



Lithium Market Outlook 2023-2025

Rating:	LC: Bullish (Short Term) LC: Very Bearish (Long Term)
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★ Shrinking Profits and External Disturbances

Non-integrated converters in China have been facing a cash-negative situation since March, mainly due to the price disparity between lithium product streams. This has resulted in a decline in the output of lithium chemicals this year. Moreover, Australia's spodumene concentrate production in 1Q23 has been disappointing due to external disturbances.

★ Terminal Demand Remains Steady despite Short-Term Disruptions

1H23 can be considered as a vacuum period for the Chinese EV market, as part of the demand has either been front-loaded or delayed. However, we anticipate that demand will rebound during the second half of the year due to strong seasonality and an increase in purchasing power. Moreover, the long-term trend of rapid growth in terminal demand for both EVs and energy storage batteries remains unchanged.

★ Impact of Speculative Demand on Fundamentals

With the relatively small market and a long industrial chain, speculative demand has a huge impact on lithium fundamentals. The active destocking of midstream is the core reason for the previous drop in lithium price. The upswing of the inventory cycle is expected to further boost the demand in 2H23. Through the change in the spread between the spot price and the Wuxi Exchange price, we believe market confidence is gradually recovering now.

★ Lithium market outlook

Based on our quarterly balance, the Chinese lithium market will experience a tight balance in 2H23, and lithium prices may go upward with fluctuation due to this improvement in fundamentals.

While there may be a rebound in lithium prices during 2H23, our annual balance forecast shows a continuous surplus towards 2025. Achieving long-term balance requires squeezing out some marginal supply, which indicates lithium prices may fall below the 75th percentile of the cost curve for at least a period of time in the next three years.

★ Risk Warning

Short-term demand falls short of expectations. Construction of new capacity falls behind schedule.

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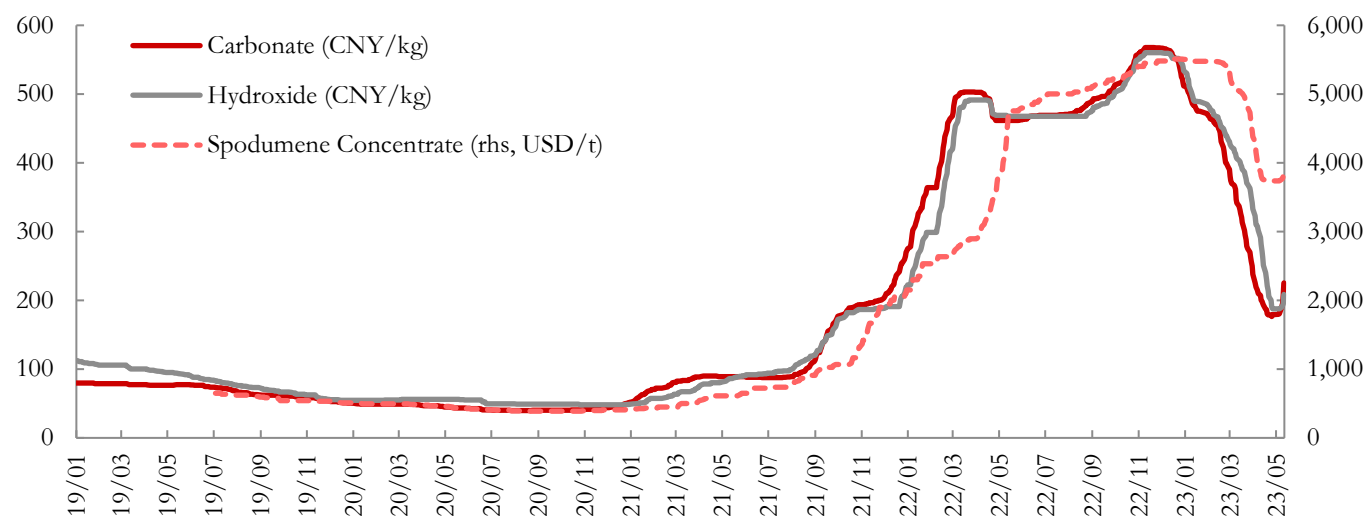
1. Lithium Market Review: 1Q21-1Q23

Since 2021, the rapid growth of the global EV market, especially the Chinese market, has boosted the demand for lithium chemicals significantly. Meanwhile, the previous decline in lithium price led to the shutdown of several high-cost mines in 2019, and the COVID-19 pandemic has slowed down the resumption of those production capacities. The shortage of supply has finally led to the continuous deficit of the global lithium market in 2021 and 2022. As a result, China's lithium carbonate spot price surged from 50 Yuan to nearly 600 Yuan per kilogram in two years, and so did the hydroxide.

However, lithium prices peaked in November 2022 and dropped rapidly since then. The carbonate spot price in China dropped by 70% to 190 Yuan per kilogram in just five months. Meanwhile, huge divergence exists between different markets. Specifically, the decline in overseas lithium prices during the same period is significantly more moderate than those in China, and the realized selling price of Australia's spodumene concentrate remains robust in the first quarter of 2023.

So, what happened in the last quarter? We believe the main reason is the collapse of confidence in Chinese demand. Since the end of last year, China's EV market continues to underperform expectations. As prices began to fall, the midstream chose to actively reduce inventory to minimize the loss of depreciation, which led to further contraction of demand, and lithium prices continued to decrease in such a negative feedback loop.

Exhibit 1: China carbonate, hydroxide and spodumene spot price



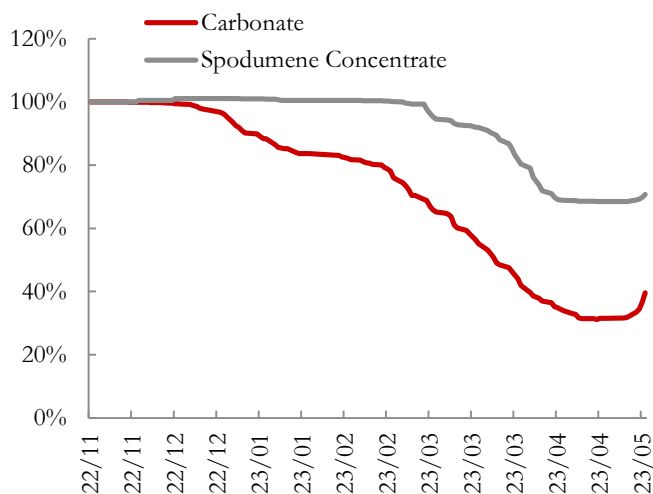
Source: SMM, Research Institute of Orient Futures

2. Shrinking Profits and External Disturbances

In the last quarter's decline, due to the weak demand and high inventory, the market was completely dominated by buyers, and producers could do nothing but only passively accept the falling price.

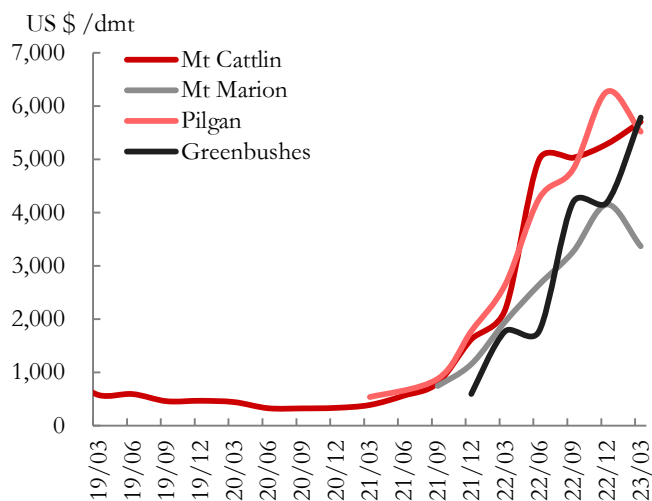
But things are starting to change as prices continue to fall. As we mentioned before, the price of spodumene concentrate falls much slower than lithium chemicals. In the spot market, the carbonate price dropped by 70% while the spodumene price only dropped by 30%. As for the long-term contract, the average realized selling price of spodumene is still increasing in the last quarter. This is mainly determined by the ongoing pricing mechanism. Since 2022, most Australian mining companies use the average spot price of the previous quarter as the benchmark of their long-term contract, so the actual realized price has a time lag of about one quarter. This mechanism is still valid, and according to IGO, the sales price for battery-grade spodumene concentrate produced by Greenbushes has been reset to US\$5,444 /t for the June quarter. This price only decreased by 6% than the March quarter and is still much higher than the current spot price.

Exhibit 2: % change of LC & spodumene spot price



Source: SMM, Research Institute of Orient Futures

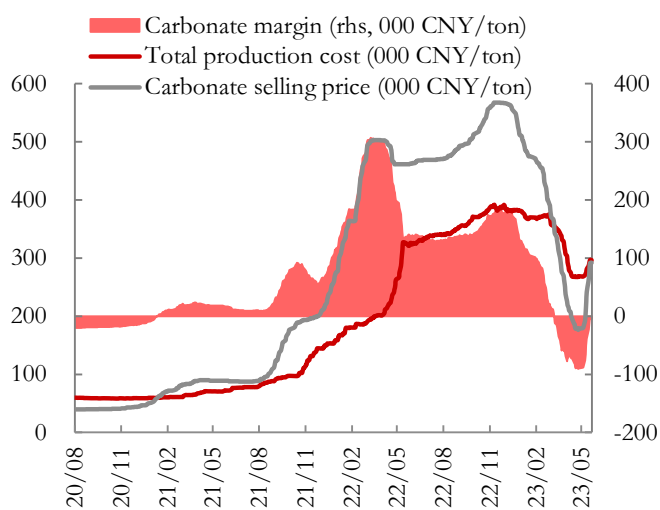
Exhibit 3: Realized selling price of Australia's spodumene



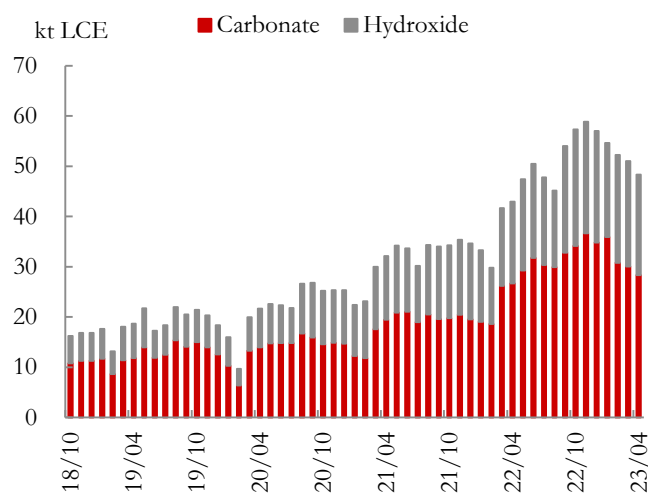
Source: Company data, Research Institute of Orient Futures

The price disparity between lithium product streams has put non-integrated converters into trouble. According to our estimation using the spot price, the non-integrated converters in China have come to a cash negative since March. In April, they suffer a loss of nearly 100 thousand Yuan for each ton of carbonate they produce. Moreover, if we take the higher long-term contract selling price and the processing period of two to three months into consideration, the actual loss faced by those converters is even more serious.

As a result, we can see that China's lithium chemicals output has continued to fall month-on-month since this year, which is abnormal, because as the weather warms up, the recovery of brines in Qinghai province should drive a growth of China's carbonate output. This is partially due to the crackdown on illegal mining in Jiangxi province, but we believe the more important reason is the shrinking profit. Although with the recent rebound in lithium price, the profit of those non-integrated converters has recovered quickly, it still takes some time to ramp-up. Thus, we believe that China's lithium chemicals output may continue to decline in the June quarter.

Exhibit 4: Non-integrated converter margins


Source: SMM, Research Institute of Orient Futures

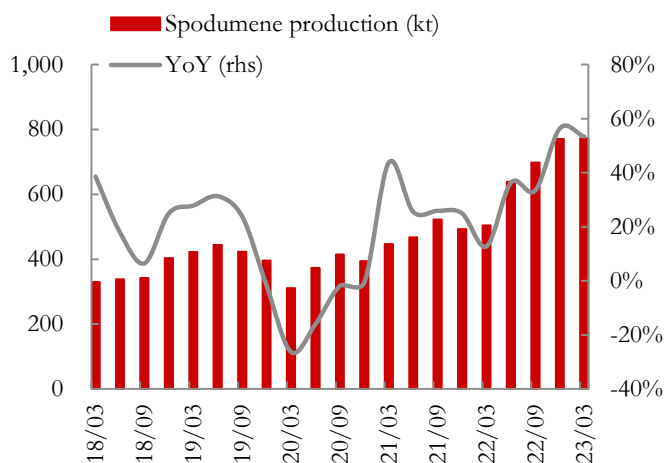
Exhibit 5: China's lithium chemicals output


Source: SMM, Research Institute of Orient Futures

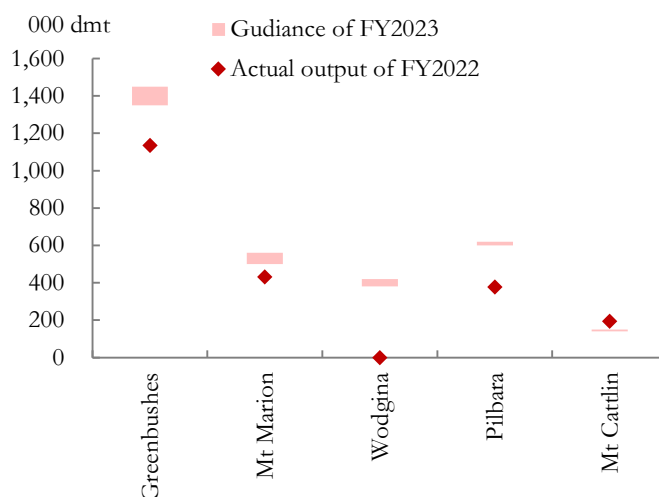
In addition, production of Australia's spodumene concentrate is disappointing in the first quarter of 2023. The cumulative production reported by Australia producers is 773,000 dmt, which is flat versus the 4Q22. Production at Greenbushes and Pilbara was even down on the March quarter due to the lower run time or extended maintenance shutdown on processing plant. And Mineral Resources pointed out that the actual output of Mt Marion in fiscal year 2023 is expected to be at the lower end of previous guidance.

Under the influence of external disturbances and profit shrinkage, the actual lithium supply has been lower than expected since the beginning of this year, both for spodumene concentrate and chemicals.

And when the chemicals' price falls below the production cost of most non-integrated converters in China, which is about 180-200 Yuan per kilogram for battery-grade carbonate, some suppliers show the tendency of reluctance to sell. As buyers and sellers compete fiercely for pricing power, the decline of lithium prices gradually slowed down.

Exhibit 6: Australia's quarterly spodumene output


Source: Company data, Research Institute of Orient Futures

Exhibit 7: Guidance of Australia's spodumene output


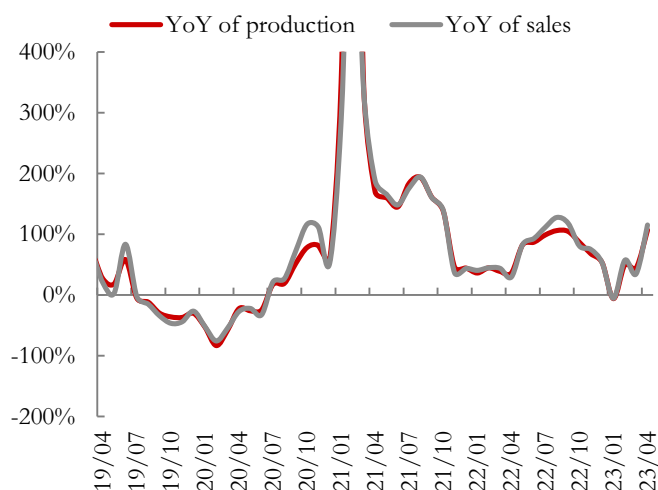
Source: Company data, Research Institute of Orient Futures

3. Terminal Demand Remains Steady despite Short-Term Disruptions

Although marginal changes in the supply side have slowed down the decline of lithium price, when talking about whether the price can rebound, demand is still the most important factor.

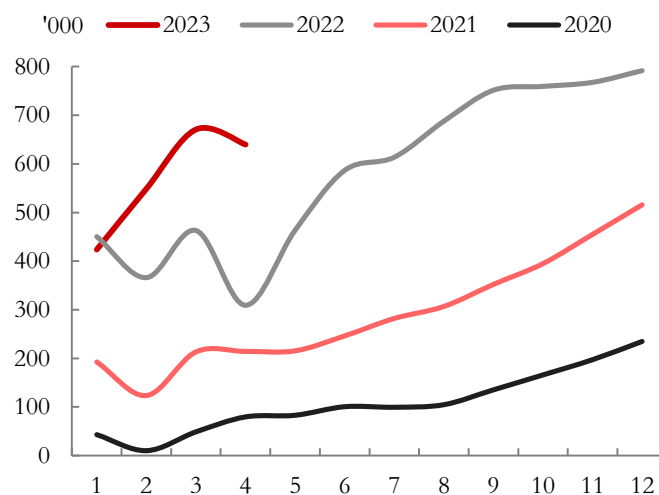
For the terminal market demand, investors are still focusing on the Chinese EV market, whose performance has continued to fall short of expectations since the end of last year. As the national subsidy policy for EVs expired at the end of 2022, a portion of demand in 2023 has been front-loaded in the December quarter of last year. And in the post-epidemic era, it needs some time for Chinese consumers to recover their purchasing power. Besides, the promotion of fuel vehicles caused by the switch of emission standards also has a periodic impact on the consumption of EVs in 1H23. Moreover, due to the sharp drop in raw material prices like lithium and nickel, many consumers choose to wait and see, thus we believe that part of the demand has been postponed to the future. In general, 1H23 can be regarded as a vacuum period for the Chinese EV market.

Nevertheless, we still have confidence in the consumption of the Chinese EV market for the whole year. In specific, we believe that demand will improve significantly in 2H23. This is mainly based on the obvious seasonality of the Chinese EV market. In general, the second half of the year usually accounts for more than 60% of the annual consumption. In addition, with the gradual recovery of consumer purchasing power and as the price towards stable, demand is expected to improve further in 2H23. We believe that sales of EVs in China will reach 8.5 to 9 million in 2023, with a year-on-year growth rate of nearly 30%.

Exhibit 8: YoY growth rate of Chinese EV market


Source: CAAM, Research Institute of Orient Futures

*The data for 2021 is the two-year average growth rate, to eliminate the disturbance of COVID-19.

Exhibit 9: The seasonality of the Chinese EV market


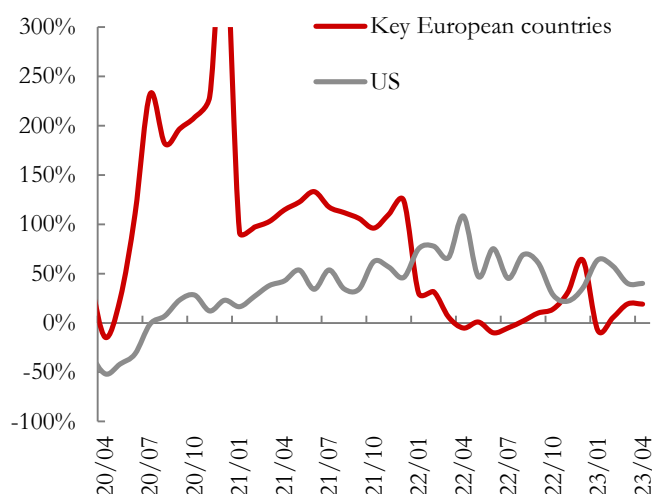
Source: CAAM, Research Institute of Orient Futures

*Production volume

As for the overseas' EV market, it still maintains a satisfying growth trend. In the March quarter of 2023, the sales of EVs in the US market increased by 50% than last year. And the consumption in the European market is gradually recovering from the impact of the energy crisis.

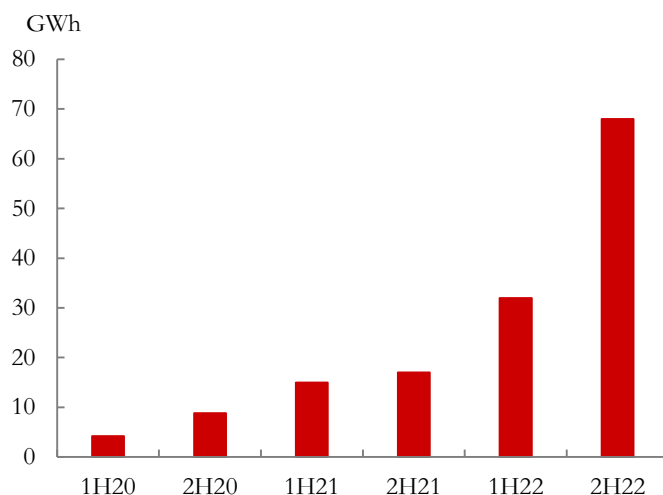
With the rapid growth of new energy installed capacity as well as the support policy, the global demand for energy storage is still growing rapidly. The reason for the disappointing demand for energy storage batteries in the short term is similar to that of EVs. That is, the demand has been postponed due to the drop of lithium price, and as price volatility decreases, this part of demand is gradually recovering now.

In short, we believe that the long-term trend of rapid growth in terminal demand has not changed, both for EV power batteries and energy storage batteries. The demand in the first half of the year was lower than expected just because of some short-term disturbances.

Exhibit 10: YoY growth rate of the overseas EV market


Source: PFA, SMMT, KBA, MobilitySweden, UNRAE, OFV, Autoinforma, ANFAC, Research Institute of Orient Futures

*Sales volume. Key European countries here including Germany, France, UK, Norway, Italy, Sweden and Spain.

Exhibit 11: China's energy storage battery output


Source: CAAM, Research Institute of Orient Futures

4. Impact of Speculative Demand on Fundamentals

However, it should be noted that, in addition to terminal demand, speculative demand in the whole industrial chain also plays a vital role in the fundamentals of lithium chemicals.

As with all commodities, speculative demand has an effect on short-term fundamentals. However, as the current supply and demand for global lithium market is relatively small, and the industrial chain is long, which includes mines, converters, cathode material producers, battery manufacturers, OEMs, etc., the short-term impact of speculative demand on fundamentals is more obvious.

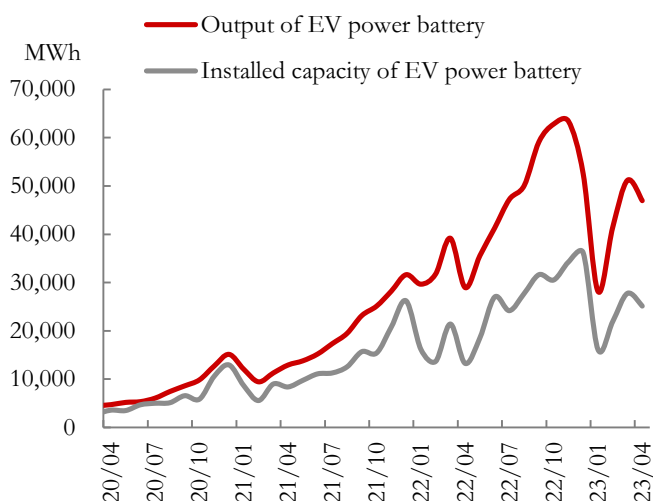
For example, in 3Q22, as the price continues to rise, the increasing speculative demand amplifies the shortage of supply. And in 1Q23, the sharp decline of lithium prices reduced the market's risk appetite, and the decline in speculative demand makes the market further oversupplied.

As we mentioned before, the active destocking of midstream is the main reason for the drop in lithium price this year. However, we believe this destocking may be coming to an end, and the upswing of the inventory cycle is expected to further boost the demand in 2H23. We draw this conclusion mainly based on three arguments.

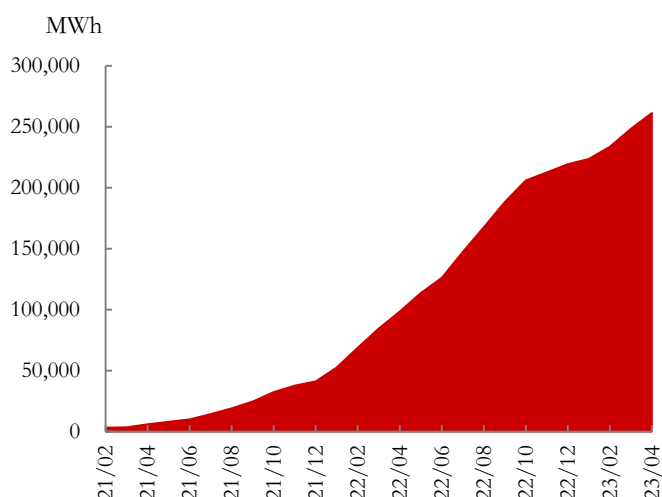
Firstly, after half a year of destocking, the midstream inventory has been significantly lower than before. Especially in the cathode material factory, the inventory level of raw material has dropped to an extremely low level.

Secondly, according to our estimation, there is still a certain amount of battery and vehicle inventory in the industry chain, and the neutral estimate is equivalent to about 3 to 4 months of terminal demand. However, with the reduction of lithium price fluctuations, the depreciation pressure of this part of the inventory has also eased. Considering that most companies regard increasing market share as the highest priority goal, as the pressure of inventory depreciation decreases, we believe that this part of inventory will not affect the company's production plan.

Thirdly, the lithium carbonate futures to be listed on the Guangzhou Futures Exchange will provide entities with effective risk hedging tools, and the impact of lithium price fluctuations on the production and operation of entities is expected to be reduced.

Exhibit 12: Output & Installation of China's EV battery


Source: CABIA, Research Institute of Orient Futures

Exhibit 13: Inventory of China's EV power battery


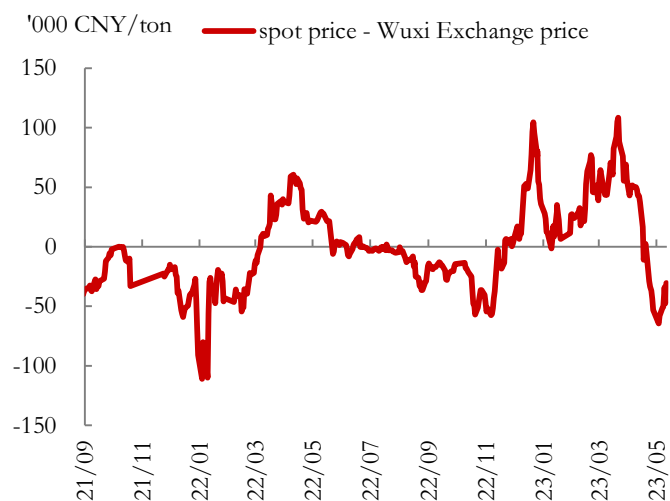
Source: CABIA, Research Institute of Orient Futures

In fact, we have seen some signs of recovery in market confidence recently.

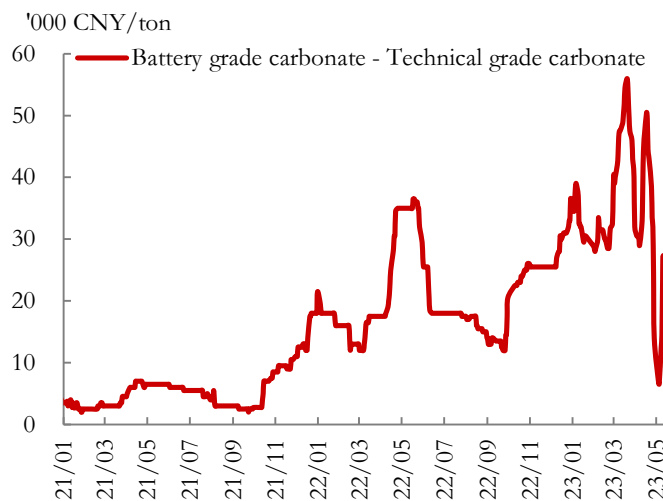
An interesting indicator is the spread between the spot price and the Wuxi Exchange price. Unlike basis for other commodities, we regard this spread as an effective indicator of market sentiment, mainly because of the strong speculative nature of the Wuxi Exchange.

In the last quarter, both prices fall quickly, and the lithium price of the Wuxi Exchange drop faster than the spot price. We can see that the lower price further exacerbated the pessimism in the spot market.

With the rebound since mid-April, the lithium price of the Wuxi Exchange is now higher than the spot price. With the recovery of market confidence, the downstream has begun to gradually increase the purchase volume. We can draw the same conclusion from the narrowing spread between the battery grade and the technical grade lithium carbonate.

Exhibit 14: Spot - Wuxi Exchange spread


Source: SMM, Wind, Research Institute of Orient Futures

Exhibit 15: Battery - Technical grade LC spread


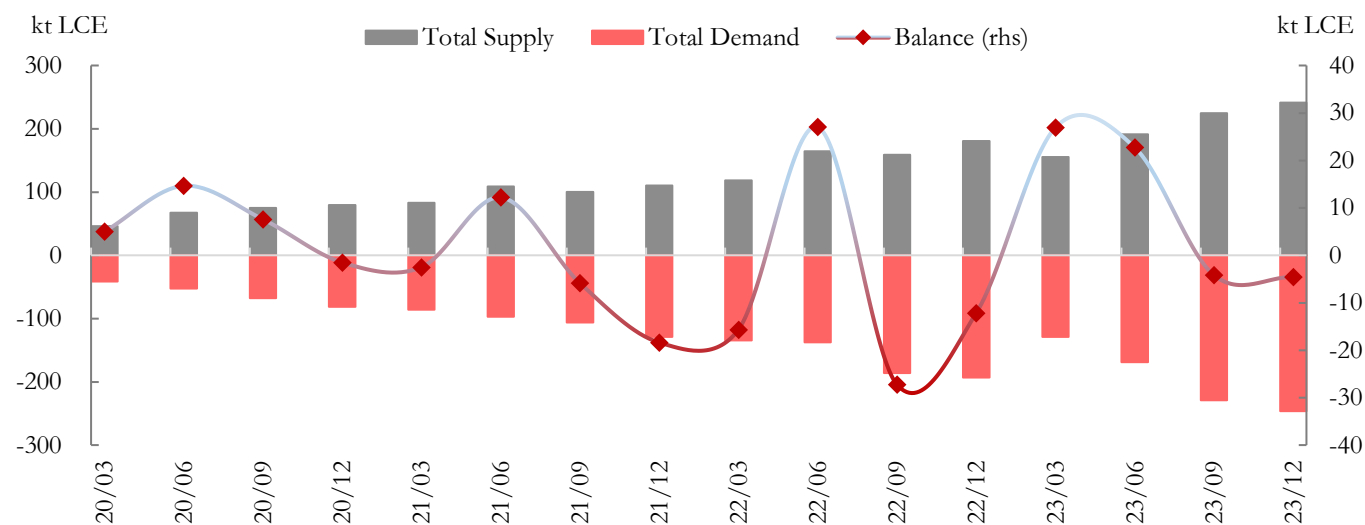
Source: SMM, Research Institute of Orient Futures

5. Short Term Forecast: a worth-expecting rebound

We believe the fluctuation of lithium price in 2023 mainly depends on demand, other than supply. In the second half of this year, with the improvement of terminal demand, as well as the replenishment of inventory brought by the recovery of confidence, the elasticity of demand will be much higher than that of supply.

Our quarterly balance shows that, in 1H23, the Chinese lithium market showed a significant surplus of about 20 to 30 thousand tons of LCE for each quarter. And in 2H23, our estimation shows that the Chinese lithium market will turn to a tight balance, indicating improving fundamentals.

The first half of this year can be regarded as the darkest moment for lithium market. Considering the improvement of fundamentals, we are relatively optimistic about lithium price in the second half of the year. In specific, we believe that the lithium price in 2Q23 will be the lowest point of the year, and price may go upward with fluctuation in the remaining time of 2023.

Exhibit 16: Quarterly balance of China's lithium market


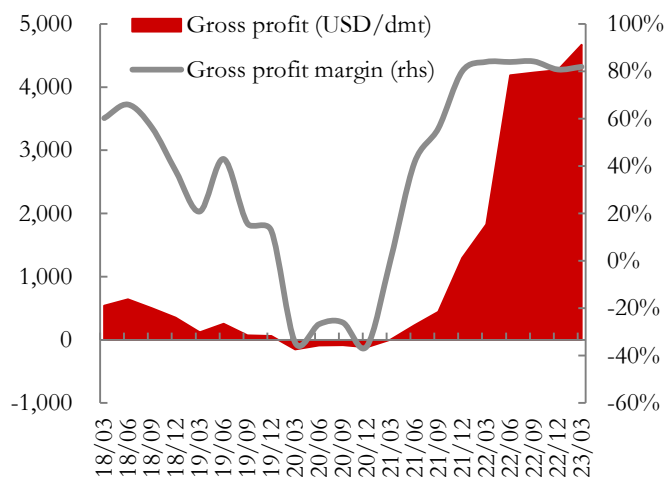
Source: Research Institute of Orient Futures

6. Longer Term View: some marginal supply needs to be squeezed out

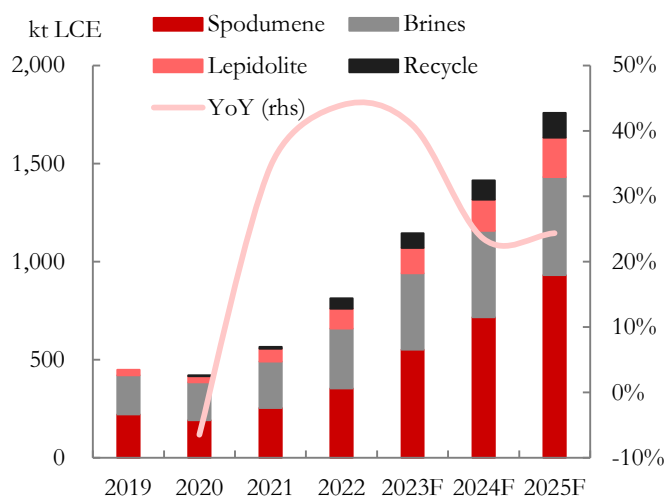
Different from the short term, when we turn to the long-term perspective, we will find that changes in speculative demand are only temporary disturbances. The long-term trend of lithium price depends on the relative growth rate of the lithium resource supply and the terminal demand.

The sharp rise in lithium prices since 2021 has brought massive profits to lithium producers. Take Mt Cattlin as an example, its gross profit margin has increased to 80% since 2022. In fact, lithium may be the most attractive metal for mining companies for now.

Driven by such a high profit, the capacity expansion cycle of lithium is still in progress. Indeed, in the short term, we see that the construction progress of some brines in South America is not as good as expected. But there are still massive projects under construction worldwide, including South America, Africa, China, etc., which will bring online in the near future. Based on the companies' schedule, we believe that the average growth rate of lithium supply in the next three years will be close to 30%.

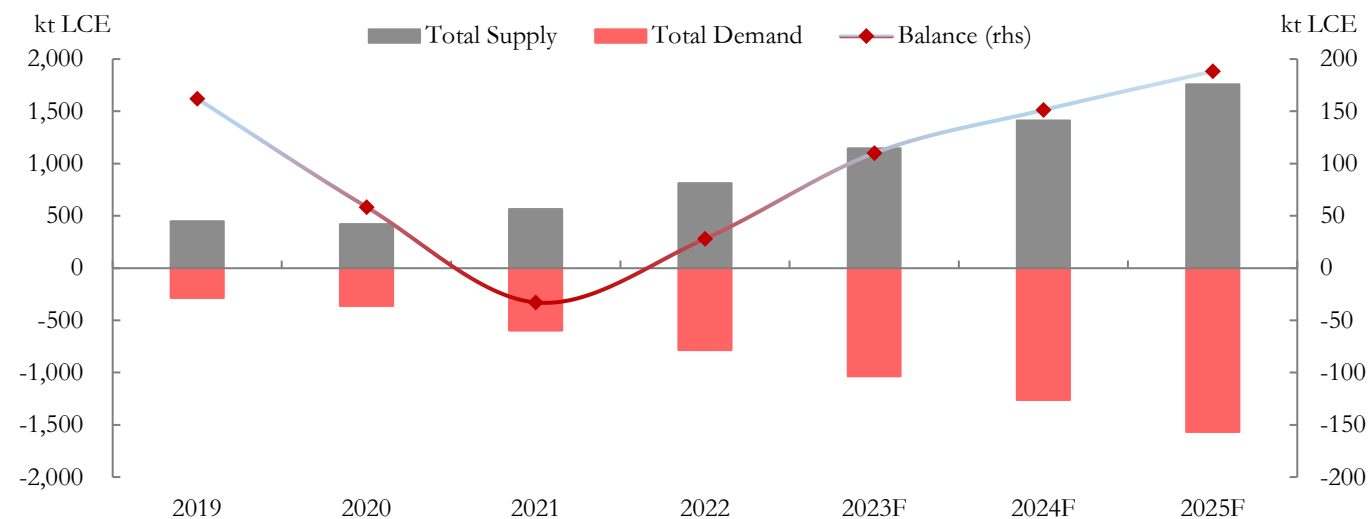
Exhibit 17: Gross profit of Mt Cattlin's spodumene


Source: Company data, Research Institute of Orient Futures

Exhibit 18: Lithium supply outlook towards 2025


Source: Company data, Research Institute of Orient Futures

For the demand side, there will be more uncertainties, including the macroeconomic environment, subsidy policy for new energy in each country, and demand substitution from new battery technologies. What we can relatively be sure of is the main driver of EV power battery demand will gradually shift to the overseas market, and the proportion of energy storage battery will continue to increase. At this point, under our optimistic forecast, the average growth rate of demand for the next three years is about 26%, which is slightly slower than that of supply.

Exhibit 19: Annual balance of global lithium market


Source: Research Institute of Orient Futures

Based on the continuous surplus, we believe that in the long term, lithium prices are still in a downward trend. That is, lithium prices in 2H23 can only be considered as a rebound, not a reversal.

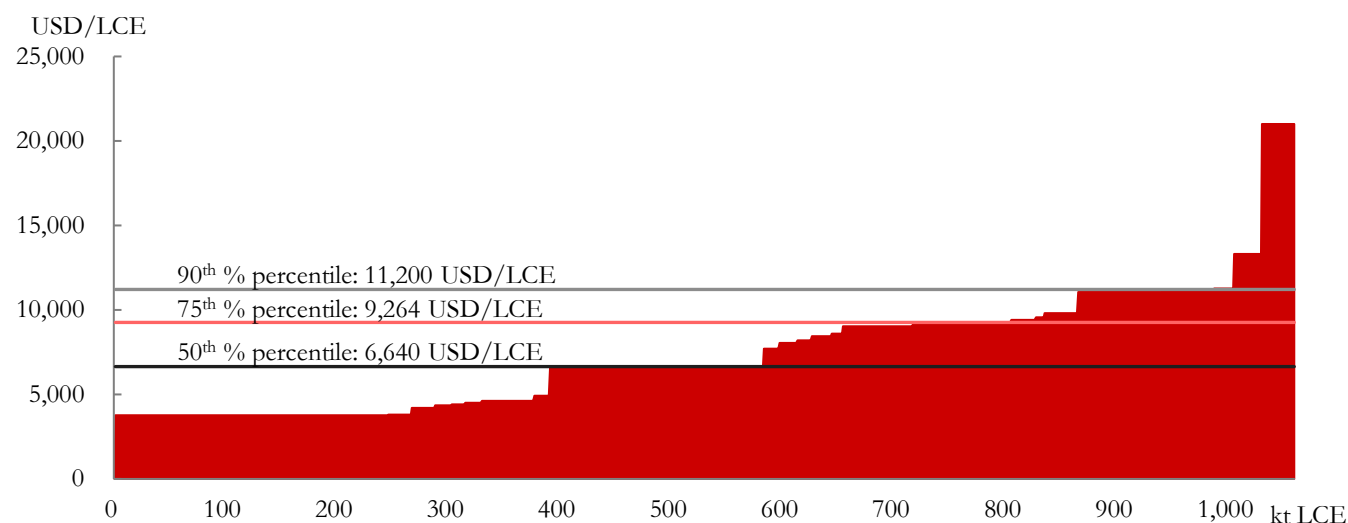
Then, in the long term, how can the lithium market reach a new balance?

Since the growth rate for both supply and demand of lithium are still high, even marginal changes will have a remarkable effect on the balance. In addition, changes in market expectations will also exacerbate short-term volatility. So, it is unrealistic to predict when lithium prices will hit bottom. We try to discuss this topic from another way, that is, where is the bottom of lithium price for the long term?

The answer may be the support from the cost curve. We believe that the long-term balance of the lithium market needs to be achieved by squeezing out some supply through falling prices. In addition to the reduction and shutdown of operating capacity, the delay in the construction of new projects caused by the lack of motivation after the price drop will also have a huge impact on future supply. Considering the high growth rate of future supply, when the construction of new projects slows down, this will significantly improve the fundamental of lithium for the long term.

Therefore, we believe that, in the next 3 years, at least for a period of time, lithium price will fall below the 75% percentile of the cost curve, which is about 9,300 USD, or 72 thousand Yuan, for each ton of carbonate. And then we may see some producers decide to delay their project or even cut production. In that time, we will be able to say that the lithium market has come to a new balance.

Exhibit 20: Lithium carbonate cost curve of 2023



Source: Company data, Research Institute of Orient Futures

7. Risk Warning

Short-term demand falls short of expectations. Construction of new capacity falls behind schedule.

Rating System (Based on Close)

Ratings	Short Term (1-3 months)	Medium Term (3-6 months)	Long Term (6-12 months)
Very Bullish	+15%~∞	+15%~∞	+15%~∞
Bullish	5%~15%	5%~15%	5%~15%
Neutral	-5% ~ +5%	-5% ~ +5%	-5% ~ +5%
Bearish	-15% ~ -5%	-15% ~ -5%	-15% ~ -5%
Very Bearish	∞ ~ -15%	∞ ~ -15%	∞ ~ -15%

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