global industry, JA Solar Holdings Co. Ltd. rose from No. 10 to No. 7 in the ranking based on 109% growth in MW sales in 2008. Yingli Green Energy Holding Co. Ltd. advanced from ninth place to eighth on the strength of 93% growth.

In Taiwan, Motech Industries Inc. swapped seats with Kyocera, moving from No. 6 to No. 5 thanks to a 67% increase in MW sales. But perhaps more impressive was the performance of Gintech Energy Corp., which equaled First Solar's growth of 144% in MW sales in 2008, pulling itself up from No. 12 to No. 8 in the ranking.

Gintech, like JA Solar, makes solar cells only; these two companies follow the business model of top-ranked Q-Cells, which has only recently started to diversify beyond pure-play PV cell manufacturing. Other suppliers in the top 10 are involved in panel manufacturing, system installations, and other aspects of the solar value chain.

At the bottom of the list is No. 10 Solar World AG, a German company that holds the distinction of being the biggest manufacturer of PV cells in the U.S., thanks to the recent expansion of its plant in Hillsboro, Oregon. A U.S.-headquartered cell manufacturer, SunPower Corp., almost made it into the top 10 in 2008, but SunPower manufactures its cells in plants in the Philippines.

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 a 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.

Web Site: www.icinsights.com • **Phone:** +1-480-348-1133 • **E-mail:** info@icinsights.com