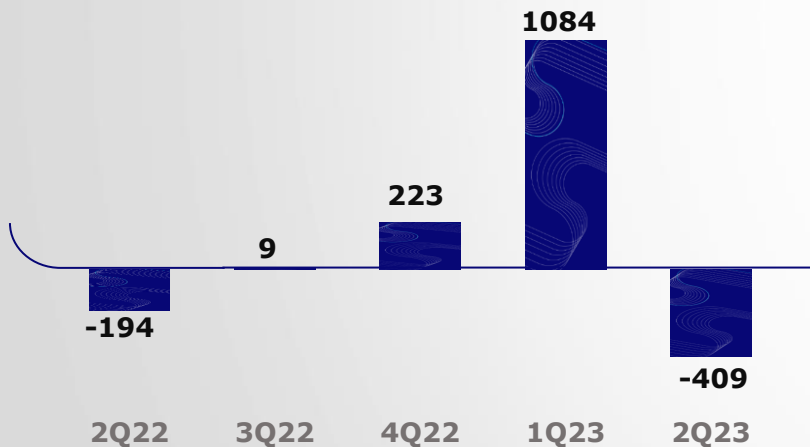


Aluminum Market Report 2Q 23



Gradual recovery in Chinese demand leads to a global aluminum market deficit in the quarter

Global Balance¹ (kt) - Supply vs Demand

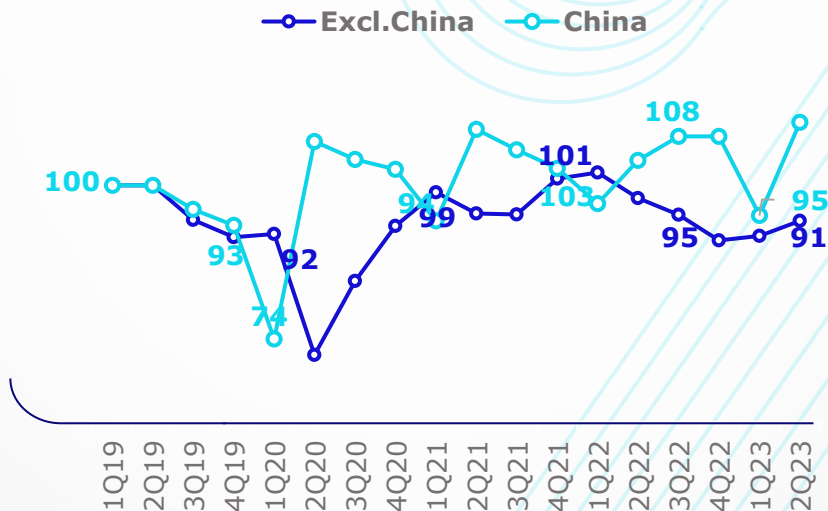


¹ Balance adjusted for net primary trade

Expected surplus in 2023 (~800kt) due to weaker global demand and higher supply in China with restarts in Yunnan.

Primary Aluminum Demand

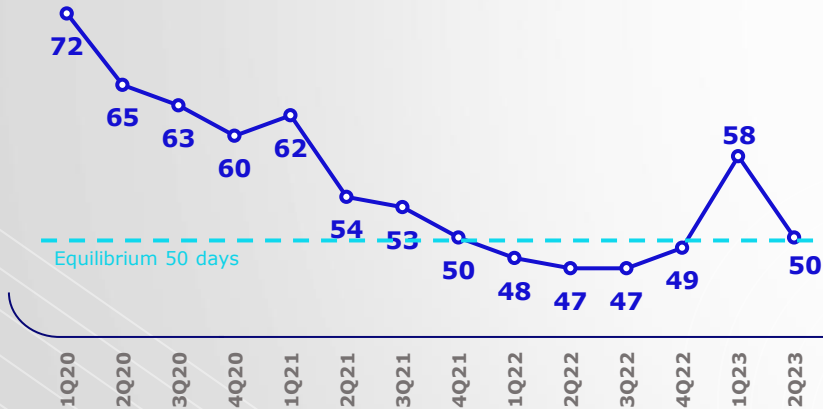
2Q19 = 100



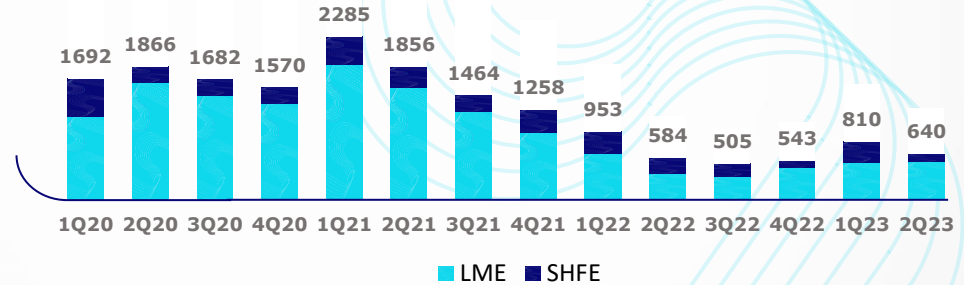
Seasonal consumption recovery in China after New Year. In other countries, the demand recovery is slow, amid persistent inflation and high interest rates.

Global inventories resume downward trajectory in 2Q23. In China, volumes are below historical levels

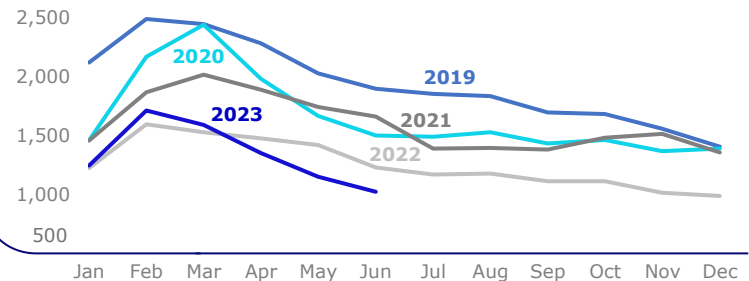
Global stocks in days of consumption



LME and SHFE exchange stocks (kt)



China: SHFE stocks and unregistered warehouse stocks (kt)

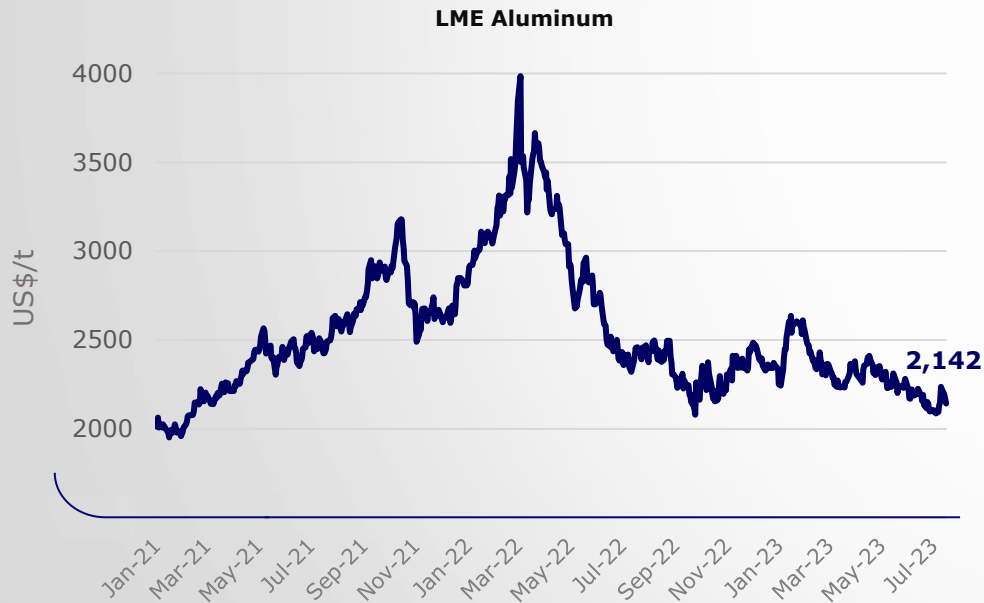


According to CRU consulting, lower-than-expected demand from the downstream sector in China has offset the impact of a relatively tighter market with low stocks



LME drops 6% compared to 1Q23 due to concerns about the macro scenario and smelter restarts in Yunnan

Expectations of increased supply in China with restarts in Yunnan coupled with a backdrop of slowing global demand have put pressure on the LME in recent months



LME Aluminum
(US\$/t)

2,875

2Q22

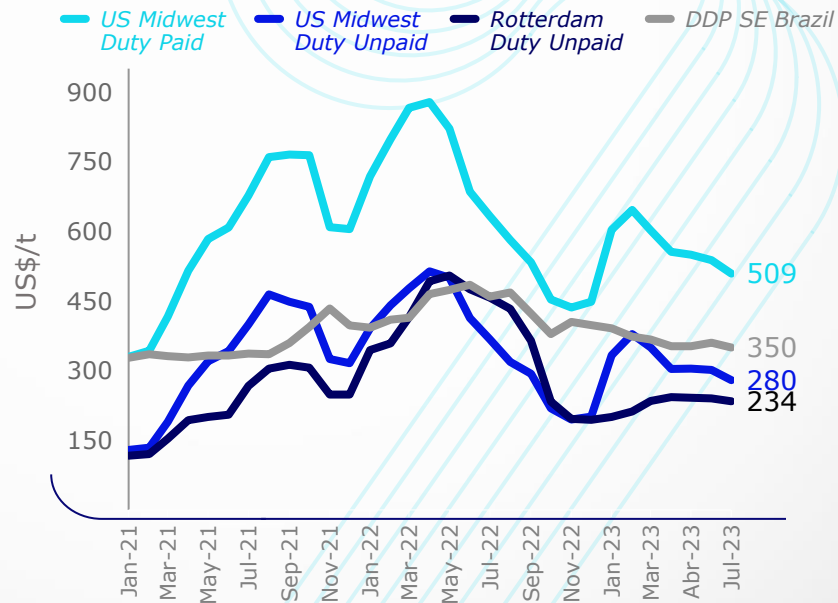
2,395

1Q23

2,258

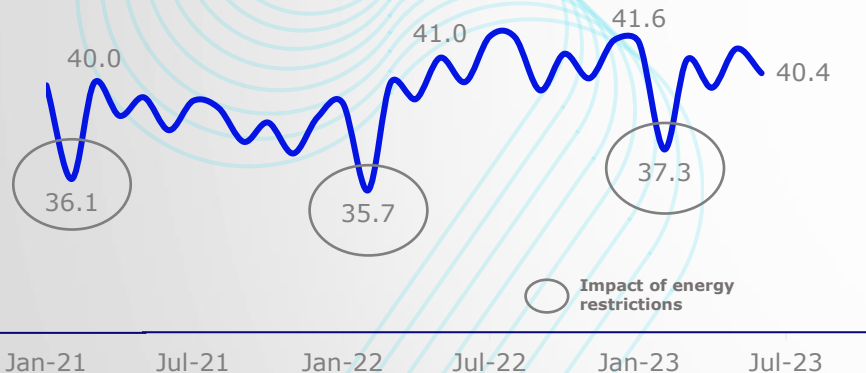
2Q23

Midwest premium pushed lower on weaker demand and falling U.S. logistics costs. Other premiums showed little change in the quarter



Part of the closed smelters in Yunnan restart operations after power restrictions were lifted in June

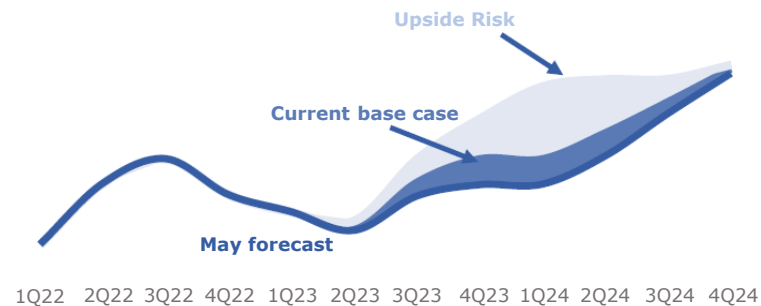
Annualised primary aluminum production in China (Mt)



- **Power supply risk still remain**, which could slow down the pace of restarts. Smelters will have four months of rainy season until restrictions possibly return.
- China aluminum production to grow 2.3% y/y in 2023. Still, CRU projects a roughly balanced Chinese market, with a slight surplus of 0.3Mt, given that **restarts in Yunnan are being partially offset by higher demand from the solar power sector.**

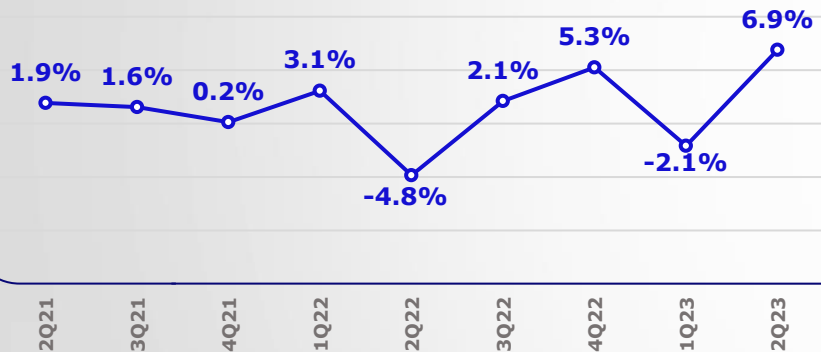
- **In recent years, China has faced energy crisis**, with an impact on aluminum production, mainly in Yunnan province.
- In June, power restrictions were removed in that province, paving the way for some smelters to restart. **CRU estimates that 1.5Mtpy could return by the end of the year.**

Annualised primary aluminum production in Yunnan (Mt)



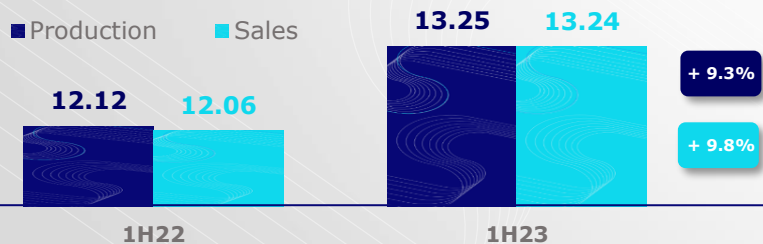
Demand in China: slower-than-expected recovery, with positive signs in some segments

Primary aluminum consumption in China (% y/y)



Vehicle Production and Sales in China (MM units)

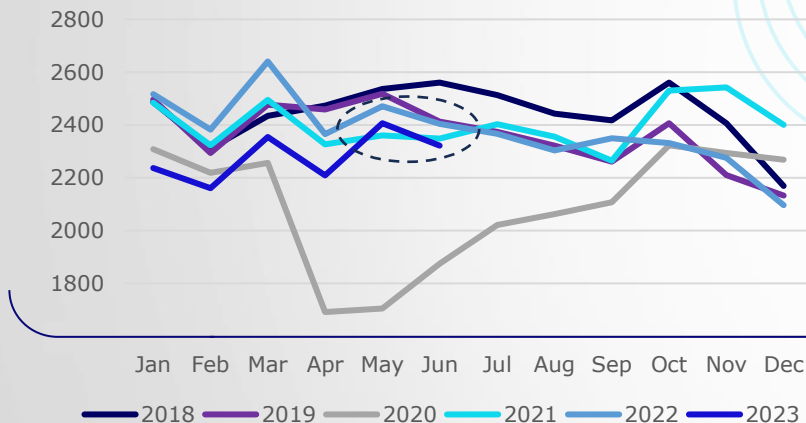
Source: China Association of Automobile Manufacturers (CAAM)



- **Primary aluminum demand grew in 2Q23**, but it's worth noting that in the same period of the previous year, the country was in lockdown.
- After lower-than-expected 2Q23 GDP growth, pressure mounts on the government to implement more **economic stimulus**.
- New measures have recently been announced such as cuts in **interest rates** and **auto taxes**.
- The Chinese government has also supported developers to finish uncompleted projects. Despite this, the **property sector remains under pressure**, with a retraction in sales and new starts.
- On the other hand, the **solar power and automotive segments** have performed well this year.
- CRU estimates a **20%** growth in aluminum demand for solar power vs 2022 in China, with the energy sector as a whole expected to grow **12%** y/y in 2023.

Aluminum consumption in other countries follows a gradual recovery trajectory, approaching historical levels

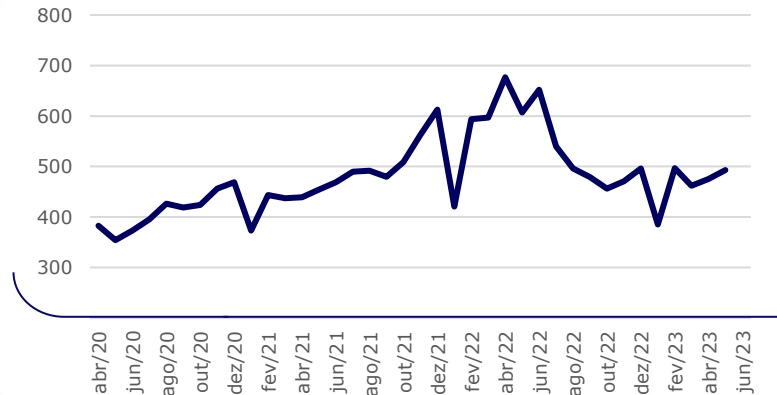
Primary aluminum consumption in other countries (excl.China) (kt)



Despite the challenging macroeconomic scenario in the main regions of the world, the **automotive sector has been a positive highlight for the aluminum demand** in the USA, Europe and Japan, mainly.

Aluminium consumption from **global construction sector** is weak, especially in Europe. Demand from **packaging sector**, mainly aluminum cans, is also under pressure. There are still relevant **uncertainties** regarding the resumption of global demand in the second half of 2023.

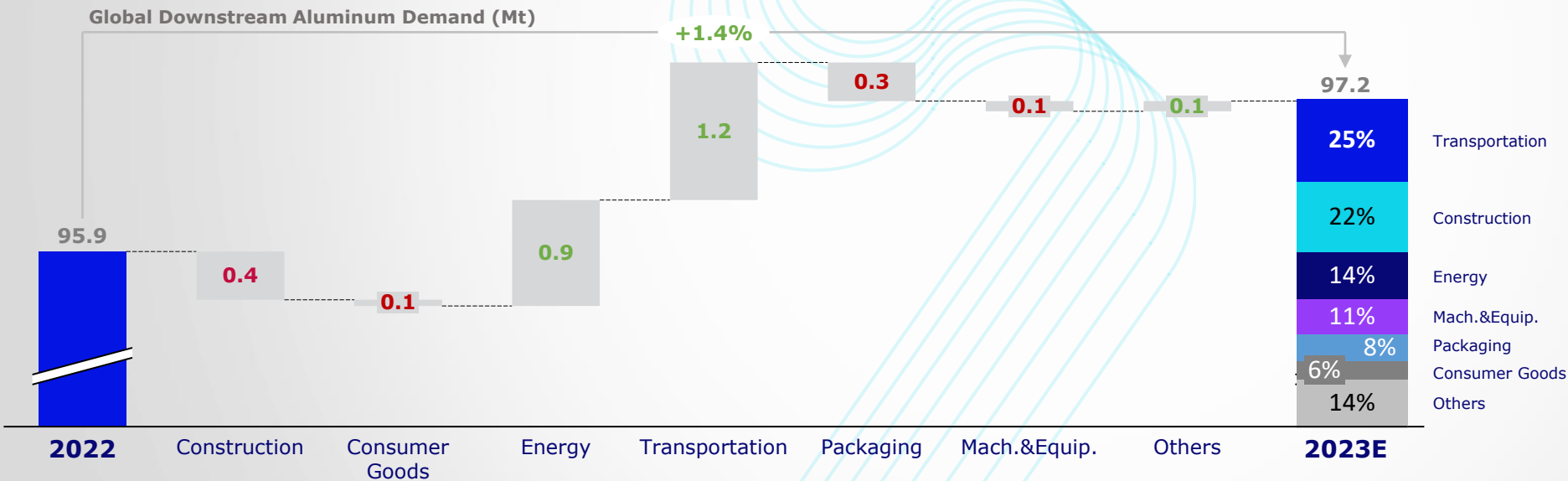
Aluminum products exports from China (kt)



Between January and June 2023, Chinese exports fell by 20 percent from the same period a year earlier, indicating **weaker demand from other countries**.

Central banks decisions on interest rates will play an important role in demand behavior in the coming quarters

In 2023, global aluminum demand is expected to increase 1.4%, driven by Energy and Transportation



In the World excl. China, **only Transportation and Energy sectors will register growth in 2023**. In China, such segments are expected to register the **highest percentage increases**.

Part of the growth of the Energy and Transportation sectors is linked to the decarbonization movement, mainly in China, with increased participation of electric vehicles and renewables.

Brazil: Aluminum market remained resilient in 2Q23

Construction and **Transportation** are bright spots in the first half of 2023 compared to the previous year. On the other hand, the **Consumer Goods** sector continues to be under pressure

Decision of the Brazilian government contributed to the balance of the competitive environment: **implementation of ~15% rate on imports of rolled products from China** from July/23

Fall in Brazilian premium in line with international premiums, but in a smaller proportion due to firm domestic demand

Brazil DDP
SE Premium¹
(US\$/t)

475
2Q22

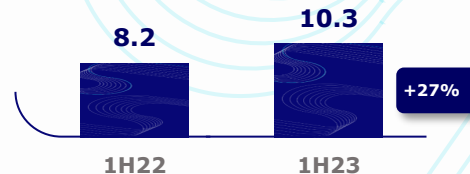
377
1Q23

355
2Q23

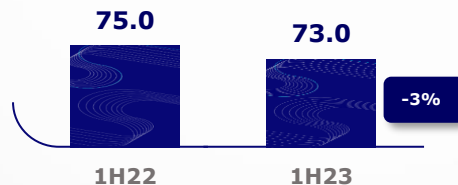
¹ Brazil DDP SE Premium: refers to P1020 – standard ingot, sow e T-bars.

Production/Sales of light and heavy vehicles (thousand units)

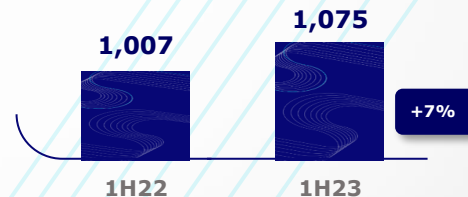
Bus bodies production (Fabus)



Road implements sales (Anfir)

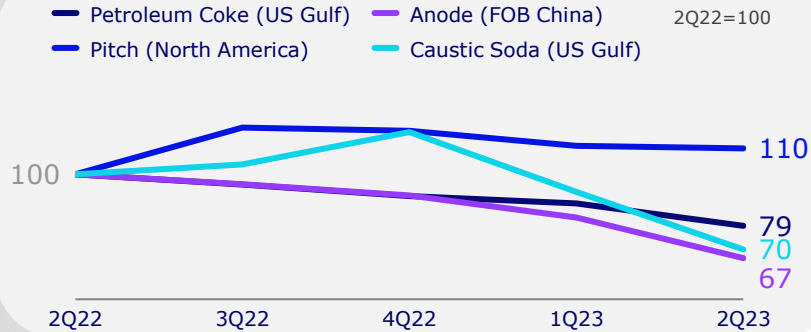


Light vehicles production (Anfavea)

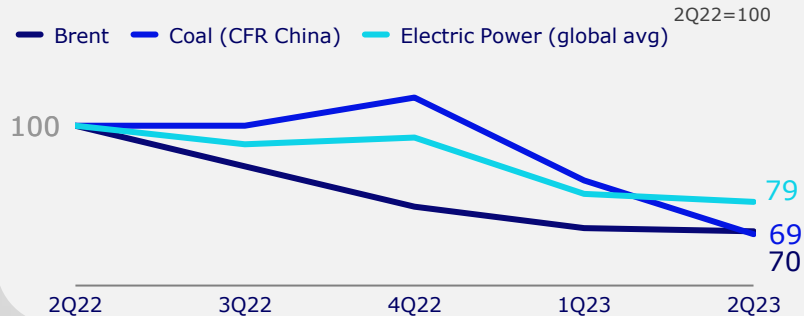


Pitch price remains at a high level. Other raw materials show a gradual drop in prices

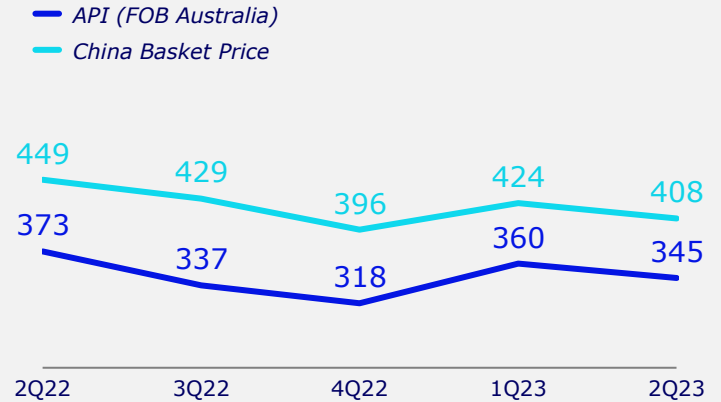
Price Index - Carbon Products and Caustic Soda



Price Index - Power Prices



Alumina Prices (US\$/t)



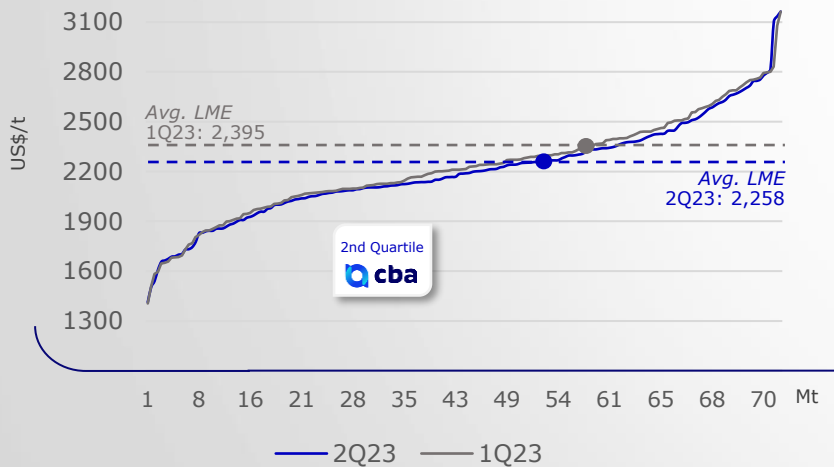
Surplus in the alumina market and negative sentiment put pressure on prices in 2Q23. However, in July, prices in China began to rise due to smelter restarts.

Despite cost reductions, margins of smelters outside China remain pressured due to LME price fall

Reduction of ~1% in the industry average cost. CBA positioned in the 2nd quartile, reflecting the impact of smelter's operational instability, costs at still high levels and Real appreciation against the US Dollar

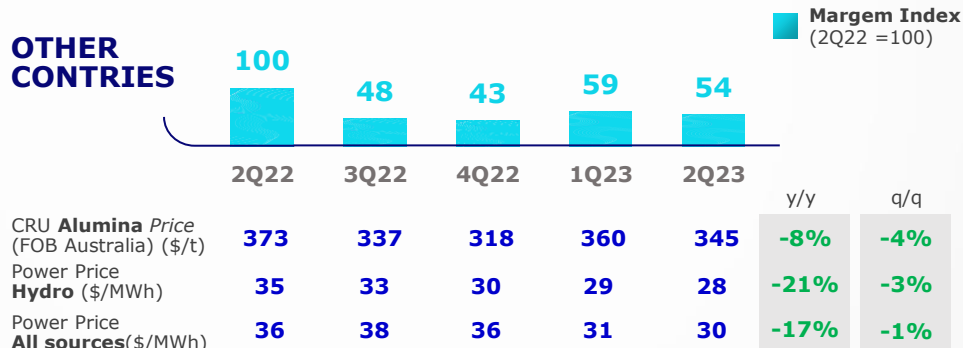
Liquid Metal Cost Curve – 2Q23

CRU Liquid Metal Cost (US\$/t)

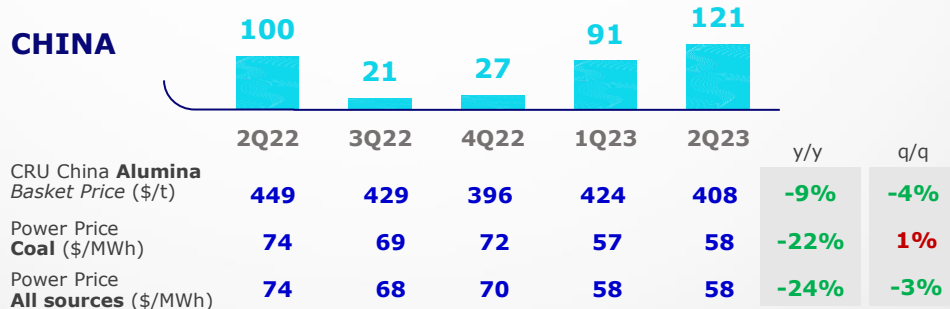


Margin of smelters in China improve due to sharper reduction in power costs and lower aluminum price decrease in the country

OTHER COUNTRIES



CHINA



Key Takeaways

Global aluminum market returns to deficit and inventories fall again in 2Q23, mainly reflecting the seasonal demand recovery in China

Aluminum consumption in other countries in slow recovery. However, there is a high degree of uncertainty about performance in the second half of 2023, due to the adverse macroeconomic scenario

Smelters in Yunnan (China) begin restart process after the removal of power restrictions. Expectation of increased supply in a scenario of fragile demand puts pressure on aluminum prices

Regional premiums in opposite directions, reflecting local supply and demand dynamics. Despite this, **they remain at healthy levels**

Industry costs show a slight decrease in 2Q23. **Smelters' margins outside China continue to be pressured due to the LME price drop**

Brazilian demand remained firm in 2Q23, however, consumer sectors presented different performances

Brazilian government implements **rate of ~15% on rolled products imported from China** from July / 23, favoring the competitive landscape

