News

SolarCity's 1GW Buffalo fab using technology from Japan, Germany and Taiwan

SolarCity's 1GW factory in Buffalo, New York, will likely be equipped with tools from suppliers in Japan, Germany and Taiwan.

In February 2016, SolarCity, the largest residential solar PV installer in the US said in its fourth quarter 2015 earnings call that its ambitious 1GW Buffalo Riverbend manufacturing facility had been impacted by longer than expected equipment lead times, pushing some equipment installs into the second half of 2016.

Credit: SolarCity

The 1GW Buffalo fab has experienced some minor delays with the delivery of equipment.

However, much of the equipment set to produce its hybrid heterojunction cell and module technology from its acquisition of start-up Silevo remained a mystery.

According to PV Tech's analysis, German equipment specialist Singulus Technologies is one of the key front-end suppliers to the Buffalo fab, possibly supplying its modular SILEX II wet processing batch system for n-type monocrystalline wafer texturing and its HISTARIS inline sputtering system for anti-reflection, barrier, buffer and precursor layers.

A stumbling block did exist in identifying the a-Si (PECVD) deposition tool supplier, until by accident we stumbled across Taiwan-based firm, Archers Systems.

In a February 2016 press release, believed to be related to a new order from Taiwan-based solar cell producer, Neo Solar Power (NSP), Archers makes clear reference to the "US largest rooftop solar PV provider" and its "1GW HJT solar cell production capacity", which noted that it had "successfully delivered and received the final acceptance for the equipment ordered by this client in 2015".

There still remains some uncertainty over whether we have got these supplier selections right as on purpose they were not contacted as they would surely be under NDA agreements. There also remains some uncertainty in regards to some other tool selections but the picture is emerging.

Market

Global PV manufacturing capacity expansion announcements in March increase to 7.3GW

Preliminary analysis of global PV manufacturing capacity expansion announcements for March 2016 have revealed over 7.3GW of planned future expansions of solar cell and module production.

The planned expansions are primarily due to several companies – including JinkoSolar, Trina Solar and Canadian Solar – adding meaningful capacity to meet expected global demand in 2016.

Dedicated solar cell capacity expansions announcements reached 3.1GW in March, compared to 1.26GW in the previous month. The increase was primarily driven by JinkoSolar, Trina Solar and Tainergy Tech.

Overall capacity expansion announcements in 2016 are continuing to track significantly higher than in 2014 and 2015.

However, dedicated solar cell and integrated cell and module plant expansions are running almost at the same levels since the second half of 2015, indicating that after a two-year period of mainly dedicated module assembly expansions carrying low capital expenditure, PV manufacturers are having to correct major cell to module imbalances or add cell capacity to retain established imbalances as further module assembly expansions are also planned in 2016.

JA Solar matching production capacity to shipment guidance for 2016

JA Solar has said it expects full-year 2016 shipments to be in the range of 5.2GW to 5.5GW, including 250MW to 300MW of module shipments to its downstream projects.

The company is increasing its manufacturing capacity to match expected demand, which will include expanding in-house wafer capacity to 2.0GW, solar cell capacity to 5.5GW and module capacity to 5.5GW by the end of 2016.

Management noted in the earnings call that the majority of the capacity expansions would take place at its existing facilities in China. However, its integrated cell/module plant in Malaysia could ramp to 600MW to 800MW in 2016, dependent on overseas demand.

The company said that capital expenditure in 2016 could reach around US$350 million to meet wafer, cell and module planned expansions.

Baofang Jin, chairman and CEO of JA Solar said: "Our outlook for 2016 is bright. We expect growth of over 30%, as countries around the world continue to encourage the growth of clean, renewable energy.

"We are able to capture this market growth due to our industry-leading reputation for quality and value. We intend to aggressively protect that reputation through our ongoing investment in research and marketing."

Europe

Trina Solar takes over Solland Solar's Dutch cell plant

Leading 'Silicon Module Super League' (SMSL) member Trina Solar has acquired the solar cell manufacturing assets of bankrupt producer, Solland Solar, in the Netherlands. No financial details were disclosed.

PV Tech had previously reported that just before Solland Solar's parent company Pufin Group filed for insolvency, Trina Solar had secured a supply deal from the Dutch firm for over 200MW of solar cells.

Trina noted that its wholly owned subsidiary, Trina Solar Netherlands, had made the purchase of the plant and planned to re-start production in the coming weeks.

Jifan Gao, chairman and CEO of Trina Solar, said: "This investment will be one of the components of our ongoing global expansion strategy. In particular, this new cell facility in Europe, along with our in-house manufacturing capacity in Thailand and other overseas capacities allows us to leverage our global resources so that we can further expand our presence and enhance our competitive edge in overseas markets, especially the US and Europe."

Former Centrosolar module assembly plant in Germany back in production

CS Wismar GmbH with a team of former Centrosolar staff have restarted PV module assembly operations at the former

Sonnenstromfabrik facility in Wismar, Germany

Centrosolar Group AG went bankrupt in 2014, which led to rival module manufacturer, Solar-Fabrik, acquiring the facility in July, 2014. However, Solar-Fabrik itself went bankrupt in February 2015.

CS Wismar said the manufacturing facility had a capacity of around 525MWp and would primarily offer OEM services for companies focused on the fast growing US market.

Dr Bernhard Weilharter, sales director at CS Wismar said: "The demand is there. The market will recall good experiences with modules from Wismar – over our 20-year production history at Wismar we had a complaint rate of less than 0.02% p.a. – such quality rates are unequalled in the industry. Even before the production start people were asking us when superior-quality modules made in Wismar would finally go on sale again."

Credit: Centrosolar

Centrosolar's Wismar fab is back in production, with a capacity of around 525MW.

Polysilicon

REC Silicon restarts FBR production at Moses Lake

REC Silicon will restart FBR polysilicon production at its Moses Lake facility in the US during May, with full production planned to be resumed in June 2016, the company has confirmed.

The company had previously said the shutdown was due to high polysilicon inventory levels and its cash position, on the back of the ongoing anti-dumping duties placed on US-based polysilicon into China as part of the wider solar trade war.

Tore Torvund, REC Silicon, CEO said: "We have reduced our inventories and market conditions have improved to the point to enable us to restart production in Moses Lake, with FBR cash costs near US$10/kg. Further, the maintenance work that has been completed during the curtailment period should allow us to run the FBR unit as well as Silane III and IV for two years without an extended outage."

On a global basis, polysilicon had been in oversupply for several years but tight supply exists in China, due to the limited access polysilicon producers in the US (Hemlock, REC Silicon and SunEdison) have to the largest market after high anti-dumping duties were imposed and shipment loopholes closed.

REC Silicon noted in its first quarter 2016 financial report that it expected around an extra 17,000MT of polysilicon to come on stream in 2016, compared to 72,000MT claimed in 2015, which has primarily been absorbed by global downstream PV installation growth.

Wacker opens 20,000MT Tennessee poly plant

Wacker Chemie has officially opened its 20,000MT polysilicon plant in Tennessee with production now ramping up. The company expects to be at full capacity in the third quarter of 2016.

Wacker CEO Rudolf Staudigl said the company expected between 60 and 70GW of installed PV capacity this year.

"Cost for electricity produced by photovoltaic systems has declined markedly in recent years. Consequently, this way of generating energy has become even more competitive, which is opening up new markets," explained Staudigl.

In particular, he said he expects India to join the US, China and Japan among the largest sources of end demand in 2016.

"This will spur demand for high-grade material of the best quality, as supplied by WACKER," emphasised Staudigl. In the photovoltaic sector, silicon technology has clearly beaten other technologies, he said.

According to the company, the site in Charleston, Tennessee is the company's single largest investment having been built over five years at a cost of US$2.5 billion. It will employ around 650 people once it reaches full capacity.

Credit: Wacker Chemie

Wacker's new poly plant in Charleston, Tennessee, will employ 650 people once it reaches full capacity.

Cells

REC Solar to switch all production capacity to half-cut PERC cell technology

Integrated PV module manufacturer REC Solar will migrate all production at its manufacturing facility in Tuas, Singapore to its half-cut PERC cell technology, used for its 'TwinPeak' series modules.

The recently announced capacity conversion (automation, technology upgrades) (1.3GW) and R&D investment in collaboration with Singapore-based R&D centre, SERIS (Solar Energy Research Institute of Singapore) includes SG$200 million (US$182.3 million) capacity conversion and SG$50 million R&D spending over the next three and five years respectively.

The R&D spending with SERIS will be used for development of a novel 350W PV module over the next five years. REC Solar claims the new module is expected to generate 1.35 times more energy while at a comparable cost and size to standard multicrystalline modules.

Capacity expansions are therefore coming from higher cell and module conversion efficiencies rather than added new capacity.

According to PV Tech's assessment, REC Solar would become the first PV manufacturer to switch all production capacity to half-cut and PERC cell technology. Other companies such as SolarWorld are also planning to migrate all production to PERC cell technology.

Neo Solar Power adding 50MW heterojunction solar cell line

Taiwan-based major solar cell producer Neo Solar Power (NSP) is installing a 50MW N-type heterojunction (HJ) solar cell line, according to reports.

Taiwan-based PV equipment specialist Archers Systems said in a statement that it had secured the repeat order from Neo Solar Power, it had previously only said that it had made a deal with a leading Asia-based solar cell manufacturer which was developing bifacial cells. Digitimes, which covers tech news in Taiwan and China said on Friday that the line will have an annual production capacity of 50MWp.

The latest order included its PECVD tool for coating high uniform thin-film layer's and a new type of PVD system using reactive plasma technology to provide higher uniformity Transparent Conductive Oxide (TCO) layer with higher conductivity and higher transparency, claimed to provide a 1% efficiency gain, leading to cell conversion efficiencies over 23%.

Emerging markets

Saudi energy minister wants investors for PV export industry

Saudi Arabia's energy minister has said he believes it will be impossible to keep fossil fuel resources "in the ground" even in the next 50 years but nonetheless sees his country as an ideal potential manufacturer-exporter of PV panels.

Ali bin Ibrahim Al-Naimi, minister of petroleum and mineral resources for the Kingdom of Saudi Arabia, who is also the head of OPEC, said at an international event in Berlin in March that instead of trying to eliminate fossil fuel use and emissions should instead be "controlled". He also reiterated recent comments he has made about wanting to establish the kingdom as a PV manufacturing base and invited investors to consider Saudi Arabia as a potential hub of the renewables industry.

Al-Naimi was speaking at the Berlin Energy Transition Dialogue, a German federal government-backed event which sought to share lessons from Germany's own 'Energiewende' ('energy transition') with international stakeholders including utilities and policymakers and provoke discussion on the topic and its relevance to the rest of the world.

"I hope I can interest investors, worldwide, especially in Germany," the minister said.

"Come to Saudi Arabia, join hands with our business community and develop an industry integrated from the sand, the pure sand, to the factories. Then generate power from photovoltaics."

India plans support scheme for large-scale domestic solar equipment manufacturing

The Indian government is planning a policy to support the development of large-scale solar manufacturing facilities in India, according to energy minister Piyush Goyal.

Goyal's comments at the Surya Kranti Summit Organised by Bharat Solar-Power Development Forum in New Delhi were widely reported by the local press.

He said: "We are working on a policy to promote large-scale domestic manufacturing of solar equipment for making it more competitive."

Aiming for a "quantum jump" in domestic production of solar equipment and potentially including silicon wafers, Goyal said the new policy will soon be sent to India's Union Cabinet for approval.

Meanwhile, a committee headed by Department of Industrial Policy and Promotion (DIPP) secretary Amitabh Kant has already provided contours of the policy to be evaluated.