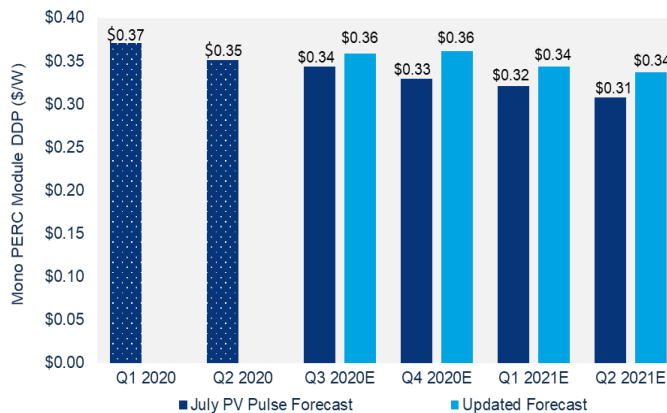


Solar module price declines have ended. Expect short-term price increase.

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On July 19, 2020, an explosion occurred at GCL Poly's production facility in Xingjiang China, affecting 48,000 metric tons of polysilicon production, which is approximately 10% of China's capacity. The incident is creating a ripple effect on the global module supply chain, driving up prices for the rest of 2020.

US bifacial mono PERC module price forecast



Note: Prices are based on modules made in Southeast Asia

Source: Wood Mackenzie

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- **Global PV supply chain pulse: August 2020 (upcoming)** for our latest module pricing forecast.
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The cost pressure along the supply chain is high. Module prices will increase in August and remain relatively flat for the rest of 2020.

The incident and industry reaction

When fully utilized, the affected GCL facility can supply up to 15 GW of wafers. The facility has been taken offline as a result of the accident. Industry experts expect that it will take at least one month to repair the damage and resume production. Some pessimistic estimate puts the timeline to bring the capacity back online at the year-end. This incident has triggered a domino of supply chain impacts, and they will have significant implications on module pricing around the globe.

In the days after the GCL accident, mono-grade polysilicon prices in China increased by 20%. This dramatic price hike is felt immediately by downstream players. In the week following the accident mono wafer prices increased by 6%, mono PERC cell prices increased by 12%. Mono PERC module prices did not immediately react to the upstream price hike, although upward cost pressure is building. Suppliers have asked a number of module makers to re-negotiate supply contracts. The four-month-long pandemic-triggered module pricing decline is coming to an end.

PV supply chain constraint lies in the polysilicon sector

Going forward, the polysilicon supply is the key factor to watch. The sector faces three headwinds in the short-term.

1. Even before the GCL incident, ongoing summer maintenance had taken 10,000 tons of capacity offline in late June. This capacity should return to production through August.
2. The GCL incident further affects short-term supply.
3. Covid-19 outbreak and the lockdown measures to contain it in Xinjiang province, which holds over half of the global polysilicon production capacity, have created outbound logistics challenges.

Demand for polysilicon is expected to be strong as the wafer capacity expansion plans announced by Jinko, LONGi, and Tianjin Zhonghuan in the past 18 months will start to come to fruition between H2 2020 and 2022. Yet, among polysilicon producers, only Tongwei had announced capacity expansion plans, which will not materialize until 2022.

Wood Mackenzie estimates that the global demand for PV translates to roughly 500,000 tons of polysilicon demand. There are about 750,000 tons of polysilicon production capacity around the world, 550,000 tons of which is located in China. In absolute terms, supply outstrips demand. The problem is that a third of the global capacity is uneconomical in a low-cost environment, and there is little to no inventory that operating facilities can draw from in this supply shock.

Against this backdrop, polysilicon prices have started to climb up since the GCL incident. The rising market price could allow capacities previously deemed “too expensive to run” to re-enter the market. This could alleviate the supply shortage in the coming quarters and stabilize prices.

Factors impacting module prices

H2 2020

Price will first increase and then stabilize

- Price driver: polysilicon supply shortage will continue till Q4 2020, driving up prices along the supply chain.
- Silver lining: high polysilicon prices may allow high-cost players to re-enter the market. Supply shortage may see alleviation soon after.
- Risk factor: a severe Covid-19 second wave in the fall may dampen the price hike

H1 2021

Stable price with minor declines

- Price driver: Lower demand in Q1 2021 (the rhythm of the market) will bring price increase to a conclusion.
- Supply chain dynamic: Re-vitalized higher-cost polysilicon capacity and the repaired GCL capacity will enable the return of supply-demand balance.

H2 2021 and beyond

Return to gradual price declines

- Supply chain dynamic: polysilicon supply return to business as usual. Demand will remain high.
- Capacity expansion: No significant expansion in the polysilicon sector until 2023. Wafer, cell, module capacity will each expand by tens of GWs.
- Price driver: Economic recovery from Covid-19 will affect global demand for solar. Additional polysilicon capacity will lower costs.

Short-term polysilicon supply shortage is relative. The rising market price could allow capacities previously deemed “too expensive to run” to re-enter the market.

Bifacial mono PERC module prices in the US could increase two to three cents

Take the US bifacial mono PERC module market as an example. In Wood Mackenzie's latest forecast, the supply chain events will create a two to three cents price increase in Q3 and Q4 2020, compared to the previous forecast published in the July version of the *PV supply chain pulse* report (see the Figure on page 1). The new forecast shows a reversal of the declining price trend that the market had enjoyed since late March. Nevertheless, module prices in H2 2020 will still be marginally lower than they were in January 2020, right before the global Covid-19 outbreak.

For the complete global PV module pricing forecast, please see the upcoming August version of the *PV supply chain pulse* report.