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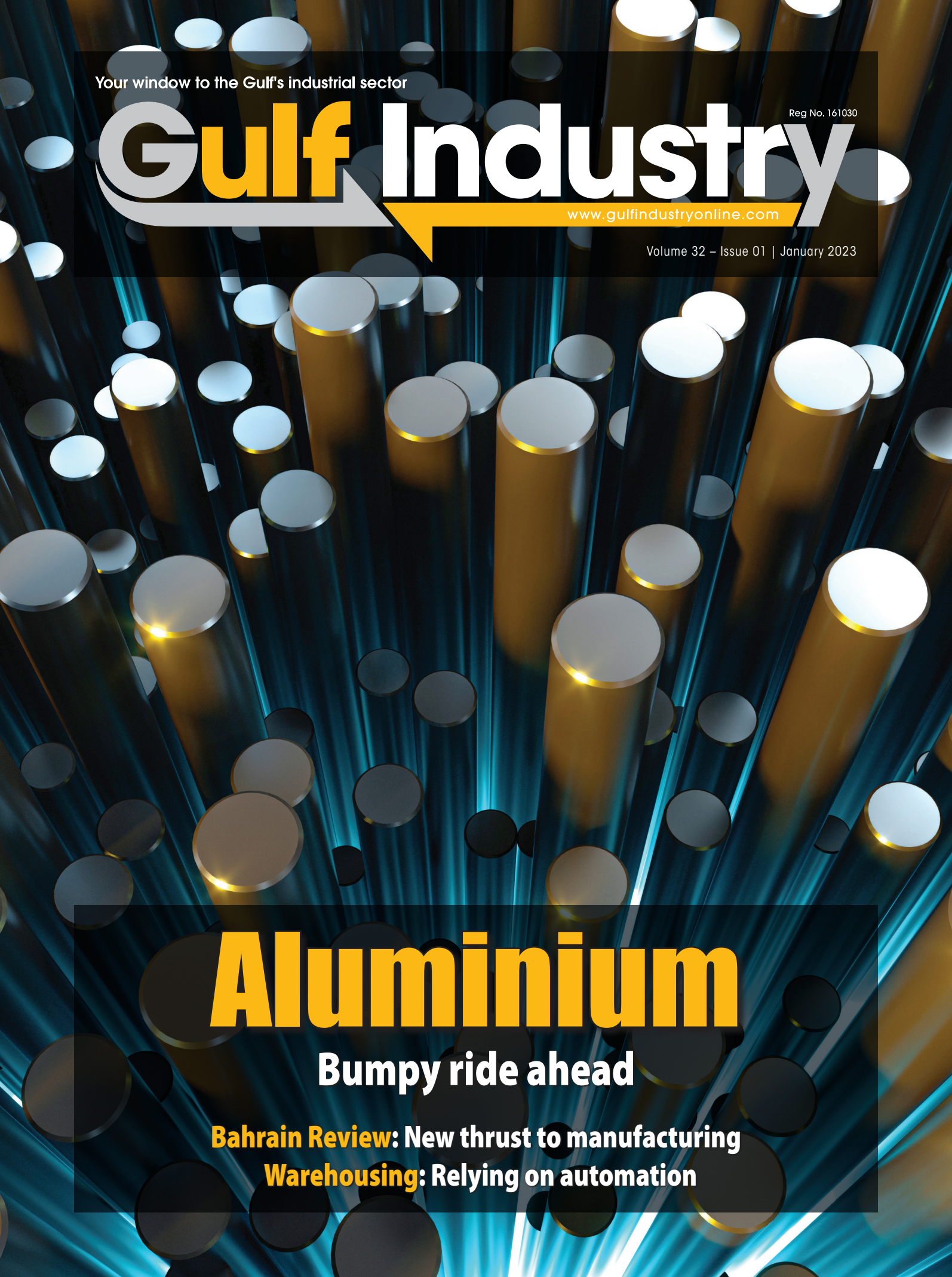

Aluminium

Bumpy ride ahead

Bahrain Review: New thrust to manufacturing

Warehousing: Relying on automation

Aluminium sector faces macroeconomic headwinds

Negative macro sentiment will continue to put downward pressure on aluminium, with a worsening demand outlook being balanced against tight physical supply, says ING in its outlook of the sector

Despite the recent weakness in energy prices, capacity may not come online in the short term

ALUMINIUM prices have been highly volatile in 2022 due to the Russia-Ukraine war, logistical issues, increasing recessionary fears and the Covid-19 pandemic.

LME prices reached a peak of $3,849 tonnes in March but have now declined more than 40 per cent from their post-invasion peaks.

HIGH ENERGY COSTS REMAIN A THREAT TO SUPPLY

Soaring energy costs following Russia's invasion of Ukraine have squeezed producers' margins, with energy-intensive metals having been particularly affected. Aluminium, the most energy-intensive base metal to produce, requires about 40 times more energy to make than copper.

Several output cuts have already taken place since December 2021 at key European smelters, including Alcoa's San Ciprian smelter and Hydro's plant in Slovakia.

As of mid-October, Europe and the US combined have cut around 1.7 million tonnes (Mt) of capacity – 25 per cent of European output and 2.1 per cent of the global total – from the second half of 2021.

Production cuts in Europe account for around 1.4 million tonnes of capacity. In the US, more than 300,000 tonnes of capacity have been cut, including Alcoa's Warrick and Century Aluminium's Hawesville plants.

Despite the recent weakness in energy prices, we do not expect capacity to come back online in the short term with Europe heading into the winter months and the war with Russia raging on. Further smelter closures and curtailments in production are highly likely given the uncertainty over energy prices through next year. Any announcement of further closures could see aluminium prices spike but any potential rallies are likely to be unsustainable. We don't anticipate European smelters restarting before 2024.

Although production continues to be cut in Europe and in the US, global primary aluminium output in October rose 3.1 per cent year-on-year to 5.85 million tonnes, according to data from the International Aluminium Institute (IAI). Estimated Chinese production was 3.475 million tonnes, according to the IAI.

Total worldwide production on an annualised basis came in at 68.9 Mt, according to the IAI. For Chinese production, the IAI estimated the annualised October output at 40.9 Mt.

China's aluminium smelters are facing constraints, too. In the drought-hit hydro province of Yunnan, which accounts for 11 per cent of China's aluminium output, aluminium smelters have been required by the government to reduce their operating rates from mid-September. The smelters in Yunnan have cut around 20 per cent of operating capacity, around 1.1 M t/y. It is unlikely that any idled capacity will resume by the end of this year due to current energy issues, with restarts forecast for 2Q 2023 once hydro-reservoir levels have stabilised.

This was the second consecutive year that Yunnan cut primary aluminium production. In 2021, smelters in Yunnan experienced three rounds of major curtailments amid power supply shortages, with cuts accounting to 1.74 M t/y of aluminium smelting capacity on an annualised base.

The output reductions in Yunnan came after Sichuan smelters cut 920,000 tonnes of capacity in August, accounting for 2 per cent of China's total. Most smelters in Sichuan have now restarted the idled capacity.

More recently, some smelters in Henan province were planning to cut around 10 per cent of their capacity due to a combination of winter season-related cuts and operational losses, which could account for an additional 50,000-100,000 t/y.

Still, China's aluminium output has held up despite the energy crunch. For the first 10 months of the year, China produced 33.33 Mt, up 3.3 per cent from the corresponding period in 2021, data from the National Bureau of Statistics showed.

In the longer term, as China continues to decarbonise its aluminium industry and increases its share of power generated by green energy, and as capacity shifts from coal power-dominated Shandong province to hydro power-dominated Yunnan, the industry is vulnerable to further disruptions with green energy heavily relying on seasonality and general weather conditions.

DEMAND WOES TAKE CENTRE STAGE

The rise in global aluminium output comes against weakening demand amid global economic gloom. The aluminium market's focus has shifted to demand woes due to European recession fears amid high power prices, central banks' monetary tightening and China's continued Covid-19 restrictions.

Industrial metals prices have been battered by fears of weakening global demand, as well as a stronger dollar. Growing recession risks in the US and Europe and an uncertain recovery in China will likely continue to pose downside risks to the demand outlook.

In its latest World Economic Outlook, the International Monetary Fund cut its forecast for global growth next year to 2.7 per cent from 2.9 per cent seen in July and 3.8 per cent in January, adding that it sees a 25 per cent probability that growth will slow to less than 2 per cent.

About one-third of the global economy risks contracting next year, with the US, the EU and China all continuing to stall. Excluding the unprecedented slowdown of 2020 because of the coronavirus pandemic, next year's performance would be the weakest since 2009, in the wake of the global financial crisis.

Aluminium consumption has been hit by the bleak global growth outlook, with

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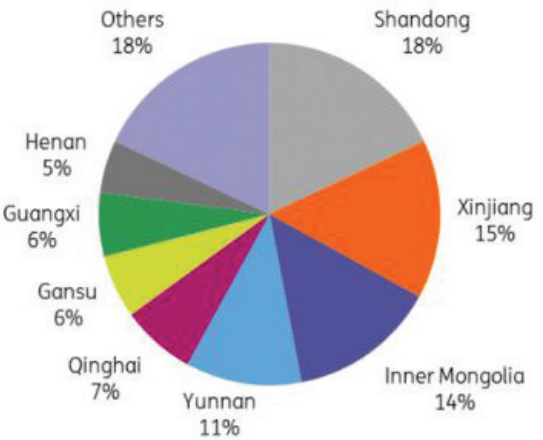
China's aluminium capacity breakdown by province



Source: National Bureau of Statistics, ING Research

ING Forecasts

	1Q23	2Q23	3Q23	4Q23	FY23
LME Aluminium (US$/t)	2,150	2,200	2,300	2,500	2,290

Source: ING research

LME prices are down more than 40pc since March peak

Source: LME, ING Research

Aluminium pigments

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primary aluminium demand in the world excluding China expected to grow 0.4 per cent YoY in 2022, according to CRU. No dramatic recovery is expected in 2023, as many economies will battle with recession, with demand expected to grow by just 1.8 per cent YoY in 2023 at 28.9 Mt, according to CRU. European demand has been hit the most in 2022 and is expected to be the major reason for weak growth in 2023.

In China, demand has stalled in 2022 amid zero-Covid policies and lockdowns, with CRU expecting demand to grow just 0.1 per cent YoY in 2022, at 40Mt, while the recovery in 2023 is expected to be sluggish given a slowdown in the construction sector.

RUSSIAN METAL REMAINS THE BIGGEST UNCERTAINTY

One potential source of price volatility would be sanctions on the Russian material either by the US or the EU. Metals have been mostly spared in the rounds of sanctions imposed on Russia that followed its invasion of Ukraine on 24 February, but it has been reported that the US is considering an effective ban on Russian imports of the metal. The Biden administration is reportedly weighing three potential measures: a complete ban on Russian aluminium, increasing tariffs to levels that would effectively act as a ban and sanctioning the company that produces Russian aluminium, Rusal.

The only government to take direct action against Russia's aluminium sector so far has been Australia, when in March it banned the export of bauxite and alumina into the country, effectively freezing Rusal's off-take flow from the Queensland Alumina joint venture. In Russia's other top raw material supplier, Ukraine, the war has closed Rusal's Nikolaev refinery. The alumina gap has been filled by Chinese producers, which have been increasing their exports to Russia.

However, if the US decides to sanction Rusal, the impact could be severe, bearing in mind the market's reaction to the sanctions in 2018 when the LME prices jumped to $2,718/t, at the time the highest since 2011 before gradually falling in the following weeks and months. Sanctions were then lifted in January 2019.

If the US decides to go ahead, the move could freeze the Russian producer out of Western markets, depending on the severity of sanctions, which would boost global prices for the metal and distort global aluminium trade flows.

Meanwhile, at least for now, the aluminium market has a bit more clarity following the LME's decision to take no action on the delivery of Russian metals into LME warehouses, as a significant portion of the market was still planning to buy it next year.

The LME was looking at potentially banning the delivery of Russian metal into its warehouses, limiting Russian flows or taking no action.

Instead, the exchange said it will publish regular reports from January 2023 detailing the percentage of Russian metal stored under warrant in LME warehouses to provide more transparency. In a response to the LME's proposal, Rusal has called for the exchange to start disclosing the origin of all metal stocks on warrant rather than singling out Russia as proposed. Alcoa was also supportive of the idea of providing more details about the origin of the material in LME warehouses.

If we continue to see an increasing amount of self-sanctioning of Russian metals, the risk is that we see more Russian metal being delivered into LME warehouses, which could potentially mean that LME prices trade at discounted levels to actual traded prices. However, the LME believes we would have seen higher inflows of metals into warehouses regardless, given the depressed global outlook.

The LME's decision to continue to allow Russian metal to be delivered into its warehouses put some downward pressure on aluminium prices, easing fears of supply shortages. How much further pressure we will see on aluminium prices going forward will depend on whether we see a significant inflow of Russian metals into LME warehouses in the weeks and months ahead.

While the LME accepts that LME prices may start to increasingly reflect the price of Russian metal if we see large inflows into LME warehouses, they believe that premia will play an important role, with this likely reflecting a larger proportion of the all-in cost, so that non-Russian metal producers continue to receive fair value for their metal.

Russia accounts for about 6 per cent of global aluminium output estimated at 70 million tonnes this year. Russian aluminium has accounted for as much as three quarters of LME stockpiles over the past decade, according to the exchange.

The LME has reported that the proportion of Russian metal in LME warehouses has not changed significantly over the discussion paper period, with the percentage of live tonnage of Russian aluminium on warrant standing at 17.7 per cent on 28 October, compared to 17 per cent on 6 October when the LME launched the discussion paper.

At the same time, the flow of Russian metal into Western markets was strong in the first half of the year. European average monthly imports were up by 13 per cent year-on-year in March through June, while the US increased its Russian imports by 21 per cent in the same period.

Most Rusal customers have been accepting deliveries under existing contracts, however, that is likely to change next year. Self-sanctioning is likely to disrupt trade flows with the possibility of Russian metal flowing to the market of last resort – the LME. Novelis, a division of Hindalco Industries and Norsk Hydro's extrusions unit have already said they will not enter into new Russian purchase contracts for 2023.

Rusal has recently said that its sales picked up after the LME's decision, exceeding 76 per cent of its primary aluminium production and value-added production for 2023.

High energy costs remain a threat to supply

PRICES TO SLIDE IN EARLY 2023

Looking ahead to 1Q 2023, the risk for aluminium prices will be mainly to the downside, with the prolonged war in Ukraine, rising energy prices, low gas availability, high inflation and weakening downstream demand all adding to the bearish outlook for the lightweight metal.

The aluminium market will significantly reduce its global deficit in 2022 and move into surplus in 2023, according to CRU, with an estimated market deficit of 300kt in 2022, down from 1.6Mt in 2021. Given the production cuts, CRU is expecting only a modest surplus next year of 300kt tonnes. This is driven by demand destruction in the world ex-China in 2022 and 2023 and a higher rate of production inside China compared to 2021.

The projected surplus in the world ex. China is only 71,000 tonnes. Demand destruction will offset the impact of smelter closures seen in recent months.

In the short-term, the market's focus will remain on the bigger macro-economic and demand-side problems, with prices expected to fall further to $2,150/t in 1Q 2023.

We believe a recovery in price should start in the second quarter 2023, although any recovery is likely to be slow. ■

Bahrain's Alba prepares for market uncertainty

ALUMINIUM Bahrain (Alba) has discussed the dynamic market situation with its ups and downs and how to achieve its 2022 production and safety targets.

At a one-day Alignment and Synergy Workshop hosted by Alba Chief Executive Officer Ali Al Baqali, the company's Executives, Directors and Managers were prepped for Alba's 2023 objective given the heightened uncertainty and challenges in the market.

Speaking at the workshop, CEO Al Baqali said: "As the markets always change, we must be where the market is going and learn how to trade the market sentiment for Alba's benefits.

MARKET SENTIMENT

"We can't change the market sentiment; however, we can change the way we think to be able to blend in and this can only be done through building a feeling of oneness, of dependence on one another as well as our synergy as a management team."

Ali Al Baqali

Al Baqali's keynote focused on the importance of aligning Alba business units' strategies to ensure a successful year ahead despite the challenges. The company's Executives – Chief Operating Officer Dr Abdulla Habib, Chief Financial Officer Bryan, Chief Marketing Officer Khalid A Latif, Chief Power Officer Amin Sultan and Chief Supply Officer Waleed Tamimi – also made presentations on their respective group's achievements for the current year and outlook for 2023.

A special session on 'Applied Psychology' was also conducted by a well-known sports personality and Director of the Olympic Academy at the Bahrain Olympic Committee Dr Nabeel Taha Al Shehab (PhD in Positive Psychology) on cognitive, motivational, affective, and behavioural psychological factors that play a key role in work and organisational settings. ■

Surpluses of green aluminium seen as production ramps up

Output of low-carbon aluminium, which dipped in 2022, is due to bounce back globally this year, rising 10 per cent to 18.56 million tonnes - accounting for 26 per cent of total aluminium production, says a report

EGA agreed to supply solar aluminium to Kobe Steel to make automotive body sheet for Nissan

ALUMINIUM makers are set to boost low-carbon metal output by 10 per cent in 2023 and churn out even more in the years ahead, driving down the cost for carmakers seeking climate-friendly supplies and shrinking the industry's hefty carbon footprint, according to a *Reuters* analysis.

Aluminium is the most energy-intensive metal to produce, accounting for about 1.1 billion tonnes of global CO2 emissions per year. Next year's forecast increase in "green aluminium" output would reduce that by 13 million tonnes, or about 1.2 per cent.

Pressure by governments to cut greenhouse gas emissions has given aluminium producers an incentive to ramp up output of the low-carbon material, which emits less than 4 tonnes of CO2 per tonne of metal compared to the global average of 16.6 tonnes.

That means global surpluses of green aluminium – largely produced using hydro power or recycled material - already weigh on the premium that producers can charge buyers, from automakers and beverage can firms to construction suppliers.

"It's (the premium) been very modest now for the last couple of years," Ivan Vella, chief executive of Rio Tinto Aluminium, told an investor conference last month.

Vella added that the company had seen some increases in premiums recently, without giving details.

GREEN PRODUCTS

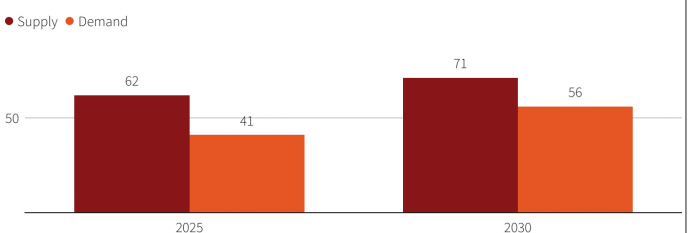
Global supplies of low-carbon aluminium have been robust for several years, but dipped in 2022 mainly due to restrictions in southern provinces in top producer China that rely on hydro power.

Output is due to bounce back globally next year, rising 10 per cent to 18.56 million tonnes – accounting for 26 per cent of total aluminium production, said Simon Large, analyst at consultancy CRU.

In Europe, the proportion of low-carbon products to overall supply is much higher than in the rest of the world, because large Scandinavian producers typically use hydro power, and should reach 83 per cent next year, he added.

Abundant Supplies of Green Aluminium

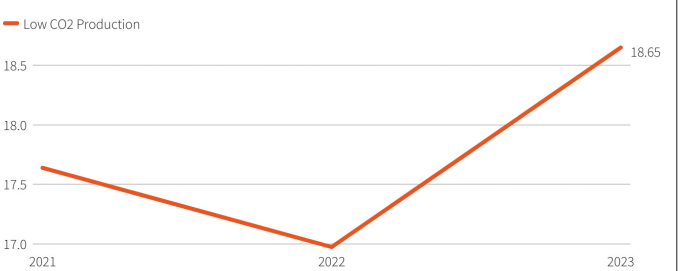
The amount of aluminium produced with low carbon emissions is expected to grow faster than demand in coming years



Note: million tonnes of primary aluminium produced with less than 4 tonnes per CO2 emissions per tonne of metal plus secondary or recycled aluminium
Source: McKinsey & Company

Low Carbon Aluminium Output Due to Bounce in 2023

Production of green aluminium metal is due to rise by about 10% in 2023



Note: Millions of tonnes of global aluminium production with less than 4 tonnes of CO2 emissions per tonne of metal during smelting
Source: CRU

AUTO INDUSTRY

The increase in more sustainable supplies has coincided with growing efforts by companies to demonstrate their green credentials to consumers, led by the European car sector.

Germany's BMW agreed last year to buy aluminium made with solar power from Emirates Global Aluminium (EGA), while Volkswagen's premium brand Audi is piloting metal from the new ELYSIS technology pioneered by Alcoa and Rio Tinto, which eliminates all CO2 emissions and replaces them with oxygen.

Most companies are reluctant to disclose how much low-carbon material they buy and any premiums paid for competitive reasons.

Electric vehicle (EV) maker Polestar has started to use green aluminium as part of a project to create a vehicle with zero emissions from every aspect of production, teaming up with Norway's Norsk Hydro, which uses hydro power to produce much of its metal.

Polestar said it pays slightly more for green aluminium, partly due to the administrative costs of changing suppliers, but did not say how much more.

"The cost per reduced kg of CO2 emissions when shifting to green aluminium is still significantly lower than many other ways of reducing raw material emissions," a company spokesperson told *Reuters*.

Norsk Hydro also inked a deal to supply Mercedes-Benz with aluminium that produces less than 3 tonnes of CO2 emissions per tonne of metal.

HEAVY INVESTMENT

Aluminium companies have invested heavily in low-carbon technologies. Norsk Hydro said this year it had spent billions making its aluminium more sustainable, while Rio Tinto, Alcoa and the Canadian government invested $228 million in their new ELYSIS process.

But such investments to step up output are dampening the prices that producers can charge for their low-carbon products, especially this year when overall demand has been hit by recession fears, analysts say.

"Low carbon premiums on the spot side have basically disappeared," said Jorge Vazquez at consultancy Harbor Aluminum. The spot premium for low-carbon billet, a fabricated product often used in construction, has slid to zero from $30 a tonne in January, he said.

Producers, however, are still managing to sell some of their low-carbon output at higher prices under quarterly and annual contracts. Wire rod commands the highest premiums due to its use in power wiring linked to the green energy transition around the world, he added.

But even the bumper premium for wire rod of $45 a tonne represents less than 2 per cent of the underlying benchmark aluminium price.

REGIONAL VARIATIONS

"Where we've seen the most willingness to entertain green premiums is Europe, where it is quite accelerated, and we're starting to see the early elements in North America, but Asia is behind," said an industry source who declined to be identified.

In Europe, premiums may get a lift from European Union proposals to impose tariffs on imports of high-carbon goods by 2026, another analyst said.

Consumers are benefitting from the plentiful supplies of not only low-carbon primary aluminium, but recycled material, which uses about 95 per cent less energy to make.

Rising output of both will keep green premiums relatively low in the coming years, said Marcelo Azevedo at the McKinsey consultancy. Limited movement of supplies between regions, however, could lead to deficits in high-demand areas such as Europe, he added.

One area bucking the weak trend is "ultra-low" carbon aluminium, meaning metal produced with less than 2 tonnes of carbon emissions per tonne of metals, where premiums are strong due to lack of material, Azevedo said. ■

ALUMINIUM COMPANIES COMPETE TO SELL LOW-CARBON PRODUCTS

ALUMINIUM *companies have launched a raft of aluminium products with lower carbon emissions, largely by either using hydro power or recycled material.*

Primary aluminium emits on average 16.6 tonnes of CO2 per tonne of metal, according to the International Aluminium Institute (IAI), based on 2021 data, making it one of the most carbon-intensive segments of the metals industry.

Below are low-carbon aluminium brands by the major producers.

Producer: ALCOA
Brands:
ECOLUM – Primary aluminium with a total carbon footprint of under 4 tonnes of CO2, including bauxite mining and refining.
ECODURA – Aluminium billet made with minimum of 50 per cent recycled content.

Producer: NORSK HYDRO
Brands:
REDUXA – Two products of primary aluminium, one with carbon content below 4 tonnes of CO2 per tonne of metal and the second below 3 tonnes. This includes emissions from bauxite mining and making products such as alloyed metal.
CIRCAL – Two products of recycled metal, one with a minimum of 75 per cent used aluminium and a footprint of less than 2.3 tonnes of CO2, and the other from 100 per cent recycled metal with less than 0.5 tonnes of CO2.

Producer: RIO TINTO
Brand:
RENEWAL – Primary metal with CO2 emissions of 4 tonnes or less of CO2 per tonne of metal.

Producer: RUSAL
Brand:
ALLOW – Primary metal with a footprint of less than 4 tonnes of CO2, based on direct and indirect smelter emissions only, by using hydropower in Siberia.

Producer: EMIRATES GLOBAL ALUMINIUM
Brand:
CELESTIAL – EGA markets a brand of primary metal produced with solar power. It produced 39,000 tonnes of solar-powered metal last year, making up 1.5 per cent of total output.

Producer: CENTURY ALUMINUM
Brand:
NATUR-AL – Century markets a low-carbon product with less than 4 tonnes of CO2 made at its plant in Iceland.

Producer: CHINA HONGQIAO GROUP
The Chinese producer has introduced two low-carbon products, HQALoop and HQA-Light, one made with recycled aluminium and the other from low-carbon aluminium produced in Yunnan using hydro electricity and other renewables.

Producer: ALCOA/RIO TINTO JOINT VENTURE
Brand:
ELYSIS – Joint venture between the two groups to commercialise a new technology by 2024 to produce carbon-free aluminium, using a ceramic anode and emitting only oxygen.

To help meet ESG goals, Alba has invested in the region's first spent pot lining (SPL) treatment plant

Heading towards 'green' aluminium

As the role of 'green' aluminium continues to rise, some of the major players in the regional aluminium sector are taking notable, game-changing initiatives, reports *Pummy Kaul*

AS focus on sustainability grows in markets around the world, environmental, social, and governance (ESG) investments and carbon net-zero are on the rise as companies aim to reduce or eliminate carbon from their operations and pursue more sustainable practices.

Environmental considerations are becoming increasingly pertinent in aluminium production as it is the most energy-intensive metal to produce, accounting for about 1.1 billion tonnes of global CO2 emissions per year.

While the big global players in the sector are taking strategic steps to transform themselves into green industries, closer home in the GCC region, some of the major players in the sector are taking equally impressive steps with notable, game-changing policies.

TREATING WASTE

"Environmental, social and governance (ESG) standards have gained momentum throughout the aluminium supply chain. As a result, suppliers, producers and clients are joining the race – with decarbonisation being a key value driver – by moving towards greener and more sustainable business models," Aluminium Bahrain (Alba) CEO Ali Al Baqali stated.

To help meet ESG goals, Alba has invested in the region's first spent pot lining (SPL) treatment plant, which began operations in December 2021. The facility is one of the key ESG initiatives in line with the kingdom's environmental and carbon-reduction objectives.

A zero-waste processing plant, Alba's SPL plant will enable it to transform the treated SPL in to valuable products, which can be used in other industrial applications, such as cement manufacturing.

"With the SPL treatment plant in operation, the company has integrated waste management and recycling into its operational spectrum to create sustainable value in a circular economy. The processed material, called HiCal, can then be used in the cement and construction industries. Indeed, the company recently exported its first shipment of 125 tonnes of HiCal to Thailand.

Japan's Mitsubishi Heavy Industries have also started working on a feasibility study for CO2 capture at Alba potentially contributing to Bahrain's net-zero and renewable energy targets.

The world's largest aluminium producer ex-China, with a production of more than 1.561 million per annum (2021) on March 28, last year, signed a Memorandum of Understanding with Mitsubishi Heavy Industries and its engineering company, Mitsubishi Heavy Industries Engineering, to capture carbon dioxide (CO2) emitted from the smelting process at one of its plants. Following this significant collabo-

ration, on June 20, Alba propelled a new ESG campaign across all its plants to reassert the company's six priority areas according to its ESG roadmap. These steps are illustrations that explain Bahrain's undulated commitment to achieving net zero carbon emissions by 2050.

The latest buzz is that the Bahrain-based industrial giant is readying to produce aluminium commercially using solar power.

SOLAR POWER

Only last month, Emirates Global Aluminium, the largest industry company in the UAE outside of oil and gas, announced that it has agreed to supply CelestiAL solar aluminium to Kobe Steel to make automotive body sheet for Nissan.

The agreement with Kobe Steel will see the supply of EGA's CelestiAL solar aluminium to one of the largest rolling mills in Japan. Automotive body sheet is used by the giant Japanese automaker to form vehicle body panels such as doors and bonnets.

In 2021, EGA became the first company in the world to produce aluminium commercially using solar power, marketed under the brand, CelestiAL, through a partnership with Dubai Electricity and Water Authority, which operates the Mohammed bin Rashid Al Maktoum Solar Park in the desert outside Dubai.

EGA expects to vastly increase its production of CelestiAL through an initiative with Abu Dhabi National Energy Company PJSC (Taqa), Dubal Holding and Emirates Water and Electricity Company (EWEC) to divest its electricity generation assets and instead source power from the grid, including an increasing proportion of clean energy.

Abdulnasser Bin Kalban, Chief Executive Officer of EGA, said: "EGA was the first company in the world to make aluminium using solar power, and we are proud that our CelestiAL metal will now be used in Nissan vehicles through Kobe Steel, as well as those of other leading global car companies. We look forward to increasing our production of CelestiAL over the years ahead, contributing to the decarbonisation of EGA and of end user industries including auto manufacturing. I thank Kobe Steel for their continuing trust in EGA and our metal."

The use of solar power in producing EGA's CelestiAL solar aluminium significantly reduces the emissions associated with aluminium smelting and provides an opportunity for end users to reduce their Scope 3 emissions.

Patrick Pollmann says Taha continues to be a global leader in processing of aluminium slag

The company joined the First Movers Coalition in November 2022, associating itself with an international board to achieve Net zero by 2050. Also, as early as May 2022, the company actively participated in the 50th-anniversary meeting of the International Aluminium Institute (IAI), advocating the shift to greener energy for aluminium production.

DROSS RECYCLING

Contributing further to the role of 'green' aluminium in the region by reducing or eliminating waste is another notable company Taha International.

Out of the approximately 65 million tonnes aluminium produced annually, one million tonnes of aluminium dross is created as a by-product of the manufacturing process. While dross recycling is a well-established practice for aluminium manufacturers, but conventional methods still produce a sizeable carbon footprint.

However, Taha International says its Hot Dross Processing technology possesses the ability to change how companies handle their dross, making the process environmentally friendly and, most importantly, zero-waste. A recent study conducted by Ernst & Young, the Netherlands in collaboration with the renowned Austrian Montan University Leoben for Taha found that compared to other processes, Taha's process reduces greenhouse gas emissions by more than 80 per cent.

Taha International CEO Ammar Awachi, said: "The aluminum dross processing technology developed by Taha International has the potential to transform how companies manage their aluminum waste, making it more ecologically friendly and, most importantly, free of toxic and dangerous waste. This is in line with our commitment to support the strategy of the Kingdom of Bahrain in addressing environmental and climate challenges and to bring carbon emissions to net zero by 2060."

The company last month signed a deal with Indian aluminium giant Runaya Group enabling its use of Taha's patented technology for the processing of aluminium slag. The agreement also stipulates the provision of two advanced industrial units to Runaya.

Patrick Pollmann, Group CEO of Taha International, said that his company continues to be a global leader when it comes to the processing of aluminium slag. He reiterated Taha's determination to innovate in this area, employ the finest talent and set global trends for the promotion of aluminium metal, which has emerged as the metal of the future.

"As a result of this agreement, aluminium slag processing technology will help provide sustainable and distinctive solutions and present new perspectives in the Indian aluminium industry. Furthermore, the creation of methods devoid of hazardous and toxic industrial waste will support sustainable global economic growth." said Pollmann at the signing ceremony. ■