

India
Overweight *(no change)*
Highlighted Companies
National Aluminium Co Ltd
ADD, TP Rs103, Rs83 close

Assuming current energy prices will sustain for two-to-three years (which is our base case), the fair value of aluminium is around US\$3,000/t. We have valued Nalco at 10x FY24F EPS to arrive at our new target price of Rs103.

Summary Valuation Metrics

P/E (x)	Mar22-A	Mar23-F	Mar24-F
National Aluminium Co Ltd	5.22	7.1	8.07
P/BV (x)	Mar22-A	Mar23-F	Mar24-F
National Aluminium Co Ltd	1.23	1.5	1.4
Dividend Yield	Mar22-A	Mar23-F	Mar24-F
National Aluminium Co Ltd	7.5%	7.5%	7.5%

Mining

It's time to go long on aluminium

- Global aluminium prices have multiple tailwinds such as 1) rising energy prices, 2) primary aluminium supply constraints, 3) demand tailwind from new areas like electrical vehicles, and 4) metal supply from scrap must increase to meet demand which needs an impetus from stable to rising aluminum prices.
- Scrap collection is dependent on two factors such as 1) established supply chain, and 2) stable aluminium prices. Please note that it takes multiple weeks before the collected scrap reaches traders/user yards and hence, volatile aluminium prices make scrap collection risky. Thus, to promote scrap collection, prices will be less volatile, which is positive for equity valuation.
- We have baked in US\$2,400/t (current prices US\$2,650/t) to arrive at our EPS estimates and target price for Nalco. Our top pick in the sector is Nalco.

Aluminium prices have multiple tailwinds

Global aluminium prices have multiple tailwinds: 1) Rising energy cost - we have written multiple reports on this (please click here for our reports: [IN: Oil & Gas - Overall - EU energy crisis: coal, chemicals to rise](#) and [IN: Oil & Gas - Overall - 2nd round of energy inflation on the horizon](#)). 2) Primary aluminium capacity constraints are evident which means that old scrap needs to fill the gap – please note that scrapping of old metal stock is dependent on metal prices and hence, we expect stability in metal prices going ahead. 3) Demand tailwind is apparent, as apart from traditional demand drivers, electric vehicle, beverage cans as well as battery usage drivers are coming to fore. 4) China is pledging to cap its production capacity at 45mt but baking in Chinese promises into numbers and hence, arriving at a bull thesis, is fraught with risk. Therefore, we have not accounted for the same. If it happens, it will provide a further impetus to our thesis. Rising, but less volatile aluminium prices, is positive for equity valuations. We reiterate our Overweight stance on the sector. Nalco is our top ADD-rated stock in the sector.

Importance of aluminium scrap set to grow in coming future

IAI (International Aluminum Institute) notifies factory scrap as pre-consumer scrap and used metal scrap as post-consumer scrap. As pointed out in this report, used metal scrap or post-consumer scrap is getting prominence as the used metal pool is increasing over time. There was a record 20mt of post-consumer scrap intake in 2019 – representing about 60% of scrap intake – equivalent to saving 300mt of greenhouse gas emission. Pre-consumer scrap - stagnated in 2019 due to flat aluminium consumption from 2018 to 2019. Going forward, constraints on primary metal production will put the onus on scrap metals to balance the market. Scrapping is a highly price-sensitive function and hence, as scrap metal is needed to fulfill demand it makes us believe that going ahead aluminium price volatility will be limited. The global pledge on decarbonization is another impetus for scrap usage - please note that we have ~1.3bnt of used metal pool which can be used to make aluminium. It is worth noting that using 1t aluminium made from scrap will have 95% less carbon emission.

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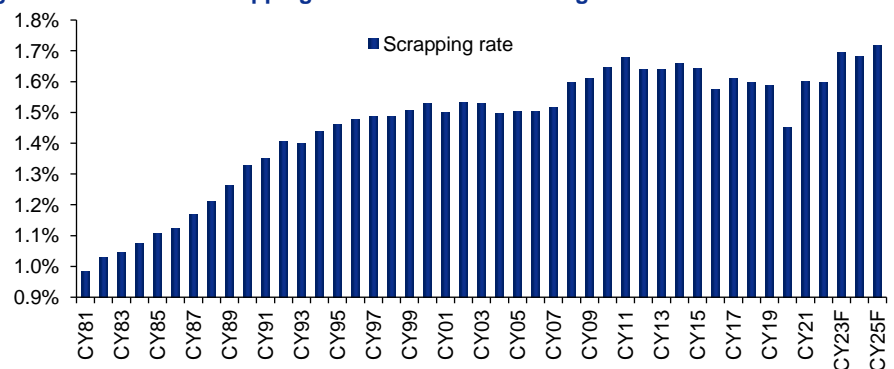
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Figure 1: Aluminium scrapping rate should reach the highest-ever number of 1.72%


SOURCE: INCRED RESEARCH, COMPANY REPORTS

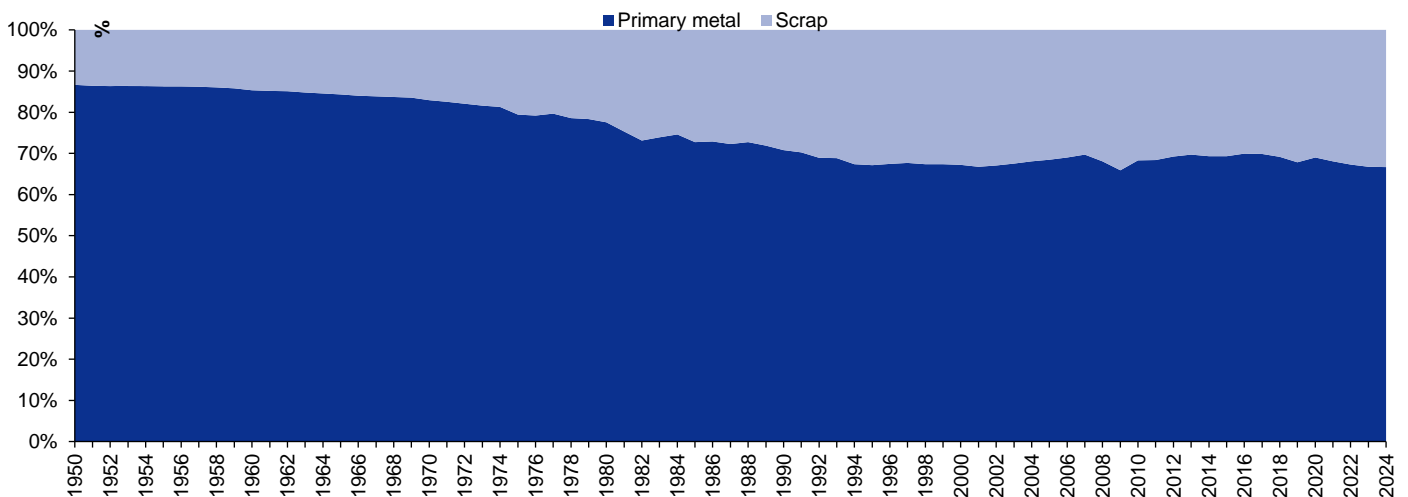
It's time to long on aluminium

Global energy problems have not yet been resolved. In fact, the coming few months are likely to witness a fresh round of energy inflation. Rising cost as well as a steep correction in primary aluminium prices can lead to a shortage of scrap supply which, in turn, can lead to even higher metal prices.

Scrap is a critical but less understood component of aluminium metal supply

Over the years, aluminium scrap has become one of the most critical components of aluminium supply. From 22% of the overall metal consumption in CY12, it has reached around 33% in CY22. The rising importance of scrap is often overlooked by street. In the coming future, this will become even more important.

Figure 2: By 2024F, one-thirds of aluminium consumption will come from scrap metal (factory scrap + old metal scrap); please note that factory scrap is dependent on the usage of aluminium, but old scrap depends on the used metal pool of aluminium



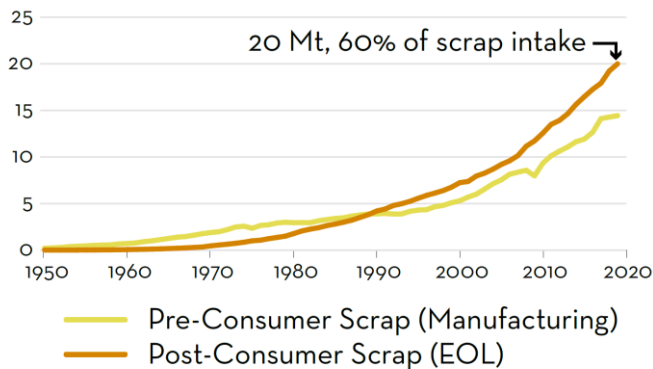
SOURCE: INCRED RESEARCH, COMPANY REPORTS

Aluminium scrap comes from factory scrap & used metal scrap ►

IAI (International Aluminum Institute) notifies factory scrap as pre-consumer scrap and used metal scrap as post-consumer scrap. As is evident over the period, used metal scrap or post-consumer scrap is getting prominence as the used metal pool is increasing over time.

Figure 3: Used metal scrap (post-consumer) now accounts for 60% of overall scrap input

Global scrap intake (Mt)

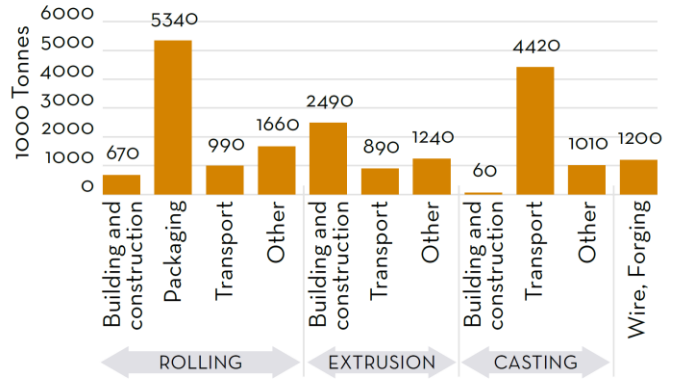


SOURCE: INCRED RESEARCH, IAI

Figure 4: Rolled products are becoming the biggest source of scrap

Global sourcing (Mt)

The biggest post-consumer scrap intake in 2019 came from used packaging (rolled products).



SOURCE: INCRED RESEARCH, IAI

There was a record 20mt of post-consumer scrap intake in 2019 – representing about 60% of scrap intake – equivalent to saving 300mt of greenhouse gas emission.

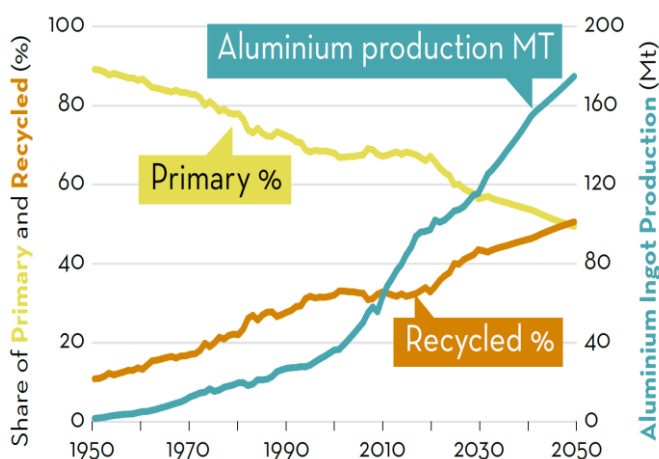
Scrap will become increasingly important in the coming period ➤

Pre-consumer scrap – stagnated in 2019 due to flat aluminium consumption from 2018 to 2019. Of these 14mt:

- 51% was sheet and foil;
- 27% was extrusion scrap;
- 16% was castings.

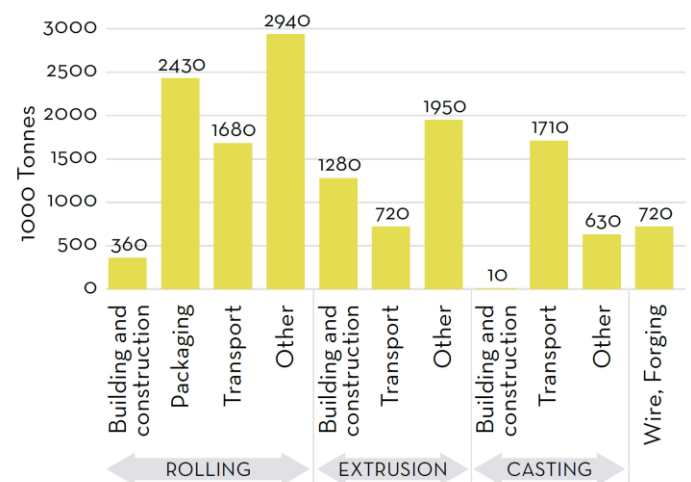
Figure 5: By the year 2050F, 50% of aluminium will come from scrap metal

Share of primary and recycled aluminium



SOURCE: INCRED RESEARCH, IAI

Figure 6: Scrap generation from building is coming down and rolled product, transports etc. are becoming key source for material



SOURCE: INCRED RESEARCH, IAI

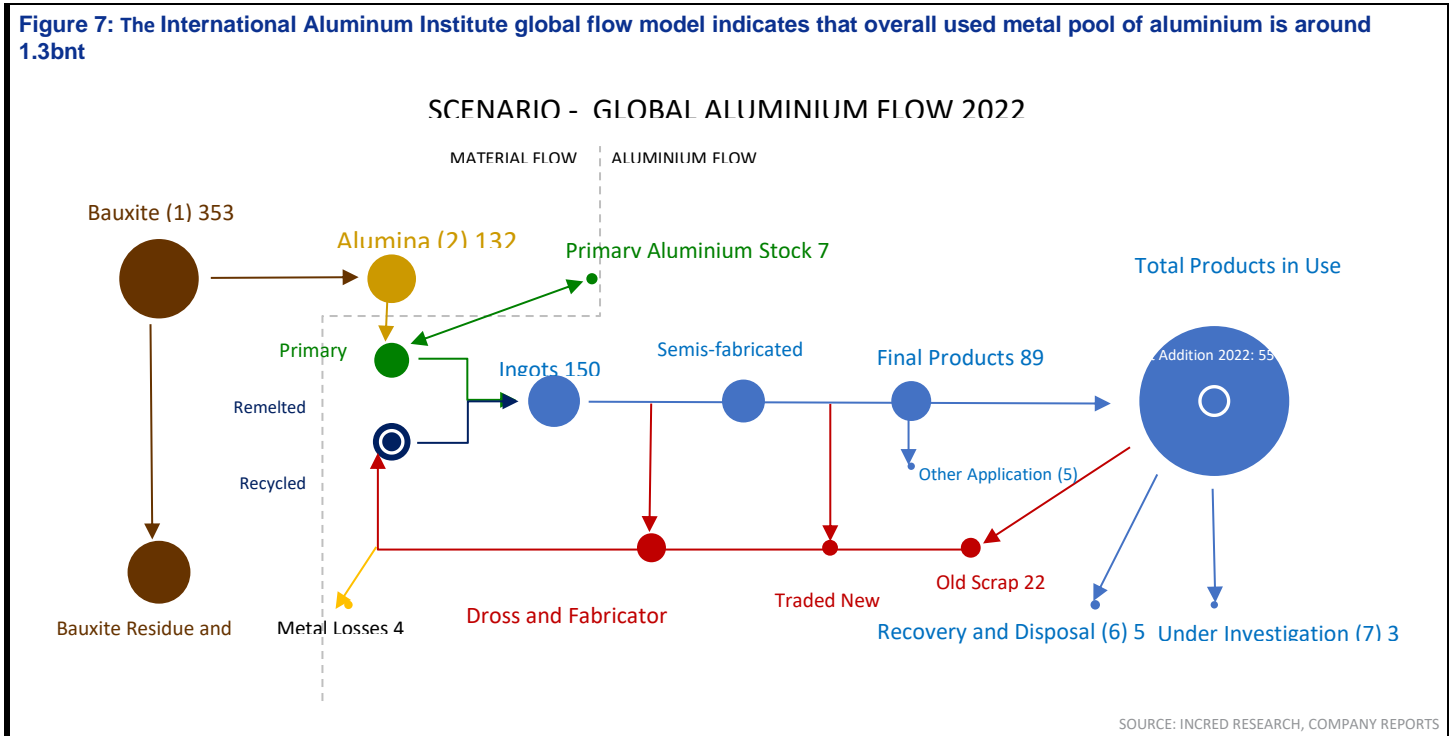
Hence, analysing primary metal production in isolation is meaningless ➤

A major portion of the investor community looks at primary metal demand-supply balance, which is immaterial in the current scenario. Please note that scrap availability can only be known with retrospective effect. Real-time analysis of the same is impossible.

One of the most important things to analyse scrap availability is the used metal pool of aluminium, which stood at 1.3bnt in CY22 ➤

The global flow model of aluminium indicates that overall used metal pool of aluminium was around 1.3bnt in CY22.

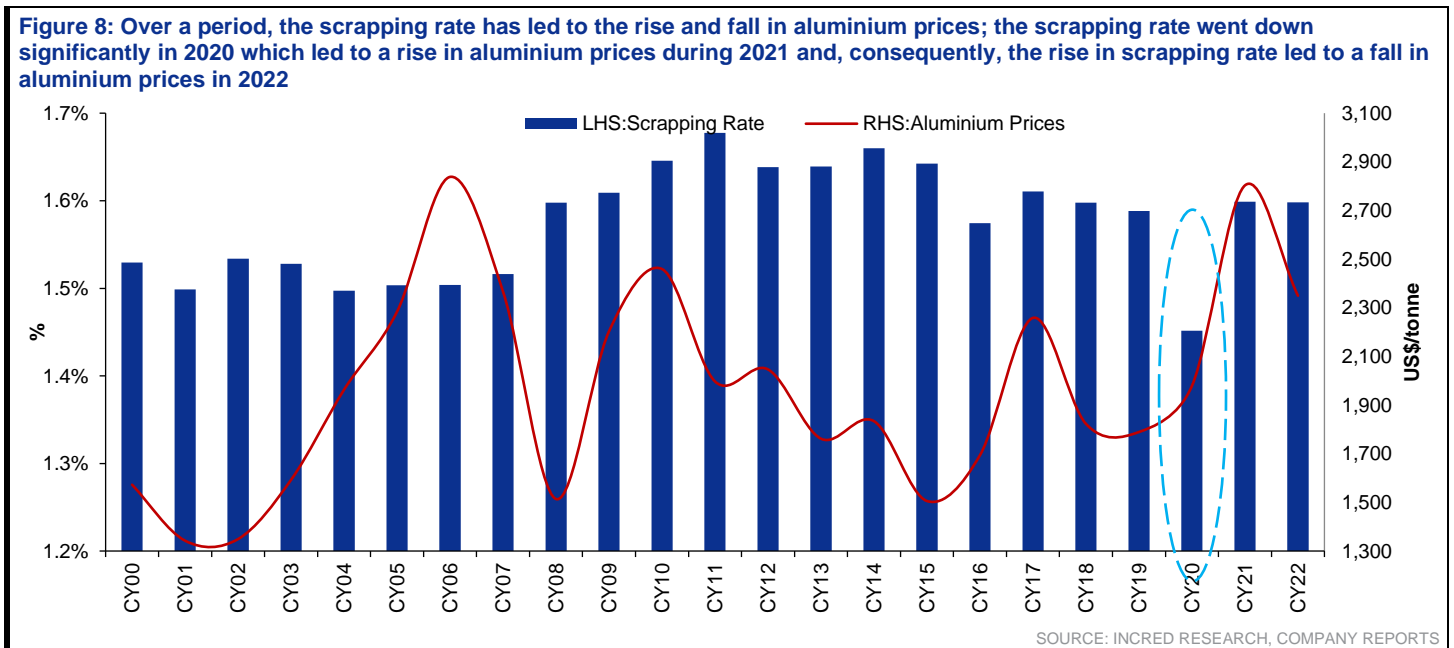
Figure 7: The International Aluminum Institute global flow model indicates that overall used metal pool of aluminium is around 1.3bnt



The scrapping rate of used metal pool remains ~1.5-1.6% ➤

The global flow model of aluminium indicates that overall used metal pool of aluminium was around 1.3bnt in CY22. As per our estimate, the scrapping rate went down substantially in CY20 because of Covid-related lockdown which led to scarcity of secondary metal and hence, supply chain scarcity.

Figure 8: Over a period, the scrapping rate has led to the rise and fall in aluminium prices; the scrapping rate went down significantly in 2020 which led to a rise in aluminium prices during 2021 and, consequently, the rise in scrapping rate led to a fall in aluminium prices in 2022



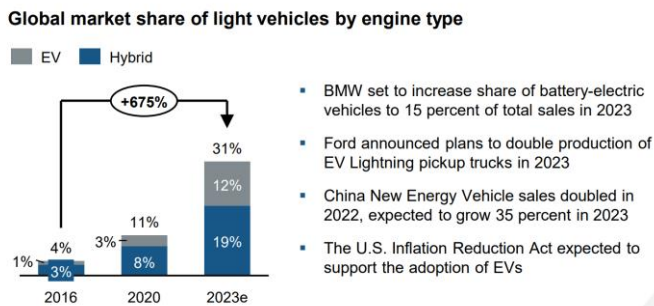
Stable scrapping rate in CY21/22 will lead to primary metal deficit coming into the picture again in CY23F ➤

The stable scrapping rate will lead to primary metal deficit/surplus becoming important again in CY23F. It was unimportant in CY22, as the scrapping rate increased significantly over CY20 and CY22 appeared to have a constant rate. It's important to note that trailing years' scrapping rate is very important than that of the current year as before consumption, scrap remains in the supply chain for a long period (at least six months).

We believe aluminium demand will remain steady over the next five-to-seven years ➤

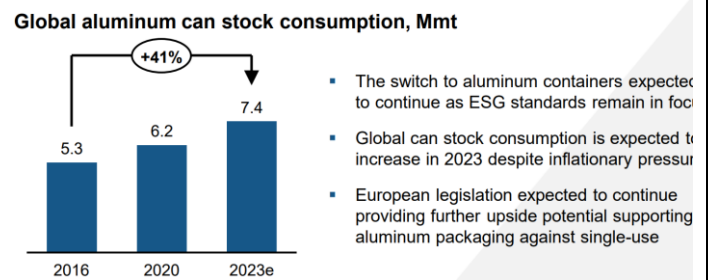
- Aluminium demand has plenty of tailwinds in terms of its rising usage in vehicles, and especially increased usage in EVs.
- Potential to be deployed as energy producer in an aluminium air battery. Please note that most of the time aluminium air batteries can be used as an emergency source of energy in EVs.
- Increased usage of cans because of Covid-led lockdowns have brought cans into fashion again.

Figure 9: Increase in hybrid vehicle/ EV will lead to higher aluminium consumption than traditional IC engine vehicle



SOURCE: INCRED RESEARCH, ALOCA INVESTOR PRESENTATION

Figure 10: Aluminium can stock consumption has also been increasing over time



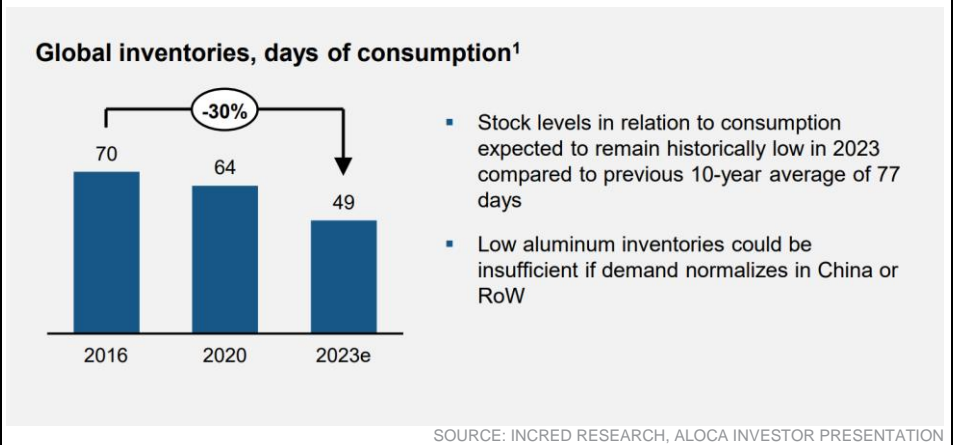
Sources: CRU, LMC 1. Estimate of year end primary inventories, excluding fake semis

SOURCE: INCRED RESEARCH, ALOCA INVESTOR PRESENTATION

There are constraints on primary metal production which will lead to inventory drawdown ➤

Overall global primary aluminium capacity is the range of 77mt, which is operating @90%. Please note that it's very difficult for all the smelters in the world to simultaneously operate at more than 90% capacity utilization for a longer period (may be more than six months). Apart from this, there is a proclamation by China that it wants to limit aluminium production capacity to 45mt. At the same time, we will be first to point out that any 'Bull or Bear' strategy based on China's promise should be thrown into the dustbin. However, it's true that smelter operation at more than 95% capacity utilization is very difficult to sustain and hence, there will be inventory drawdown in the system.

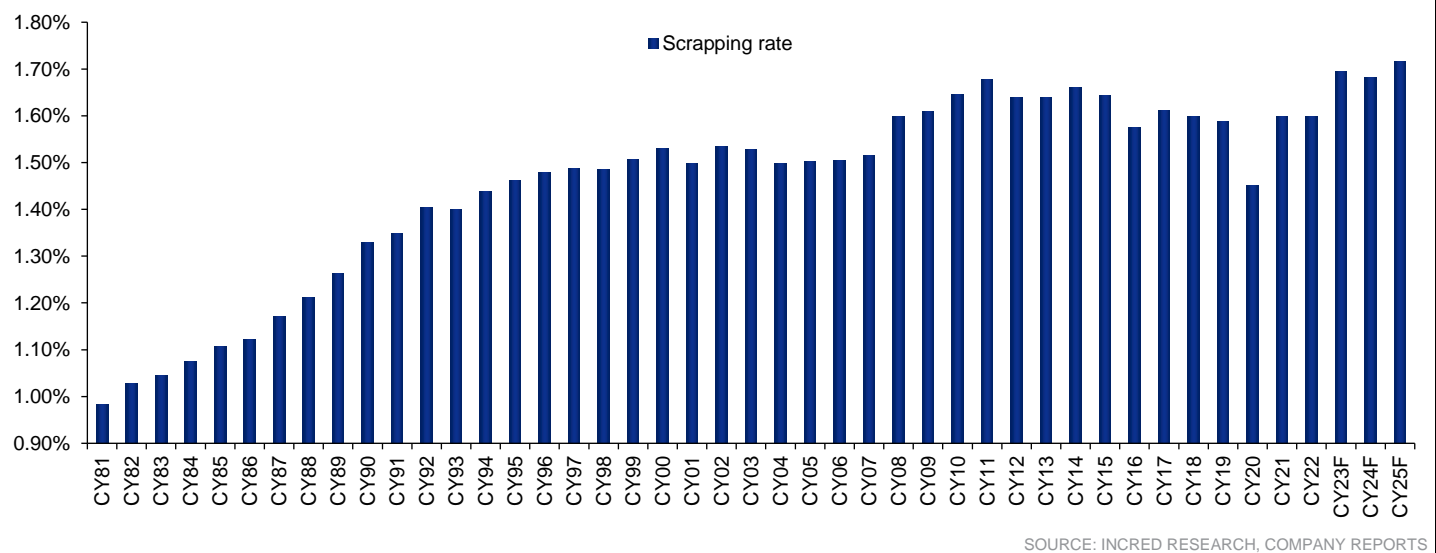
Figure 11: Global aluminium inventory is likely to come down significantly in CY23F



Constraints on primary metal production will put the onus on scrap to balance the market ➤

Constraints on primary metal production will put the onus on scrap metals to balance the market. Scrapping is a highly price-sensitive function and hence, there may be a time when aluminium price volatility will be limited.

Figure 12: In the next three years, aluminium scrapping rate should reach the highest-ever number of 1.72%



Primary metal supply is supported by cost push as well ➤

Enough has been written on this and it is widely appreciated now that cost push will support primary aluminium prices.

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