Risk and Opportunities

Navigating Uncertainty Through Effective Risk Management

Businesses today are impacted by rapid shifts in consumer preferences, a dynamic geo-political environment, increasing impacts of climate change and a swiftly evolving regulatory landscape. Thus, risk management becomes integral to the decision-making process while operating in such an environment.

At Hindalco, our three-pronged approach comprising a robust Enterprise Risk Management (ERM) framework, Crisis Management, and Business Continuity Management helps us to navigate business risks effectively. Hindalco bases its risk management policy on the Enterprise Risk Management Policy, which the Risk Management and the ESG Committee regularly review. The policy is applicable across all our operations.

We follow both bottom-up and top-down approaches to risk management. The Board-level Risk Management and ESG committee, headed by one of the Board members, is the apex body that oversees risk management across the organisation. The committee meets quarterly and provides guidance and strategic directions to manage risks.

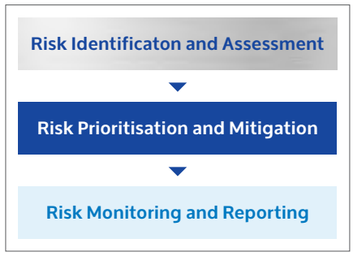
The Chief Risk Officer (CRO) manages theenterprise risk management and heads the central risk management team. The latter is the custodian of the risk management process at all locations.

To manage the risks at the grassroots, we have an established team structure at cluster, site, and department levels. These teams are responsible for implementing risk mitigation plans and regularly reporting to the Risk Management Head. The Risk Management Head is responsible for monitoring and auditing the risk management performance. Risk management and compliance with risk procedures are part of senior management's Key Result Areas (KRAs) and are linked to their variable incentives.

Risk Management Process

We at Hindalco follow an ERM framework developed following COSO and ISO 31000 guidelines and fully integrated with our strategic priorities.

During the reporting period, we bolstered the framework to adapt to the BANI world and embraced the RAAT (Resilience, Attention, Adaption, Transparency) approach.



Risk identification and assessment is the first step in the risk management process. We classify risks into four categories: Strategic, Operational, ESG, and Projects. We conduct detailed due diligence using tools such as Root Cause Analysis and Consequence Analysis to assess the likelihood and impact of risks. The risks are prioritised based on their risk scoreand then translated into a Risk Heat Map representation consisting of four zones: Red, Amber, Yellow, and Green. We review and assess the risks at least twice a year.

The prioritised risks are analysed, and mitigation plans are prepared, considering the risks' short, medium, and long-term implications on us. Periodic sensitivity analysis and stress testing are conducted on these mitigation plans.

Once mitigation actions are completed, we incorporate them into applicable Standard Operating Procedures (SOPs) to enhance our practices. The risk management framework is audited internally and externally during the Integrated Management System (IMS) audits. In addition, we regularly monitor and evaluate existing and emerging risks.

We have structured training programmes to inculcate the risk management culture across Hindalco.While annual training programmes are part of a training calendar available for existing employees, new employees are trained on risk management during onboarding. We have customised workshops for senior leadership and the Board of Directors.

Risk and Opportunities

Risk	Significance and Impact	Mitigating Actions	Reference Capitals	Strategic Priorities
R1 **Increased focus on decarbonisation**	▸ The global decarbonisation efforts in various industries can lead to shifts in the demand and supply of the material. ▸ Operation costs might be impacted by policies such as carbon pricing in the near future.	▸ We have increased our renewable energy consumption by 54% compared to the previous year, with a renewable energy capacity of 108 MW. ▸ We are executing another 71 MW of renewable energy to meet our targets. ▸ We are finalising our renewable hybrid energy project using pumped hydro storage to deliver 100–300 MW of round-the-clock power.	▸ Natural Capital ▸ Manufactured Capital	SP-3
R2 **Supply chain risks**	▸ Supply chain disruptions can extensively impact our operations, strategy, and society. ▸ This may impact our revenue, customer base, inventory costs, etc.	▸ We are strengthening our supply chain strategy through a systematic supplier screening approach to identify significant suppliers. ▸ We consider risks for negative environmental, social, and governance impacts related to a country's political, social, economic, environmental, or regulatory situation in the screening process for significant suppliers. ▸ Additionally, we have taken various initiatives to digitalise our supply chain and logistics.	▸ Social & Relationship Capital ▸ Manufactured Capital	SP-3
R3 **Price volatility of aluminium**	▸ Fluctuations in the price of aluminium can have a significant impact on the profitability of our business.	▸ To minimise risk, we have deployed strategies such as hedging against price fluctuations and diversifying our product portfolio. ▸ The strategy to mitigate this risk involves regular reviews and stress tests to optimise hedge levels. We follow price offset hedging in the aluminium business to insulate it from commodity price and currency fluctuations.	▸ Financial Capital ▸ Social & Relationship Capital	SP-2 SP-4
R4 **Increased import of aluminium**	▸ Our market share might be affected by the increasing import of aluminium and scrap.	▸ We are organically expanding our downstream facilities to enhance the product mix and meet customer demands. ▸ At Aditya, we are building a can recycling facility with a tolling partner to utilise secondary aluminium.	▸ Financial Capital ▸ Social & Relationship Capital	SP-2 SP-4
R5 **Solid waste management**	▸ Waste management rules are constantly evolving, and the availability of land is becoming a challenge for waste storage. ▸ Therefore, waste management in operations is essential for environmental protection and societal safety.	▸ Each unit has a dedicated Waste Management Task Force (WaMTF) to streamline the waste management process. ▸ Our waste management strategy is aligned with UN SDG 12 and follows the 5R+1S approach of Reduce, Redesign, Recover, Rehabilitate, Recycle and Storage. Our goal is to achieve Zero Waste to Landfill by 2050. ▸ To create value from waste, we have adopted in-house processes. In addition, we have partnered with cement manufacturing companies to utilise our by-products. We are also collaborating with research institutes and think tanks to explore the effective utilisation of waste.	▸ Natural Capital	SP-3
R6 **Depletion of natural resources**	▸ With the increasing consumption of natural resources, the cost of materials also rises. ▸ Furthermore, it is creating water and mineral shortages and disturbing the ecosystem in which we operate.	▸ We have increased our recycling capabilities and recycled 18.08 Million m^3 of wastewater in FY2022-23. ▸ We are introducing a seawater reverse osmosis system with mechanical vapour recompression technology at Dahej to recover and recycle water from existing RO reject. ▸ We have embedded circularity into every aspect of our business, encompassing mining, aluminium production and scrap recycling to reduce reliance on natural resources.	▸ Natural Capital	SP-2 SP-3

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Risk	Significance and Impact	Mitigating Actions	Reference Capitals	Strategic Priorities
R7 **Shareholders/ lenders focus on ESG**	▸ The pandemic and the dynamic regulatory changes have heightened shareholders' attention to environmental and social responsibility and created long-term shareholder value. ▸ Shareholders are also mindful of an organisation's impact on the community and people not directly involved or related.	▸ The need for organisations to understand and address the externalities is likely to become essential to maintain our social license. Therefore, we have taken various initiatives, including goals and targets around ESG. ▸ We regularly track and disclose our performance on ESG goals and targets. ▸ We have also integrated sustainability parameters into our Annual Incentive Scheme.	▸ Intellectual Capital ▸ Social & Relationship Capital ▸ Natural Capital ▸ Human Capital ▸ Financial Capital	SP-2 SP-3
R8 **Product development strategy risks**	▸ We risk losing opportunities and market share if we focus on producing similar products.	▸ Besides increasing our existing market share, we are also exploring new product verticals. For instance, innovative solutions like AC Fin Stock Coatings can support our efforts to capture new markets. ▸ We aim to focus on new research areas, including copper anode and cathode quality, optimisation of copper refinery bleed generation, purification, and recycling, as well as reducing ETP load and advanced applications for zero waste to landfill. ▸ We successfully developed 62 new products in the reporting year at our Innovation Centres.	▸ Intellectual Capital ▸ Social & Relationship Capital	SP-2 SP-4
R9 **Changes in the regulatory requirements**	▸ The regulatory landscape around ESG, such as the carbon trading system, is rapidly evolving. ▸ EU's CBAM regulation will impact aluminium imports into the EU. Its reporting requirements will start in October 2023.	▸ We are engaging with government agencies and industry bodies to adapt to the evolving regulatory environment. ▸ We also focus on developing low-carbon products and implementing decarbonisation plans across all our sites. ▸ We are aligning our reporting in line with the EU's CBAM requirements.	▸ Intellectual Capital ▸ Social & Relationship Capital	SP-2 SP-3

New employees are trained on risk management during onboarding.

Risk	Significance and Impact	Mitigating Actions	Reference Capitals	Strategic Priorities
R10 **Cyber Security & Data Protection risks**	▸ Digital tools play a crucial role in modern technology. The growing use of these tools has increased cybercrimes, posing threats such as privacy breaches, data loss, fraud, and theft. These cybersecurity risks can potentially impact businesses, operations and customer base.	▸ We have developed an Information Technology Policy to guide our cybersecurity practices. ▸ Our entire IT infrastructure is certified with ISO 27001 Information Security Management System, and we conduct periodic audits to strengthen the systems. ▸ Our intranet portal has an Incident Reporting Form on which employees can report any actual or suspected information security breaches.	▸ Intellectual Capital ▸ Social & Relationship Capital	SP-3

Above mentioned risks are not in any specific order of priority / risk grade.

Risk and Opportunities

Unveiling Emerging Risks

At Hindalco, we believe in a proactive approach to managing emerging risks while seizing opportunities in the business landscape.

Emerging risks have the potential to impact operations both directly and indirectly. We build resilience in a dynamic environment by effectively managing these risks and ensuring business continuity.

We are building resilience in a dynamic environment and ensuring business continuity

Emerging Risks	Impact	Mitigation Strategy
Climate action failure Failure to adopt, enforce and invest in climate change adaptation and mitigation	▸ Unprecedented natural events lead to disruptions in operations as some of our sites face exposure to physical risks. ▸ Four of our sites lie in water-stress areas and face the risk of droughts during summer. ▸ Some sites will also be prone to heat waves in the long term.	▸ Conducted location-wise detailed climate risk assessment and formulated mitigation strategies for the same. ▸ Identified levers and undertook initiatives to minimise the carbon footprint.
Degradation of natural ecosystem impacting operations Human interventions affect global ecosystems and trigger reactions such as biodiversity loss, water stress, climate change, natural resource consumption and other socio-economic impact. Considering our dependence on natural resources, it is essential to address the risk.	▸ Lack of raw materials and fuel availability may lead to operational disruptions. ▸ Degradation of the ecosystem will impact operational efficiency.	▸ We are mapping ecosystems through biodiversity management plans. ▸ Our Sustainable Mining Charter supports our responsible mining practices. ▸ We have enhanced resource optimisation by increasing operational and energy efficiency and recycling and reusing waste. ▸ We have undertaken afforestation programmes around our operational sites and mines.

Opportunities

Both aluminium and copper markets present business opportunities in various sectors like automotive, building and construction, packaging, and electronics.

We are leveraging these opportunities by advancing from manufacturing products to manufacturing solutions. Our enriched portfolio aligns us with customer demands and enables us to cater to their needs.

Further, aluminium is a potential changemaker in the journey of decarbonisation, offering opportunities in areas such as circular economy, low-carbon products, and lightweighting.

Opportunities	Description	Resource Allocation
Rising demand for aluminium and copper products	▸ By 2033, aluminium consumption is expected to double in India from 4.5 Million MT to 9 Million MT, and copper consumption is set to increase from 1 Million MT to 2 Million MT. ▸ The increase in consumption will open a pool of opportunities in sectors like automobiles, urban infrastructure, pharma, air conditioning, among others. ▸ Rising demand from OEM manufacturers for lightweight materials and growing electric mobility space.	▸ We are enhancing our downstream capacity for extrusions, FRP, battery enclosures and foils, and coated AC fins to cater to the market. ▸ Capital allocation for expansion and downstream product development. ▸ Manufacturing of superior copper alloy rods for railways. ▸ Under the Product Linked Incentive scheme, we are developing an Inner Grooved Copper Tube facility and coated AC fins.
Development of low-carbon products	▸ With rising carbon prices and increasing commitments to decarbonisation, the industry will have a growing appetite for low-carbon products. ▸ Low-carbon products will be a differentiator compared to other products. ▸ Investments in renewable energy, inert anodes, hydrogen, and biofuels will be significant.	▸ We are developing our renewable energy portfolio and investing in research and development for carbon-neutral solutions and low-carbon products. ▸ The Novelis portfolio includes products manufactured from recycled aluminium. ▸ We are developing a first-of-its-kind recycling facility for copper and e-waste.
Recycling and circular economy	▸ Aluminium and copper, with their high recycling properties, may prove to be building blocks for the circular economy. ▸ With the projected increase in consumption, the volume of post-consumer aluminium and copper is also set to rise. ▸ Using recycled metals will help meet consumer demands while reducing the consumption of virgin metals.	▸ We are developing a can recycling facility where a tolling partner will provide the hot metal. ▸ We are developing a state-of-the-art recycling facility for copper and e-waste. ▸ We are collaborating with cement manufacturers to use fly ash and bauxite residue. ▸ We are testing the use of bauxite residue in road-making.
Emerging applications for specialty alumina	▸ Due to evolving industry requirements, there is an increased demand for developing high-end sophisticated products in existing markets, such as refractories, ceramics and flame retardants, and emerging markets like Li-ion batteries and semiconductors.	▸ The business is focused on expanding its value-added product capacity and portfolio with projects up to 150 KT underway.