

No end in sight for cost pressures on PV manufacturers – ITRPV

PV manufacturing capacity expansions planned this year are expected to push production levels beyond anticipated demand in 2016, creating further cost pressures for suppliers, according to the findings of the seventh International Technology Roadmap for Photovoltaic (ITRPV), produced this VDMA.

Focusing as usual specifically on c-Si rather than thin-film manufacturing, the report alludes to the recent trend of capacity expansion announcements by module manufacturers.

With global demand predicted at around 60GW this year and capacity expansions expected to push total production capacity above the 60GW the roadmap said was in place at the end of 2015, the report said supply would likely outstrip demand this year.

Among the trends for achieving reductions, the roadmap predicts diamond wire sawing will steal significant market share off the current slurry-based process that currently dominate both mono and multi wafer production.



Credit: Trina Solar

Module manufacturers face ongoing cost pressures in the coming year, according to the latest ITRPV report.

Market

Record year for solar driven by reduced technology costs – IRENA

Global solar capacity grew by 47GW (26%) during 2015 as a result of module prices dropping by as much as 80% over the same period, according to the latest data from the International Renewable Energy Agency (IRENA).

At the end of 2014, solar deployments worldwide stood at nearly 180GW, rising

to 227GW during 2015.

The highest regional increase in solar deployment was the 48% growth in Asia with 15GW in China and 10GW in Japan. North America's 8GW saw it surpass European installations for the first time, which stood at 7.6GW.

In the emerging markets, Oceania saw a 1GW solar increase and Africa had 0.9GW installed. Elsewhere, South American solar grew by 517MW over 2015; meanwhile Central America and the Caribbean went up by 577MW. At the end of 2015, Europe accounted for 43% of global capacity.

Manufacturers

JinkoSolar makes 1,500V 'Eagle' modules available in US

JinkoSolar has said that its multicrystalline 'Eagle' modules in 1,500V configuration were being made available in the North American market.

JinkoSolar has previously guided shipments to the US in 2016 to potentially exceed 1.5GW, a key market being utility-scale PV projects which increasingly have adopted 1,500V



Credit: JinkoSolar

JinkoSolar has said it will add 1GW per quarter of new capacity this year to keep up with demand.

modules to lower balance of system costs.

The 1,500V Eagle PV modules for the North American market will also come specified with DuPont's 'Tedlar' polyvinyl fluoride (PVF) film-based backsheets and were said to have passed potential-induced degradation (PID) tests at 85 degrees Celsius and 85% relative humidity.

JinkoSolar adding 1GW of solar module capacity per quarter

JinkoSolar is adding 1GW of solar module capacity per quarter through to the end of the first half of 2016 to meet the "minimum" expected demand for its products. The company guided total module shipments in 2016 to be around 6GW to 6.5GW.

Solar cell capacity is to expand by 200MW in Q1 2016 and by a further 700MW by the end of Q2 2016. Total nameplate capacity by mid-year is expected to reach 3.5GW, up 900MW from 2.5GW at the end of 2015.

The company is expanding module assembly to much higher levels than wafer and cell combined and is adding 1GW of nameplate module capacity in Q1 2016, and a further 1GW by the end of Q2 2016. JinkoSolar plans to reach 6.3GW of nameplate module capacity by the end of Q1 2016, up from 4.3GW at the end of 2015.

SolarWorld posts sales of €212 million in Q1 2016

Integrated PV module manufacturer SolarWorld has reported preliminary first quarter 2016 sales of €212.6 million on product shipments of 341MW.

SolarWorld's sales in the first quarter of 2016 were down from €231 million in the previous quarter but up significantly from €149.1 million in prior year quarter.

Sales were almost identical to those reported in the third quarter of 2015, while shipments were lower, indicating declining ASPs.

Shipments in the quarter, which include modules and system installation kits, were down from 404MW in the previous quarter but up significantly from 202MW in the prior year period.

Shipments were said to have been strong in the US, Germany and Europe.

The company noted that its order backlog stood at over 540MW at the beginning of the second quarter of 2016, while orders totalled over 880MW in early April.

As a result of a strong order backlog, SolarWorld said it expected total shipments in 2016 to exceed 1,390MW, or more than 20% over shipments of 1,159MW in 2015.

Trina Solar hits shipments of 5.74GW and US\$3 billion revenue in 2015

Trina Solar has reported full-year 2015 total solar module shipments of 5.74 GW, an increase of 56.8% from 3.66GW in 2014 and revised upward guidance of 5.5GW to 5.6GW.

Total net revenues were US\$3.0 billion, an increase of 32.8% from 2014.

The company exceeded fourth quarter shipment guidance of 1.5GW to 1.65GW to reach 1,776.3MW.

The company expects to ship between 1.37GW to 1.45GW of PV modules in the first quarter of 2016, all of which will be shipped to third-party customers.

Trina Solar guided manufacturing nameplate capacity of ingots of 2.3GW by the end of 2016 and wafer capacity of 1.8GW. Solar cell capacity would be 5GW and module assembly capacity would reach 6GW at year-end. Both ingot and wafer capacities will therefore remain unchanged from 2015, while solar cell capacity will increase 1.5GW in 2016 and module capacity by 1GW.

SunEdison teams with Jinergy on 1.5GW integrated n-type heterojunction production plant

Prior to filing for bankruptcy, SunEdison partnered with Jinneng Group to build a 1.5GW integrated n-type monocrystalline heterojunction production facility in Shanxi Jinzhong Industrial Park, Shanxi, China. No financial details of the partnership were disclosed.

Jinergy was established at the end of 2013 and broke ground on its first facility in March 2014 with a claimed 500MW of n-type monocrystalline solar cell nameplate capacity, 600MW of PV module assembly capacity and average cell efficiencies of 18.7%.

The company has also recently claimed to have achieved a monocrystalline PERC efficiency of 21.3% in R&D.

Applied Materials supplied double printing fine line (FLDP) metallization tools to the company.

SunEdison recently announced it was making drastic changes to its upstream manufacturing operations by closing down one of its polysilicon plants and selling its wafer operations in Malaysia to Longi Silicon Materials.

Yingli Green secures module supply deal for 2017

Despite being technically bankrupt, Yingli Green has been in stealth mode over its future viability since reporting Q3 2015 results at the beginning of December last year.

On April 12 Yingli Green announced a 200MW PV module supply deal with an unnamed European EPC firm for PV power plant projects in the Dominican Republic for 2017 onwards.

The company has managed to file only one SEC filing in 2016, which related to one of only seven press releases the company has issued this year. Only one of those at the beginning of the year related to its financial condition with the expected reverse stock split to counter a looming delisting.

In recent years, Yingli Green has been the last publicly listed solar company to report quarterly results and has yet to announce when it will report fourth quarter and full-year 2015 financial results.

News

Technology

Bifacial PV test site shows 'impressive' yield gains

Early results from a test array in Germany using bifacial 'BiSoN' module technology have indicated significant yield gains compared to a nearby reference site using standard modules.

The bifacial array uses 16 BiSoN modules manufactured by Italian firm MegaCell, which incorporate technology initially developed by German research institute ISC Konstanz.

According to the institute's analysis, the bifacial system demonstrated a daily average production of 1.8kWh/kWp compared to 0.8 produced by traditional monofacial modules.

ISC project manager Joris Libal said this "noteworthy difference" is due to the high incidence of diffused light caused by winter cloudiness. Because in sunny conditions this difference would be lower, as the front efficiency of the module would be proportionately bigger, the overall yearly yield gain from the bifacial module would be less than the +120% recorded during the sample month – between 25 and 40% over a typical year, according to ISC projections.

High-performance solar modules order of the day

At the recent PV Expo in Tokyo, Japan, several international PV manufacturers showcased high-performance PV modules.

Hanwha Q CELLS introduced its proprietary Q.ANTUM cell technology that included a monocrystalline Q.PEAK prototype, which was said to produce up to 305Wp from 60 cells.

Shanghai Aerospace Automobile



A test array using bifacial 'BiSon' technology has shown promising yield gains.

Electromechanical (HT-SAAE) is also showcased its 'Milky Way' Twin Star bi-facial module, which uses N-PERT solar cells and is compatible with a 1,500V PV system, reducing BOS up to a claimed 10% due to its 20W higher power output compared to first generation Milky Way modules.

Seraphim Solar launched its new 'Eclipse' module at the Expo which archives 310W output power and 19.1% solar energy conversion efficiency, according to the company. The module is claimed to generate 15% more output than conventional modules by optimising the busbar and module design, increasing its active working area to an alleged 50% calorific effect.

Panasonic sets module efficiency record of 23.8%

Panasonic claims to have set a new module efficiency record of 23.8%, a full percentage point higher than the previous record c-Si record.

The company announced a cell conversion efficiency of 25.6% in its

silicon heterojunction cells in April 2014 and now claims to hold both the cell and module records.

The milestone has been achieved at research level, not commercial production level, and was authenticated by Japan's National Institute of Advanced Industrial Science and Technology (AIST).

A previous round of efficiency records in October 2015 saw SolarCity's Silevo technology trumped by Panasonic.

The company has also pledged to continue developing its HIT technology to improve efficiency and move improvements from lab to fab.

Last month the manufacturer reportedly suspended one-third of its HIT manufacturing capacity citing low domestic demand.

New Fraunhofer CPV module sets new world record in efficiency

After announcing a new world record in solar-cell efficiency in 2014, Fraunhofer

ISE reports that it has set a new benchmark for efficiency at the module level, using concentrator PV (CPV) technology.

According to the Freiburg-based research institute, a new CPV 'mini-module' consisting of four-junction solar cells reached a new world record efficiency of 43.3%.

Andreas Bett, deputy director of the institute at Fraunhofer ISE, said: "This value is a new milestone in the history of CPV technology and demonstrates the potential available for industrial implementation."

Multi-junction solar cells are often utilised in CPC, which is often integrated into regions with a large share of direct irradiation to generate cost-effective renewable electricity.

The 2014 record by Fraunhofer and partners Soitec and French research body, CEA-Leti, achieved a cell conversion efficiency of 46%, the highest recorded conversion of sunlight into electricity.