

Aluminium: secular shift to higher costs

Behind the aluminium market gyrations, primary production costs have surged, and this has led to an acute squeeze on producers' margins. China's power market reforms could add to a secular shift towards higher costs for primary aluminium smelting. As a result, there could be profound impacts on long term supply.



Source: Shutterstock

Market volatilities remain amid signs of an easing in the power crunch

Amid an energy crisis, aluminium prices have had a roller-coaster run with LME 3M prices surging to a multi-decade high of US\$3,168/t, which it reached on 18 October, before plunging 13% over the next ten days and then consolidating at around US\$2,700s this week. The sharp move may be amplified by speculative bets withdrawn from the market ahead of some major macro events. The recent correction can be attributed to two main reasons:

1. Firstly, major energy costs inputs have come off significantly, which may be seen as signs of an easing in the power crunch. In Europe, Dutch TTF gas fell more than 26% last week, following reports that the Russian president has ordered Gazprom to fill up its storage facilities in Europe from 8 November. In China, strong policy intervention from Chinese

policymakers sent thermal coal prices into a freefall. The China Zhengzhou Exchange-traded thermal coal price, surged to a historic high, touching CNY2,630/t on 19 October, before plunging to today's price of CNY1,100/t, easing fears of further escalation of the power crunch.

2. Secondly, onshore inventories have started to build up at a faster pace than expected. The wider measure of the onshore aluminium inventories has seen the latest read cross one mln tonnes, quickly hitting its five-year average level. This fast accumulation in inventories may be conducive to a shift in the market focus on demand uncertainties in China and elsewhere, as higher power prices sent shock waves through the supply chain as we have highlighted [here](#). The concerns around aluminium demand are also tied to greater concerns over the Chinese economy, which is undergoing triple-shocks, including a property slowdown, Covid-19 outbreaks and the power crisis.

Higher costs may be here to stay

However, the costs side has seen an even more dramatic move northwards and a sharp squeeze into smelters' margins. During 2Q20-3Q21, margins had been improving along with rising aluminium prices, while other cost inputs remained contained, such as alumina and the single largest cost - electricity. However, smelter margins have quickly collapsed, and the escalating energy crisis at the beginning of 4Q21 came as a major inflecting point of smelting costs, and producer margins saw a sharp turn to the south.

Additionally, some policy changes may have a profound impact on aluminium costs in the longer term.

1. Firstly, China had, as long ago as 2004, introduced tiered pricing of electricity costs for the aluminium industry. They also introduced some updates this year to incentivise energy efficiency. Essentially, those higher than industry average intensity producers, are faced with punitive power prices which raises their costs. Being the world's largest primary aluminium producer, the energy intensity on average has decreased by 8% from 14,795kWh/t in 2004 to 13,543 kWh/t in 2020.
2. Second, China recently [liberalised its coal-fired power pricing](#) which could have a more profound impact in the future.

The authority had introduced the new 'base + floating' mechanism and now allow the on-grid price to fluctuate more than 20% on top of the base price for the nation's energy-intensive sectors.

Assuming other input costs remain unchanged, a 20% rise in power prices would result in around a 7% increase in costs.

However, some provinces, such as Inner Mongolia, have significantly hiked the floating percentage to as high as 80%. Others such as Guangxi province, one of China's major aluminium production hubs, is set to slap a 50% premium on electricity prices for those energy-intensive industries. Aluminium smelting accounts for almost 15% of total power usage. Meanwhile, it also said that those power users without term-supply contracts, would have to pay the premium from this month, and charges based on term contracts will need to be renegotiated according to the new power price mechanism.

The margins have fallen off a cliff with the recent pullback in aluminium prices, adding to the problems of surging input costs and higher power prices along with other rising prices of raw materials, such as alumina. **The boom-and-bust cycle in the primary aluminium smelting**

business has never shifted so quickly. Unless any quick advances in technology, drive down the energy intensity of primary smelting or open the bottlenecks for smelters so they can access stable renewable energy, higher costs may be here to stay, despite the collapse in coal prices.

Long term primary supply growth looks unsustainable

How do the power crisis impact aluminium? First, the market has witnessed the power shortage led to curtailments that eventually led to reduced supply. Second, with costs proliferating, supply growth looks unsustainable if the price stays at the current level for longer. Moreover, the long-term decarbonisation goal should continue to remain a cap to supply growth, as well as a major disruptive factor to supply growth.

However, the world's energy transition journey continues to require increasingly marginal demand for aluminium to be used in [vehicle light-weighting](#) and renewable energy and other applications such as in power infrastructure. Despite the recent power market crisis bringing about much volatiles, our long-term constructive view remained unchanged. Together with a continuous destocking trend in LME, the market is increasingly like a coiled spring.