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# **Aluminum Market Outlook**

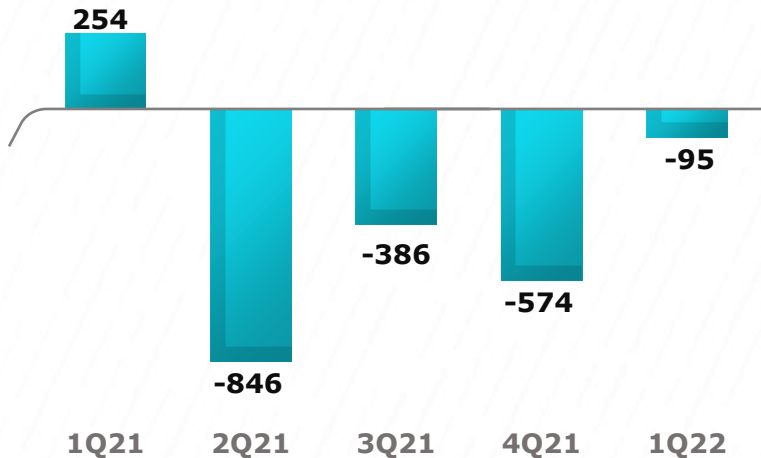
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1Q22

ALUM

# Global aluminum market remains in deficit despite a slowdown in Chinese demand

Global Balance<sup>1</sup> (kt) - Supply vs Demand

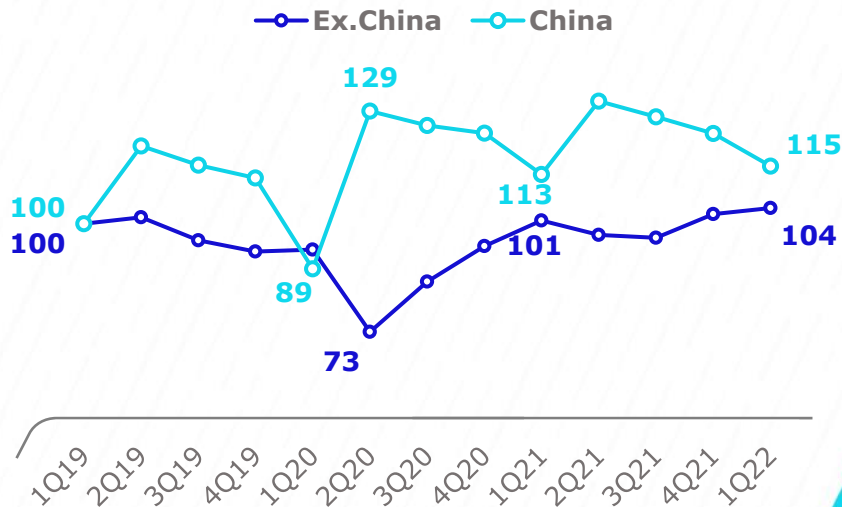


<sup>1</sup> Balance adjusted for net primary trade

Fourth quarter out of five with a deficit

Primary Aluminum Demand

1Q19 = 100

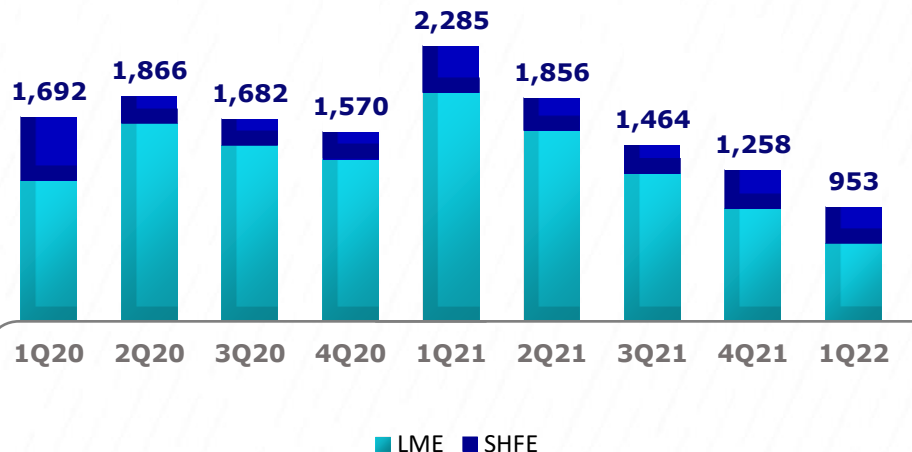
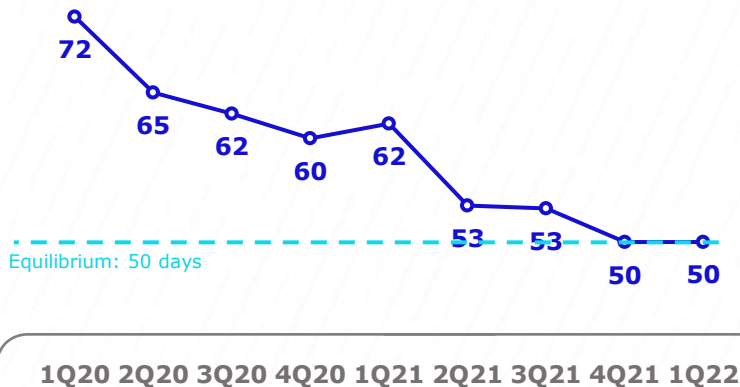


Chinese consumption impacted by the slowdown in the construction sector and, at the end of 1Q22, also by covid-19 lockdowns

# Significant drop in inventories has resulted in tighter global physical market

Global stocks (days of consumption) reached what is considered to be the equilibrium levels, indicating a potential critical situation in the market

LME and SHFE Inventories (kt) fell 58% in 1Q22 compared to 1Q21, reaching the lowest level since 2007



# LME Aluminum volatility in 1Q22, with regional premiums continuing in an upward trend

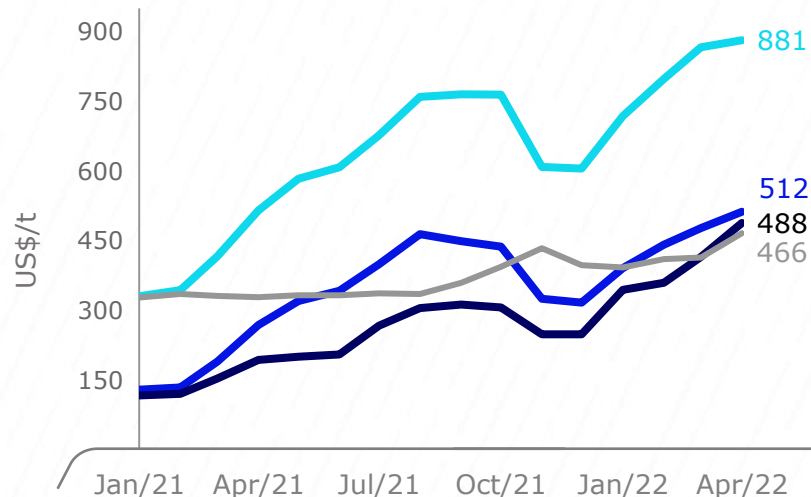
LME Aluminium showed volatility due to tensions in Europe and, more recently, lockdowns in China



LME (US\$/t)

Period	Price (US\$/t)
1Q21	2,096
4Q21	2,762
1Q22	3,280

Demand growth, low inventories and uncertainties over Russia underpin high regional premiums outside China



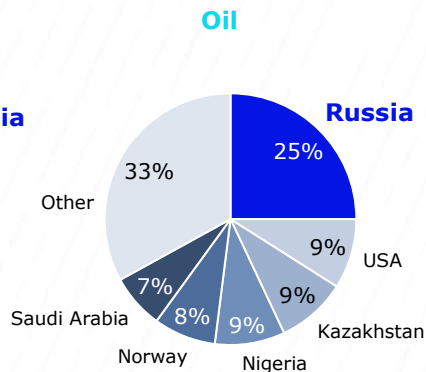
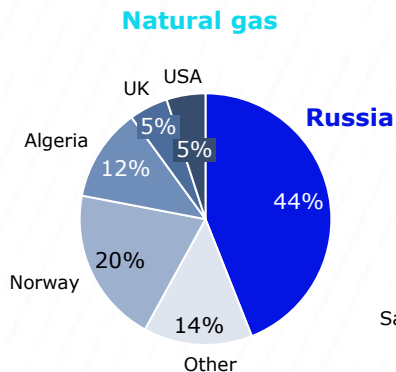
— US Midwest Duty Paid  
— US Midwest Duty Unpaid  
— Rotterdam Duty Unpaid  
— DDP SE Brazil

# Russia-Ukraine conflict has influenced the aluminum market dynamics, raising uncertainties

**LME Aluminum reached historic records, reaching close to US\$ 4,000/t, amid fears of direct sanctions on Russian metal**

**Conflict boosts cost inflation and logistical pressures, with emphasis on volatility in power prices in Europe. Europe is highly dependent on natural gas and oil imports from Russia**

EU imports (2020)



**Volatility of power prices implies greater difficulty to restart smelters in Europe (~20% of the capacity of the region is now closed)**

**Russia, the largest global exporter of primary aluminum, has Europe as its main market and accounts for 6% of the global supply, with production of 3.9 Mtpa**

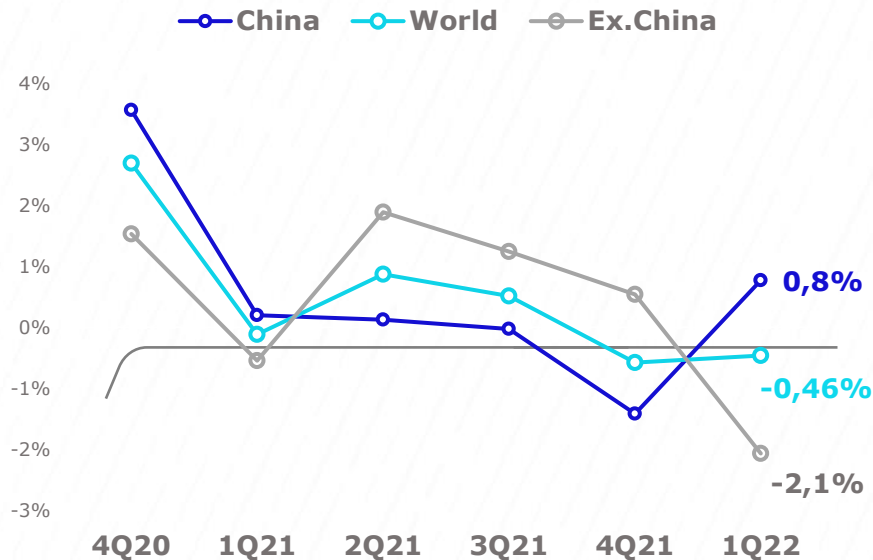
**Closure of the Nikolaev refinery in Ukraine (1.7Mtpa) and disruption of imports from Australia (1.5Mtpa) due to sanctions could put Russia's primary aluminum production at risk**

**Prolonged conflict tends to negatively impact the economy and consequently the aluminum demand in the region**

# Global production decrease in 1Q22, mainly affected by smelter closures in Europe

## Growth in primary aluminum production

% QoQ

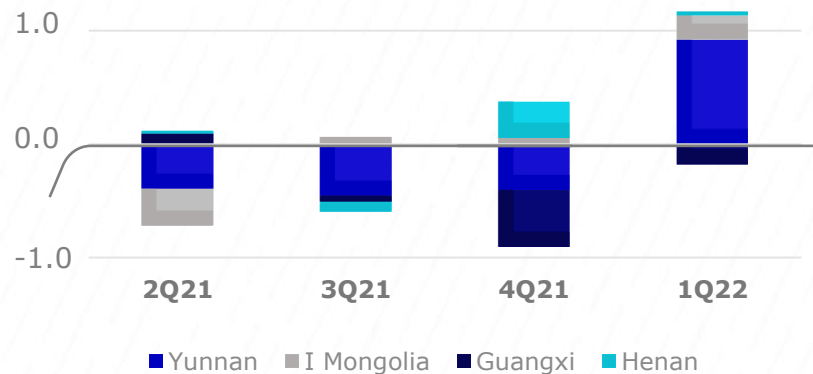


CRU excluded from its projection the restart of smelters in Europe for 2022. About 0.8Mtpa are still closed, equivalent to ~20% of the region's capacity



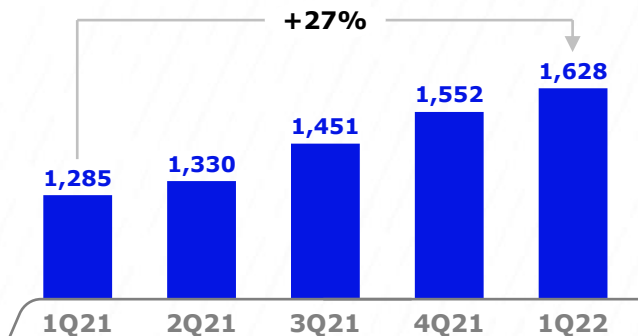
Production growth in China due to increased supply of coal for thermoelectric plants and improved hydrology in some provinces, mainly Yunnan

Production change in selected provinces of China (Mt annualized)



# Despite recent increase in exports, China still remains net importer of aluminum

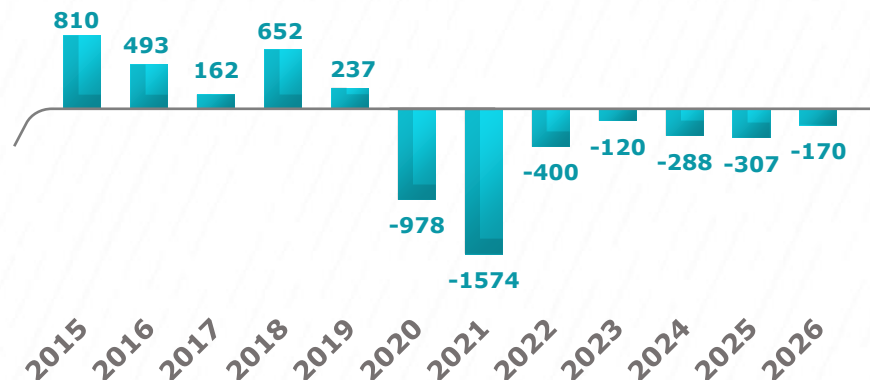
Exports of primary and downstream aluminum products by China (kt)



China has increased exports of primary and downstream aluminum products, taking advantage of favorable arbitrage and firm demand from other countries

In the short term, exports will be an important source of consumption as domestic demand prospects have weakened further from the sluggish construction market and the impacts of Covid-19 lockdowns

Exports vs. Imports of Primary Aluminum by China (kt)



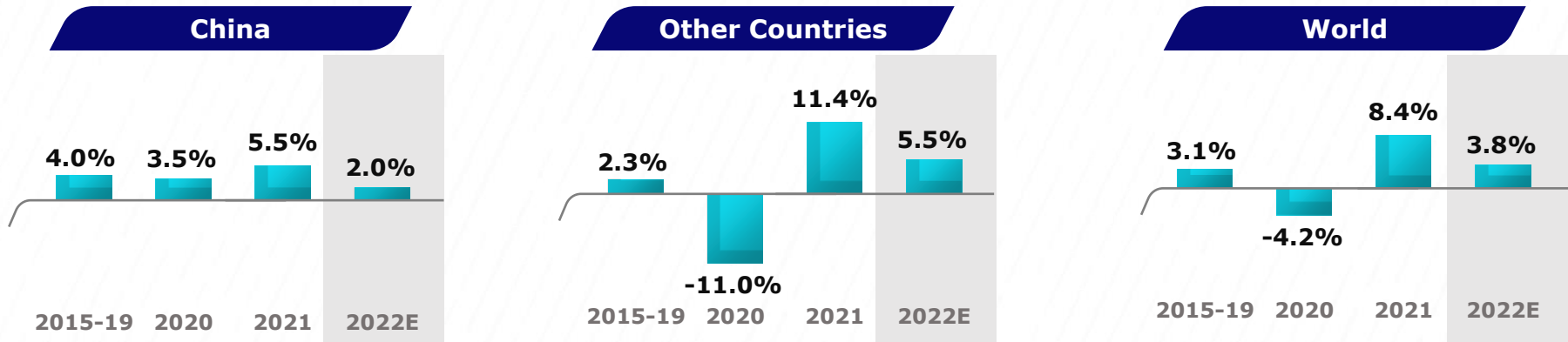
With capacity cap being reached in the medium term, China may depend on imports to meet domestic demand



# Global consumption in 2022 tend to be supported by downstream demand outside China

## Growth in downstream aluminum products demand

% YoY



Challenging scenario for sectors such as **construction and durable consumer goods** due to rising interest rates and inflation



High premiums outside China suggest that **demand remains firm**. There are signs of cooling in Europe due to conflicts in the region, but US stands out positively



**Automotive sector** still suffering from supply chain pressures. However, according to CRU consulting, there is still pent-up demand

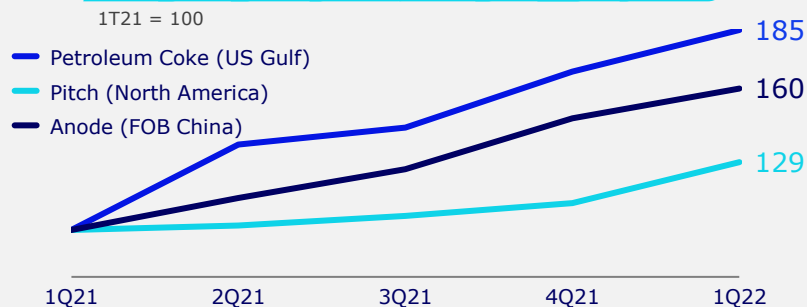


President Xi announced **new stimulus** to contain impacts of covid-19 and slowing construction sector in China. Traditional measures such as **public investments in infrastructure** tend to benefit aluminum demand

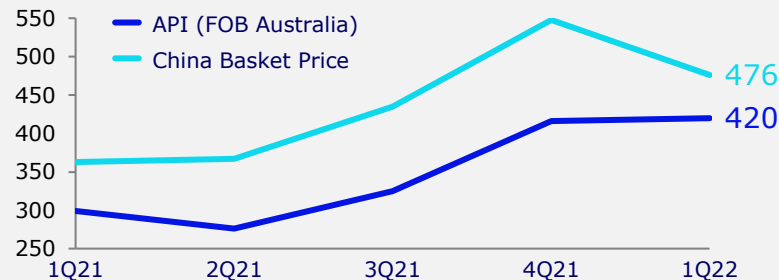


# Most raw materials prices continue to rise, even though they are at historically high levels

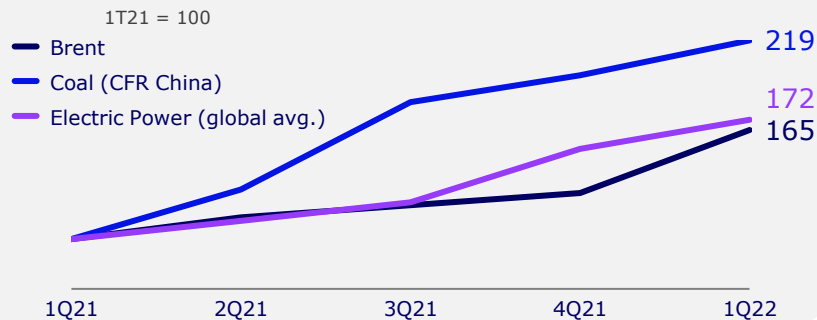
## Price Index - Carbon Products



## Alumina Prices - US\$/t



## Prices Index - Power Prices

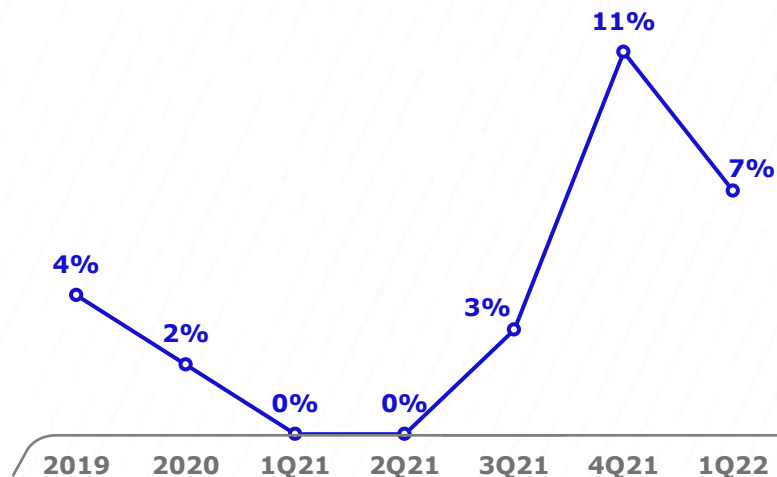


# High aluminum price benefits margins outside China, but cost pressure is still hitting the industry

Cost inflation led to an increase in the number of smelters operating at costs above the aluminum price

Share of global primary aluminum production with costs above the aluminum price

CRU Smelter Business Cost vs Aluminum Price

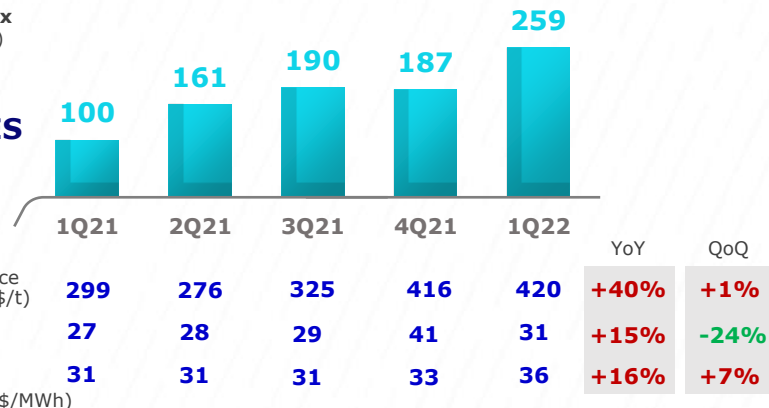


Source: CRU Aluminium cost dashboard quarterly review (Apr 2022)

Decrease in hydro power price outside China and alumina price in China benefit smelter margins

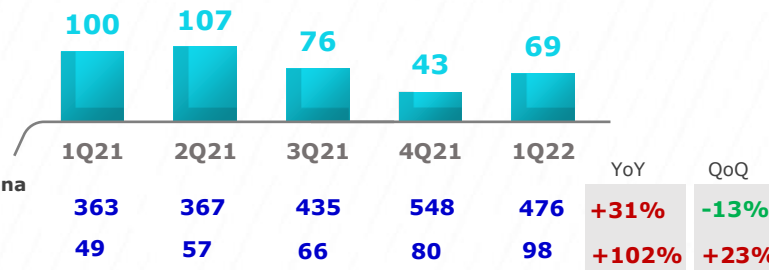
Margin Index  
(1Q21 = 100)

OTHER COUNTRIES



CHINA

CRU China Alumina Basket Price (\$/t)  
Power Price @ Coal (\$/MWh)

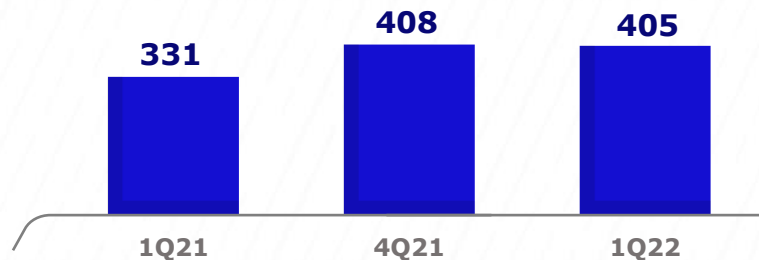


# Brazil: softening demand in some sectors, however, premium remains resilient

- ▼ Cement consumption decreased 2% in 1Q22 vs 1Q21 (SNIC), indicating a **slowdown in construction sector demand**
- ▼ End of government financial assistance, rising interest rates and inflation moderate demand for **consumer goods and packaging**
- ▼ Light vehicle production continues to suffer from supply chain pressures, with an 18.6% drop in 1Q22 vs 1Q21 (Anfavea)
- ▲ **Domestic premium resilience: supported by high logistics costs and elevated international premiums**

Brazil DDP SE US\$/t [S&P Global Platts]

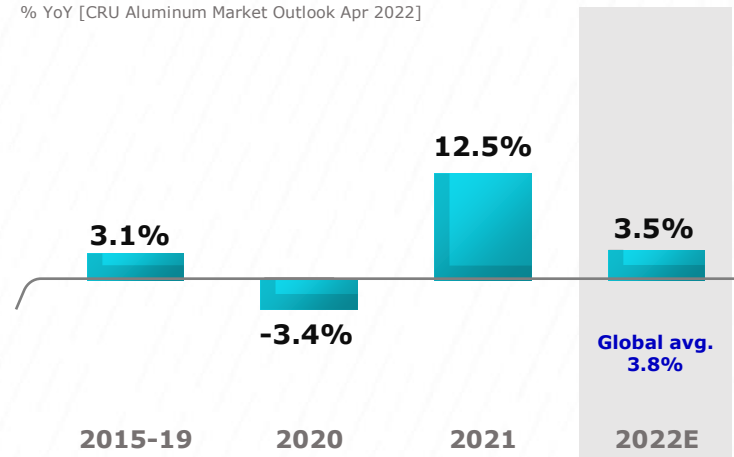
P1020: standard ingot,  
sow and T-bars



- ▲ **Best performance of the heavy-duty vehicles segment: truck implements with a growth of 0.3% in sales of 1Q22 vs 1Q21 (Anfir). Bus chassis sales increased 10% in January and February 2022 compared to the same period last year (Fabus)**

## Growth in Brazilian downstream aluminum demand in line with global average

% YoY [CRU Aluminum Market Outlook Apr 2022]



# Key Takeaways

- Slowdown in Chinese demand due to sluggish construction sector and lockdowns. However, **global market remains in deficit with stocks declining in 1Q22**
- Production decrease in world ex-China offset rising production in China. As a result, **global supply declined in 1Q22, keeping physical market tight**
- LME aluminum increased 56% compared to 1Q21**, but showed volatility in 1Q22 reflecting lockdowns in China and tensions between Russia and Ukraine
- Combination of firm demand, low inventories, cost pressure and uncertainties about sanctions on Russian metal underpin **prices and premiums at high levels**
- Despite the increase in exports, China is expected to remain a **net importer of aluminum**. New government **stimulus** tends to support domestic demand
- Global cost inflation continues to put pressure on the industry, resulting in an **increase in the number of smelters operating at costs above the LME**
- Brazil: **demand cooling in some sectors** in 1Q22, however, with **expected growth of 3.5% in 2022**, according to CRU consulting estimates

