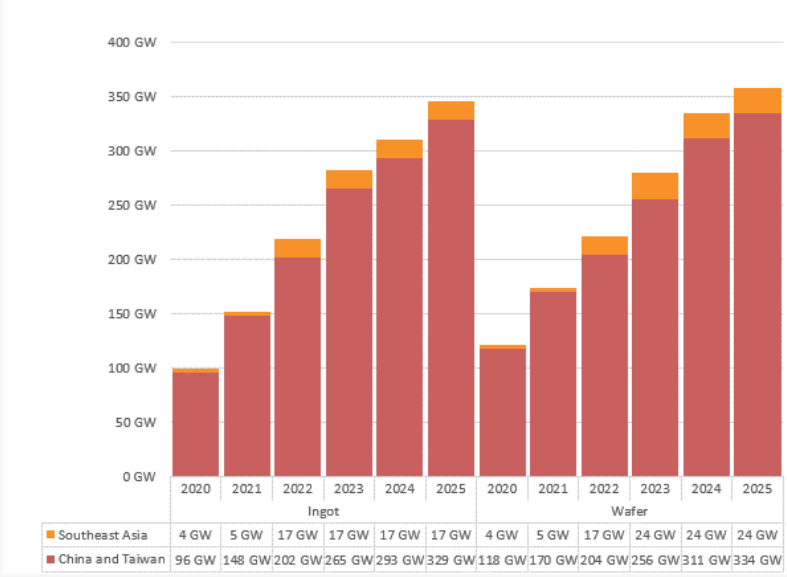
End-of-year polysilicon capacities expected to reach 295 GW in 2022 and up to 536 GW in 2023

Clean Energy Associates' forecast of potential solar manufacturing capacity far exceeds next year's expected global solar installations



Supplier Ingot and Wafer Capacities (GW end-of-year capacity estimates)

DENVER, COLORADO, UNITED STATES, October 13, 2022 /EINPresswire.com/ -- Clean Energy Associates (CEA), a leading solar and storage supply technical advisory, has released its Q2 2022 PV Supplier Market Intelligence Program Report (SMIP). The subscription-only report by CEA's Market Intelligence team includes proprietary insights based on 1-on-1 interviews with technical leaders at many of the world's leading solar suppliers.

PRODUCTION CAPACITY UPDATES

Module capacity expansions are slowing, but many suppliers continue to increase cell manufacturing capacity, especially for new factories catering to n-type TOPCon or HJT manufacturing.

Only seven suppliers covered by the report are vertically integrated from ingot to module production, with most others only holding cell and module capacity. With growing merchant wafer options, there is little need for most suppliers to expand upstream.

While some suppliers still see additional gains for PERC cells, most have shifted their focus to exploring TOPCon and HJT, given promising efficiency potential based on champion efficiency levels.

MARKET TRENDS

China's PV market demand

China's PV market had a strong start in 2022, with nearly 31 GW of solar installation during the first half of 2022. Installations in just the first half of 2022 are almost equivalent to 2021 installations from January to October. Multiple market analysts project that China will break 100 GW of installations this year, CEA maintains expectations for slightly lower solar installations in China during 2022, mainly due to high module prices impacting utility-scale projects, with many investment decisions deferred as projects could not meet their internal rate of return thresholds.

Manufacturers optimize wafer sizes after standardizing module dimensions

On the manufacturing side, suppliers are exploring ways to optimize wafer sizes after standardizing 210 mm (G12) and 182 mm (M10) module dimensions. The "182 mm Plus" (182P) has increased wafer heights to further reduce "white space" caused by intercell gaps to achieve up to 5 W of additional output. Module sizes will be unaffected. The "210 mm Reduced" (210R) has reduced wafer widths for niche rooftop applications at the expense of power output. New module sizes for rooftop applications will be introduced.

Global PV supply chain capacities

- Six polysilicon facilities are expected to fully ramp up production this quarter, bringing Q3's total global available polysilicon manufacturing nameplate to 90 GW. End-of-year polysilicon capacities are expected to reach 295 GW in 2022 (after accounting for factory maintenance) and up to 536 GW in 2023 (assuming all projects in the pipeline develop as planned).
- Ingot capacity grew almost 30 GW this quarter, primarily due to another 23 GW coming online at two facilities.
- Wafer capacity decreased slightly, primarily due to a supplier retiring its multi-crystalline wafer capacity.
- The 17 PV suppliers covered in the report increased total cell capacity by 22% in Q2 2022 alone, bringing an additional 47 GW of capacity online to reach a total of 262 GW this quarter.
- Module production capacities in Q2 2022 reached over 324 GW, and by the end of 2022 are forecasted to reach nearly 400 GW, up approximately 20% from current capacities.

PV supply chain capacities outside China

Suppliers covered by the report currently operate 11 GW of non-China ingot capacity, 42 GW of non-China cell capacity, and nearly 50 GW of non-China module capacity. They maintain plans to increase these capacities to 23 GW, 73 GW, and 74 GW, respectively. Almost all suppliers have

realized non-China upgrade plans for large wafers; only a few suppliers migrating to the 210 mm format need additional time to finalize expansion plans due to the need for more costly equipment purchasing/upgrading.

Policy uncertainties continue to defer expansion plans of suppliers as they remain cautious due to lingering policy uncertainty in the United States surrounding the Uyghur Forced Labor Prevention Act and anticircumvention investigation.

The complete Q2 SMIP report covers more about polysilicon price trends, China's PV market, manufacturing in North America, Europe and India, n-type supplier updates, detailed module and raw material capacity information, and up-to-date operational data for the largest solar suppliers.

The complete report is available for purchase and includes insights gathered from 1-on-1 interviews with technical leaders at many of the industry's leading suppliers.

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