

**Leading to Progress. Driven by Purpose.**  
Through Sustainable Mining Solutions.





## About Aditya Birla Group

Aditya Birla Group (ABG), a global conglomerate with a turnover of \$63 Billion, is in the league of Fortune 500 companies. Headquartered in India, the Group is present across 14 industry sectors. It has achieved global and national market leadership in several sectors like metals, pulp and fibre, chemicals, textiles, carbon black, cement, financial services, and fashion retail.

## About Hindalco

Hindalco Industries Limited is the metals flagship company of the Aditya Birla Group and a global leader in Aluminium, Copper, and Specialty Alumina. It is India's largest fully integrated aluminium manufacturer and one of Asia's top primary aluminium producers. Its subsidiary, Novelis Inc., is the world's largest aluminium rolling company and recycler.

Hindalco also operates a major copper smelter and fertiliser plant, and is the third-largest copper cathode rod manufacturer outside China.

Our specialty alumina (Chemicals) business is at the forefront of the industry in India and is recognised as a prominent global player in specialty alumina and hydrates.



## Our Commitment to Sustainability

### Carbon Footprint

Currently, 80% of waste is re-used, including 2.3 M tons of red mud and over 100% of fly ash.



### Environmental Effects

Hindalco aims to reduce net water intensity by 30% by FY'25 compared to 2019, saving over 18 MCM of water annually.



### Recycling of Waste

During the fiscal year 2022, Hindalco processed and recycled 2.2 MM tons of aluminium scrap.



### Impact on Biodiversity

Hindalco contributes to environmental conservation with 190 HA of greenbelt and 450,000 trees planted each year.



## HINDALCO INDUSTRIES

### TOP 1%

S&P Global (DJSI) ESG Score 2024

**87** / 100

as of February 7, 2024.

Position and Score are industry specific and reflect exclusion screening criteria. Learn more at [spglobal.com/esg/yearbook](https://spglobal.com/esg/yearbook)

### ESG Targets

- Zero net carbon & net loss of biodiversity by 2050.
- 100% of electricity requirement from renewable energy by 2050.
- Zero waste to landfill by 2050.
- Zero harm to occupational health & safety.

At Hindalco, our unwavering commitment to enriching lives is intricately woven into our sustainability efforts. We firmly believe in creating a greener future, and to achieve this, we are committed to attaining our environmental goals. Our ESG commitment is deeply ingrained in our strategic priorities, which drive positive change and make a lasting impact on the planet. Awarded "Most Sustainable Aluminium Company" in Dow Jones sustainable indices five years in a row from 2020-2024.



# Our Innovation Capabilities

Innovation is not just our biggest tool; it is the foundation of our journey to unveil new products, combinations, and designs to cater to an array of opportunities.

Our innovation capabilities are one part of the equation, with external associations and industry learnings completing the loop. We invest in partnerships, specialised innovation centres, and state-of-the-art facilities to bolster our innovation capabilities.

Our innovation centres at Belagavi and Taloja in India are recognised by the Department of Scientific and Industrial Research (DSIR). This relentless pursuit of ours is substantiated through new patents, well-equipped innovation labs and our increased spending on Research and Development (R&D).

## Key Highlights



**Patents Filed**



**Patents Granted**



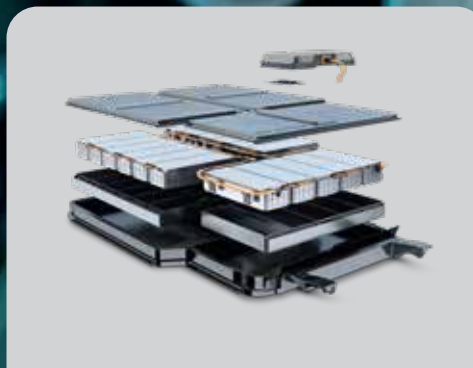
**New Products  
Developed**



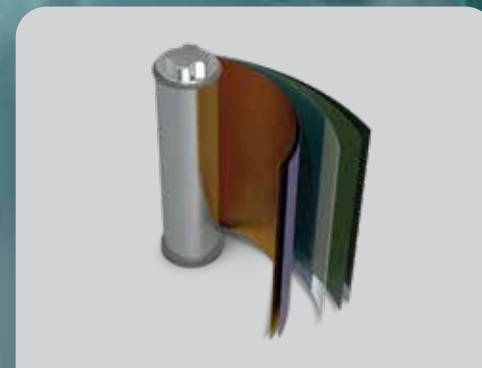
India's First All-Aluminium Freight Rail Rakes



Cargo Solutions for Commercial Vehicles

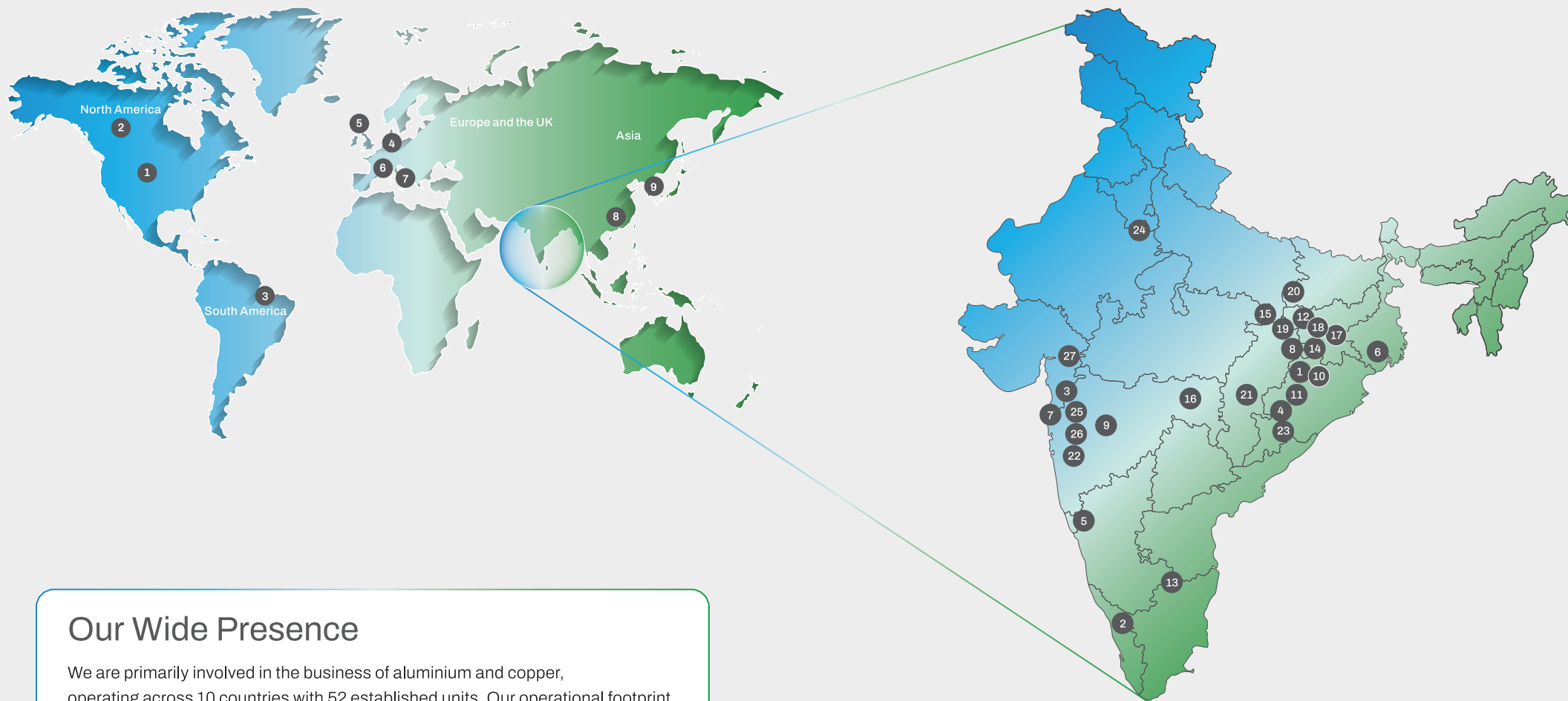


Battery Enclosure for Personal Mobility EVs



Aluminium Foil for Li-ion Battery Current Collectors





## Our Wide Presence

We are primarily involved in the business of aluminium and copper, operating across 10 countries with 52 established units. Our operational footprint across India has been indicated on the map.

### Novelis' Global Operations

#### North America and South America

Novelis Inc.	
1. US	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
2. Canada	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
3. Brazil	■ ■ ■ ■ ■ ■ ■ ■ ■ ■

#### Europe and the UK

4. Germany	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
5. UK	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
6. Switzerland	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
7. Italy	■ ■ ■ ■ ■ ■ ■ ■ ■ ■

#### Asia

8. China	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
9. South Korea	■ ■ ■ ■ ■ ■ ■ ■ ■ ■

### Domestic Operations

1. Aditya Aluminium	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	8. Gare Palma (IV/IV)	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	15. Mahan	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	22. Taloja	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
2. Alupuram	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	9. HAAL	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	16. Mouda	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	23. Utkal Alumina	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
3. Asoj	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	10. Hirakud FRP	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	17. Muri	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	24. Bhiwadi	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
4. Baphlimali	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	11. Hirakud S&P	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	18. Netarhat (4 mine sites)	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	25. Silvassa	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
5. Belagavi	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	12. Kathautia	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	19. Renukoot	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	26. Pune	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
6. Belur works	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	13. Kuppam	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	20. Renusagar	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	27. Waghodia, Vadodara	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
7. Dahej	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	14. Lohardaga (4 mine sites)	■ ■ ■ ■ ■ ■ ■ ■ ■ ■	21. Samri	■ ■ ■ ■ ■ ■ ■ ■ ■ ■		

■ CPP ■ Refinery ■ Smelter ■ Extrusion/FRP/Foil ■ Bauxite ■ Coal ■ Copper/Tube/Alloys ■ Personal Mobility Solutions

# One Hindalco Many Solutions

At Hindalco, we offer materials, products and solutions engineered to suit the needs of various applications across sectors.



## Our 5 Range Brands Offers Unique Benefits Across Sectors:



Products/solutions that are circular in nature and hold recreation or recycling at their core.

Ingots from Recycled Aluminium, Aluminium Circles for Cookware, Aluminium Foil for Food Packaging, Copper Rods.



Products/solutions that are zero or low carbon, use alternate sources of energy, and are ultimately greener, smarter, and better.

Primary Ingots made using Renewable Energy, Ultra light Gauge Aluminium Foil for Packaging.



Products/solutions which promise use of superior technology to deliver precision and meeting exacting standards for high-tech applications.

Precision Extrusions for Transport, Aerospace, Defence and Electricals & Electronics, AluAlu foil for Pharmaceutical Packaging, Aluminium Rolled Stock for Closure, Clad, Litho, Detonators, Fin, Foil and Battery Foil, Copper Oxygen-Free Rods, Copper-Magnesium & Copper-Silver Rods for Railway Electrification, Copper Inner Groove Tubes for Air Conditioning and Refrigeration, Speciality Alumina Solutions for Refractory, Ceramics, Polishing, and Battery applications, EV Battery Frame Solutions, E-Cycle Components, Battery Foil Solutions and Crash Components.



Products/solutions that offer the promise of durability and toughness.

Roofing and Façade Solutions for B&C, Bus Body Solutions.



Product/ solutions that offer safety as their core value proposition.

Flame Retardant Solutions for Electrical Transmission, Building and Construction, Automotive, Railways and many more.

Solutions for Railways

Solutions for Packaging

Solutions for Aviation

Solutions for Building and Infrastructure

Solutions for Electrification

Solutions for Renewable Energy

Solutions for Aerospace

Solutions for Consumer Durables

Solutions for Circularity

Solutions for Safety

Solutions for Defence



## Introduction

At Hindalco Ltd., we see mining as a way to drive sustainability, aiding the development of the nation. Our captive bauxite and coal mines secure our position as a leading fully integrated aluminium player in the world. Additionally, in a mined-out area in Bagru mines, we have developed a bio-park and are currently working on a project for sustainable disposal of red mud at Baphlimali mines. To guide our efforts in sustainable and responsible mining, we have developed the Sustainable Mining Charter (SMC), which outlines seven focus areas.





An aerial photograph of a coal mine. A yellow excavator is positioned on the right side, near a conveyor belt system that runs diagonally across the frame. The ground is covered in dark coal and some lighter-colored soil. The excavator's arm is extended towards the conveyor belt. The overall scene depicts active coal mining operations.

## Reimagining Energy Solutions with Captive Coal Mines

While the collective focus is on decarbonisation, coal remains to be the primary source of energy. Therefore, in 2015, we successfully acquired four coal mines through auctions held by the Ministry of Coal, Government of India. These include the Gare Palma IV/4 in Chhattisgarh and Kathautia in Jharkhand. Later in 2021, we also acquired the Chakla coal block in Jharkhand.

Thereafter in 2023, we acquired the Meenakshi West coal mines, and soon after, in 2024, we finally got the Meenakshi coal block, which is located in Odisha, through a commercial coal block e-auction.





## Gare Palma Mines

The Gare Palma IV/4 Coal Mine, located in the Mand-Raigarh coalfield in the district of Raigarh, Chhattisgarh, was vested to Hindalco Industries Limited by the Ministry of Coal through a vesting order dated March 23, 2015. The total leased area of the mine is 884.84 hectares. GP IV/4 is an ISO 9001 (Quality Management System), ISO 14001 (Environmental Management System), ISO 45001 (Occupational Health & Safety Management System), and ISO 50001 (Energy Management System) certified coal mine.

In March 2015, GP IV/4 was an operating coal mine with an extractable reserve of 14.712 MT. The annual production capacity of the mine is 1 MTPA. As of January 2025, after extraction, the remaining available reserves stand at 9.26 MT with an average grade of G10.

Mining operations at GP IV/4 use drilling & blasting technology, combined with a shovel-dumper fleet and a 600 TPH In-Pit Crushing & Conveying (IPCC) system, which is powered by solar energy for efficient material handling. With emphasis on digitisation, the mine operations are equipped with a Fleet Management System (FMS) to enable monitoring and optimisation of production parameters in real time.

## Certifications of the Mine

- FIMI TATA Steel Sustainable Mining Award (2023-2024).
- Consecutive Gold Awards in NAMC Audit (2022-2023, 2023-2024, and 2024-2025).
- Annual Safety Fortnight Awards: Overall Winner. Securing 3rd place in VTC, and earned 2nd place in the Mine Working category (2023).
- 4-Star rating by CCO (2022-2023).
- CII SHE State Level Winner (2023 and 2024).
- Eastern Region Appreciation Award (2024).
- MD Award for Implementing the Respiratory Protection Program (one of the few mines to be implemented with this initiative).



## Chakla Coal Project

Chakla is a greenfield coal mine project located in North Karanpura coalfield, in the district of Latehar in Jharkhand. It was vested to Hindalco Industries Limited by the Ministry of Coal through a vesting order dated March 3, 2021. The mine has an extractable reserve of 71.88 MT with a peak rated capacity of 5.3 MTPA as per the approved plan. The total block area of the coal mine is 863 Ha, with mainly six coal seams developed within the block, with an average grade of G11. While the project is under various stages of approval, the revised mine plan and mine closure plan have been approved.



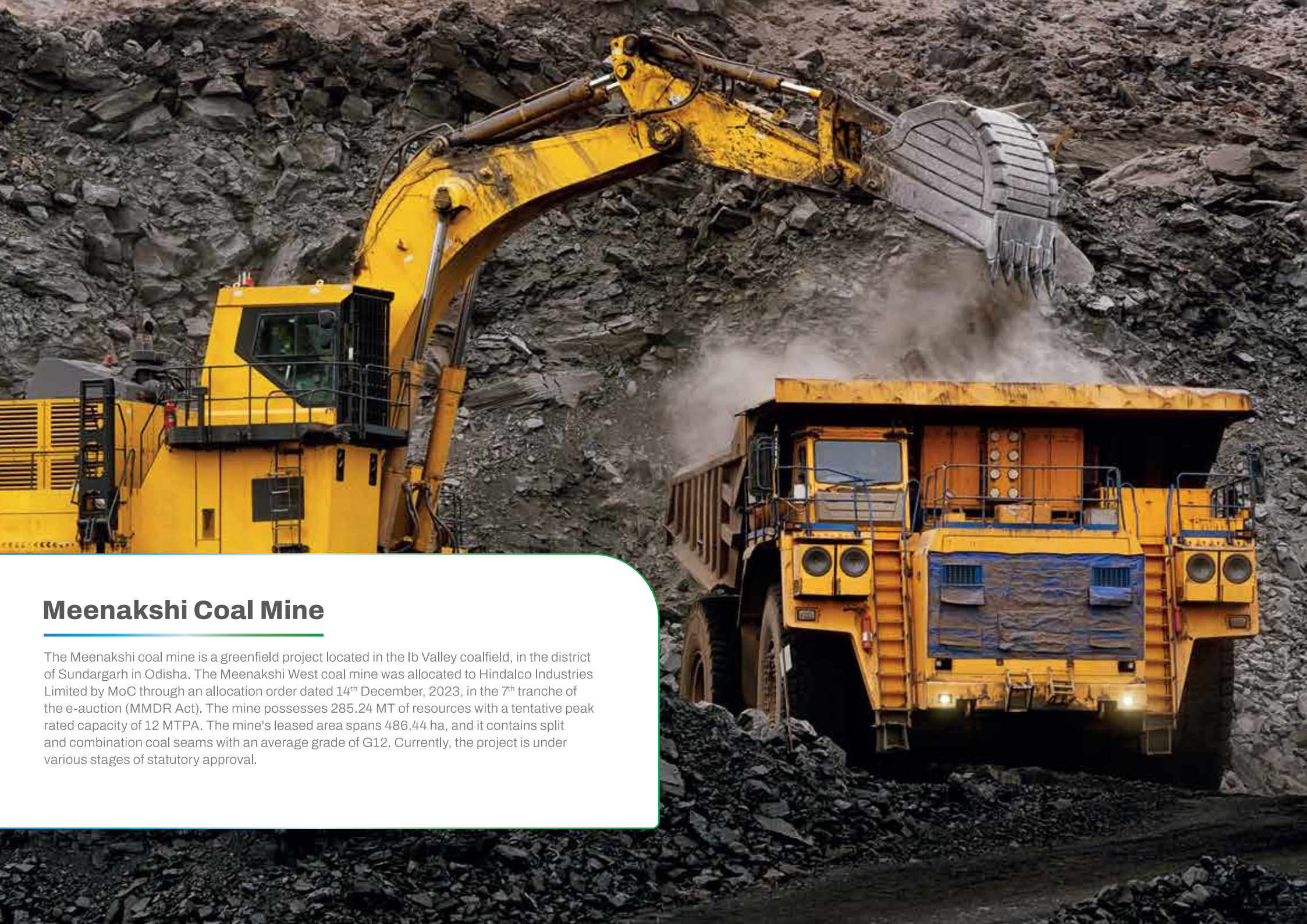




## Meenakshi West Coal Mines

The Meenakshi West coal mine is a greenfield project, located in the Ib Valley coalfield, in the district of Sundargarh in Odisha. The Meenakshi West coal mine was allocated to Hindalco Industries Limited by MoC through an allocation order dated 14<sup>th</sup> December, 2023, in the 7<sup>th</sup> tranche of the e-auction (MMDR Act). The coal mine has undergone partial exploration and possesses 1188,942 MT of geological resources. The mine's leased area spans 768.50 Ha, and it contains 31 split and combination coal seams with an average grade of G12. Currently, the project is under various stages of statutory approval.





## Meenakshi Coal Mine

The Meenakshi coal mine is a greenfield project located in the Ib Valley coalfield, in the district of Sundargarh in Odisha. The Meenakshi West coal mine was allocated to Hindalco Industries Limited by MoC through an allocation order dated 14<sup>th</sup> December, 2023, in the 7<sup>th</sup> tranche of the e-auction (MMDR Act). The mine possesses 285.24 MT of resources with a tentative peak rated capacity of 12 MTPA. The mine's leased area spans 486.44 ha, and it contains split and combination coal seams with an average grade of G12. Currently, the project is under various stages of statutory approval.





## Bauxite Mines: Facilitating Backward Integration

Our fully integrated value chain begins at the bauxite mines. We operate a total of 21 bauxite mines across the states of Jharkhand, Odisha, Chhattisgarh, and Maharashtra. These mines have a total EC capacity of approximately 12 MT. We have also adopted sustainable transport facilities at the bauxite mines, like the Bagru ropeway and the Long-Distance Conveyor (LDC) at Baphlimali mines in Odisha, to transport bauxite efficiently with minimal environmental impact. In addition, we also prioritise water conservation through the construction of bunds, gully plugs, rainwater harvesting ponds, contours, and terraces. Rainwater is harvested for mining operations to minimise consumption of groundwater. These operations have helped us collect more water than our total consumption while mining activities.





## Lohardaga Bauxite Mines

Lohardaga has a total of 16 bauxite mining leases, which are Amtipani, Amtipani Chirodih, Bagru (which includes Bagru, Bhusar, Hisri New, and Hisri Old), Bimarla, Gurdari, Kujam I, Kujam II, Pakhar 109.507, Pakhar 15.58, Pakhar 115, Shrengdag-A, Shrengdag-B, Jalim, and Sanai. These deposits have been identified as key bauxite resources to meet raw material requirements of the Hindalco Alumina Refineries at Muri, Jharkhand, and Renukoot, Uttar Pradesh.

Dedicated sidings, like the Lohardaga Siding, Richuguta Siding, and Tori Siding, are used to supply blended bauxite to the captive refineries in Muri and Renukoot.

At Bagru, eco-friendly modes of transportation are used, such as aerial ropeway, to transport ROM (Run-of-Mine) to the Lohardaga siding for dispatch to reduce carbon emissions. A 350 kW DC/270 kW AC system with a 390 kWh BESS has been installed for 100% usage of renewable energy and to power the ropeway and crusher, resulting in net zero carbon emissions. Moreover, the introduction of the Xcentric Ripper in mining operations and the adoption of the zero-blasting concept have significantly increased productivity and safety.

Additionally, a V.R. Dome has been introduced at Bagru for 3D training purposes for the mine employees. The training includes both safety protocols and videos related to specific operations.

## Certifications of the Mine

- Amtipani Mines: 4 star rating award by IBM and certified by CII.
- Amtipani Chirodih Mines: 1<sup>st</sup> prize in dust suppression.
- Bagru Mines: Overall winner in both the Annual Safety Week and MEMC Week celebrations. It secured the first prize for Excellence in Safety Systems by FICCI, and earned the International Safety Award by the British Safety Council, as well as a 5-star rating award by IBM.
- 4-star Mine Rating: By the Indian Bureau of Mines (2022-23).
- Kujam Bauxite Mines: FIMI Award - RIO TINTO, Health and Safety Award (2022-23).





## Samri Bauxite Mines

The Samri bauxite mine, operated by M/s Hindalco Industries Ltd., is a semi-mechanised mining facility situated in the Samri Tehsil of Balrampur district, Chhattisgarh. It encompasses a sprawling area of 3,742 Ha. The mine operates under three distinct leases: Samri, Tatijharia, and Kudag, along with 2 greenfield mines – 1200 Ha (Surbena-Khajri, Damchua). It is an opencast mine with an operational capacity of 9.6 LTPA of bauxite.

The mine is accredited with Environmental Management System – ISO 14001: 2015, OH & SMS – ISO 45001: 2018, Quality Management System – ISO 9001: 2015 and Social Accountability Policy – SA 8000: 2014. It is located at an elevation of 1140m from MSL with an annual mean rainfall of 1500mm. The Samri bauxite mines have been awarded with various awards over the years.

Some of the best practices implemented in the mines include the use of Xcentric rippers, simultaneous backfilling, operation of screening machines, the Samri Bio-Park project, rainwater harvesting ponds, the establishment of a green belt, and the creation of safety zones within the mine premises.

## Certifications of the Mine

- National Safety Award (NSA) by the Ministry of Labour & Employment, Govt. of India (2009-10, 2014-15).
- 5-Star Rating in implementation of Sustainable Development Framework by Indian Bureau of Mines (IBM), Govt. of India, Ministry of Mines (2021-22, 2022-23, 2023-24).
- Golden Bird National Award: Platinum Award - Sustainability by FAME INDIA & Golden Bird (2021-22).
- Won the 1<sup>st</sup> prize in overall performance category in the 5<sup>th</sup> MEMC Week under the aegis of IBM Raipur Region (2021-22).
- Won the 1<sup>st</sup> prize in overall performance in 7<sup>th</sup> MEMC week under the aegis of IBM Raipur (2023-24).
- Fame National Award 2023-24 in Diamond Award for the Outstanding Project on "Best Environmental Social Governance" by FAME India and Golden bird, (2023-24)
- Won the 1<sup>st</sup> prize in Waste Dump Management, Reclamation & Rehabilitation, Mineral Conservation in the 7<sup>th</sup> MEMC week under the aegis of IBM Raipur (2023-24).
- Won the gold medal in IGMC.





## Baphlimali Bauxite Mines

Strategically located in Doraguda in the Rayagada district, Utkal Alumina International Ltd. (UAIL), is a wholly owned subsidiary of Hindalco Industries Limited. Powered by a 90 MW co-generation thermal power plant, it has a production of 2.27 MTPA for the Alumina Refinery Project. It also has 7.0 MTPA of captive bauxite mines and a 5 MW solar power project. The deposit covers an area of 968 sq. km, occurring as a residual blanket-type deposit over the khondalite basements, on top of the Baphlimali plateau. The oval shaped plateau boundary roughly resembles the map of India with maximum dimensions of 6.3-3.2 km and about 150-200 m above the surrounding valleys.

The mine operates as a fully mechanised opencast facility, minimising manual intervention across all processes. To reduce manual labour, emulsion explosives are used for blasting and eliminating the need for storage and handling of explosives. A single fixed crusher plant with a capacity of 1425 TPH is employed, ensuring that there are no movable crushers inside the pit. Additionally, an advanced 18.5 km long, fully-covered belt conveyor system transports materials, effectively reducing the truck traffic and preventing dust generation. Moreover, electricity is supplied from a captive power plant through overhead cables running parallel to the conveyor.

## Certifications of the Mine

- International Safety Award from British Safety Council with Distinction (2024).
- Baphlimali received Winner Award for CII Safety Health Environment (Eastern Region) 2023-24.
- Received FIMIs Misrilal Jain Environment Award (2023-24) by Shri V.L. Kanta Rao, Secretary to the Govt of India, Ministry of Mines.
- 5-star award (2023-24) presented by honourable Union minister for coal and mines Mr. G. Kishan Reddy and honorable minister of state for coal and mines Mr. Satish Chandra Dubey.



# 7 PRINCIPLES OF MINING

To guide our efforts in sustainable and responsible mining, we have developed the Sustainable Mining Charter (SMC), which outlines seven focus areas.

The Sustainable Mining Charter provides a holistic framework to accelerate the shift from compliance focused operations to sustainability focused operations and become future ready to meet the rising demand of metals and minerals.



## SUSTAINABLE LAND USE

- Ensure growth of local environmental and social infrastructure through effective conservation, restoration, rehabilitation & resettlement and responsible mine closure practices.
- Minimise risk to natural resources, biodiversity, livelihood, socio-cultural and natural heritage.



## WATER USE

- Rethink and redesign mining activities to avoid and minimise impact on watershed.
- Conserve, restore and equitably share water resources with stakeholders to maintain positive water balance in the watershed.



## WASTE MANAGEMENT

- Manage waste responsibly and go beyond compliance to reduce, reuse, recycle, recover and ensure safe disposal of waste.
- Transform towards a circular economy and create value out of waste.



## EMISSIONS REDUCTION

- Become carbon positive by adopting low-carbon growth strategy.
- Ensure a healthy and safe environment by balancing the impact of mining operation of air quality and climate change.



## BIODIVERSITY MANAGEMENT

Strive for No-Net-Loss of biodiversity by avoiding, minimising, restoring and if necessary, offsetting residual impacts on biodiversity.



## HEALTH & SAFETY

- Achieve 'zero harm' through institutionalising systems, controls and standards.
- Ensure safe environment for mine workers and communities with focus on employee well-being.



## COMMUNITY DEVELOPMENT

Develop an integrated, equitable and sustainable growth model that creates synergistic and symbiotic socio-economic value for the community.



## Our CSR Initiatives

- **Education:** Established Aditya Vidya Mandir in Samri to provide free quality education to local students.
- **Healthcare:** Developed Aditya Chikitsalaya, a primary healthcare centre with:
  - A 6-bedded hospital
  - 3 dispensaries offering free medicines and ambulance services
- **Clean Drinking Water:** Set up a Water ATM to provide good-quality drinking water at a nominal price.
- **Remedial Coaching Centres:** Operates 7 centres, supporting 245 students, under the CSR initiative of Baphlimali mines.
- **Mobile Health Unit (MHU):** Covers 78 remote villages, bringing healthcare services to villagers' doorsteps.
- **Community Development Projects:**
  - Construction of 2 check dams at Peringini and Kendumundi.
  - Establishment of 2 community centres at Andirakanch and Maligaon.
  - Repair of defunct water sources based on community requests.
  - Installation of solar streetlights to improve local infrastructure.
- **Sustainable Livelihood – Coffee Plantation Initiative (2021-22):**
  - Launched on 12 acres of reclaimed land in an Indian bauxite mine.
  - Planted 12,000 coffee plants to support sustainable community livelihoods post-mining.
  - Potential for diversification with fruit-bearing orchards or herbal plantations.
- **Mine Rehabilitation & Eco-Tourism:**
  - Bio-Park and Dhumkudia in Bagru are emerging as key benchmark sites for post-mining rehabilitation.
  - Promoting sustainable land-use practices and Mine Eco-tourism as an innovative approach.





## Key Projects Underway Include

- **Medicinal Garden Development:** A garden focused on cultivating medicinal plants, contributing to both conservation and sustainable healthcare.
- **Adra Bhumi Project:** Aim to increase aquatic biodiversity by purifying water bodies as well as enhancing the ecosystem and promoting ecological balance.
- **Nida Project:** Focused on the conservation and promotion of biodiversity, particularly targeting cavity-nesting bird species in the Bagru area.
- **Lac Cultivation:** The farming of lac, a resin produced by the lac insect, is being promoted in the region. This cultivation takes place on specific host plants, such as Kusmi Lah. The distribution of lac seeds in Bimarla is helping farmers diversify their income sources, reducing dependence on traditional crops. With the growing demand for lac in industries like cosmetics, pharmaceuticals, and textiles, this initiative is providing a valuable economic opportunity for local communities.

These combined efforts are not only enhancing the local environment but also creating sustainable livelihoods for the people of Lohardaga, all while contributing to biodiversity conservation and ecological restoration.



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