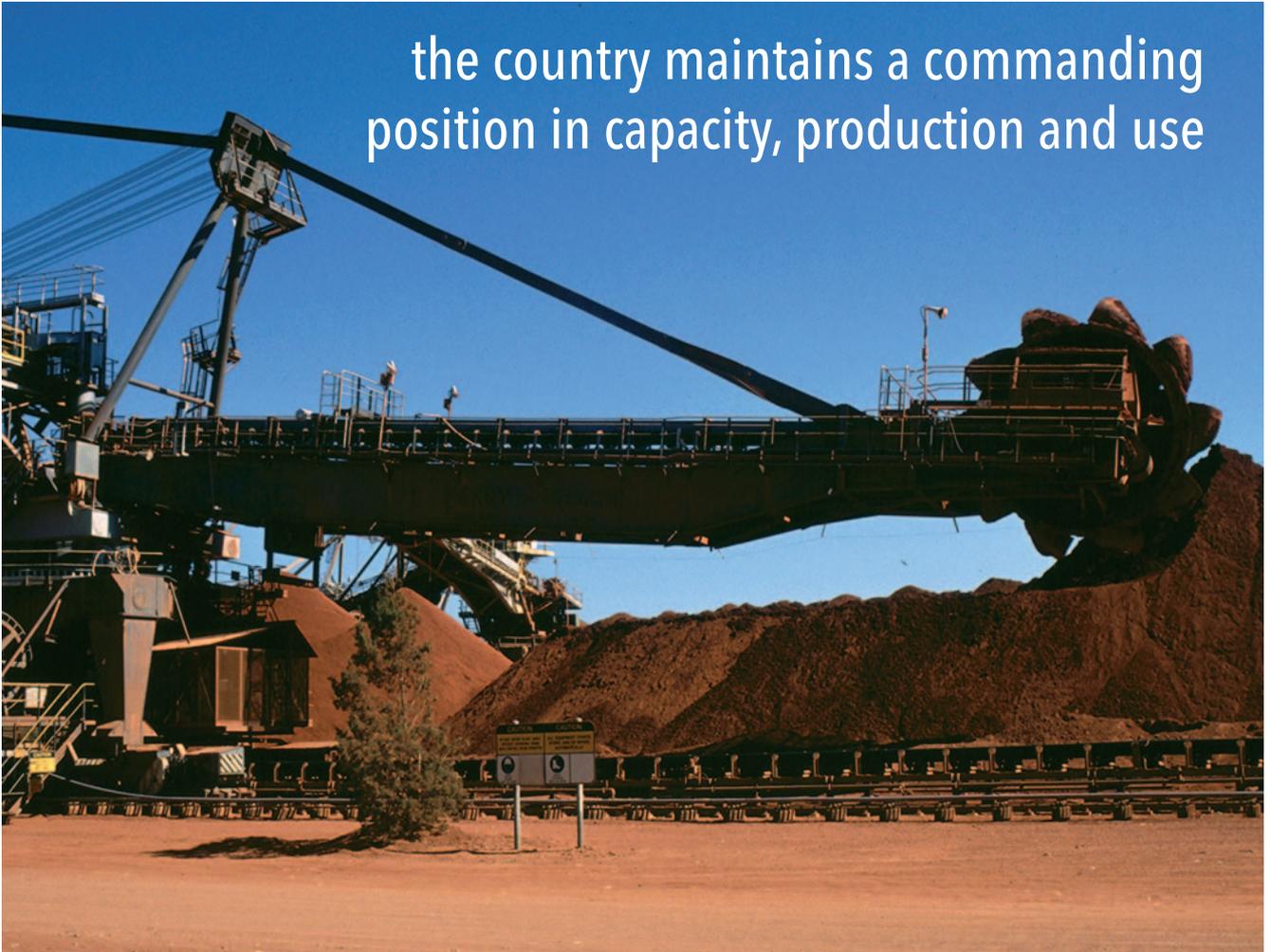


# Chinese imports determine price of bauxite and alumina

the country maintains a commanding position in capacity, production and use



## China's dependence on bauxite imports continues to grow

For over a decade now, China — relying on a vision of becoming an invincible powerhouse and a factory to the world — went on investing heavily in all metals, writes *Kunal Bose*. At the same time, the country was found to be highly creative in organizing supplies of raw materials to ensure uninterrupted production of steel to aluminium to copper to ferroalloys. China today accounts for 18% of world GDP, but 20% of business. This has resulted in no small way in China's state-backed promotion of metal building capacity, — often at the cost of other nations, including the US, the European Union and the UK — that led to the creation of a huge manufacturing base, including it

becoming the world's largest automobile producer.

The best part of China's metals and minerals strategy has been to grow simultaneously its engineering capability, largely through local R&D, and to process raw material bauxite, mostly imported, in indigenously built refineries. The locally available Chinese bauxite does not have the right alumina content, but rather is full of gangue, requiring considerable upgrading before this could be put in refineries for digestion, so dependence on imports is steadily rising. Moreover, recent years have seen Beijing coming down hard on illegal and unscientific bauxite mining as part of China gradually toughening its stand on

environmental protection.

No wonder then that China, the world's largest producer of aluminium and alumina, is stepping up annual imports of bauxite at an annual rate of 20% for past five years. In 2019, China's bauxite imports from multiple sources exceeded 100mt (million tonnes) for the first time — precisely at 100.66mt, imports were up 21.9mt from 82.57mt in 2018. The two principal responsible factors for this import surge are: (i) growing restrictions on local bauxite mining and (ii) the impressively rising demand for imported mineral from Shandong's alumina plants, Central China and also from northwest China.

Three countries, namely, Republic of

Guinea, Australia and Indonesia have a share of approximately 95% share of China's bauxite imports. Take 2019, when Guinean supplies rose 16.49% to 44.45mt, shipments from Australia were up 21.08% to 36.04mt and Indonesian despatches were remarkably up 91.16% to 14.41mt. It looks like the pull of big Chinese commerce has triumphed over political rows with Australia, when Canberra went hammer-and-tong over the alleged Covid-19 virus leak at a Wuhan laboratory and also Jakarta's resources nationalism.

A consensus is emerging among analysts that, in the not-too-distant future, China would come to rely on imports to the extent of 80% or more to feed its smelters compared with 53.8% in 2019. According to China National Bureau of Statistics, the country's bauxite imports in 2020 had once again seen an impressive growth of 10.93mt at 11.59mt.

According to a 360 Research Report on bauxite future, the global size of the bauxite mining market size is to climb at a CAGR (compound annual growth rate) of 3.4% from here to 2027 to become over \$12bn by 2027 from \$9.272bn in 2020. Hopefully, the Covid-19 pandemic, which is now coming under control in several countries, will not be spoiler.

China has come to occupy such a commanding position in terms of capacity, production and use of aluminium and alumina that its bauxite imports will remain the principal determinant of the mineral prices in future. The world will also be keenly watching China's progress in funding opening of new mines in Guinea and also building the attendant infrastructure for bauxite egress to distant ports through rail.

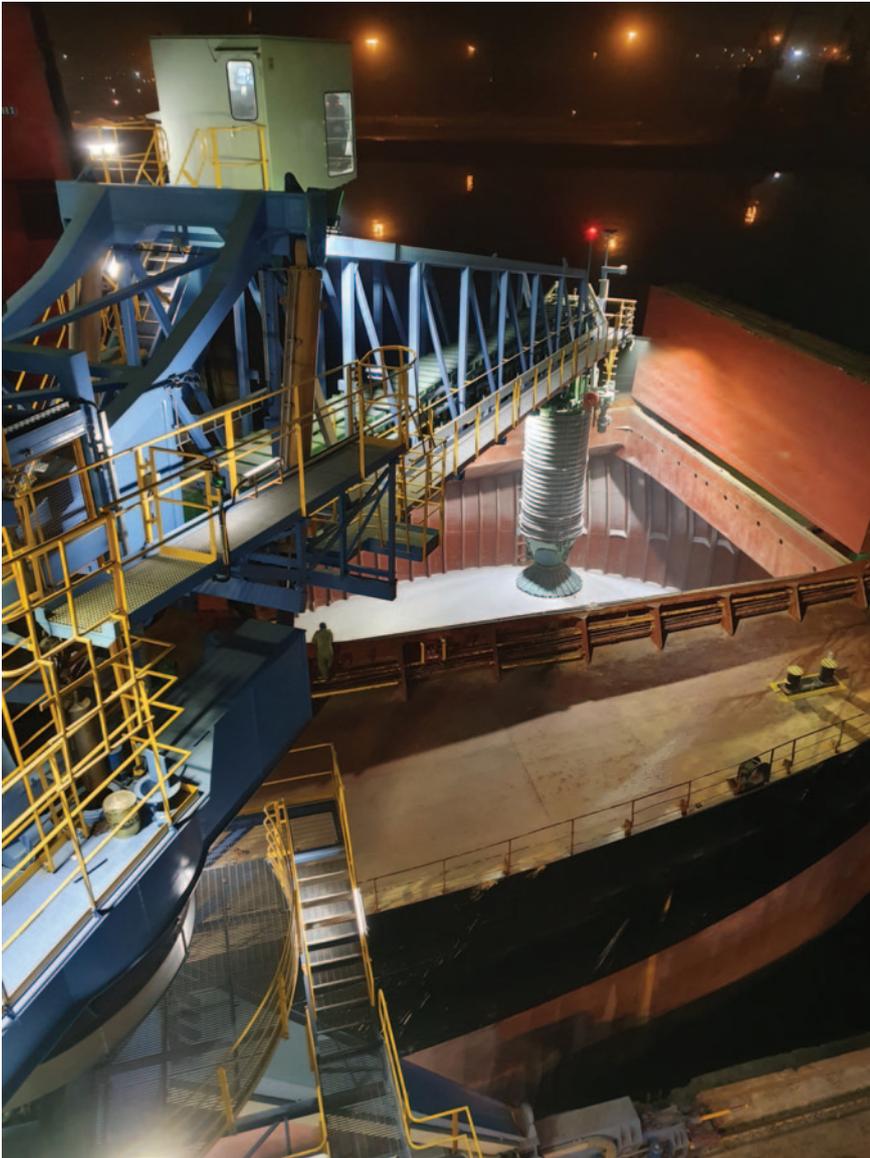
A new CM Guinean bauxite report says the country, as it is creating additional new export capacity of 24mt, it is also building

new mining capacity of 32.5mt. The question here is will this new capacity building not add to an "already oversupplied Chinese market?" The report says: "Although we forecast a strong demand growth for China, new capacity from Guinea risks the market entering an extended period of oversupply, increasing the possibility of lower prices for longer."

Whatever that may be, there is no stopping China from making more planned investment by its refineries in opening of new bauxite mines for upstream integration. Having got such large refining capacity, which must always depend on supplies from multiple sources, the strategy speaks of securing long-term supply of an essential resource, thinning and going down in alumina content within the country.

The Fitch database will show that Guinea has the second-largest number of new bauxite mine projects only after Australia, which has a rich mining tradition and now is focused on sustainability and environment friendliness of mining operations. Local administrations and civic society in Australia have worked hard to drive the sustainability concept among the mining groups, and many of them are among world leaders. Last year Australia produced 104mt of bauxite, slightly down from the record 105.54mt record achieved the year before. Remarkably, bauxite mines expansion and production has risen steadily since 2011 when output was close to 70mt. In the corresponding period, Australian bauxite exports climbed nearly four times, exclusively on the back of China, to 37.45mt. Not only has Australia ownership of the world's second-largest bauxite reserves of 6.2bn tonnes, next only to Guinea, but the mineral there has alumina content ranging from 49% to 54%. The country's best reserves are found in Queensland and the Northern Territory. In Fitch's database of key global mining projects, Australia has 12 of 29 projects in the pipeline, the largest share of new developments among all participating countries.

What does the world's largest producer of bauxite do with the surplus after exports of close to 37.50mt? It does local value addition to the mineral by refining the surplus to alumina, most of which is again exported. According to the Australian Aluminium Council (AAC), the country remained the world's second-largest producer of alumina in 2020, with production of 21.2mt, and also the largest exporter with 18mt. The remaining surplus was used to smelt 1.59mt of aluminium last year.



National Aluminium Company Limited (NALCO)'s new 2,500tph REEL Alesa pneumatic alumina shiploader in operation. For more details on this shiploader, please see 'Something in the air? Pneumatic equipment in focus,' in the May 2021 issue of Dry Cargo International.



*Operations at Guinea Alumina Corporation.*

Australia, says AAC, has five large bauxite mines besides several small ones, six alumina refineries and four smelters. The country sells alumina in a large number of markets, including South Africa, West Asia, China and India. With the help of large Chinese investment, Guinea, the world's single largest owner of 7.4bn tonnes of bauxite reserve accounting for 26.9% of total global reserve will continue to be the rising star in new mines development and production.

Next only to Australia, Guinea has eight projects in the pipeline. China so far has remained ahead of any other country, including the US in acquiring mineral assets in Africa in particular, not always in a straightforward way though. This has assumed the character of new resource colonialism. However, at the same, this at some point invariably gives rise to resource nationalism in host countries where governments have to listen to demands of the local population for value addition and more paying skilled jobs. The world has been witness to how resource nationalism

raised its head in countries such as Indonesia, Malaysia and India.

Beijing is aware that Guinea, being so enticingly rich in bauxite resources, will have the ambition like that of Australia of being a major exporter of both the mineral and alumina. As part of the emerging policy, China will be encouraging its alumina groups to build more refineries abroad within the next few years. It is likely Guinea could have its second alumina refinery facilitated by a \$20bn Chinese loan. Guinea has been exporting high quality and low-cost metallurgical grade bauxite for which hunger for China-based refineries is growing. Guinean ore is natural low silica (up to 2.5%), medium gibbsite bauxite with alumina content in the range of 44% to 46%.

The reactive silica is between 1.2% and 1.5%, putting Guinean origin ore among the world's best. Experts are saying for sustainability of bauxite mining on an increasing scale, Guinea should be both a producer and exporter of bauxite and alumina. To make this happen, the massive

logistical issues of laying roads and rail lines and opening of large dry cargo handling ports will have to be resolved requiring investment of billions of dollars.

The gradual change in Djakarta's attitude towards shunning of exports of ores, including bauxite announced in July 2019 to have been made effective in 2020 has been borne out emphatically by spurt in Indonesian supplies of alumina making ingredient to China. It is, therefore, likely that the downside risk to Fitch's long-term bauxite production forecast for Indonesia to about 15mt will go on reducing.

As for India, National Aluminium Company is building a 1mt fifth stream at its 2.275mt alumina refinery in Orissa's Damanjodi and Hindalco will be increasing capacity of its Rayagada refinery in Orissa by 500,000 tonnes to 2mt by March 2022. In the meantime, India's largest aluminium group Vedanta with smelting capacity of 2.3mt has announced decision to expand its refinery in Orissa's Lanjigarh from 2mt to 5mt to "make it one of the world's largest single location alumina complexes."



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The feeding of all the new alumina capacity to come through will require of the country to expanding bauxite mining and step up production of the ore. India's bauxite production was over 20mt in 2020. Fitch expects this to rise to 32.2mt by 2029. This is not a difficult task, considering that the country's bauxite resources amount to 3.896bn tonnes, including proved reserves of 656mt. But there are two downside risks to the projection: first, increasingly tight environmental regulations and resistance of tribals, backed by NGOs to open mines where indigenous population is living for centuries.

By investing heavily in building refinery capacity since the beginning of the decade and organizing imports on an ever-growing scale, China has been able to achieve close to self-sufficiency in alumina, which is smelted into white metal. According to the World Bureau of Metal Statistics, China's alumina production in 2020 was approximately 73mt out of Asia's total of around 87mt. Asia, helped by China had a major share of global alumina output of 135mt, up from 132.33mt in 2019.

The Chinese production rise has been sharp since 2010, when it was 29.06mt, and the trend remained intact till 2018 when it started flattening around 72–73mt. For every unit of alumina, use of anything between two and three units of bauxite are needed and then smelting of two units of alumina gives one unit of metal.

Even at that high production, China imported 3.84mt of alumina last year. An S&P Global Platts poll on price outlook for the chemical in 2021 showed most respondents' expectation alumina "hovering around yuan 2,300 [\$351 a tonne] with some putting the high at yuan 2,500 and low at yuan 2,200." The caveats here are: new refining capacity is coming up at several centres and there is a likelihood that idled Chinese refining capacity would keep on coming on stream. That may put pressure on alumina prices in China. But CRU says China which is aiming to cap aluminium capacity at 45mt will be lifting metal production by another 6.5% in 2021.

### **RAHUL SHARMA, DEPUTY CEO OF VEDANTA ALUMINIUM BUSINESS SPEAKS:**

**Q:** *Where do you expect aluminium prices this year end and next year?*

**A:** Prices have remained buoyant, driven by primary aluminium supply restrictions in China, persistent global deficits and strong global demand growth. Because of stringent emissions related Chinese restrictions, the market may stay at current levels for some time. Market

*Rahul Sharma,  
Deputy CEO  
of Vedanta  
Aluminium.*



dynamics are linked to Chinese supply based on its environmental policy.

**Q:** *The 2021 first quarter saw a remarkable turnaround in global aluminium demand of 16% to 16.2mt y-o-y when production was up 6% to 16.8mt. How is the metal behaving in terms of production and demand since?*

**A:** Outside China, aluminium use has continued to rebound strongly. Demand for aluminium-intensive vehicles should remain strong. So also electrical and consumer durables maintain a firm demand recovery. However, overall demand is still highly dependent on how Covid-19 behaves, and thereby you have a downside risk. As for India, in the near to mid-term, we expect aluminium use to bounce back to pre-Covid levels.

**Q:** *India has aluminium smelting capacity of 4.1mt. But for how long its demand will be met more by imports (scrap and others) than by locally smelted aluminium? What will be your recommendations to correct the situation?*

**A:** India is a leading player in the global industry, being the world's third largest aluminium producer and consumer. Vedanta group produces almost half of India's aluminium at about 2mt. Despite having sufficient domestic capacity, currently 60% of the country's demand is met through imports, majorly in the form of scrap. The share of scrap in total imports has increased from 52% in 2015/16 to 67% in 2020/21, resulting in forex outgo of \$2 billion. This remains a threat to the wellbeing of highly capital-intensive primary aluminium industry whose domestic market share was down to 40% in 2020/21 from 60% about ten years back.

Unfortunately, in the absence of an adequate institutional mechanism to

regulate scrap imports and also of BIS quality standards, India has been turned into a dumping ground for the material. The Import Monitoring System and National Scrap Recycling Framework are in place, but implementation of BIS scrap standards should be the first step to promote circular economy with utilization of domestically generated scrap.

**Q:** *Where do you see India's smelting capacity by 2030?*

**A:** The official think tank NITI Aayog wants a 'National Aluminium Policy' like the one for steel industry. India's aluminium smelting capacity is just 10% of Chinese capacity. Aluminium has been identified as one of the 12 'Champion Sectors', where India can be a global leader and major supplier. Ahead of breakout of Covid-19 pandemic, the industry growth was majorly driven by India and China with double digit consumption rise. India has a low *per capita* consumption of about 3kg against world average of around 12kg and 30kg in China. We see in this an opportunity for growth in aluminium use with demand set to recover in major sectors such as auto, infra, electrical and packaging. With abundant bauxite and thermal coal reserves, skilled man power, strategic geographical location, India has immense potential to become a global aluminium hub. Indian capacity will increase to 5mt by 2025 and then to 8mt by 2030.

**Q:** *What are Vedanta Aluminium's growth plans? Or will that have to wait till the Group is able to acquire sufficiently large bauxite assets like its Indian industry peers?*

**A:** We have started expanding our Lanjigarh alumina refinery annual capacity from 2mt to 5mt. The expanded capacity will be fed through both domestic and foreign origin bauxite. We will be eyeing opportunities for bauxite mines acquisition in India whenever they are put at auctions.

**Q:** *Your thoughts on China. Possibility of its production going up to 45mt capacity cap set earlier?*

**A:** China is currently focused on reducing greenhouse gas emissions and promoting low carbon development. Though China has excess smelting capacity, that level may not be reached as the provinces are under increasing pressure to reduce carbon footprint. China may, therefore, continue to be a net importer of aluminium.