

Aluminium sees a perfect storm in the energy crisis

The aluminium industry's ability to swiftly respond to strong demand and higher prices is being hampered by the ongoing energy crisis and the move to decarbonisation. The risk to prices is more skewed to the upside, particularly in any further supply squeeze.



Source: Shutterstock

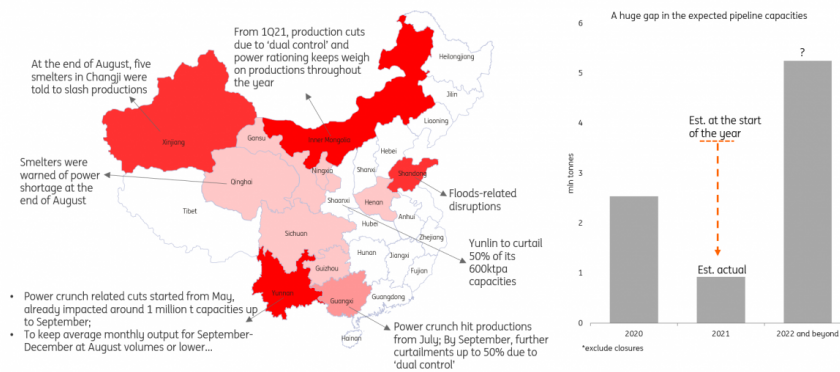
Concurrent forces squeezing aluminium supply

The current supply squeeze in aluminium reflects both the power crunch and the Chinese government's 'dual-control' policy, but is ultimately tied to decarbonisation goals. China has emphasised its 'dual carbon' goals (for carbon emissions peaking by 2030 and achieving carbon neutrality by 2060). We need to view these factors separately.

In September, the power crunch escalated further - 20 Chinese provinces were hit, and cities in Northeast China even saw households facing blackouts. There are mandates by local authorities asking smelters to curtail productions throughout the remainder of the year, including in Yunnan, Guangxi and Xinjiang. As of September, more than two million tonnes of operating capacity have been hit, and pipeline capacities have been further pushed back (see Fig 1). Meanwhile, the latest data suggests that production has been declining every month since May (Fig 2).

Fig 1. Power shortage escalates and affects wider regions

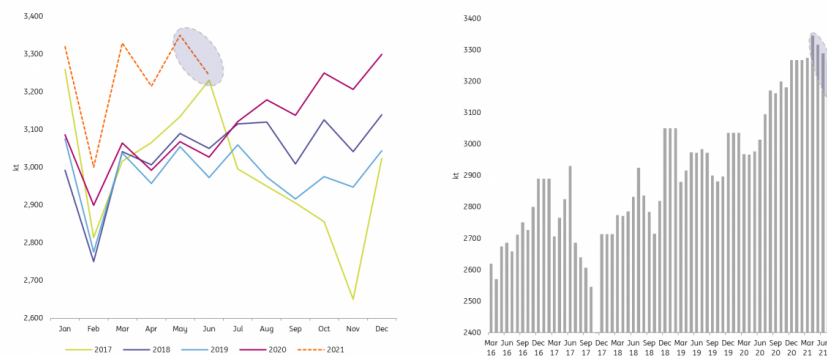
Supply squeeze at primary aluminium smelters due to power crunch and dual-control; more than 2 million tonnes of operating capacities have been hit so far; Chinese monthly primary aluminium productions have been in a downward trend since May, and may further decline throughout the year.



Source: ING

Fig 2. Increasing disruptions hit China primary aluminium productions

- IAI China primary aluminium production
- China NBS-primary aluminium production



Source: IAI, NBS

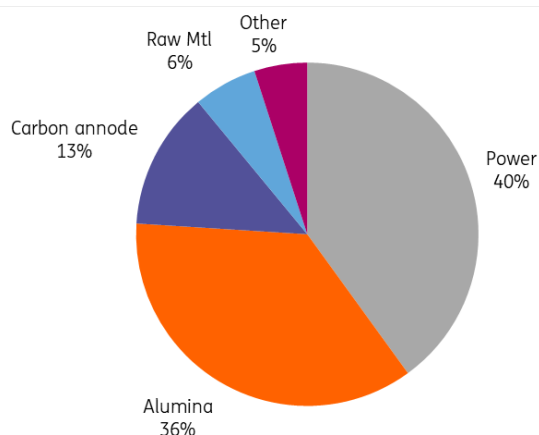
However, the situation is dynamic not static

In China, the authorities vowed last week to tackle the power shortage issue 'at all costs'. Today there's a document circulating that the local government from Inner Mongolia, a key coal production region, has ordered more than 70 miners from the region to dig more coal. Yet it remains to be seen how this would help to alleviate the crunch. A key uncertainty is that the winter heating season is only starting next month. Demand for coal and electricity is set to rise further in the coming months. Going forward, supply constraints include: (1) as we highlighted in our [last update](#), the coming dry season in Yunnan is likely to see hydropower generation fall from this month, and (2) there are likely to be the usual winter cuts in northern China over the winter. [Last December](#), the market saw disruptions on the alumina side which gave aluminium prices a nudge higher.

Elsewhere, surging energy prices from Europe, especially for natural gas and power, add to risks of margin squeezes at smelters. In the aluminium smelting cost breakdown, electricity accounts for around 40% (Fig 3). So far, the announced cutbacks due to energy prices are relatively small. The situation in Europe is worth monitoring - if energy prices stay higher for longer then the risk of

further cutbacks adds to more aluminium supply losses, on top of those from China.

Fig 3. Aluminium Smelting Cost Components



Source: IAI, CINA

Producer margins may have peaked

The energy crisis - with surging energy prices and the dual control measures in China - has seen the turmoil spread to other markets. The prices of many raw materials have risen, so quickly eroding producers' margins.

Alumina costs, representing almost 35% of the total in aluminium smelting, had remained muted before August. Then supply began to tighten in China, hit by the same factors as those afflicting primary aluminium. The Guinea coup in early September further fanned alumina prices, gaining more than 38% over the last month.

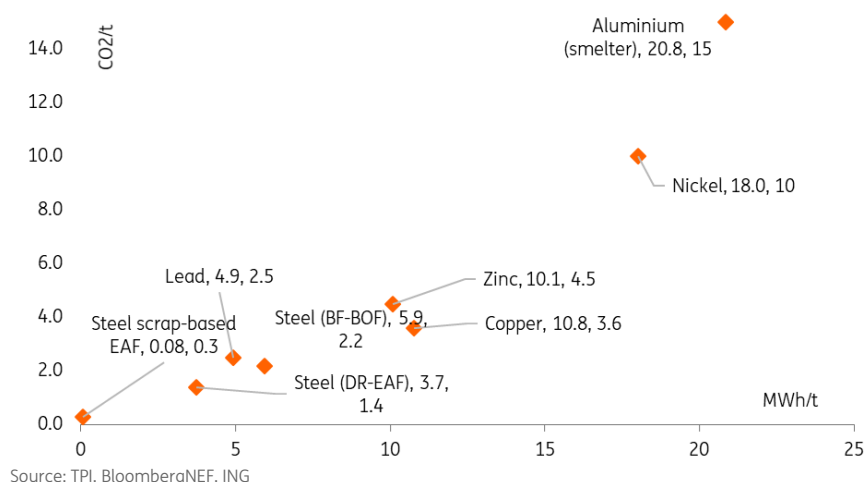
Prices of other inputs such as carbon anode have risen to the highest on record for the China market. Meanwhile, for suppliers of aluminium value added products (VAP) that need other metals as ingredients for making the products and selling to the downstream, magnesium and silicon prices have risen sharply recently. This has also curtailed production.

Demand destruction is a short term concern

As the above supply-side dynamics continue to unfold, there are growing concerns that energy prices and metal product prices might derail any economic recovery post-pandemic.

We had noted in our daily update that the power crunch has evolved into a double-edged sword that hits both supply and demand. The situation is worse than what we saw in March - when dual-control started to impact supply in Inner Mongolia - and in June when power shortages forced smelters to curtail operations from Yunnan. Downstream and hence demand are now being affected, although we still need to wait for more evidence to corroborate the level of demand destruction. While there is a risk to short-term demand, we remain constructive on aluminium demand over the medium to longer term. We see increasing demand from packaging and energy transition-related sectors, including vehicle lightening and renewable energy.

Fig 4. Carbon and energy intensity per tonne of metal produced



Investing commodities, cyclical play to structural play

The market is now faced with rising concerns over stagflation pressure within economies, and rising macro headwinds could take some wind out of commodities' sails. What we have seen in the market since Q2 is a rising tide lifting all boats. However, now it's probably better to analyse each metal individually, as we have probably shifted away from a cyclical change towards a structural one, where we might see sticky divergence among metals. For high energy intensity and high emissions metals (in terms of their production process; Fig 4), their industry's ability to flexibly respond to demand surges and high prices has diminished. (We discussed in May in our note [Aluminium is entering a new era](#)).

Given the nature of primary aluminium production, we remained structurally bullish on aluminium. However, due to the recent escalating power issues, we have lifted our aluminium forecast to \$2,950/t for 4Q21 (based on LME 3M quarterly average). Still, we expect prices to return above \$3,000/t over the next six months. Key downside risks include any major reversal in the current decarbonisation push and policies in the traditional fossil fuel mining sector - such as a big boost in coal supply that could alleviate the power issue and demand destruction.