Management Discussion & Analysis

Hindalco Industries Limited, the metals flagship of the Aditya Birla Group, is the world's largest aluminium rolling and recycling company, a major copper player and one of Asia's largest producers of primary aluminium. Hindalco was named the world's Most Sustainable Aluminium Company in the Dow Jones Sustainability Indices (DJSI) in 2020 and 2021.

FY2021-22: Key Highlights

Consolidated

₹1,95,059 CR (↑ 48%)
Revenue

₹30,056^ CR (↑ 59%)
EBITDA

₹13,730 CR (↑ 294%)
PAT

Novelis

3,858 KT
Overall shipments

US$530 BN
Record Yearly adjusted EBITDA/ton

US$2.045 BN (↑ 19%)
Record Adjusted EBITDA (excluding metal price lag)

US$1,018 BN (↑ 122%)
Record Net Income from continuing operations

India Business

1,294 KT
Aluminium metal production

1,302 KT
Aluminium metal sales

3,235* KT
Alumina production

359 KT
Copper Cathode production

405 KT
Copper Metal Sales

Aluminium value-added products (VAP)

349 KT
Production

348 KT
Sales

Copper value-added product (Copper Rods)

259 KT
Production

262 KT
Sales

In India, Hindalco's aluminium manufacturing units comprise the full value chain, from bauxite mining, alumina refining, coal mining, captive power generation and aluminium smelting to downstream value addition of Aluminium rolling, extruding and foil making. Hindalco's copper facility in India comprises a world-class custom copper smelter at a single location with downstream facilities, a fertiliser plant and a captive jetty. Hindalco is one of the largest suppliers of Copper to the Indian Railways.

Guided by its purpose of building a greener, stronger, smarter world, Hindalco provides innovative solutions for a sustainable planet. Today, Hindalco's global footprint spans 50 manufacturing units across 10 countries. Its wholly-owned subsidiary Novelis is the world's largest producer of aluminium beverage can stock and the largest recycler of used beverage cans (UBCs). Novelis provides innovative solutions to its customers in the beverage cans, automobile, aerospace and high-end speciality markets such as foil packaging, certain transportation products, architectural, industrial, and consumer durables. Novelis operates an integrated network of technically advanced rolling and recycling facilities across North America, South America, Europe and Asia. Novelis, which has recycling operations in 15 operating facilities across the world, recycles over 82 Billion cans a year, enough to circle the globe more than 160 times.

In FY2021-22, the Company delivered its best financial and operational performance, reporting its highest ever profits. This stellar showing was driven by favourable macros, higher volumes, strategic product mix, lower input costs, stability in operations and improved performance of downstream business in India and overseas. Novelis reported its best-ever adjusted EBITDA, adjusted EBITDA per ton, overall shipments and Net Income in FY2021-22. On a consolidated basis, Hindalco continued to maintain its strong balance sheet in FY2021-22, resulting in a 1.36x Net Debt-to-EBITDA of at the end of the year against 2.59x in the previous year.

82 BN
Total cans recycled in FY2021-22

* includes Utkal, the wholly-owned subsidiary;

^ Exceptional Income / (Expenses) for the ended 31 March 2022 exclude ₹418 Crore which represents the principal portion of (a) PIS/COFINS related tax credit income in Brazil of ₹358 Crore (net of litigation cost of ₹9 Crore) and (b) tax rebates for sales to Manaus, Brazilian Free Trade Zone and ₹60 Crore, as it is included in the results of Novelis segment (part of EBITDA).

Management Discussion & Analysis

Key initiatives during the year

Hindalco India has taken several cost optimisation initiatives across the value chain to improve efficiency and reduce the overall cost of production at all its facilities. The Utkal Expansion providing low-cost alumina, better coal mix and operational efficiencies has helped the Company to reduce it cost of production. As a result, Utkal Alumina continues to remain in the first quartile of the global cost curve in FY 2021-22.

Hindalco sustainable business model and the downstream strategy of product expansion in India will nearly double its existing downstream capacity in the next five to six years. Hindalco has recently completed acquisitions of Hydro's Kuppam Extrusions facility in India and Copper CCR facility of Polycab (Ryker Base) expanding overall capacities in the value-added segment during the year. In FY2021-22, Utkal Aumina refinery successfully completed expansion via debottlenecking of 500 kt taking its total capacity to 2.1 Million MT. Further debottlenecking is planned at Utkal Alumina by 350 kt to take the capacity to around 2.5 Million MT by FY 2023-24.

In line with its growth strategy of organic expansions, Hindalco has recently announced investments in Downstream and Upstream spread over next five years in the businesses of Aluminium, Copper, Specialty Alumina and Resource Securitisation through new commercial coal mines between FY23 and FY27. These investments are expected to be in the range of $3.0-$3.3 Billion, though certain projects are under appraisal. These investments are mainly targeted towards downstream capacity expansions in Aluminium, Copper and Specialty Alumina to cater the growing demand in domestic markets. The Company's intent is to build a larger value-added product portfolio over the next few years. This investment indicates confidence in the economic revival, which will raise the demand for downstream value-added products.

Novelis' acquisition of Aleris in 2020 has been highly accretive in terms of market positioning and synergies. Novelis has identified more than $220 Million in synergies, exceeding its original estimate at time of acquisition of achieving approximately $150 Million. Through 31st March, 2022, Novelis has achieved $112 Million of run rate cost synergies.

Novelis remains committed to all its organic growth expansion projects. Novelis launched a multi-year strategy to transform and improve the profitability its business through significant investment in new capacity and capabilities. Future investment opportunities in new capacities and facilities, between FY2023 and FY2027, is expected to be more than $4.5 Billion, funded by stable cash flow generation. These new facilities in US, China, South Korea, Germany, and Brazil will cater to the entire portfolio of offerings. Of the estimated range of total investments, ~USD 3 Billion is expected to be invested in the US.

Hindalco retained its position as the Aluminium Industry Leader for its sustainability performance in the 2021 edition of the S&P Dow Jones Sustainability Indices (DJSI) Corporate Sustainability Assessment (CSA). Industry Leaders are the top-performing companies in the Index. Hindalco was again featured in the S&P Global Gold Class category as 'Sustainability Leaders of 2022' in the Dow Jones Sustainability Yearbook 2022.

Through LEAD (Leverage, Efficient, Augment and Digital Savvy), Hindalco's digital transformation initiative, we are trying to arm our employees with the analytics and insights to take decisions with speed and confidence. LEAD will help us capture benefits across the entire manufacturing value chain—increasing production capacity, reducing material losses, improving customer service and delivery times and reducing environmental impact. These gains are expected to strengthen Hindalco's competitive position.

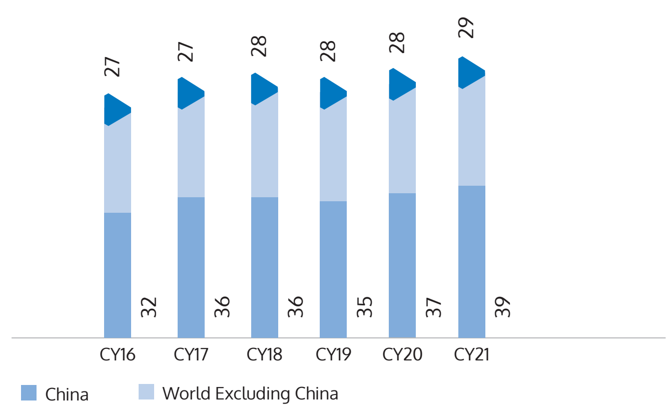
1. Industry analysis

1.1 Aluminium Segment and Industry Review

In CY2021, the global economy witnessed a post pandemic rebound to 6.1%. In CY2021, the Global Production of Aluminium grew 4% yoy to 67.4 Million MT while global consumption rebounded sharply by 10% to ~69 Million MT due to pent up demand. Hence, global markets were in deficit of ~1.6 Million MT in CY2021. On a region-wise split in CY2021, production in China increased by 5% yoy to 38.5 Million MT led by increases in Yunnan, Inner Mongolia, and Henan. Aluminium intake in China was primarily driven by a sharp increase in demand for electric vehicles and solar. The demand Aluminium in China was subdued in the building and construction and auto segments. Hence, overall consumption in China grew by ~6% to ~40 Million MT in CY2021 resulting in a market deficit of ~1.6 Million MT. In the Rest of the World, production grew by 3% yoy to ~29 Million MT led by production increase in Middle East, Central & South America and India. Low base effect and solid demand from packaging segment helped consumption rebound by 14% yoy to 29 Million MT. Hence, the ROW markets were balanced.

As the Global markets remained in deficit, the inventory levels continued to decline from 11 Million MT to 9.4 Million MT. In CY2021, the prices averaged at $2,480 as against $ 1,704 in CY2020. In Q1 CY2022, the global aluminium prices continued to grow to $3,280/ton. The rally in aluminium prices in Q1 CY2022 was driven by Russia-Ukraine geopolitics and depleting global inventories.

Primary Production (in Million MT)



Primary Consumption (in Million MT)

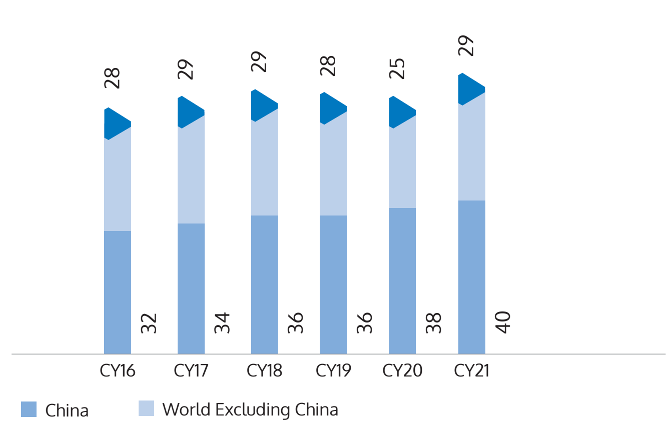


Table 1: Global Production and Consumption (in Million MT)

In Million MT	CY2019	CY2020	CY2021
Production	63.3	64.7	67.4
Consumption	64.6	62.9	69.0
Surplus	-1.4	1.8	-1.6

The average value of premiums was also volatile. By the end of CY 2021, Spot Main Japanese Port (MJP), European Rotterdam Ingot duty and US Midwest premium was $156/t, $268/t and $ 27 cents/lb, respectively versus $86/t, $129/t and $12 Cents/lb, respectively in CY 2020.

As economic activity resumed, domestic consumption saw significant improvement across all sectors over the year. Domestic consumption is likely to grow by 15% yoy in FY 2021-22 and 6% over Pre-COVID levels. Imports continue to be a concern for domestic players. Overall imports, including scrap, touched ~2.3 Mt in FY2021-22 from ~2.1 Mt in FY2020-21.

Global Aluminium Prices ($/MT)

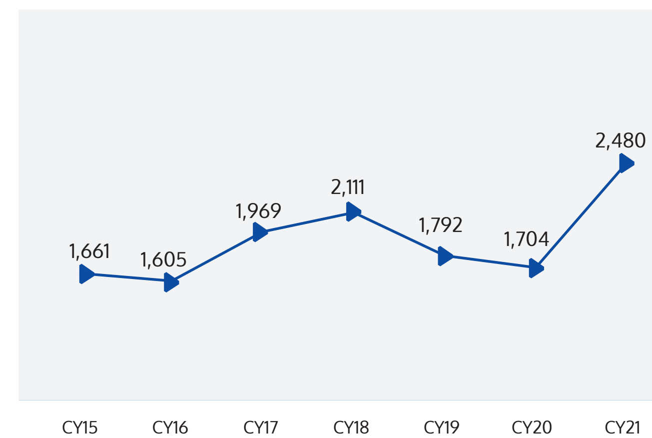


Table 2 : Sector Wise Domestic Consumption for FY2019-20 vs FY2021-22 and FY2020-21 vs FY2021-22

Growth (%)		
Sector	FY2021-22 vs. FY2020-21	FY2021-22 vs. FY2019-20
Electrical	0 to 10%	-15 to -5%
Building and construction	20 to 30%	-5 to 5%
Auto	20 to 30%	5 to 15%
Industrial and Defence	5 to15%	20 to 30%
Print	30 to 40%	-20 to -30%
Packaging	10 to 20%	10 to 20%
Consumer Durables	15 to 25%	15 to 25%
Others	0 to 10%	0 to 10%
Overall India Consumption	15%	6%

Source: Company Estimates

1.1.1 Outlook:

Global growth is likely to moderate to 3.6% in CY2022 from 6.1% in CY2021. War-induced commodity price increases and broadening price pressures have led to CY 2022 inflation projections of 5.7% in advanced economies and 8.7% in emerging market and developing economies. Overall, in CY 2022, primary demand is likely to grow by 1% to ~69 Million MT. Production is expected to be around ~70 Million MT. Hence the market is likely to be balanced. Production in the world excluding China is expected to increase by ~1% to ~29 Million MT. Primary aluminium supply in China is likely to grow by 5% to ~40 Million MT. Consequently, the inventories are likely to remain stable at 9.0 Million MT by the end of CY2022.

Demand Drivers for World Ex China

World Ex China	Demand Drivers
Transport	Government provides purchase incentives to the buyers of electric vehicles
Construction	Stable residential demand in key region and re-opening of economies post COVID-related lockdown.
Packaging	Substitution against PET bottles in Europe and North America. Aluminium Beverage cans replacing PET and glass bottles.
Foil stock	

China Outlook:

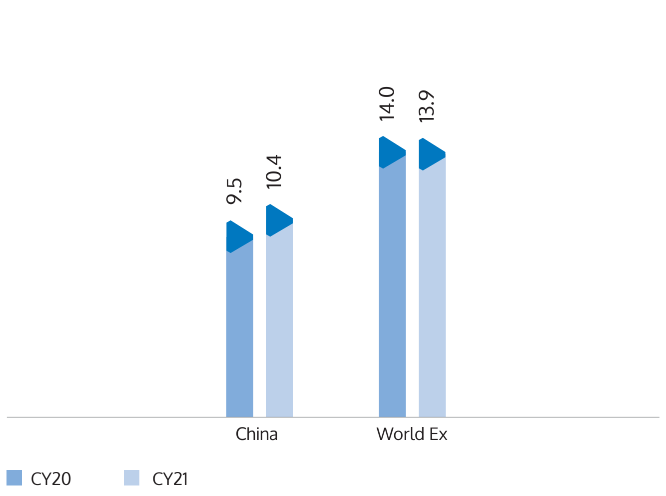
China	Demand Drivers
Transport	Significant aluminium demand over the next 3 years due to rising sales of EVs (auto body sheet, battery foil). Light weighting supported by stringent national emission standards and achieve dual control target.
Construction	Reducing loan prime rate to support demand
Packaging	Stable demand from food and pharmaceutical sectors
Foil Stock	
Electrical	State grid to build "24 AC and 14 DC" Ultra High Voltage projects involving >30,000 km transmission lines
Consumer Durables	Strong domestic and export demand
Machinery & Equipment	Good industrial production and investment growth to support growth

The domestic market is likely to see a broad-base recovery across all sectors. Imports of aluminium products, including scrap, continue to remain a major concern for domestic aluminium producers. Over the last few years the domestic rolled and foil products industries have been hit by increased dumping of imports, especially from China and FTA countries. Some of this has been countered through 'trade remedial measures' to combat the surge of imports.

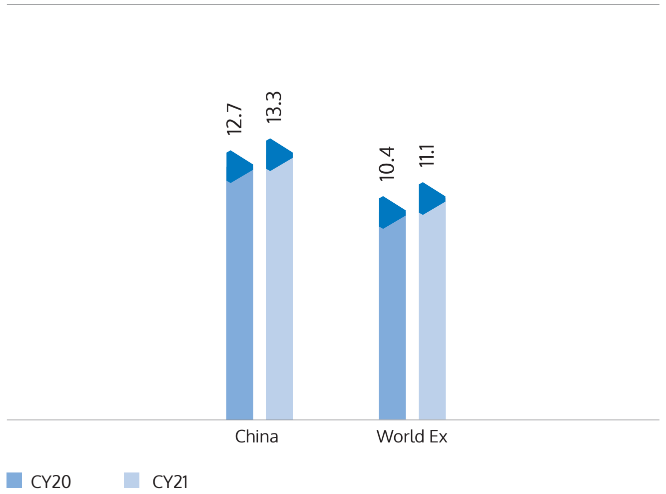
1.2 Copper - Industry Review & Outlook

In CY2021, on a yearly basis, refined copper consumption globally saw an increase of 6% to 24.4 Million MT against 23.0 Million MT in CY2020. Copper intake in China grew by 5%, whereas in the World Ex China, it increased by 7%.

Refined Copper Production



Refined Copper Consumption



On a yearly basis, domestic market demand increased by 8% to 612 kt in FY2021-22 from 567 kt in FY2020-21. The market share of imports declined 5% to 26% (157 kt) in FY2021-22 from 31% (178 kt) in FY2020-21.

The CY 2022 Annual Tc/Rc benchmark was finalised at 65/6.5 (16.7 c/lb), which is a 9% improvement over the CY 2021 benchmark of 59.5/5.95 (15.26 c/lb). With the ramp-up of key large-scale mining projects and new mines like QB2 & Quellaveco getting operational in CY 2022, the concentrate market is looking at a likely surplus of ~250 kt in CY 2022 against a deficit of ~ 299 kt during CY 2021, which should allow spot Tc/Rc terms to recover. Accordingly, Tc/Rc is expected to improve for the rest of this year as well as next year.

1.2.1 Outlook

Global demand for refined copper is expected to increase by ~2.4% in CY 2022. China is expected to grow by ~2.1% and the rest of world is expected to grow by ~2.8%. Demand for Refined Copper in India is likely to improve and recover to pre-COVID levels in FY2022-23 of 750kt.

In the medium-term, the risks to mine supply have increased due to several factors, including western sanctions on Russia which will probably hit the development of mine projects in that country, increased social conflict in Peru and continued regulatory uncertainty in Chile. At the same time, China will continue to invest in new smelter capacity, though at a reduced scale. COVID-19 related lockdowns in China disrupting manufacturing activities will be a passive factor in the supply-demand trend.

1.3 Novelis – Global FRP Industry Review and Outlook

The global demand for aluminium and rolled products remains strong, driven by economic growth, material substitution and sustainability considerations including increased environmental awareness around polyethylene terephthalate plastics. Although the early months of FY2021 were negatively impacted by a short-term reduction in demand for aluminium rolled products particularly in the automotive and aerospace markets, pandemic-related demand disruptions have since been in check. However, it is difficult to predict impacts of the ongoing pandemic on future demand. Economic growth, material substitution, and sustainability considerations including increased environmental awareness around polyethylene terephthalate (PET) plastics continue to support long-term increasing global demand for aluminium and rolled products.

Except for China, where can sheet overcapacity and strong competition remains, favourable market conditions and increasing customer preference for sustainable packaging options is driving higher demand for recyclable aluminium beverage cans and bottles.

Demand for aluminium automotive sheet began to be impacted by the semiconductor shortage in the automotive industry at the start of FY2022, and we expect uneven demand to continue in the CY2022. The demand for auto sheets has been primarily driven by the benefits that result from using lightweight aluminium in vehicle structures and components, as automakers respond to stricter government regulations regarding emissions and fuel economy, while maintaining or improving vehicle safety and performance. We are also seeing increased demand for aluminium for electric vehicles as the metal's lighter weight can result in extended battery range.

The long-term demand for building and construction and other specialty products is expected to grow on account of increased customer preference for lightweight, sustainable materials. The requirement for aluminium plates in Asia is set to grow, driven by the development and expansion of industries serving aerospace, rail and other technically demanding applications.

Aerospace demand which was muted in FY2021-22 due to pandemic-induced air travel restrictions, intake is expected to improve to pre-COVID levels by the end of fiscal 2023. In the longer-term, significant aircraft industry order backlogs for key OEMs, including Airbus and Boeing, would translate into growth and our multi-year supply agreements have positioned us to benefit from future demand.

Novelis experienced some inflationary cost pressures in FY2021-22 resulting from global supply chain disruptions impacting the availability and price of materials and services including freight, energy, coatings and alloys. Rising geo-political instability, which had aggravated inflationary cost pressures in the fourth quarter of FY2021-22, are expected to continue in the foreseeable future. Novelis is well positioned to maintain current production levels and service its customers without disruptions in the near term. While Novelis' near-term results are being negatively impacted by higher input costs, it has been able to mitigate some of it through a combination of hedging, cost passthrough to customers, favourable pricing environments and increased recycling benefits.

For a region-wise detailed business overview, please refer to the 10K filed by Novelis Inc. dated May 11th, 2022 for the year ended March 31, 2022.

2. Business Segment Review

2.1 Hindalco – SWOT Analysis

India Aluminium

Strengths	Weakness	Opportunities	Threats
• Fully Integrated business model • Dominant player in India across upstream and downstream • Utkal - among the world's most economical and efficient Alumina producers; with capacity expansion of 500 kt Utkal capacity reached 2.1 Mt in FY2021-22 • Increased focused on Value Added Products (VAP) will lead the company to be delinked from LME • Market leadership in Flat Rolled Products	• Commodity product (upstream) • Smaller market share in Extrusions and Foils • Upstream business linked to LME volatility	• Immense headroom for a growing market in India; Per Capita Aluminium consumption in India at 1/4th of global average • Rising Aluminium Consumption in the end use segments like Building & Construction, Automotive, Packaging, and Consumer Durables • Substitution opportunity versus steel, uPVC, wood, among others. • Light-weighting initiatives in commercial vehicles, personal mobility, etc. leading to a higher Aluminium adoption in the country. • PLI scheme for White Goods and proactive trade measures by the Government to help in import substitution.	• LME, Forex and raw material price volatility • Competition from China in the downstream • Rising imports of scrap • Increasing imports of VAP from the Free Trade Agreement (FTA) countries. • Domestic availability/ shortage of resources (mainly coal)

Novelis

Strengths	Weakness	Opportunities	Threats
• Diverse, high-value product portfolio with unmatched global presence and scale • Very stable customer base locked in long-term contracts • Ability to grow pricing in capacity constrained and high growth end markets • Market leader in a more recession resistant beverage packaging end-market • Leading recycling capabilities with ~60% recycled content and growing hence driving sustainability and providing cost competitiveness	• Capacity constrained next 2-3 years until capacity expansion projects underway are complete • Long-term contracts while providing volume stability but create time lag between inflation and ability to pass on higher costs to customers	• Key end markets - Can and Auto - growing faster than GDP growth due to strong recycling and sustainability value proposition offered by Aluminum • Build on existing sustainability leadership by expanding recycling capabilities • Digitalising the value chain, including implementing a 'Plant of the Future' operating model to drive efficiency gains and overall operational excellence	• Supply chain disruption and high cost inflation • Geo-political instability, increasing tariffs, protectionist measures and cybersecurity risks • Increasing competition for scrap input materials

Copper

Strengths	Weakness	Opportunities	Threats
• A balanced portfolio of revenue streams to tide through volatile market • Secured concentrate supply via long-term contracts with miners • Focus on VAP like Copper Rods and Inner Grooved Tubes (IGT)	• Dependence on imported Copper concentrate	• Immense headroom for growth due to lower consumption vs global average • Strong Demand of Copper particularly in the EV segments	• Mine Disruptions • Duties & Free Trade Agreement and trade politics

2.2 Operational Performance and Financial Review

Financial Table: Standalone & Consolidated (₹ Crore)

	HIL Standalone		Consolidated	
Description	**FY2021-22**	**FY2020-21**	**FY2021-22**	**FY2020-21**
Revenue from Operations	67,653	42,701	1,95,059	1,32,008
Earning Before Interest, Tax and Depreciation (EBITDA)				
Novelis*			15,229	12,727
Aluminium (Including Utkal)			13,025	5,441
Copper (Including DHIL)			1,390	869
Other Segments			26	26
Unallocable Income/(Expense) - (Net) & GAAP Adjustments			386	(167)
Total EBITDA	11,828	4,884	30,056	18,896
Depreciation & Amortisation (including impairment)	1,847	1,848	6,884	6,766
Finance Cost	1,417	1,469	3,768	3,738
Earning before Exceptional Items, Tax & Share in Profit/(Loss) in Equity accounted Investments	8,564	1,567	19,404	8,392
Share in Profit/(Loss) in Equity Accounted Investments (Net of Tax)	-	-	6	5
Earning before Exceptional Items and Tax	8,564	1,567	19,410	8,397
Exceptional Income/(Expenses) (Net)#	(107)	7	164	(492)
Profit Before Tax (After Exceptional Items)	8,457	1,574	19,574	7,905
Tax Expense	2,950	581	5,373	2,723
Profit/(Loss) from Continuing Operations	5,507	993	14,201	5,182
Profit/(Loss) from Discontinued Operations	-	-	(471)	(1,699)
Profit/(Loss) After Tax	5,507	993	13,730	3,483

* As per US GAAP

Pertians to the Consolidated Exceptional Income / (Expenses) for the year ended March 31, 2022, ₹418 Crore, which represents the principal portion of (a) PIS/COFINS related tax credit income in Brazil of ₹358 Crore (net of litigation cost of ₹9 Crore) for FY22 and (b) tax rebates for sales to Manaus, Brazilian Free Trade Zone ₹60 Crore for FY22, as it is included in the results of Novelis segment.

Management Discussion & Analysis

Hindalco Aluminium Business Review

2.2.1 Operational Overview – Aluminium

The Company delivered a strong financial and operational performance in its aluminium business in FY2021-22 primarily due to favourable macros, higher volumes, better operational efficiencies and improved performance of downstream business despite headwinds from higher input costs. The production of aluminium stood at 1.294 Million MT in FY 2021-22 versus 1.229 Million MT in the corresponding year. The overall alumina production stood at 3.235 Million MT versus 2.699 Million MT in FY2020-21. This includes the additional volumes from 500 kt brownfield Utkal Expansion, commissioned during the second half of FY2021-22. Utkal Alumina recorded production of 2.048 Million MT in FY2021-22 and continues to be the most economical and efficient alumina producer globally, running at maximum capacity to produce 2.1 Million MT of world-class alumina and providing strong support to most of Hindalco's India smelting facilities, leading to better cost optimisation and quality input (alumina).

The overall metal sales in all forms were at 1.302 Million MT in FY2021-22 against 1.250 Million MT in FY2020-21, up by 4% yoy on account of market recovery and higher value-added sales in FY2021-22. Production of VAP was higher by 30% yoy, at 349 kt in FY2021-22 vs 269 kt in FY2021-22.

2.2.2 Financial Overview

Aluminium

Revenue for Hindalco's aluminium segment was up 57%, rising to ₹32,169* Crore in FY2021-22 from ₹20,518* Crore in FY2020-21 on account of higher global aluminium prices. EBITDA was up 139% at an all-time high of ₹13,025 Crore versus ₹5,441 Crore a year earlier on account of favourable macros, higher volumes, better operational efficiencies and improved performance of downstream business offset by higher input costs. The EBITDA margins were at 40.5% in FY2021-22, one of the best in the industry.

*The above numbers are without elimination of Inter-segment revenue.

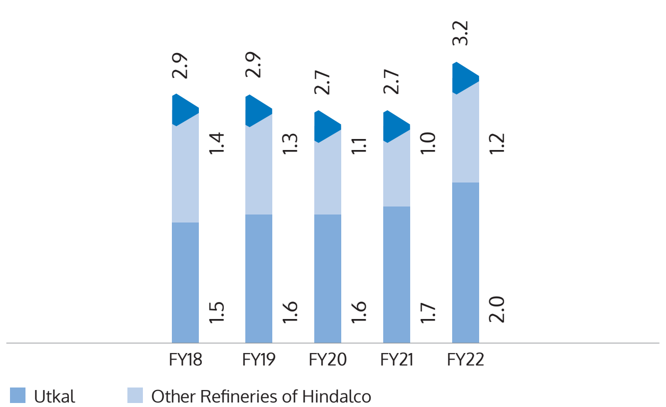
(₹ Crore)

Description	FY2021-22	FY2020-21	% Change
Revenue	32,169	20,518	57%
EBITDA	13,025	5,441	139%

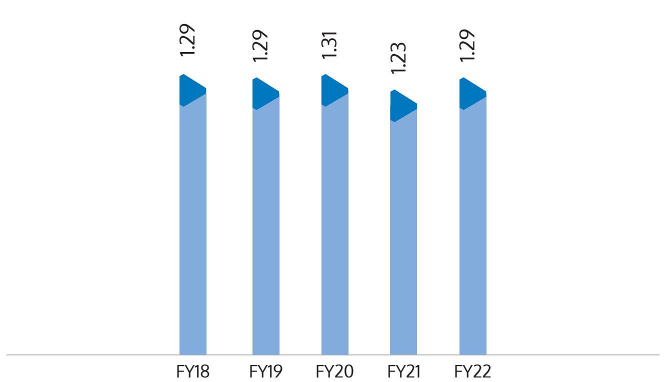
Note: In the consolidated financial statements, within the aluminium segment, the significant entities are Hindalco and Utkal Alumina International Ltd. Utkal Alumina is a wholly-owned subsidiary of Hindalco and supplies a substantial quantity of its production to Hindalco hence we have analyzed the combined performance of Hindalco's aluminium business along with Utkal Alumina.

The graphs show the trend of total alumina production and aluminium production and sales in last five years:

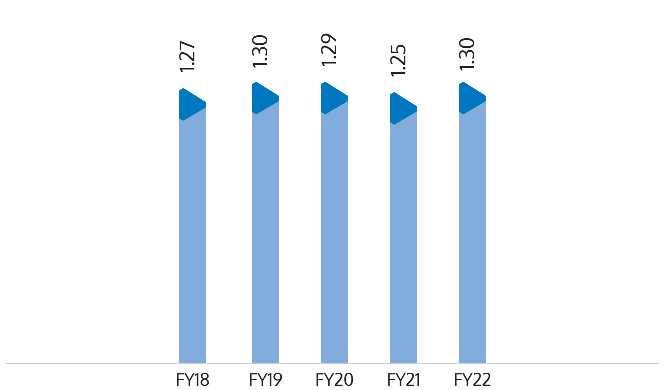
Alumina Production (in Million MT)



Metal Production (in Million MT)



Metal Sales in All Forms (in Million MT)



2.3 Copper Business Review

2.3.1 Operational Overview

Copper smelters ran optimally during FY2021-22 and delivered consistent production. The copper cathode production was 359 kt in FY2021-22, up 37% against the previous year. Copper rod production was at 259 kt in FY2021-22 versus 235 kt in FY2020-21.

Total copper metal sales were at 405 kt in FY2021-22 up by 29% compared to 313 kt in the previous year in line with better production and market demand. The sales of Copper VAP (Copper Rods) were up by 13% at 262 kt in FY2021-22 versus 233 kt in the previous year. The share of VAP (CC Rods) to total metal sales was 64% in FY2021-22, from 74% in the previous year.

On 3rd November, 2021 Hindalco acquired Ryker Base Pvt Ltd (Ryker), a 225 kt copper rod manufacturing facility of Polycab Ltd., taking the total capacity of CCR to around 540 kt currently.

2.3.2 Financial Overview

Copper segment revenue for FY2021-22 was at ₹36,723* Crore (vs. ₹22,446* Crore in FY2020-21), up 64% on account of higher global prices of copper and higher volumes in this financial year. EBITDA was at ₹1,390 Crore (vs. ₹869 Crore in FY2020-21) up 60% yoy, on account of higher volumes, better operational efficiency and improved by-product realisations in FY2021-22.

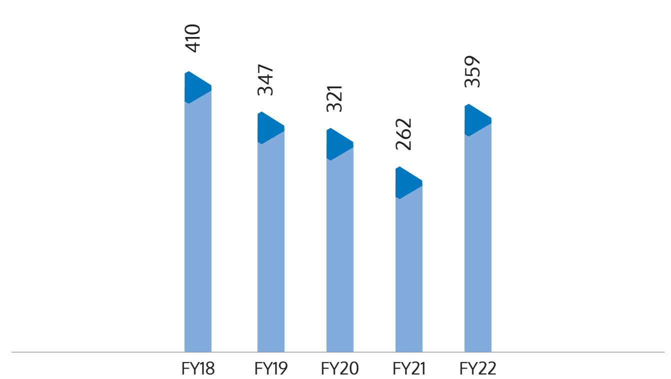
*The above numbers are without elimination of Inter-segment revenue

(₹ Crore)

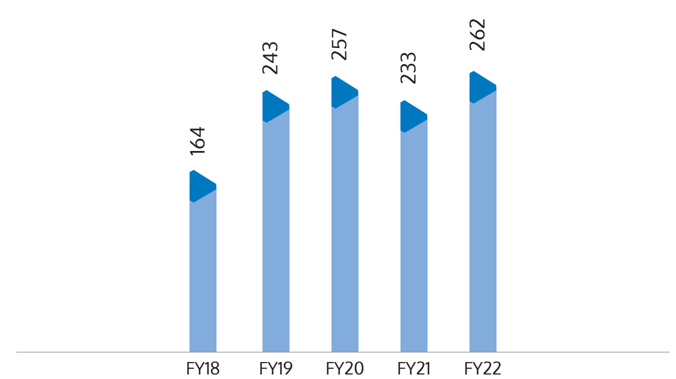
Description	FY2021-22	FY2020-21	% Change
Revenue	36,723	22,446	64%
EBITDA	1,390	869	60%

The graphs show the trend of total cathode production and Copper Metal and Value Added (CC Rods) sales volume in the last five years:

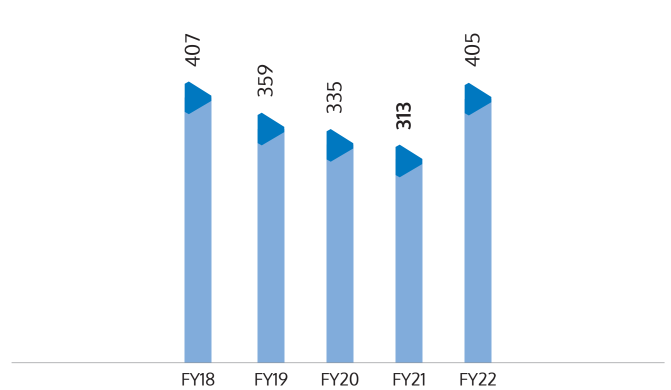
Cathode Production (kt)



Copper VAP - CC Rod Sales (kt)



Copper Metal Sales in all forms (kt)



2.4 Novelis Business Review

2.4.1 Operational Overview

Novelis Inc., is the global leader in flat-rolled aluminium products and the world's largest recycler of aluminium. Driven by its purpose of shaping a sustainable world, Novelis works alongside its customers to provide innovative solutions to the beverage can, automotive, aerospace and speciality markets (which include foil packaging, certain transportation products, architectural, industrial, and consumer durables). Novelis operates an integrated network of technically advanced rolling and recycling facilities across North America, South America, Europe, and Asia, and leverages its global manufacturing and recycling footprint to consistently deliver high-quality products around the world.

Novelis reported its best-ever financial performance in FY2021-22, despite semiconductor chip shortage in automotive, slowly reviving aerospace segment and some short-term operational challenges in quarter four of FY2021-22. In FY2021-22, Novelis recorded its best-ever adjusted EBITDA and EBITDA per ton mainly driven by its portfolio optimisation, better cost efficiency, favourable product mix, innovations, customer centricity and favourable demand for lightweight, sustainable aluminium solutions across end markets. Novelis leveraged its extensive recycling footprint and favourable market conditions to utilise high levels of recycled content in its shipments in FY 2021-22.

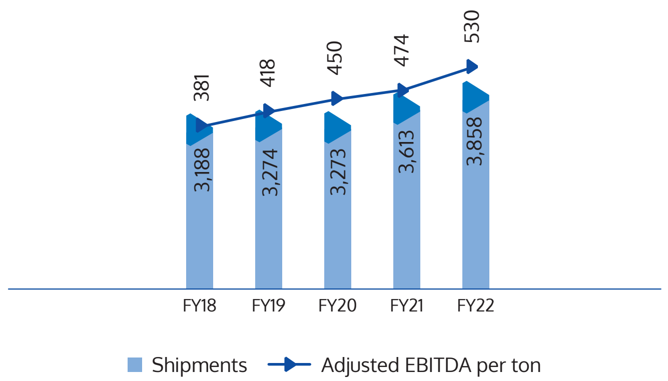
In FY2021-22, total shipments were up by 7% over the last year to 3.858 Million MT, driven by strong demand for sustainable, flat rolled aluminium sheet and recovery from COVID-related production shutdowns early in the previous financial year.

Share of beverage can sheet shipments were 58% in FY 2021-22, automotive body sheet shipments were at 17% in FY2021-22, despite challenges on account of global semi-conductor chip shortages. The specialities and aerospace shipments were 23% and 2% respectively in FY2021-22.

Novelis operates in four key geographies: North America, Europe, Asia and South America. In North America, in FY-2021-22, total shipments were at 1,466 kt. In Europe, the Company shipped 1,048 kt across product categories in FY 2021-22. In Asia, Novelis shipped 737 kt of rolled products in FY2021-22 versus 740 kt in FY2020-21. In South America, Novelis shipped 617 kt in FY2021-22, up from 577 kt in the previous year.

In FY2021-22, Novelis reported a record overall adjusted EBITDA/MT of $530, up from $474/MT in the last year, reflecting strong and consistent performances year after year.

FRP Shipments (kt) **and Adjusted EBITDA per ton** ($/t)



With Novelis' thrust on sustainability and recycled aluminium, the share of recycled inputs was at 57% in FY2021-22. The Company has invested significantly in recycling initiatives and developed high-tech recycling capabilities over the years. Its new 100 kt rolling, casting, and recycling expansion projects in Pinda, Brazil commissioned during FY2021-22, added to Novelis' overall rolling capacity which reached 4.0 Million MT at the end of FY2021-22.

2.4.2 Financial Overview

Novelis' total revenue in FY2021-22 were at $17.1 Billion, up 40%, mainly driven by higher average global aluminium prices, local market premiums and record shipments in every product end market. Adjusted EBITDA stood at a record high of US$ 2.045 Billion, up 19%, on the back of higher volume, favourable product mix and strong environment benefiting pricing, partially offset by high inflation and operational disruptions.

Novelis reported adjusted free cash flow from continuing operations of $649 Million, after absorbing more than $ 400 Million of increased working capital pressure from rising aluminium prices, net of metal price lag compared with $ 740 Million as the end of previous financial year.

Driven mainly by higher adjusted EBITDA, Net Income (without special items) from continuing operations is up 66% yoy at $ 934 Million in FY2021-22 against $561 Million in FY2020-21.

($ Million)

Description	FY2021-22	FY2020-21	% Change
Revenue	17,149	12,276	40%
Adjusted EBITDA	2,045	1,714	19%
Net Income/ (loss) w/o Exceptional Item*	934	561	66%

*Tax-effected special items may include restructuring & impairment, metal price lag, gain/loss on assets held for sale, loss on extinguishment of debt, loss/gain on sale of business

The newest NFL super stadium, SoFi Stadium, in Inglewood, California, uses Novelis aluminium in critical structures

3. Consolidated Financial Statements

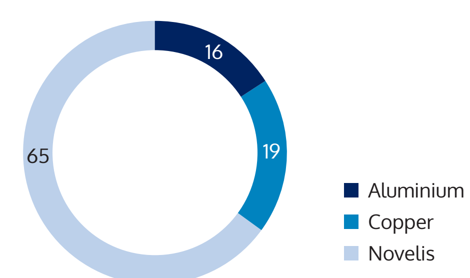
3.1 Revenue

Hindalco's consolidated revenue was up 48% at ₹1,95,059 Crore in FY2021-22 compared to ₹1,32,008 Crore in FY2020-21, primarily driven by higher global aluminium prices and local market premiums. The graphs below show the split of Consolidated Revenues by businesses in FY2021-22 and the trend of revenues over the past five years.

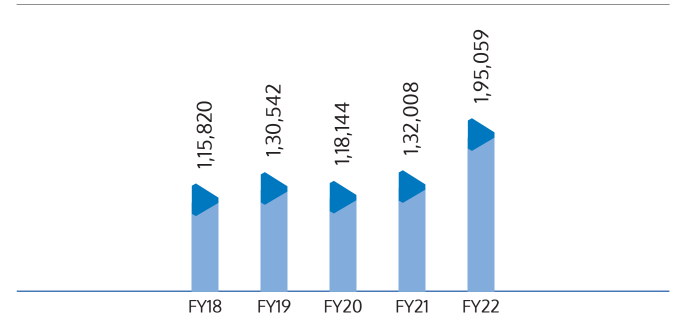
3.2 EBITDA

Consolidated EBITDA for FY2021-22 was higher by 59% to ₹30,056 Crore from ₹18,896 Crore in the previous year. This was due to higher EBITDA in the aluminium business in India and best-ever performance by Novelis in FY2021-22. The EBITDA margin in FY2021-22 was at 15.4% compared to 14.3% in FY 2020-21. The graphs below show the consolidated EBITDA split by businesses in FY2021-22 and trends over the past five years.

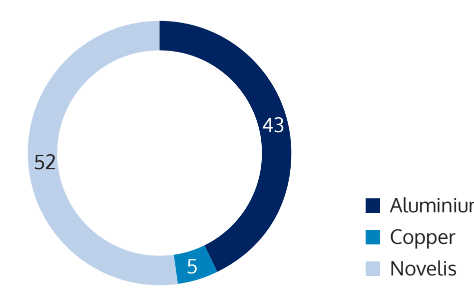
Consolidated Revenue split by Business for FY2021-22:
(%)



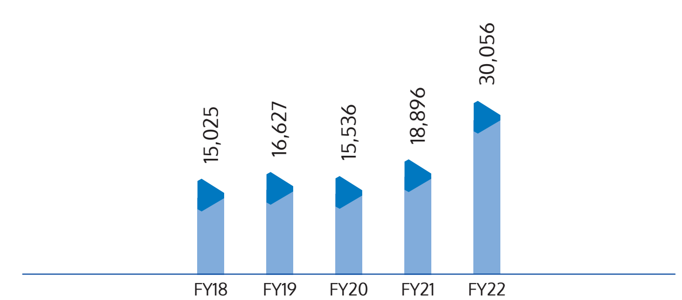
Consolidated Revenue (₹ Crore)



Consolidated EBITDA split by Business: FY2021-22
(%)



Consolidated EBITDA (₹ Crore)



Management Discussion & Analysis

Novelis' aluminium facades help create striking and sustainable structures that last for decades

3.3 Finance Cost

Finance Cost decreased 1% and was at ₹3,768 Crore in FY2021-22 from ₹3,738 Crore in FY2020-21 due to lower interest cost of long-term loans in India and refinancing of term loans by Novelis. Novelis refinanced 5.875%, $1.5 Billion Senior Notes due in September 2026 via 3.250%, $750 Million senior notes due in November 2026 and a 3.875%, $750 Million senior notes due in August 2031. The 2017 term loan of $1.8 Billion was fully repaid by Novelis before maturity in FY2021-22.

3.4 Depreciation and Amortisation (Including net impairment loss/(reversal) of non-current assets)

Depreciation and amortisation (including net impairment loss/(reversal) of non-current assets) increased to ₹6,884 Crore in FY2021-22 from ₹6,766 Crore in FY2021-22 mainly on account of capitalisation and certain reclassifications as per the accounting standards and exchange impact.

3.5 Exceptional Income/(Expense)

In FY2021-22, total exceptional income stands at ₹164 Crore excluding ₹418 Crore of principal portion of PIS/COFINS related tax credit income in Novelis Brazil (₹358 Crore and net of litigation cost of ₹9 Crore) and tax rebates for sales to Manaus, Brazilian Free Trade Zone of ₹60 Crore included in the results of Novelis segment.

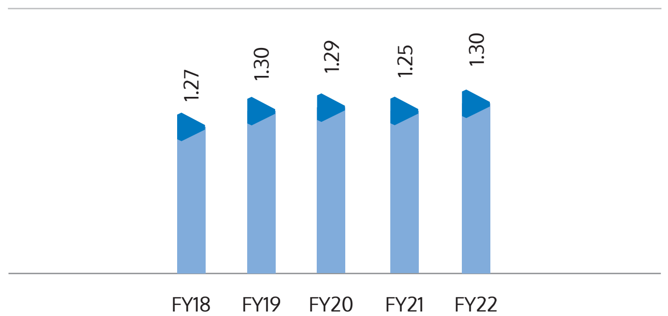
3.6 Taxes

Provision for the tax was at ₹5,373 Crore in FY2021-22 against ₹2,723 Crore in FY2020-21. This increase in taxes was due to higher taxes in Novelis and higher profitability of the Company in FY2021-22.

3.7 Profit/(Loss) After Tax

Profit After Tax (PAT) in FY2021-22 was at an all-time high of ₹13,730 Crore compared to ₹3,483 Crore a year ago, up 294% yoy. The net profit margin in FY2021-22 stood at 7.04% versus 2.64% in FY2020-21. The PAT for Continuing operations for FY2021-22 was up 174% yoy at ₹14,201 Crore versus ₹5,182 in FY2020-21.

Metal Sales in all forms (in Million MT)



3.8 Consolidated Net Debt to EBITDA

The consolidated balance sheet continued to remain strong with the Net Debt to EBITDA at 1.36 times at the end of March 2022 versus 2.59 times at the end of March 2021. (Net Debt to EBITDA = Consolidated Business EBITDA/Consolidated Net Debt)

3.9 Key Financial Ratios (Consolidated)

(i) Debtors Turnover (Days)

The Consolidated Debtors Turnover Days on 31st March, 2022 was 32 days compared to 31 days at the end of 31st March, 2021. This shows consistency in managing its credit with customers and this also reflects the Company's strong financial position with respect to most of its customers. The Debtor Turnover (days) is calculated as Average Debtors/Total Consolidated Sales multiplied by 365 days.

(ii) Inventory Turnover (Days)

The Consolidated Inventory Turnover Days on 31st March, 2022 was at 79 days versus 80 days at the end of 31st March, 2021. This shows how the Company managed its inventory levels during the year. The Inventory (days) is calculated as Average Inventory /Cost of Goods Sold (Cost of Sales + Depreciation) multiplied by 365 days.

(iii) Interest Coverage Ratio:

The Consolidated Net Interest Coverage Ratio on 31st March, 2022 stands at 7.87 times versus 5.06 times at the end of 31st March, 2021. This is higher over the previous year because of higher earnings (EBIT) and refinancing of long-term loans in Novelis. This ratio reflects the Company's ability and strength to meet its interest obligations.

(iv) Current Ratio

The Consolidated Current/Liquidity Ratio as on 31st March, 2022 stands at 1.28x versus 1.39x at the end of 31st March, 2021 reflecting the Company's strengthening of liquidity or solvency position compared to the last year.

(v) Debt to Equity Ratio

The Consolidated Debt to Equity Ratio as on 31st March, 2022 stands well below 1.0x at 0.81x versus 0.99x as on 31st March, 2021. This reflects the Company' strong balance sheet and ability to meet its current short-term obligations.

(vi) Return in Net Worth (RONW)

The Consolidated Return on Net Worth as on 31st March, 2022 stands at 18.97% compared to 5.58% on 31st March, 2021. This was higher compared to the previous year due to the higher profits in FY2021-22. This is Calculated based on PAT/Average Net Worth.

(vii) Operating Margins

The Consolidated Operating margins in FY2021-22 stands at 14.61% versus 13.41% in FY2020-21 reflecting higher operating profit in FY2021-22 compared to the previous year. (Operating Margin = Operating Profit/Net Sales).

(viii) Net Profit Margins

The Consolidated Net profit margins in FY2021-22 stands at 7.04% versus 2.64% in FY2020-21. This was higher on account of higher consolidated profits recorded in FY2021-22. (Net Profit Margin = Net Profit/Net Sales).

Novelis is the world's largest aluminium recycler

Management Discussion & Analysis

3.10 Consolidated Cashflow:

Cash generated from operations for Hindalco Consolidated stands at ₹16,838 Crore in FY2021-22 versus ₹17,232 Crore in FY2020-21.

The table below shows the comparative movement of Cash flows:

(₹ Crore)

Particulars		Consolidated	
		Year ended	
		31-03-2022	31-03-2021
A.	**CASH FLOW FROM OPERATING ACTIVITIES**		
	Operating Cashflow before working capital changes	29,726	17,648
	Changes in working capital	(9,132)	1,520
	Cash generated from operations before Tax	**20,594**	**19,168**
	(Payment)/Refund of Direct Taxes	(3,773)	(1,256)
	Net Cash generated/(used) -Operating Activities - Continuing Operations	**16,821**	**17,912**
	Net Cash Generated/(Used) - Operating Activities - Discontinued Operations	**17**	**(680)**
	Net Cash Generated/(Used) - Operating Activities (a)	**16,838**	**17,232**
B.	**CASH FLOW FROM INVESTMENT ACTIVITIES**		
	Net Capital Expenditure	(5,355)	(5,517)
	Disposal of Investments in Subsidiaries (Net)	66	-
	(Purchase)/Sale of Other instruments (Net)	4,226	(2,775)
	Acquisition of business, net of cash acquired	(412)	(19,524)
	Investment in equity accounted investees	(1)	-
	Loans & Deposits (given)/received back (Net)	(6,209)	(261)
	Interest and dividends received	239	228
	Purchase/Sale of Investment in Equity Shares at FVTOCI (Net)	363	(43)
	Lease payments received from finance lease	9	10
	Net Cash Generated/(Used) - Investing Activities - Continuing Operations	**(7,074)**	**(27,882)**
	Net Cash Generated/(Used) - Investing Activities - Discontinued Operations	**-**	**2,245**
	Net Cash Generated/(Used) - Investing Activities (b)	**(7,074)**	**(25,637)**
C.	**CASH FLOW FROM FINANCING ACTIVITIES**		
	Equity Raised/Debentures Redeemed	3	-
	Treasury shares acquired & Proceeds from Shares Issued by ESOP Trust	(79)	2
	Net Debt inflows/Outflows	(2,772)	(968)
	Interest & Finance Charges paid	(3,250)	(3,678)
	Dividend Paid (including Dividend Distribution Tax)	(667)	(222)
	Net Cash generated/(Used) - Financing Activities - Continuing Operations	**(6,765)**	**(4,866)**
	Net Cash Generated/(Used) - Financing Activities - Discontinued Operations	**-**	**(16)**
	Net Cash Generated/(Used) - Financing Activities (c)	**(6,765)**	**(4,882)**
	Net Increase/(decrease) in Cash and Cash Equivalents (a)+(b)+(c)	**2,999**	**(13,287)**

4. Business Outlook

Hindalco's relentless focus is on product innovation, better efficiencies, complete digitalisation and organic expansions with a diversified product mix and cost competitiveness. Timely completion of 500 kt expansion project at Utkal Alumina refinery is helping the company to reduce the overall integrated cost of production. The Company continues to focus on cash conservation while maintaining adequate liquidity and deliver sustained performance while catching up with the market recovery. The Company's long-term strategic investments in Novelis and the India downstream expansion projects will enhance its capabilities across the FRP and the Extrusion segments in India. In addition, the acquisition of Hydro's Kuppam Extrusions facility and Polycab's Ryker CCR facility in FY2021-22 is aimed at expanding its presence in the upper-end of the value-added market and further strengthen the Company's long-term sustainable business model.

Domestic copper demand is driven largely by rods which is the downstream product for the copper business. Hindalco's strategy of enhancement of Copper VAP capacity through Copper Rods and Copper Inner grooved tubes will help the Company drive a larger market share and meet the growing demand for copper in the domestic market.

Global demand for lightweight, highly recyclable aluminium beverage packaging which is the largest share of Novelis' shipment product portfolio, remains strong in all the regions. Demand for aluminium sheet across specialties markets, including electronics, electric vehicle battery enclosures, painted products, container foil and building and construction markets, also remains strong. While long-term demand trends are intact, the current global semiconductor shortage impacting the automotive industry has resulted in temporary automotive customer shutdowns and has reduced near-term demand for automotive aluminium sheet. In aerospace, some improvement is seen in order bookings because of a slow and uneven recovery in demand for aerospace sheet for through FY2022-23.

Hindalco's strategic priorities and its capital allocation framework which is targeted towards value enhancing organic growth and ESG commitments will bolster the Company's position as the Sustainability Leader in the Industry.

5. Price Risk Management

Hindalco's financial performance was significantly impacted by fluctuations in aluminium prices as well as exchange rates and interest rates. The Company takes a structured approach to identify, quantify and hedge such risks by using derivatives in commodity and currency, which are driven by the Company's comprehensive risk management policy.

Our initiatives and performance are detailed in the 'Our Capitals' section of this report.

6. Sustainability

At Hindalco sustainability is our core priority, enabling us to create value out of revenue streams that are planet and people positive. Our strong commitment to ESG is proven by our stellar showing in the DJSI CSA assessments which recognised us as the Most Sustainable Aluminium Company in the World. We believe in the power of collaboration and we actively engage with stakeholders across the value chain to address critical sustainability issues and try to resolve them seamlessly. This helps us gain the trust of stakeholders and allows us to grow in synergy with them.

Sustainability at Hindalco is driven at the top level by the Apex Sustainability Committee, chaired by the Managing Director ensuring implementation and monitoring of sustainability initiatives across the organisation. We have task forces and ESG SPOCs from all functions working together to bring about positive change in the organisation. The task forces are made for ensuring ground level implementation of environment initiatives. There are Risk Champions to assess potential risks including those related to ESG. The ESG SPOCs in corporate functions take up projects to further the cause of ESG implementation in the organisation.

We have developed a roadmap to attain net carbon neutrality by 2050. We have already put up 100 MW of renewable energy capacity and we plan to scale it up to 300 MW by 2025. These efforts are being reinforced by various energy efficiency projects and pilot demonstrations of technologies in the pipeline. We are boosting freshwater conservation by augmenting the use of water from other sources like treated water and rainwater. We are aiming for overall water positivity by 2050, with a sub-target of making our downstream and mining operations water positive by 2025. Our efforts on circularity include extracting value out of waste generated and increasing material recycling.

We aim to be zero waste to landfill by 2030, ensuing that waste is being put to good instead of ending up in the landfill. Our work in protecting biodiversity, which was initiated alongside IUCN, has led to the development of BMPs for critical sites. These are now under implementation and will help us attain our target of no net loss by 2050. Our Sustainable Mining Charter and KPIs for implementing the charter under seven thematic areas is another key step to make our mining vertical more sustainable. Our subsidiary Novelis is the largest aluminium recycler in the world.

Management Discussion & Analysis

On the people front, we are deeply committed to build safer workplaces and a high performance work culture to keep our employees motivated. Over the years we have taken various initiatives in the area of organisation effectiveness to increase productivity of our workforce. Mental and physical health programmes have also helped our people to navigate through these challenging times. We actively engage with local communities to ensure that they prosper alongside us. We implement programmes to cater to the needs of our communities in the areas of Education, Healthcare, Livelihood, Infrastructure, and Social Reforms. We believe in inclusive growth and deploy our resources to bring about a positive impact on the areas we operate in and on society at large.

Details of our initiatives and performance are provided in the 'Our Capitals' section of this report.

7. Safety

As a responsible corporate citizen, Hindalco is fully dedicated to human health and safety. Our plants and mines follow occupational health and safety management standards that integrate occupational health, hygiene and safety responsibilities into everyday business. A strong safety culture is required to prevent fatalities and achieve good safety performance. With focused efforts to further strengthen our safety culture, our safety performance this year has been the best ever. There was a 29% drop in loss time injuries, a 18% fall in recordable injuries and a 53% reduction in first aid injuries. Because of this, there is a 29% reduction in Loss Time Injuries Frequency Rate (LTIFR) and Recordable Injuries Frequency Rate. There is a 38% drop on a yoy basis in Loss Time Injuries Severity Rate (LTIFR) in FY2021-22.

While there were no fatalities among Company employees, we lost two contract workmen to work-related injuries. We regret the loss of these valuable lives and shall continue to strengthen our safety culture to make Hindalco a "Zero Harm" organisation.

During the year, we introduced a uniform Contractors' Safety Management procedure across Hindalco. The Serious Injuries and Fatality (SIF) prevention programme, which was introduced last year, has started showing some early promise. With these programmes/standards, we have now nine technical safety standards, nine administrative safety standards and 4 occupational health standards. Our standards and procedures provide a consistent approach to managing major hazards across our operations. To meaningfully implement the standards, we developed 82 new subject matter experts (SME). This is addition to 1,166 SMEs developed over last few years.

We audit our entire operations every year against our standards and require our businesses to meet their health and safety performance requirements and targets. In FY 2021-22, all 15 manufacturing sites of Hindalco were audited virtually using "Real-Ware" due to COVID. In FY2023, we carried out physical audits.

Despite limitations on classroom safety training due to COVID in the early part of the year, we were able to invest more than three manhours of classroom safety training per person (including direct employees and contract workmen) this year also. The focus was more on-the-job training wherever possible, as a result we invested 37% more man-hours on training than the previous year.

A good safety culture depends heavily on the participation of line function employees. Which is why we have devised safety taskforces and six safety sub-committees at each unit for employees to participate in safety programmes. Each member of each task force and sub-committee is deemed a safety officer and contributes to the safety of the units and mines at every level.

In 2020, we completed Qualitative Exposure Assessment (QlEA) and Quantitative Exposure Assessment (QnEA) studies of all our manufacturing facilities and mining operations. By the end of FY2021-22, we were able to implement more than 80% of recommendations and we are making good progress in implementing the remaining recommendations that came out of these studies.

In FY2021-22, the Company continued to offer psychological safety training sessions to employees. Each unit also ran a comprehensive wellness programme recognising the value of good physical and mental health of employees, their families, and the community.

Hindalco has an active Crisis Management Plan using which the Company ensures an appropriate response to all crisis, natural disasters or other emergencies, including COVID-19 corporate level at all units and mines.

8. Human Capital

Our 40,000 employees across the globe are our biggest asset in the journey towards building a Greener, Stronger and Smarter future. In recognition of our efforts towards building a High-Trust, High-Performance culture, Hindalco was certified as a 'Great Place to Work' in 2021. Hindalco was also recognised as one of the 'Best Employers among Nation Builders' by the Great Place to Work Institute in 2022.

Through employee-centric systems and processes and capability and capacity building initiatives, we ensure the holistic development of our employees. Keeping in mind our strategic priority of value enhancing growth and to stay relevant in today's fast-changing world, investing in talent development and transforming key elements of culture has been our focus in the past few years. Our Shillim movement, now in its fifth edition, focuses on further strengthening a contemporary culture that is centred around ownership, openness, inclusion, collaboration, and meritocracy. Given the competitive job environment, we have further strengthened our talent retention strategy through various initiatives to retain our top best performing employees. Our multi-pronged talent management strategy focuses on hiring young talent, creating structured training and development initiatives, promoting gender diversity, and building technical and specialist capability. Our human rights policy safeguards our employees and contractual workmen against harassment and discrimination. We have made focused efforts to enhance employee productivity through various tailored programmes focusing on their wellbeing. By investing in people and culture we continue to inspire our workforce to go above and beyond and deliver consistent superior performance in the most challenging times.

Details of our initiatives and performance are provided in the 'Our Capitals' section of this report.

9. Internal Controls & their Adequacy

A strong culture of internal controls is pervasive throughout the Group. Regular internal audits at all locations are undertaken to ensure that the highest standards of internal control are maintained. The effectiveness of a business' internal control environment is a component of senior management performance appraisals. The principal aim of the internal control system is the management of business risks with a view to enhance shareholder value and safeguard the Group's assets. It provides reasonable assurance on the internal control environment and against material misstatement or loss. The Company has in place a robust mechanism to deal with Internal audit that involves having a dedicated Assurance & Control function having personnel specialised in the field of the subject and having two internal auditors duly appointed by the Audit Committee and Board., viz. M/s. Ernst & Young for the Aluminium Business and M/s. Suresh Surana & Associates for the Copper business. The Audit Committee discusses audit plans, findings and observations made by the internal auditors at its meetings. The findings made by the internal auditors are reviewed and suggestions implemented.

Cautionary Statement

Statements in this "Management Discussion and Analysis" describing the Company's objectives, projections, estimates, expectations or predictions may be "forward looking statements" within the meaning of applicable securities laws and regulations. Actual results could differ materially from those expressed or implied. Important factors that could make a difference to the Company's operations include global and Indian demand supply conditions, finished goods prices, feedstock availability and prices, cyclical demand and pricing in the Company's principal markets, changes in the government regulations, tax regimes, economic developments within India and the countries within which the Company conducts business and other factors such as litigation and labour negotiations. The Company assumes no responsibility to publicly amend, modify or revise any forward looking statements, on the basis of any subsequent development, information events or otherwise.