# Management Discussion and Analysis

## Economic overview

### Global Economy[1]

The Calender Year 2023 observed the world economy grappling with macroeconomic challenges. Despite facing headwinds, such as persistent geopolitical turmoil, fluctuating commodity prices and elevated inflationary pressures across both advanced and emerging markets, the global economy demonstrated resilience and grew at 3.2% rate.

With central banks of the major economies raising interest rates to rein in inflation, most regions observed quicker-than-anticipated decline in inflation. This has not only ensured gradual economic expansion, but also bolstered employment opportunities across the United States, Europe and other emerging markets. Several emerging markets such as India, Vietnam and Mexico also demonstrated robust growth trajectories, coupled with increasing capital inflows.

However, sustained geopolitical unrest continue to disrupt global supply chains and trade dynamics. Furthermore, China's economic performance remained sluggish throughout CY 2023, a trend which is expected to persist into CY 2024 as well. As China possesses substantial manufacturing capacity and extensive supply networks, its growth is expected to weigh on the global economy.

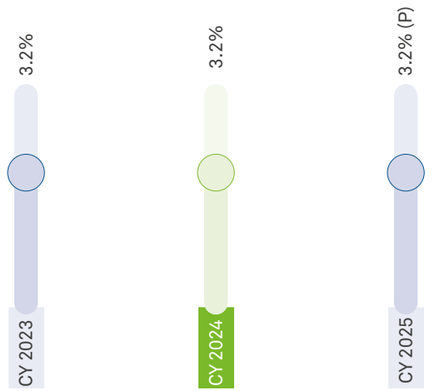
### Global Economy Outlook

With central banks implementing more accommodating monetary policies and inflationary pressures reducing in most regions, the outlook for global economy holds cautious optimism. Projections indicate that the GDP growth rate will remain steady at 3.2% in CY 2024 and CY 2025. Despite ongoing geopolitical tensions in Europe and West Asia, there is an anticipated gradual rebound and stabilization of the global economy. Consistent governmental initiatives and remarkable resilience demonstrated by economies worldwide are expected to become instrumental in shaping a sustainable and inclusive growth trajectory in the years ahead.


[1]https://www.imf.org/en/Publications/WEO/Issues/2024/04/16/world-economic-outlook-april-2024



### Global GDP growth rate[2]




### Indian Economy[3]

Despite navigating various headwinds, the Indian economy maintained its momentum as one of the world's fastest-growing major economies in FY 2024. A robust macroeconomic framework, increasing domestic demand, and prudent monetary policies implemented by the Reserve Bank of India (RBI), facilitated the growth of India's real GDP by 8.2%. Furthermore, headline Consumer Price Index (CPI) inflation, stood at 5.1% on a year-over-year (YoY) basis in February 2024.

In March 2024, merchandise exports experienced a seasonal upsurge, coinciding with a peak in industrial production. With enhanced capacity utilization, the manufacturing sector emerged as a key driver of industrial growth, registering a steady 11.6% increase throughout FY 2024.

While inflation rates have been declining and credit demand steadily increased, an atmosphere of economic optimism prevails across the nation. Furthermore, efforts to streamline supply chains and increased government expenditure cushioned the country from significant economic disruptions. Looking forward, with India establishing itself as a viable alternative to China, it is anticipated to propel the country's growth to become the world's third-largest economy by FY 2027.

### Indian Economy Outlook

India is expected to maintain its growth trajectory in the forthcoming years, primarily driven by strong macroeconomic fundamentals, including political stability, increased government emphasis on public capital expenditure, a gradual increase in private capital expenditure and rising credit demand. The robust banking and financial services sector are expected to bolster nation's growth. With India emerging as a preferred manufacturing hub, the nation's expanding export opportunities coupled with rising domestic demand, are expected to facilitate India to surpass the growth of the other economies in the foreseeable future.

### India GDP growth rate[4]


## Industry overview

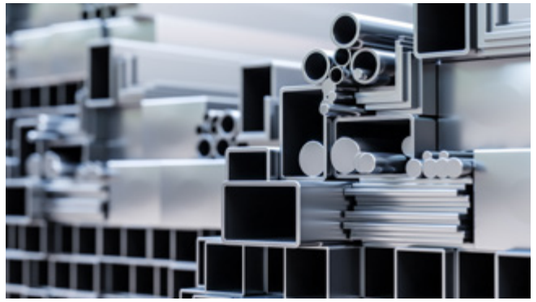
### ALUMINIUM

#### Global Scenario

Aluminium is the second largest metal market in the world, just behind iron and steel. Demonstrating a robust growth of 2.23%, the global aluminium industry reached approximately 70,581 thousand metric tonnes in CY 2023.

[2]https://www.imf.org/en/Publications/WEO/Issues/2024/04/16/world-economic-outlook-april-2024
[3]https://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/0RBIBULLETINAPRIL20244D39628B0A50466DA73AAE81CC5B42E1.PDF
[4]https://pib.gov.in/PressReleseDetailm.aspx?PRID=2022323

The significant growth of the market can be attributed to the critical role of aluminium across various sectors. Furthermore, the growth also highlights the industry's resilience and adaptability amidst fluctuating market demands and geopolitical challenges.[5]

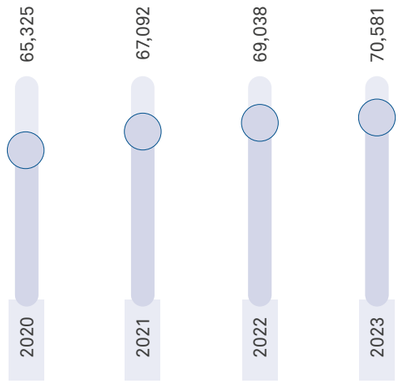


Aluminium's extensive application can be observed across diverse industries, including automotive, construction, packaging and electronics as well as emerging sectors such as electric vehicles and solar energy. Notably, the automotive industry has significantly increased the demand for aluminium as the industry is observing a paradigm shift towards lightweight vehicles for better fuel efficiency and reduced emissions. Similarly, the construction industry's ongoing quest for sustainable and durable materials has further propelled the consumption of aluminium. It is expected that with the rising demand for aluminium across different industries, global aluminium consumption will grow at 5.65% CAGR between years 2024 and 2032.[6]

Key regions such as China, Europe and North America remain at the forefront of both production and consumption. China alone accounts for 41,666 thousand metric tonnes of aluminium of the global output. Owing to rapid industrialization and urbanisation, the Asia-Pacific region, led by India, has emerged as a significant contributor to global aluminium demand. On the other hand, Europe and North America, with their advanced automotive and construction sectors, also contribute significantly to the global demand. Looking forward, the increasing focus on recycling and sustainable practices is expected to bolster the growth of the aluminium market. Furthermore, significant investments in recycling and low-carbon aluminium production is facilitating the global transition to a more sustainable and efficient manufacturing paradigm.

### Global primary aluminium production[7]

**Global production (Thousand metric tonnes)**




### Indian Scenario

The Indian aluminium industry has witnessed remarkable growth in the recent years. The country has fortified its position as a global powerhouse in the sector owing to rapid industrial expansion and increased infrastructural projects.

> India is the second largest aluminium producer and third biggest consumer in the world, with demand anticipated to increase two-fold in the coming decade.[8]

As of FY 2024, India's primary aluminium production reached an impressive 41.59 Lakhs metric tons, marking 2.1% increase from the previous year.[9] This robust performance reflects the industry's resilience and its pivotal role in driving economic growth across various sectors. With substantial reserves of bauxite and other minerals, India is poised to become a key player in the global aluminium market. Various governmental initiatives such as the National Mineral Policy, 2019 and the Mines and Minerals (Development and Regulation) Amendment Act, 2021 are bolstering production and attracting investment.

[5] https://international-aluminium.org/statistics/primary-aluminium-production/

[6] https://www.expertmarketresearch.com/reports/aluminium-market

[7] https://international-aluminium.org/statistics/primary-aluminium-production/

[8] https://pib.gov.in/PressReleaseIframePage.aspx?PRID=2019556#:~:text=Significant%20Growth%20in%20Production%20of%20Key%20Minerals%20and%20Aluminium%20Metal&text=The%20index%20of%20mineral%20production,%25%20over%20FY%202022%2D23.

[9] https://pib.gov.in/PressReleasePage.aspx?PRID=2019556#:~:text=Primary%20aluminium%20production%20increased%20from,BY/ST



The extensive application of aluminium across various industries is one of the primary growth drivers of the Indian aluminium industry. Furthermore, government's relentless focus on infrastructure development and initiatives such as the Production-Linked Incentive (PLI) scheme, are keeping the outlook of the industry promising. Owing to aluminium's versatile use and lightweight, corrosion-resistant and recyclable properties, the industry is expected to observe a surge in sales in the coming years. As the Indian economy continues to grow, the aluminium industry is poised to play a pivotal role in meeting the increasing demand for sustainable and efficient materials.

## MINING

The mining industry has grown significantly over the years, driven by rising global demand for critical minerals and metals essential for various industries, including renewable energy, electric vehicles and infrastructure development. The recovery of production capacities in China and Europe, with improved power conditions and lower energy costs have facilitated smelters to reopen. Additionally, with technological advancements, increased investment in sustainable mining practices and strategic diversification into critical minerals such as lithium, cobalt and nickel, the industry is poised for expansion in the forthcoming years.

India plays a crucial role in the global mining sector, contributing significantly to the production of various minerals, including bauxite, iron ore and coal. India's monthly mineral production, including both metallic and non-metallic minerals, increased from 7.8% in December 2023 to 9.5% in February 2024. The Year-over-Year (YoY) increase in the production of all MCDR minerals, from 26.4% in December 2023 to 31.0% in both January and February 2024, reflects the country's robust mining infrastructure and abundant mineral reserves.[10]

Increasing demand for metals in the construction, automotive, and electronics sectors, coupled with effective governmental initiatives are bolstering domestic production and reducing reliance on imports. Furthermore, decarbonization and the adoption of electric vehicles are increasing the demand for aluminium and other critical minerals, positioning the mining industry for continued growth and innovation.

## Overview of related industries

### Automobile

The automobile sector contributes to ~7.1% of India's GDP.[11] With the increasing production of lightweight and fuel-efficient vehicles, aluminium plays a crucial role in the transition, enabling automakers to reduce vehicle weight without compromising safety or performance. The India aluminium wire rod market size is estimated to reach $4.6 billion by 2032, exhibiting a 3.6% CAGR between years 2023 and 2032.[12]

Both wire rods and primary foundry alloy are derived from aluminium and are extensively used in the manufacturing of various automobile components. As a result, the demand for aluminium is expected to surge in the upcoming years. Aluminium is anticipated to play a crucial role in the industry's pursuit of sustainability and efficiency.

### Domestic automobile production[13]

(In Numbers)

| Category | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 |
|---|---|---|---|---|---|---|
| Passenger Vehicles | 40,20,267 | 40,28,471 | 34,24,564 | 30,62,280 | 36,50,698 | 45,78,639 |
| Commercial Vehicles | 8,95,448 | 11,12,405 | 7,56,725 | 6,24,939 | 8,05,527 | 10,35,626 |
| Three Wheelers | 10,22,181 | 12,68,833 | 11,32,982 | 6,14,613 | 7,58,669 | 8,55,696 |
| Two Wheelers | 2,31,54,838 | 2,44,99,777 | 2,10,32,927 | 1,83,49,941 | 1,78,21,111 | 1,94,59,009 |
| Quadricycles | 1,713 | 5,388 | 6,095 | 3,836 | 4,061 | 2,897 |
| **Grand Total** | **2,90,94,447** | **3,09,14,874** | **2,63,53,293** | **2,26,55,609** | **2,30,40,066** | **2,59,31,867** |

[10] https://mines.gov.in/admin/storage/ckeditor/_February_2024_1712227893.pdf

[11] https://www.investindia.gov.in/sector/automobile

[12] https://www.alliedmarketresearch.com/india-aluminium-wire-rod-market-A289233

[13] https://www.siam.in/statistics.aspx?mpgid=8&pgidtrail=15

### Building construction

The Indian construction industry encompasses both the real estate and urban development sectors. The industry is projected to reach $1.4 trillion by year 2025,[14] driven by the country's rapid urbanisation. Materials such as aluminium roofing sheets and hot rolled plates are extensively used in construction projects as they are exceptionally durable, lightweight and possess energy-efficient properties.

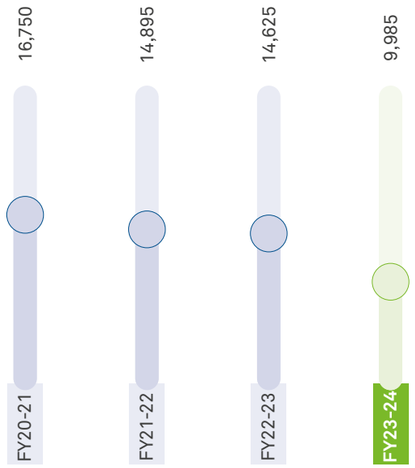
Aluminium roofing sheets offer superior resistance to corrosion, ensuring long-lasting performance and reduces frequent replacements. On the other hand, hot rolled aluminium plates are widely used in structural components, cladding, and panelling due to their high strength-to-weight ratio and robust resistance to environmental factors. These plates also play a crucial role in the construction of energy-efficient buildings, contributing to overall sustainability and cost-effectiveness.

### Power infrastructure

Owing to increasing demand for reliable and efficient electricity transmission, the power infrastructure industry is undergoing significant transformations in the recent years. Furthermore, this has surged the sales of aluminium products, particularly alloy wire rods and busbars.

The Government has set ambitious targets of investing ₹2.8 trillion ($34.2 billion) by year 2030 to strengthen the infrastructure and facilitate the evacuation of renewable energy.[15]

**Addition in transmission line (ckm)[16]**




Consequently, this is expected to bolster the sales of the aluminium alloy wire rods and busbars as they ensure efficient and secure transmission of power.

### Food packaging

With the paradigm shift to incorporate sustainable and recyclable packaging solutions to promote environmental stewardship, the global market for food packaging is projected to reach $ 714.16 billion by year 2030.[17] As traditional materials such as plastic and paper are being scrutinised for their ecological footprint, there is an increased demand for materials that offer better recyclability and lower energy consumption.

Aluminium, due to its inherent properties, plays a crucial role in meeting the food packaging industry's sustainability goals. Aluminium products, such as cold rolled coils and strips, are essential for creating various packaging forms, including foils, containers and laminates. These products are lightweight and provide protection against moisture, light and oxygen, preserving food quality and extending shelf life. With the industry increasingly focusing on eco-friendly practices, aluminium's role is expected to surge in the coming years.

## Company overview

Established in 1965, Bharat Aluminium Company Limited (BALCO) is India's first public sector undertaking in the aluminium industry. The Company played a pivotal role in India's industrial growth by introducing aluminium as an alternative to other metals such as steel in construction and copper in power transmission. The Government of India disinvested 51% of its shareholding in BALCO to Vedanta Limited (erstwhile Sterlite Industries Limited) in the year 2001. Since then BALCO has steadily forged its path in mining, smelting, fabricating and selling aluminium products both in India and internationally.

BALCO's extensive capabilities enable it to cater to the dynamic market needs. For instance, the Company's mines in Kawardha and Mainpat supply high-grade bauxite. Additionally, BALCO's major operations, located in Korba, Chhattisgarh, have an overall smelter capacity of 575,000 tonnes and produce high-quality ingots, wire rods and rolled products. Furthermore, the Company is supported by captive power plants with a total capacity of 1140 MW to ensure uninterrupted power supply.

[14] https://www.investindia.gov.in/sector/construction#:~:text=The%20construction%20Industry%20in%20India%20is%20expected%20to%20reach%20%241.4,sectors%20with%20linkages%20across%20sectors.

[15] https://www2.deloitte.com/us/en/insights/industry/renewable-energy/renewable-energy-industry-outlook.html

[16] https://powermin.gov.in/en/content/overview-0#:~:text=Country's%20Transmission%20Network%20consist%20of,1%2C16%2C540%20MW%20since%202014.

[17] https://www.fortunebusinessinsights.com/industry-reports/food-packaging-market-101941



## Business portfolio

### Ingots

BALCO produces high-quality primary aluminium ingots, essential for various industrial applications, including automotive, construction and electrical sectors. In FY24, BALCO achieved a record production of 254.6 KT of EC ingots, demonstrating the Company's capability to meet increasing market demands.

### Wire Rods

Using continuous casting and rolling process, the Company manufactured wire rods that are primarily used in electrical conductors and cables. In FY24, the company achieved its highest-ever wire rod production of 183 KT for various grades including Electrical Conductor (EC) grade, Commercial Grade (CG) and Alloy Grade.

### Rolled Products

BALCO's rolled products include hot rolled coils, hot rolled plates, cold rolled coils and sheets, utilized in various sectors such as automobiles, insulation, bus bars, power projects and packaging. In FY24, the Company achieved its highest ever rolled product production of 34.6 KT highlighting the Company's efficient production capabilities to meet the increasing demand.

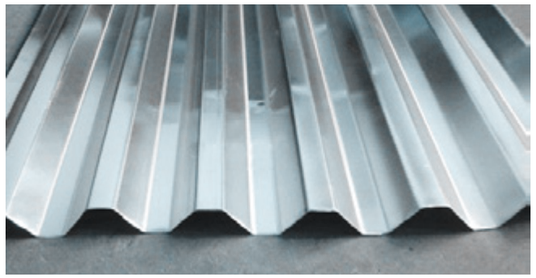
### Primary Foundry Alloy

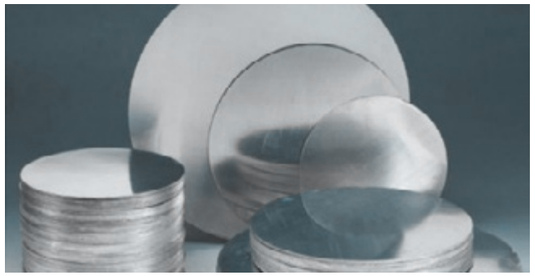
Primary foundry alloys, renowned for their superior mechanical properties and consistency, are used in the automotive and aerospace industries. In FY24, BALCO achieved its highest-ever annual production of primary foundry alloys at 71.5 KT.

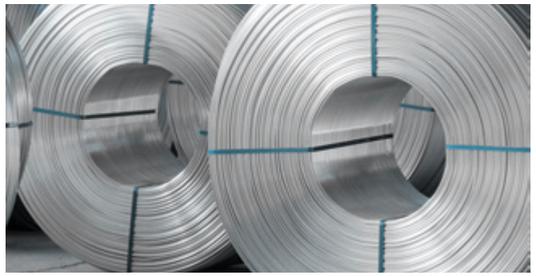
## Company outlook

Looking forward, Bharat Aluminium Company Limited (BALCO) is poised to embark on a strategic roadmap to achieve its growth objectives across short, medium and long-term horizons. The Company's future strategy incorporates sustainable and inclusive growth, underpinned by a commitment to operational excellence, environmental stewardship and social responsibility.

The Company plans to enhance its smelting capacity from 0.58 MTPA to 1.1 MTPA, focusing on the growth project that includes a 435 KTPA smelter with a 180 KTPA Rolled Products facility. This expansion is expected to fortify the Company's position within the '1 MnT club', ensuring the Company remains at the forefront of the aluminium globally. Additionally, BALCO is set to strengthen its green initiatives, with plans to secure 218 MW of renewable energy power by FY25 and achieve a target of 500 MW by FY30.







## SWOT ANALYSIS

### Strength

- BALCO is a fully integrated aluminium producer, involved in mining, smelting and fabricating. This ensures control over the entire production process and improves cost efficiency.
- A diversified product portfolio including wire rods, ingots, primary foundry alloy and rolling products.
- The Company has adopted cutting-edge technologies such as AI, IoT and digital twins to enhance operational efficiency, reduce costs and improve product quality.
- With initiatives such as using biodiesel, adopting renewable energy and reducing significant Greenhouse Gas emissions the Company adheres to its sustainability goals.
- BALCO has showcased robust financial performance with significant revenue and profit growth, driven by effective cost management and increased production of value-added products.

### Weaknesses

- The Company is vulnerable to complex and stringent environmental and regulatory requirements, that have the potential to impact operations and increase compliance costs.
- Volatility in energy prices can impact the Company's energy-intensive operations.

### Opportunities

- Increasing demand for aluminium in automotive, aerospace, construction and renewable energy sectors provides significant growth opportunities for BALCO.
- Supportive government policies and initiatives such as 'Make in India' and infrastructure development projects can bolster the domestic demand for aluminium products.
- Advanced manufacturing capabilities to explore international markets can diversify revenue streams and reduce dependence on the domestic market.

### Threats

- Intense competition from both local and global aluminium producers has the potential to affect the Company's market share and pricing factor.
- Disruptions in the availability of key raw materials such as bauxite and coal can hinder production continuity and instead increase overall costs.
- Fluctuations in global economic conditions can affect demand for aluminium and impact the Company's financial performance.

## Financial performance

### Financial Results

(₹ in Crores)

| Particulars | FY 2023-24 | FY 2022-23 |
|---|---|---|
| Revenue from operations | 13,140.73 | 13,059.36 |
| Other income | 274.60 | 248.62 |
| **Total income** | **13,415.33** | **13,307.98** |
| **EBITDA** | **2,670** | **731** |
| **Profit before tax** | **1,862.06** | **72.94** |
| **Profit after tax** | **1,384.93** | **42.43** |
| Cash flow from operations | 1,603.39 | 1,219.05 |

### Key financial ratios

| Particulars | FY 2023-24 | FY 2022-23 |
|---|---|---|
| EBITDA margin (%) | 20.31 | 5.6 |
| Debt-equity ratio | 0.22 | 0.15 |
| Return on equity (%) | 16.42 | 0.55 |
| Return on capital employed (%) | 17.04 | 2.00 |
| Book value per share (₹) | 413.38 | 351.15 |
| Earnings per share (₹) | 62.77 | 1.92 |
| Interest service coverage ratio | 5.27 | 1.02 |
| Current ratio | 0.56 | 0.56 |
| Net profit margin (%) | 10.54 | 0.33 |

## Risk Management

The Company's comprehensive risk management framework is integral to its operational strategies, ensuring effective identification, evaluation and mitigation of potential risks. The Risk Management Committee periodically review the framework to ensure it aligns with the Company's mission and vision.

BALCO's risk management encompasses various domains, including environmental, raw material, manufacturing, financial, technology, safety and regulatory risks. It takes into consideration the nature, scale of the risks and complexity of the business.

For a detailed note on the risk management of the Company refer to page number 30

## Human Resources

BALCO values its human resources, by empowering and engaging them in operations based on their potential, to drive business growth. The Company's human resource strategy focuses on attracting, developing and retaining a highly skilled and motivated workforce. The Company promotes a supportive and inclusive work environment that encourages professional growth and personal well-being. It also offers competitive compensation packages, performance-based incentives and robust training and development programmes.

To ensure diversity and inclusion, BALCO successfully onboarded 17 transgender individuals and 4 people with disabilities in FY24. The Company undertakes various initiatives to cultivate a positive work culture. BALCO conducts regular training sessions to enhance technical, functional and behavioural competencies, ensuring the workforce is equipped with the latest industry knowledge and skills. Furthermore, leadership development programs, such as the Vedanta Leadership Development Program (VLDP) and Project Horizon, are designed to identify and nurture high-potential employees, preparing them for future leadership roles.

**7087**
Total workforce

For a detailed note on human resource of the Company refer to page number 68

## Internal Control Systems and their adequacy

The Company has a strong internal audit system in place, which is regularly monitored and updated to safeguard assets, comply with regulations and promptly address any issues. The audit committee diligently reviews internal audit reports, takes corrective action as required and maintains open communication with both statutory and internal auditors to ensure the effectiveness of internal control systems. This robust internal audit framework ensures that the Company operates with integrity, transparency and accountability while mitigating risks and safeguarding the interests of stakeholders.