

Investment Insights:

Daqo New Energy

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Recent Jump In Polysilicon Prices Makes Daqo's Valuation Even More Compelling

In the past, government policy has acted as the driving force in solar energy production. Incentive provisions and tax rebates for solar installation have paved the way for an exponential reduction in costs arising from economies of scale. Solar PVs are now 82% more affordable than they were in the last decade and solar electricity is more competitive than coal and gas fired power plants. What is most striking is the data regarding global renewable energy capacity additions, which despite the pandemic, have expanded over 45% during 2020. This is significantly more than the record-level increases of previous years and can be partly attributed to the rise of solar energy. Annual additions of solar PV installations are forecasted to reach over 160GW by 2022, making up over half of all forecasted renewable capacity additions (280GW). This suggests that solar equipment, once seen as 'green posturing', and relegated to those who could afford the convenience, is permeating into more and more households across the world. Use of solar energy will likely have a wider variety of commercial and industrial applications as it has become economically feasible.

China is the driving force of the growth in solar production and is on track to provide a third of the extra solar capacity in 2021. Polysilicon, the key raw material sold to PV manufacturers in the solar supply chain, has

seen its price more than double in the last year. Polysilicon producers, who are in essence commodity producers, have valuations closely tied to the price of the underlying commodity and production capacity increases. Daqo New Energy Corp (NYSE) represents a compelling investment opportunity as a leading Chinese polysilicon pure play with competitive advantages in production who is poised to benefit from recent price rises in polysilicon. Crucially, they are benefitting from a 'Chinese premium' placed on the shares of its Shanghai-listed subsidiary, as vast capital has been raised to facilitate their lofty growth plans. Down the line, increasing profitability also brings the potential for the parent company to receive large dividend pay-outs. The disparity in valuation multiples across exchanges can be partly explained by political fears and risks of delisting, however the extent appears excessive. The difference should narrow overtime as fears subside, making Daqo New Energy an attractive investment in the short-medium term.

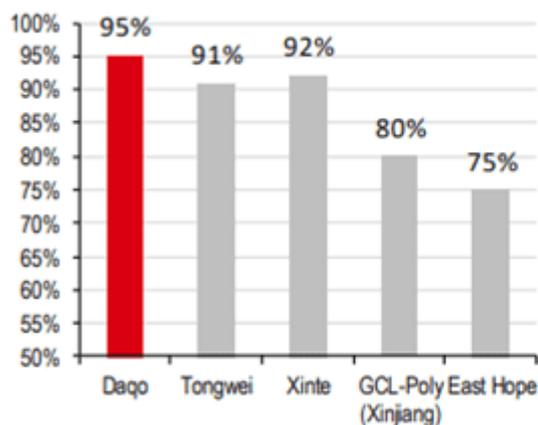
About Daqo

Daqo is a cost leader in the industry; a decade ago, they created a manufacturing base in Xinjiang, one of the lowest electricity tariff areas in China. On top of this, they negotiated additional energy cost savings with local authorities and initiated several projects to optimise manufacturing processes, enabling impressive economies of scale in polysilicon production. Cash costs of \$5.96/kg of polysilicon in Q3 was one of the industry's lowest and when

contrasted to the current spot price of polysilicon (~\$35/kg) this highlights their impressive gross margin. Daqo is also the highest quality producer in the sector, making best-in-class 'mono-grade' polysilicon which currently commands a

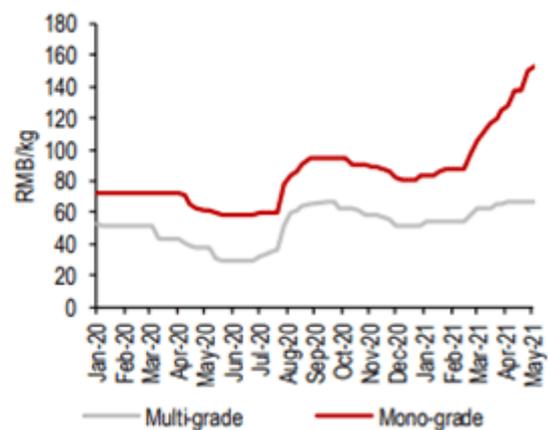
pricing premium relative to the less pure, multi-grade products made by competitors. In fact, Daqo has the highest output exposure to mono-grade products vs its peers.

Figure 1: Mono-grade output exposures, 2020



Source: Company, HSBC

Figure 2: Mono-grade pricing premium



Source: PV InfoLink, HSBC

Expansion Plans Backed By Strong Financials

Daqo's revenue growth over the last year has been remarkable as Q3 2021 figures were \$585.5m, up from \$125.5m in Q3 2020. This 367% revenue increase was largely driven by rising average selling prices of polysilicon, which have shot up from \$20.81/kg to \$27.55/kg over the last quarter. With variable costs only rising by 8.4% for the quarter, Daqo has become vastly more profitable posting a strong gross margin of 74.4%, compared to 36.1% a year ago. High operating cash flow puts the company in good stead to pay off loans

and fund the capital expenditures needed for their ambitious growth plans. Daqo's new Phase 4B project aims to take total production capacity to 123,000 tons by Q2 2022 and would place Daqo as the third-largest maker in the industry, commanding a market share of around 15%, according to Daiwa Capital Markets. This expansion will increase Daqo's capacity by approximately 50% within the next 6 months. Moreover, Daqo signed a 10-year contract with the local energy provider to guarantee a low and fixed price of electricity to power their

expansion. This deal gives Daqo a clear competitive advantage in comparison with new market entrants.

The credibility of such plans has been boosted by the Chinese listing of Xinjiang Daqo. By taking advantage of higher valuations in China this has acted to provide substantial equity financing for the company. This capital should enable further investment in technology and automation in their production process to maintain their status as a cost leader. If Daqo can enable further economies of scale, then the growth in production volume will be profitable. The outlook for the project therefore looks promising.

Supply Chain Dynamics Benefit Daqo

Looking down the solar supply chain, actual demand for polysilicon comes from the wafer producers like LONGi, whom Daqo supplies around 30,000 tons of polysilicon a year. The big players in wafer production have been expanding aggressively given unabating demand for solar energy, but over the last year this has coincided with severe shortages in polysilicon. Given current expansion schedules for these wafer producers, implied demand for polysilicon will outstretch current supply significantly this year and as well next year, according to HSBC. Tight supply in the short-medium term should therefore act to keep average selling prices high, propping up Daqo's revenues for the time being.

Recent developments in China have seen the government target certain provinces as part of their 'dual-control' policy to curb energy consumption and intensity. This includes silicon metal control, the key ingredient used to make polysilicon. Key provinces like Yunnan, which make up around 20% of the metal's production in China, now have severe output restrictions that will eliminate 200,000 MT from Yunnan's estimated Q4 production. As a result, silicon metal prices have risen by over 300% over the last few months, but crucially for Daqo, they are able to transfer this cost inflation on to their downstream buyers.

Even with a conservative assumption that Daqo sees a fivefold increase of its total raw materials, rising polysilicon prices means they are able to pass this cost inflation down the supply chain. If their current raw material costs of \$2/kg of polysilicon rise to \$10/kg, the recent jump in polysilicon prices from ~\$29 to \$35 and rising, suggests higher input costs are almost offset. This is largely due to the current pricing power over wafer producers who have raised capacities sharply over the past few years and have low utilisation rates.

Competitive Analysis

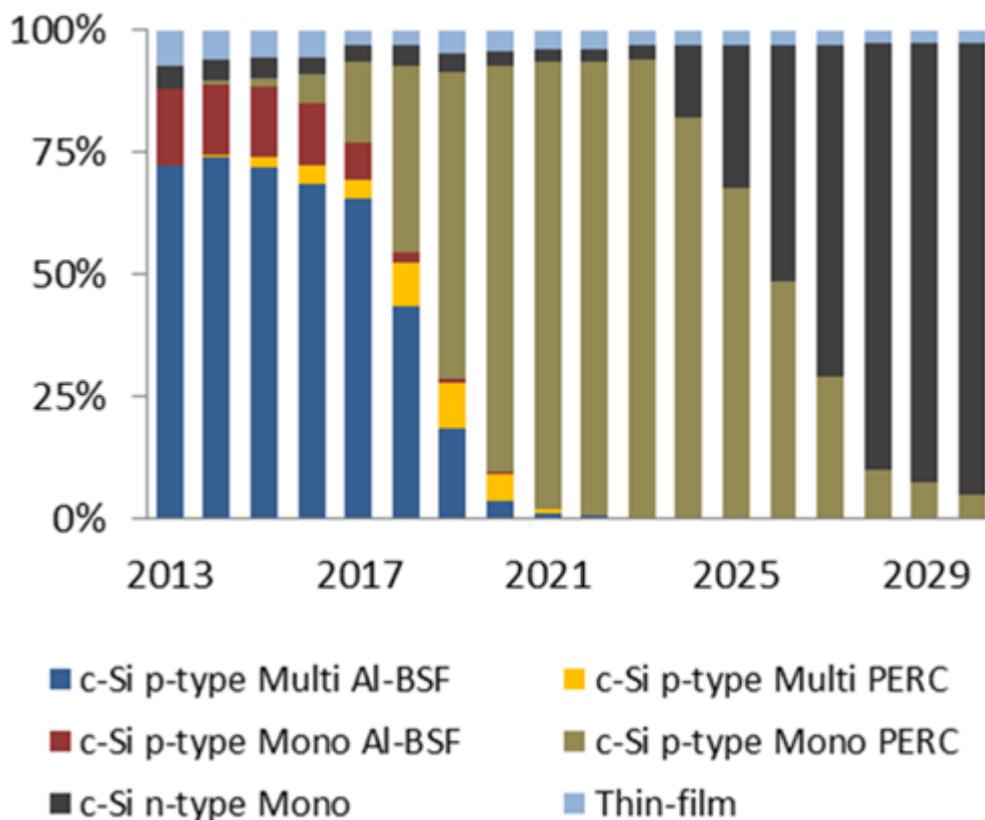
When observing the competitive landscape, Daqo looks to hold a commanding position in the industry. In this shortage scenario, elevated polysilicon prices should benefit Daqo more than its

competitors, since the entirety of its revenues are based on polysilicon sales. Unlike its rivals who have delved into wafer and cell & module production, Tongwei and GCL-Poly to name a few, Daqo is fully exposed to this dynamic in the market which benefits them.

There is also an important evolution in solar cell technology. The industry is currently in

its final phase of 'p-type' dominance, which uses positively charged silicon. 'N-type' polysilicon is more expensive to produce and uses negatively charged silicon which has the added benefits of being more efficient and longer lasting. The graph below illustrates the expected composition of solar cell production overtime.

Figure 4: Estimated Cell Production by Technology



Source: PV Manufacturing and Technology, Quarterly Report - May 2021

Clearly, the industry is witnessing a transition away from p-type cells towards n-type, however this will be a gradual process. Daqo has stated that currently they have the capacity to provide around

30-40% of its output to n-type but based on demand they have the flexibility of increasing further to 70-80% in the future. Thanks to Daqo's advanced production processes, variable costs would only rise by

~\$0.3/kg to produce n-type instead of p-type. The company therefore appears well placed and has the technology ready to handle the next generation of polysilicon production. The graph above also highlights the falling share of multi-grade vs mono-grade polysilicon production reflecting the increasing demand for higher quality cells. Daqo should therefore benefit in the long-term as they have the highest output exposure to mono-grade cells as well as a relative cost advantage vs peers.

The 'China Premium'

A key element of the investment thesis lies in the surprisingly low valuation of Daqo New Energy at 5x FY21 P/E despite its far superior profitability (70% FY21 ROE) compared to the average valuation for solar stocks of over 30x FY21 P/E. Astonishingly, their subsidiary Xinjiang Daqo, in which they own a c. 80% stake, has a market capitalization of \$22.7bn, far outstripping the U.S-listed Daqo worth \$5.5bn despite the two firms owning almost identical assets. Theoretically, the U.S-listed company should be worth at least \$18.16bn.

There are valid reasons for the U.S-listed Daqo to have a slightly lower multiple, given the recent history of Chinese ADRs being threatened with delisting from U.S exchanges. However it is the *extent* of this difference that is unjustified and the concern from the market is perhaps overdone. There is general fear regarding

the outright U.S ban on Chinese-made solar products. However, U.S restrictions have already been implemented; imports of goods from Xinjiang were banned in July. Daqo's recent share price performance suggests this is already priced in, despite it being less damaging for the company as U.S demand for polysilicon is immaterial. There has also been significant news flow in the West regarding a lack of worker rights and 'slavery' in China which has whipped up negative sentiment against Chinese companies. In Daqo's case, forced labour accusations are unfounded and there is no evidence to support such claims. The company cites the increasing use of automation in their factories to dispute allegations and have opened facilities to outsiders.

With regard to risks of delisting, it is important to recognise that the Chinese firms previously targeted were giant, data-heavy telecommunications companies that posed security risks to the U.S. Tensions between the two nations have largely been based over technology disputes. Daqo is distinctly separate from this issue as a commodity producer, yet the market appears to be grouping it in the same category. Investors may realise overtime that Daqo New Energy is astonishingly cheap given its profitability and the excessive risks that seem to be priced in.

Key Catalysts and Areas To Monitor

A broad risk to the Chinese solar industry is whether other major buyers decide to follow the U.S and place sanctions on Chinese imports. For instance, the EU accounts for half of China's solar exports meaning a boycott would be felt right up the supply chain.

Potential hiccups for Daqo in the near-term may arise in the form of lower-than-expected capacity growth, where any failure or delay in the Phase 4B expansion plan could drag down the earnings outlook. Another worrisome, albeit withstandable scenario would be a sudden collapse of the polysilicon price which Daqo is highly exposed to, however this represents a low-probability event in the short-term given current shortages and capacity expansions of downstream buyers. It will therefore be critical to monitor actual vs expected production, as well as the evolution of polysilicon prices which Daqo's profitability is ultimately tied to.

Another important, and perhaps overlooked area is distribution potential. Chinese-listed firms typically have a dividend policy that distributes a large chunk of earnings as dividends. Given Xinjiang Daqo's profitability, the potential distribution to Daqo New Energy (an 80% shareholder) would be sizable. In fact, management revealed plans to pay cash dividends to its shareholders of no less than 30% of distributable earnings up until 2024 which should boost the valuation for the parent company. It will therefore be important to track whether this dividend

policy is approved by the board of Xinjiang Daqo.

Conclusion

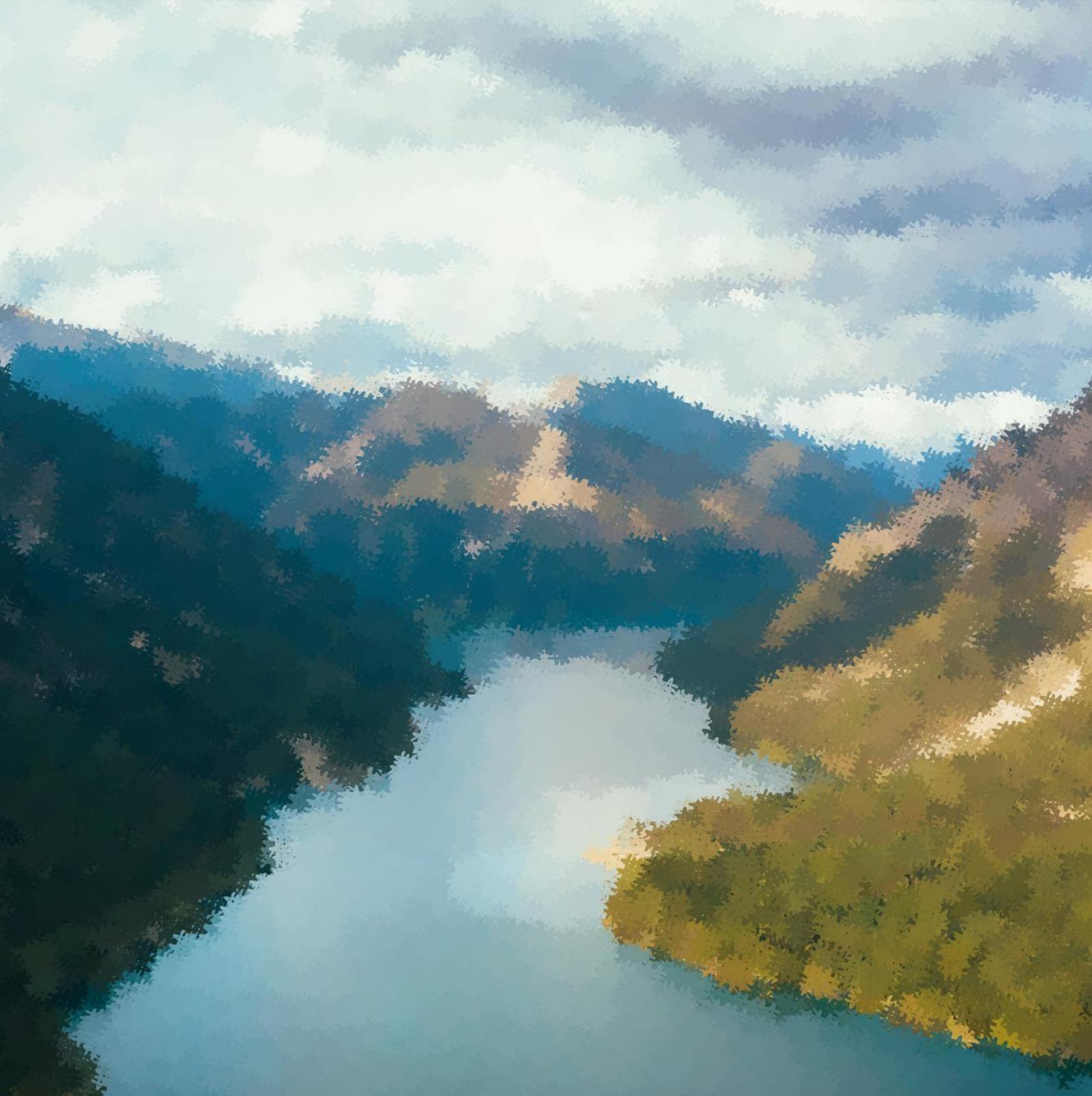
In summary, Daqo's incessant growth in production capacity coupled with diminishing variable costs should enable strong earnings momentum this and next year. Whilst polysilicon prices remain at their all-time highs, it is clear that Daqo can drive profits through rapid top-line growth. An expected P/E of around 5x makes up a strong investment case for the short to medium term. The longer-term outlook for the polysilicon market is difficult to predict and as such, the window of opportunity may diminish overtime which investors should be wary of.

Ultimately, investment returns are made not only through identifying good businesses, but by predicting how the market will perceive them. In this case, excessive political fears should subside as the market recognises Daqo as separate from tech-focused U.S-China conflict. Moreover, allegations of forced labour appear to be an unjustified cause for concern given the lack of any evidence and Daqo's heavy use of automation in their factories. Crucially, the U.S listed company is benefitting massively from the Chinese listing of its subsidiary. Xinjiang Daqo can access four times as much capital than it can in the U.S to fuel their expansion plans and can offer a handsome dividend to its parent company.

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