HINDALCO INDUSTRIES LIMITED

TNFD Report 2024

Taskforce on Nature-related Financial Disclosures

About the Report

The Taskforce on Nature-related Financial Disclosures (TNFD) framework mandates that companies disclose their approach to managing nature-related risks and opportunities across four key pillars: Governance, Strategy, Risk Management, and Metrics & Targets. This framework requires organisations to provide details on governance structures, how they incorporate nature-related considerations into business strategies, outline processes for identifying and managing related risks, and report on relevant metrics and targets. Additionally, TNFD emphasises the use of location-specific data, scenario analysis, and assessment of financial impacts associated with nature-related dependencies and impacts, ensuring alignment with established frameworks such as the TCFD.

Hindalco has become an adopter of the TNFD. This report marks Hindalco's inaugural TNFD disclosure, underscoring our commitment to addressing and managing nature-related risks and opportunities. The reporting boundary includes 21 units across our direct operations in India. In future reporting cycles, we aim to expand the scope to encompass our upstream and downstream value chain.

Aditya Birla Group Presence

Map not to scale.

This report presents information for Hindalco Industries Limited (standalone) and its subsidiaries. For this TNFD report, we have disclosed nature-related dependencies, impacts, risks, and opportunities for 21 locations based on the primary information available in our Biodiversity Management Plans (BMPs). The data pertains to Hindalco India (standalone) operations only and only the 21 sites (12 mines and 9 plants) that have BMPs out of the 42 (19 factories and 23 mines) locations. We are planning to close the BMP study for the remaining units.

The greenhouse gas (GHG) footprint, water footprint, and waste management details for FY 2023-24 have been reported in alignment with Hindalco's Annual Integrated Report for FY 2023-24.

Data: The analysis leveraged site-reported data aligned with GRI, SASB, IFRS, and ASI standards, covering the FY 2023-24 reporting period. This data addresses material topics, including water, biodiversity, emissions, pollutants, waste, impacts, recovery and conservation initiatives. Additionally, secondary data from publicly available databases and TNFD-aligned tools were incorporated to enhance the analysis.

Tools used: ENCORE, WRI Aqueduct 3.0, STAR-R, and IBAT.

For any queries, concerns, or feedback, please contact us at hilinvestors@adityabirla.com

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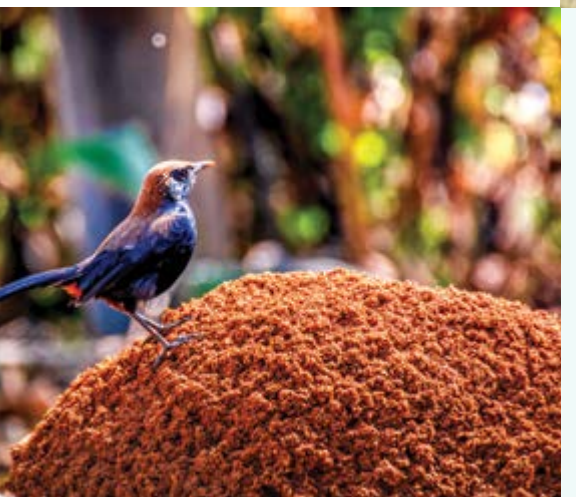

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ACRONYMS AND ABBREVIATIONS

Acronym	Description
AR3T	Avoid, Reduce, Restore & Regenerate
BMM	Black Mountain Mining
BMP	Biodiversity Management Plan
CDP	Carbon Disclosure Project
DJSI	Dow Jones Sustainability Index
ENCORE	Exploring Natural Capital Opportunities, Risks and Exposure
ESG	Environment, Social and Governance
ESIA	Environmental and Social Impact Assessment
FY	Financial Year
GHG	Greenhouse Gas
HSES	Health, Safety, Environment & Sustainability
IBAT	Integrated Biodiversity Assessment Tool
IFC	International Finance Corporation
LEAP	Locate, Evaluate, Assess and Prepare
NGFS	Network for Greening the Financial System
NNL	No Net Loss
RE RTC	Renewable Energy Round the Clock
SASB	Sustainability Accounting Standards Board
SBTi	Science-Based Targets initiative
SDG	Sustainable Development Goals
STAR	Species Threat Abatement and Restoration
TCFD	Task Force on Climate-related Financial Disclosures
TNFD	Taskforce on Nature-related Financial Disclosures
tCO_2e	Tonnes of Carbon Dioxide Equivalent
UNGC	UN Global Compact
WRI	World Resources Institute
WRMP	Water Resources Management Plan
WWF	Worldwide Fund for Nature

Climate Change

65 MW
Additional renewable capacity commissioned in FY 2023-24

19.54%
Specific GHG emissions for aluminium operations from FY 2011-12 baseline

100 MW RTC
Contract for renewable power executed from solar + wind, first aluminium industry globally to do so, with storage-based project for supply to aluminium smelter at Odisha

Energy Transition Changemaker
Recognition earned at COP28 for clean energy initiatives

CORPORATE COMMITMENT

Achieve 30% of energy mix
from renewable sources by 2030 through the successful completion of phase 1 of the renewable with pumped hydro project

Net Zero
GHG emissions by 2050

Freshwater Use Change & Resource Replenishment

Specific freshwater consumption from FY 2018-19 baseline

8.46%
Aluminium business

61.53%
Copper business (excluding Desalination)

25.39%
Recycled/reused water of the total water consumed for Aluminium & Copper business in FY 2023-24

CORPORATE COMMITMENT

Achieve net water positivity by 2050
with ongoing process optimisation, water innovation projects for water circularity, loss reduction within & beyond Fence Rainwater Harvesting projects under CSR across Hindalco

Achieve ZLD status
Aluminium business by FY 2025-26 & Copper business by FY 2029-30

Desalination
for Copper business and tertiary water recycling projects across Hindalco sites by 2050 as part of water positivity goal

Pollution Removal

85%
Of operational waste recycled or reused in FY 2023-24

15 plants and 1 mine site
Achieved Single Used Plastic Free status

CORPORATE COMMITMENT

Achieve Zero Waste to Landfill by 2050
and interim target to achieve the same by 2030

Ensure waste management continues
at high levels of reuse and recycling

Land Use Change

4.1 Lakh
Trees planted enhancing a **5,705** acres green cover

59.86 Ha
Total mining area rehabilitated in FY 2023-24, which is 47.5% of the new area mined in the year

Strengthen biodiversity and ecosystem management
by expanding green belt initiatives and implementing BMPs at all locations

Biodiversity

21
Biodiversity Management Plans (BMPs) developed across sites and mines

Green belt management plans
Implemented for non-BMP sites to further offset emissions and enhance biodiversity

Achieving No Net Loss (NNL)
to biodiversity by 2050, aligned with the Kunming-Montreal Global Biodiversity Framework

World Heritage Sites and IUCN Category I-IV areas
Avoided by operating outside sensitive and critical zones

IBAT tools, Encore, WWF Risk Filter etc.
Used to assess biodiversity dependencies and risks

Collaboration with International Union for Conservation of Nature
and other reputed agencies for multi-season biodiversity studies

Restoring degraded ecosystems/habitats
near operational areas by at least:

10% by 2030

40% by 2040, and

100% by 2050

Satish Pai,
Managing Director,
Hindalco Industries Limited

At Hindalco, nature conservation is not just a commitment—it is integral to our core business philosophy. We view nature as a vital stakeholder in our value chain and are deeply committed to embedding biodiversity and ecosystem preservation into every strategic decision we make.

As the metals flagship of the Aditya Birla Group, Hindalco is a global leader in aluminium, copper, and specialty alumina, with operations across 10 countries. As one of the world's largest non-ferrous metal producer and India's leading fully integrated aluminium manufacturer, we are uniquely positioned and obligated to lead in sustainability and nature-positive actions.

We are proud to present our inaugural Taskforce on Nature-related Financial Disclosures (TNFD) Report, placing us among first movers in the global aluminium industry. This marks a pivotal milestone in our journey of environmental stewardship, and it also demonstrates our commitment towards integrating nature into our governance, strategic planning, risk management and disclosures.

Our long-term vision is guided by a clear goal: achieving No Net Loss of biodiversity by 2050. We are actively working to ensure that any ecological impact from our operations is offset through robust restoration and conservation initiatives that aim to deliver neutral or, preferably, net positive outcomes. This includes significantly enhancing the use of native species in plantation programs, integrating ecological planning into project development, and collaborating with leading academic and environmental institutions on large-scale conservation projects.

Through this TNFD report, we reaffirm our strong commitment to drive the socio-economic development of the areas where we operate while preserving and harmonising with nature. It also underscores our dedication to building a resilient, responsible and future-ready business that creates long-term value for all our stakeholders.

Vaishali Surawar

Chief Sustainability Officer,
Hindalco Industries Limited

I am proud to release our Inaugural Taskforce on Nature related Financial Disclosures (TNFD) report. This milestone underscores our unwavering commitment to sustainability and dedication to integrating environmental stewardship into the core of our business operations. In our quest to run Nature positive operations, we have assessed the impact on biodiversity for each of our operations, disclosed the same through detailed Biodiversity management plans and mobilised the resources to mitigate nature related risks. This also showcases our alignment with Kunming-Montreal Global biodiversity framework. We are abiding by GRI-101 for all our biodiversity disclosures.

At Hindalco, environmental stewardship is at the core of our operations. We are committed to achieving 100% water positivity, reducing our carbon footprint through increased renewable energy adoption, and enhancing biodiversity conservation across all operational sites. Our circular economy initiatives ensure maximum resource efficiency, with a strong focus on waste reduction, co-processing, and alternative material utilisation. Aligned with the TNFD framework, we are integrating nature related risk assessments into our business strategy, ensuring that our actions drive measurable improvements in air quality, water conservation, and land restoration. Our goal is not just compliance but leadership in sustainable industry practices, setting benchmarks for responsible environmental performance in the Mining and Metals sector.

Hindalco Industries Limited is the metals flagship of the Aditya Birla Group and an industry leader in the manufacturing of aluminium, copper and Specialty Alumina (Chemicals).

We are among the world's largest non-ferrous metals companies with a full suite of packaging, automotive, building and construction, and aerospace solutions.

Today, we rank among the major global aluminium players, operating as an integrated producer with a footprint in 10 countries, including India. We are one of Asia's largest producers of primary aluminium (excluding China) and India's largest fully integrated aluminium manufacturing company.

We are also the country's largest downstream aluminium player, providing customised solutions in flat rolled products and extrusions. We operate one of the largest custom copper smelters at a single location in Asia and rank as the third largest manufacturer of copper cathode rods outside of China.

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

Commitment to Nature and Biodiversity

We are committed to nature conservation across our operations in the Deccan Peninsula, coastal regions, Central highlands, Northern Plains and the Western Ghats of India.

We have established an ESG target to achieve No Net Loss (NNL) to biodiversity across all our 42 locations by 2050. This commitment is guided by our Biodiversity Management Policy, which aligns with the Aditya Birla Group's Technical Standards, the Convention on Biological Diversity (CBD), and International Finance Corporation (IFC) frameworks.

Currently, 21 of our locations have Biodiversity Management Plans (BMPs) in place, with plans for the remaining sites scheduled for completion by 2025. These BMPs focus on onsite and offsite habitat development, sustainable land use, and ecosystem restoration to meet the NNL target. Key measures include afforestation, water conservation, and species protection as per each site's ecological context.

Through these conservation actions, we address our environmental impacts and support biodiversity and ecosystem resilience within our operational areas. This approach aligns with our broader sustainability objectives and operational commitments.

19 factories

23 mine blocks

21 locations with Biodiversity Management Plans

We conduct materiality assessment periodically and have derived our current material topics following the latest assessment in FY 2023.

Environmental Material Topics for Nature-related Issues

Materiality	Topic	Relevant Impact Driver of Nature		
Highly material	Energy and GHG Emissions Management	Climate Change		
	Water, Waste and Hazardous Materials Management	Resource Use Replenishment	Freshwater Use Change	Pollution/ Pollution Removal
	Air Emission & Quality	Pollution/Pollution Removal		
	Biodiversity	Conservation of Biodiversity		

Key Drivers of Nature Change

Our material topics are closely aligned with the key drivers of nature change identified by the Taskforce on Nature-related Financial Disclosures (TNFD): climate change, freshwater use, resource replenishment, land use change, pollution removal, and the state of nature. This alignment highlights the critical role these factors play in shaping Hindalco's broader corporate commitments and strategic priorities.

Factors Shaping Corporate Commitments and Strategic Priorities

Climate Change and Decarbonisation

As a leading aluminium manufacturer, we recognise the impact of fossil fuel use on GHG emissions and the challenges of transitioning to low-emission alternatives. Changing carbon regulations raise compliance costs and risks to our reputation. To address these challenges, we have increased our renewable capacity to 173 MW as of 31 March 2024 and are exploring alternative energy solutions, including biomass, fuel switching, and energy storage, all supporting our long-term sustainability goals.

Waste and Hazardous Materials Management

We are aware that improper waste disposal could degrade land, water, and air quality, pose non-compliance risks, disrupt operations and damage our reputation. We aim to achieve zero waste to landfill by 2050, with an annual target to enhance 5% recycling/reuse of generated waste and implement green technology innovations in waste and metal recycling across our India operations. Initiatives include re-purposing of bauxite residue for backfilling, road construction, and long-term contracts with cement and road developers. We strive to minimise land use, ensure safe and sustainable storage of Tailings, following best practices, rigorous risk assessments, and responsible site selection for Tailings Storage Facilities (TSF).

Water Management

We are aware of our critical reliance on water for manufacturing and the risks in water-stressed areas, where depletion or poor wastewater treatment can impact communities and ecosystems. To address these challenges, we have adopted Niti Aayog's (3M+7R) principle which include Water Measure, Monitor & Map, recycling, and rainwater harvesting initiatives. Our ambitious targets include achieving Zero Liquid Discharge (ZLD) for our Aluminium operations by FY 2025-26, Copper operations by FY 2029-30, and water positivity at our mining sites by 2025, with our aluminium and copper business units achieving this by 2050. We also undertake watershed development projects to replenish resources and respect communities' requirements.

Air Emissions

We recognise that our operations generate hazardous air pollutants, including particulate matter, NOx, and fluoride emissions. Non-GHG air emissions primarily arise from fuel combustion and production processes, with aluminium smelting contributing to fluoride emissions and fossil fuel use resulting in SOx, NOx, and PM.

To mitigate these emissions, we are implementing innovative technologies and reducing coal consumption. Flue Gas Desulphurisation (FGD) units have been installed at the Mahan and Aditya locations, with installation underway at Renusagar, and lime dosing systems at Hirakud, Muri, and Dahej.

Biodiversity

As a major player in the mining sector, we acknowledge the significant impact of raw material extraction activities on biodiversity, habitats, and ecosystems. Proactive measures such as biodiversity risk assessments and the development of BMPs are integral to Hindalco's commitment to long-term sustainability, ecosystem conservation, and responsible resource management.

For more details about our mitigation measures, refer to the Risk and Impact Management section from pages 50–67.

173 MW
Renewable energy capacity as of March 31, 2024

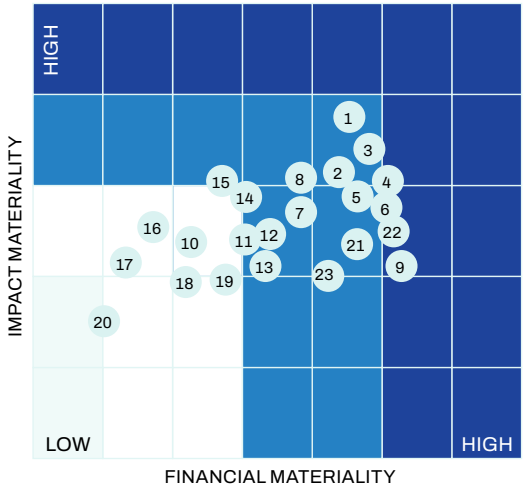
3
sites achieved Zero Waste to Landfill

3M+7R
Niti Aayog's principle of water management adopted by Hindalco

Double Materiality

At Hindalco, we embrace the principles of double materiality in our materiality assessment, ensuring that we consider both impact materiality and financial materiality. Impact materiality helps us evaluate how our activities and business relationships affect our stakeholders, society, and the environment. Financial materiality allows us to assess how these impacts translate into financial risks and opportunities for our business.

We conduct a comprehensive materiality assessment every two years, with an annual review to stay aligned with our strategic priorities and emerging risks. Following the GRI Standards 2021, we integrate this assessment into our Enterprise Risk Management (ERM) framework. The insights gained guide our ESG Key Performance Indicators (KPIs), which we map to our material topics and align with the UN Sustainable Development Goals (SDGs), the World Economic Forum's Global Risks Report, and other global frameworks.



1	Energy and GHG Emissions Management
2	Waste and Hazardous Materials Management
3	Water Management
4	Market Presence
5	Economic Performance
6	Compliance Management

7	Community Relations
8	Air Emissions
9	Occupational Health and Safety
10	Biodiversity
11	Supply Chain Transformation
12	Material Management
13	Product Stewardship
14	ROD Innovation and Technology
15	Digitalisation and Cybersecurity
16	Macro-economic Fluctuations
17	Land Use
18	Diversity and Inclusion
19	Communicable Disease and Public Health
20	Artisanal and Small Scale Mining
21	Employee Wellbeing
22	Ethics and Integrity
23	Security and Human Rights

Hindalco's emphasis on these material topics underscores its commitment to sustainability and addressing nature-related challenges. By taking focused climate action, water, air quality, biodiversity, and waste management, we are aligning with our broader corporate goals and advancing progress toward sustainable development.

The interdependence of climate, water, biodiversity and local communities underscores the need for integrated environmental strategies and requisite policies since disruption in one area can lead to cascading impact on ecosystem health and resilience.

Nature-related challenges present significant risks to our business, affecting supply chains, regulatory compliance, and our social licence to operate. In response to these challenges, we have embedded comprehensive environmental strategies into our business model, including the implementation of site-specific BMPs, Water and Waste Management Plans, and active participation in the United Nations Global Compact (UNGC).

Our management practices enhance ecosystem sustainability, with a robust set of policies and standards safeguarding and promoting environmental health. We have implemented relevant sustainability and climate-change policies to ensure effective implementation of strategies to achieve targets.

Sustainability Policy

The Sustainability Policy frames a pathway for Hindalco towards sustainable operating practices including creating long-term value for stakeholders, protecting the environment, nurturing people and more. The policy also covers Hindalco's aim to ensure a strong governance structure, regulatory compliance, and to incorporate sustainability considerations in business decisions.

To access the full policy, please click here.

Biodiversity

We aim to prevent, minimise, mitigate biodiversity risks, and target No Net Loss at our project sites through the implementation of the mitigation hierarchy and offsetting residual impacts. We also adhere to:

- Biodiversity Policy
- Biodiversity Management Plans (BMPs) for each of our sites
- Biodiversity Management Technical Standard

To access the full policy, please click here.

Environment Policy

The Environment Policy highlights our ambition to continually improve the Company's environmental performance for sustainable operations and responsible growth globally. The policy covers our aspirations to conserve natural resources, minimise waste, integrate recycling and reusing concepts.

To access the full policy, please click here.

Energy and Carbon Policy

This policy covers Hindalco's intent on improving energy efficiency, enhancing renewable energy and improving carbon performance. It also covers developing relevant mechanisms to measure, monitor and report energy consumption and carbon emissions in annual disclosures.

To access the full policy, please click here.

Rehabilitation and Restoration Policy

We have developed and implemented an Indigenous Peoples Rehabilitation, Resettlement, and Protection (IPRR) Policy, emphasising engagement, fair compensation, cultural heritage protection, and sustainable development.

To access the full policy, please click here.

Risk Management Policy

We have also developed and implemented a comprehensive risk management policy, authorised by the Risk Management Committee. This policy forms the core of the Company's risk management framework and institutionalises a holistic risk management approach encompassing all functions.

To access the full policy, please click here.

Human Rights Practices and Engagement Activities

To ensure responsible resource use, preservation of ecological integrity, and creation of post-closure resources, our Human Rights Policy aligns with international standards (mentioned below). Continuous evaluation, monitoring, and stakeholder collaboration enhance environmental management practices and foster long-term community resilience. The Technical Standard on Biodiversity Management elaborates the stepwise process to be followed by ABG companies to achieve the commitments of the Biodiversity Policy. Hindalco follows a systematic approach in avoiding, assessing and mitigating potential impacts on Indigenous Peoples and respecting their individual and collective rights. The process to be followed is based upon the ABG Technical Standard on Indigenous Peoples.

Our human rights practices adhere to the following international standards:

- United Nations Declaration on Human Rights
- UN Guiding Principles on Business and Human Rights,
- UN Declaration on the Rights of Indigenous Peoples, and
- Universal Declaration of Human Rights (UDHR)

Hindalco emphasises respect for human rights and actively engages with local communities through various initiatives. We invest in projects that improve healthcare, education, skills, and livelihoods. In FY 2023-24, ₹81.83 crore was spent on community development, benefiting over 1.5 million people through our CSR projects and initiatives in India.

Our operations also include efforts to work respectfully with indigenous communities, focusing on creating positive impact in areas where they reside. We align initiatives with our commitment to social responsibility and sustainable development, ensuring that the rights and cultural heritage of Indigenous Peoples are preserved.

Some of these projects are:

- The Kosa Silk Rejuvenation Project in Chhattisgarh, which supports traditional tribal crafts, thus helping artisans increase their income and preserve their cultural heritage
- Skill training programmes that help create job opportunities, promoting self-reliance among community members
- Hindalco's BMPs include afforestation and restoration projects that benefit local and indigenous communities by improving natural habitats and creating sustainable opportunities

These commitments are integrated into Hindalco's strategy for managing nature-related dependencies, impacts, risks, and opportunities throughout the mining lifecycle.

Hindalco's approach to engaging with indigenous peoples is guided by the principle of Free, Prior, and Informed Consent (FPIC). We actively support local communities through benefit-sharing initiatives, such as creating local employment opportunities, promoting local procurement, and implementing community development and environmental protection programmes. These efforts emphasise the responsible utilisation of shared natural resources. Key elements such as our Transforming Communities Pillar, CSR Policy, and Supplier Code of Conduct for local procurement play a critical role in fostering meaningful engagement with local communities, including Indigenous Peoples, while respecting their rights to natural resources.

> "People are at the heart of our sustainability journey. Hindalco is committed to strengthening human rights, ensuring zero incidents of discrimination, and promoting inclusive growth for indigenous communities. We actively engage in skill development, ethical labour practices, and social inclusion programmes that respect traditional knowledge and empower local communities. As part of our TNFD-aligned social governance, we strive to foster a diverse and equitable workplace while uplifting the communities we operate in."
>
> **Chief Human Resources Officer (CHRO) – Human Rights & Indigenous Communities**

Our Commitment to Indigenous Peoples and Human Rights

Rehabilitation, Resettlement, and Protection of Indigenous Peoples

In FY 2023-24, we reinforced our commitment to indigenous communities through our Rehabilitation, Resettlement, and Protection of Indigenous Peoples Policy. This policy ensures that we engage responsibly and transparently, prioritising sustainable development while respecting the rights of indigenous groups near our operations. We strictly adhere to globally recognised principles, including Free, Prior, and Informed Consent (FPIC), ensuring that indigenous stakeholders actively participate in our decision-making processes.

Key achievements of our engagement initiatives include:

- Zero grievances recorded in FY 2023-24 related to indigenous rights violations
- Baseline studies conducted before project initiation to assess community needs and environmental impact
- Community Development Agreements (CDAs) established to facilitate healthcare, education, and employment opportunities
- Regular audits of Resettlement Action Plans to ensure compliance and effectiveness

Through this approach, we remain dedicated to inclusive and sustainable development, ensuring that indigenous communities equally benefit from our presence and growth.

Empowering Indigenous Communities through Economic Upliftment

We believe in economic empowerment as a key driver of social transformation. Our initiatives focus on providing indigenous communities with sustainable livelihood opportunities, particularly near our mining operations:

- Samri Bauxite Mines: We have developed livelihood programmes to support local tribal populations
- Gare Palma Mines: We partnered with NABARD under the Tribal Development Fund (TDF) to promote financial independence and skill development

Through these efforts, we are creating pathways for economic stability, equipping indigenous communities with the tools they need for a better future.

Ensuring Human Rights through Due Diligence and Monitoring

We take human rights protection seriously and have established a Human Rights Due Diligence (HRDD) framework to identify, evaluate, and mitigate risks related to indigenous rights across our operations. Our approach includes:

- Developing heatmaps and action plans to proactively address potential risks
- Conducting periodic reviews to ensure adherence to ethical and human rights standards
- Engaging in continuous stakeholder consultations to integrate community feedback into our business operations

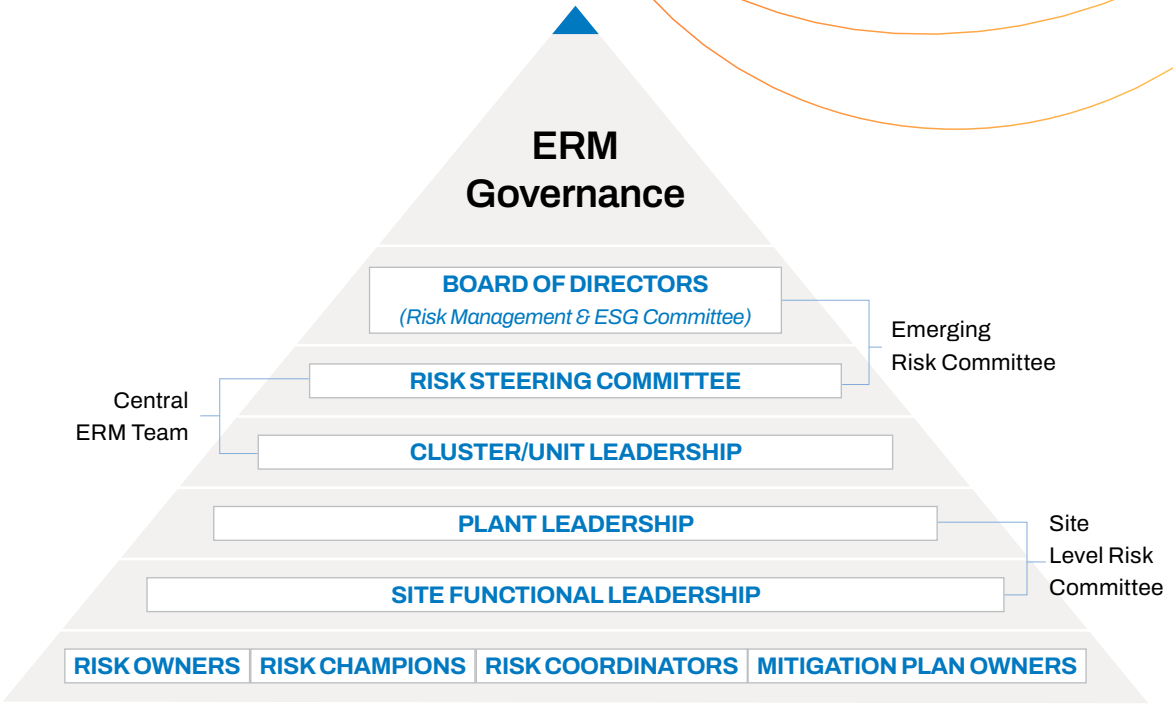
By embedding human rights principles into our Environmental, Social, and Governance (ESG) commitments, we ensure that our operations are ethical, responsible, and sustainable, fostering long-term relationships built on trust and mutual respect with indigenous communities.

Governance

We believe that governance is a key part of managing nature-related risks and opportunities. We have thus put in place the requisite frameworks, structures and processes that ensure that Hindalco stays committed to achieving its ESG targets.

Our governance system helps us create and implement policies, set goals, and track progress on our commitments to nature and sustainability. It ensures we follow regulations, meet our promises, and maintain transparency and accountability with our stakeholders.

Governance Structure



At Hindalco, we have in place a strong governance framework to identify, manage, and reduce risks related to nature while also exploring opportunities for sustainable growth. This framework clearly defines responsibilities at each management level and encourages collaboration across teams to include nature-related considerations in our decisions.

Our governance structure helps us manage nature-related risks and opportunities. This shows our dedication to responsible and sustainable business practices.

Risk Management and ESG Committee

Arun Adhikari
Chairman

Satish Pai
Member

Sushil Agarwal
Member

Praveen Kumar Maheshwari
Member

Vikas Balia
Member

Group Chief Economist	Chief Risk Officer	Head - CFD & Treasury	Chief Sustainability Officer	Head - Risk Management
	Cluster Level	Site Level	Department Level	
	Cluster Sustainability Heads	Energy Managers Sustainability SPOCS	Energy & Sustainability Task Forces	
	Risk Amabassadors	Risk Champions	Risk Coordinators	

At Hindalco, the Board maintains a robust oversight of nature-related issues, and actively shapes and monitors the Company's sustainability agenda, with a focus on nature and biodiversity.

The strong Board oversight ensures that these areas receive the necessary strategic attention. The Board periodically reviews progress and provides direction to enhance performance, aligning nature-related initiatives with the Company's broader corporate objectives.

Risk Management and ESG Committee

To strengthen governance, the Board has delegated primary responsibility for overseeing sustainability matters to the Risk Management and ESG (R&ESG) Committee. This committee systematically addresses environmental, social, and governance issues, including nature-related risks. The Chair of the R&ESG Committee provides regular updates to the Board, ensuring seamless communication and alignment on sustainability priorities. Senior management provides the committee with quarterly updates on emerging risks, including those related to nature and biodiversity, to support informed decision-making.

In FY 2023-24, the R&ESG Committee prioritised nature and biodiversity as key areas of focus. Topics discussed included the development of comprehensive Biodiversity Management Plans for all operational locations, strategies to enhance tree cover and carbon sequestration within factory premises and exploring offset projects beyond operational boundaries for habitat and ecosystem restoration to achieve no net loss. The committee also reviewed measures to support ecosystem health, such as restoring degraded habitats and aligning conservation efforts with global biodiversity goals.

Management's Role in Assessing and Managing Nature-related Issues

We have a dedicated body, the Apex Sustainability Committee (ASC), which is responsible for steering the Company's sustainability agenda, including Nature and Biodiversity Management. The ASC reports to the Board-level R&ESG Committee, providing quarterly updates on the Company's performance in sustainability areas, including nature and biodiversity, and receiving strategic guidance on key decisions.

The ASC is chaired by Mr. Satish Pai, Managing Director (MD), who holds overall responsibility for assessing and managing nature-related risks and opportunities while driving the Company's sustainability initiatives. The MD's Key Result Areas (KRAs) include specific sustainability-related goals, such as biodiversity, climate change, waste and water management, and variable compensation is tied to achieving these objectives. Under Mr. Pai's leadership, the ASC develops and implements strategies in line with the Board's guidance, sets strategic sustainability goals, and establishes frameworks for monitoring performance in areas such as biodiversity, water risk management, energy efficiency, GHG emissions, and renewable energy.

ASC Structure

ASC chaired by the Managing Director

ASC members are senior leadership representatives, including Chief Risk Officer, Head of Manufacturing Centre of Excellence (MCOE), Chief Sustainability Officer (CSO), Chief Technology Officer and Head of Energy and Clean Energy

Roles

- MD - Oversees monthly and quarterly business reviews, ensuring alignment with planning and budgeting objectives
- CRO - Identifies and assesses nature-related risks
- Head of MCOE - Conducts monthly operational reviews across business verticals, including Copper, Power, Smelting, Refining, and Downstream, with a focus on sustainability initiatives
- CSO and the Head of Energy and Clean Energy - Responsible for advancing Hindalco's sustainability initiatives, with focus on biodiversity and nature

At the Group level, the Business Review Council evaluates the Company's progress on sustainability targets, including nature and biodiversity goals, on a quarterly basis. This multi-tiered governance structure ensures a comprehensive approach to sustainability, integrating nature and biodiversity management into the core of Hindalco's operational and strategic frameworks.

Performance-based Incentives

At Hindalco, the 3C+2S framework — Cash, Cost, Customer, Safety & Sustainability, and Systems & Processes — guides decision-making and operational efficiency. This system helps manage risks by focusing on financial health, cost optimisation, product quality, workplace safety, environmental practices, and improving internal systems.

Key Result Areas (KRAs) are structured around the 3C+2S framework to align individual tasks with Company goals, driving performance evaluations and incentives. Senior leadership compensation is also tied to climate-related targets, such as reducing carbon emissions, with additional incentives for sustainability achievements. This approach fosters a culture of accountability and supports both operational and environmental objectives.

For more details read pages 364-365 of our Integrated Annual Report

Strategy

Our ESG strategic priorities are intricately linked to our material topics, opportunities, landscape, and risk management and form a crucial element of our integrated decision-making process. In line with the identified megatrends, our strategic priorities are the pillars for supporting efficient resource allocation to ensure long-term value creation.

Our ESG Strategy

Hindalco outlines its ESG strategy through our four strategic priorities: Prudential Capital Structure, Value-enhancing Growth, Strong ESG Commitment, and Portfolio Enrichment to accelerate its purpose of being A Force for Good.

Our four ESG strategic priorities are closely aligned with our key material topics, opportunities, and risk management framework. These priorities play a central role in our decision-making process, ensuring efficient resource allocation to drive long-term value creation. Guided by the identified megatrends, these priorities serve as the foundation for our strategy, supporting sustainable growth and business success.

A force for good

S1 Financial Prudence and Capital Structure

We prioritise financial prudence in our capital allocation to ensure robust growth and sustainability. This includes strategically investing in growth capital expenditures (capex) supported by strong cash flows and a healthy balance sheet, allowing us to maintain financial stability and resilience.

S2 Value-enhancing Growth

Our focus is on driving shareholder value by expanding our downstream businesses organically and by optimising costs. This includes leveraging resource securitisation to enhance operational efficiency and deliver consistent, long-term returns.

S3 Strong ESG Commitment

We are committed to integrating environmental, social, and governance (ESG) principles across our value chain. Our ESG commitments are designed to reinforce our position as an industry leader in sustainability, demonstrating our dedication to responsible business practices and positive social impact.

S4 Portfolio Enrichment

We are transitioning from being a traditional manufacturing company to a provider of comprehensive manufacturing solutions. This strategic shift includes enhancing our product portfolio by increasing the share of high-value, high-end products, positioning us for greater market competitiveness and growth.

These strategic priorities are designed to ensure that we remain agile, resilient, and focused on creating long-term value for all stakeholders while embracing our commitment to sustainability and responsible growth.

Nature-related Dependencies, Impacts, Risks, and Opportunities

We are committed to understanding and addressing how our operations impact (covering interactions with low integrity ecosystems, high importance ecosystems, and water stress areas) and depend on nature.

This awareness is shaping our approach to managing risks and seizing opportunities, ensuring we remain resilient and responsible while driving positive change and balancing operational success with environmental stewardship.

At Hindalco, we have begun adopting TNFD recommendations. As an adopter, we have utilised the Locate-Evaluate-Assess-Prepare (LEAP)[1] approach to assess site-level dependencies, impacts, risks and opportunities. We began our assessment by mapping all our operations and evaluating the provisioning and regulating ecosystem services[2]. Through this process, we identified risks such as the depletion of water resources, which affects water availability for local communities, pollution of water bodies, and our emissions leading to air pollution that endanger the health of our employees and local communities. To mitigate the risks, we have identified opportunities, such as alternate innovative sourcing and investments in ecosystem restoration.

[1] *TNFD (Taskforce on Nature-related Financial Disclosures) recommends the LEAP approach for its comprehensive and systematic methodology, which aids organisations in effectively managing nature-related risks and opportunities.*

[2] *Provisioning Services are the products obtained from ecosystems, including, for example, genetic resources, food and fiber, and fresh water. Regulating Services are the benefits obtained from the regulation of ecosystem processes, including, for example, the regulation of climate, water, and some human diseases.*
Cultural Services are the non-material benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experience, including, e.g., knowledge systems, social relations, and aesthetic values.

Our Commitment to Ecological Restoration

In FY 2023-24, we successfully restored the Hirakud fly ash dump site, transforming it into a thriving green habitat. This project involved removing invasive species, enriching the soil with mulch and biochar, and planting native flora to enhance biodiversity. Our efforts were recognised by the Odisha State Pollution Control Board, which certified the site as a rehabilitated area, reinforcing our commitment to sustainable waste management.

At Baphlimali Mines in Odisha, we implemented a rainwater harvesting system, conserving 1,42,940 KL of water annually and reducing CO_2 emissions by 6,55,734 kg. These initiatives reflect our dedication to environmental restoration, resource conservation, and creating a positive impact on the ecosystems where we operate.

Adoption of the LEAP Approach

By adopting the LEAP approach, we have taken a proactive stance in managing our interactions with nature. This not only supports the health and resilience of the ecosystems we depend on, but also enhances our long-term business sustainability.

The key parameters covered in each phase of the LEAP framework, along with Hindalco's specific approach, are outlined henceforth:

LEAP Parameters	Approach adopted by Hindalco
Locate	
L1: Span of the business model	For the current LEAP assessment, 21 operational units of Hindalco have been included, 9 of which are manufacturing plants and the remaining are active mines.
L2. Dependency and impact screening	The ENCORE tool, as recommended by TNFD, was used to identify site-level impacts and dependencies.
L3: Interface with Nature	Global environmental datasets (e.g., Global Forest Watch, Ecoregion Intactness Index, WWF Risk Filter, IBAT) and local datasets (e.g., ENVIS, Bhuvan, Ground Water Resource Assessment, 2022) were used to understand direct operations' relationships with biodiversity values, ecosystem integrity, and water risks in the respective geographies.
L4: Interface with sensitive locations	We have prioritised all of our operational sites for the identification of environmental assets and ecosystem services. Comprehensive evaluations, using BMPs, were conducted to assess natural habitat conversion, critical habitats, overlaps with protected areas, and the overall business footprint. Of the total sites, 11 are located near protected areas or key biodiversity zones and four sites are situated in water-stressed areas.
Evaluate (Impact and Dependencies)	
E1. Identification of environmental assets, ecosystem services and impact drivers	The ENCORE ratings guided the identification of key ecosystem services and the main factors driving impacts. Site-specific assessments were conducted using spatial data, disclosure reports, and biodiversity management plans to evaluate the severity, frequency, and mitigation of impacts, as well as any positive outcomes.
E2. Identification of dependencies and impacts	Dependencies and impacts were identified at the sector level for all the sites using ENCORE.
E3. Dependency and Impact analysis	Impacts at all the mining sites and plants were assessed based on the likelihood of occurrence and severity of identified impacts. The severity of impacts is categorised as high, medium or low, considering the magnitude, scale, duration, and sensitivity of the affected receptors. Dependencies identified by the ENCORE tool were analysed to determine their importance, potential substitutes, and future availability. This included a two-step process with WRI's Corporate Ecosystem Service Review for a comprehensive evaluation.
E4. Impact Materiality Assessment	The materiality of impacts was determined by combining impact significance with likelihood. Dependencies were categorised as high, medium, or low based on their importance and the availability of substitutes.
Assess (Risk and Opportunities)	
A1: Risk and opportunity identification	Risks and opportunities linked with impacts and dependencies were identified and categorised by sector using WWF's Biodiversity and Water Risk Filter for risks and review of additional business and sustainability performance actions for opportunities.
A2. Adjustment of existing risk mitigation and risk and opportunity management	We already have a biodiversity and risk assessment and management framework. Accordingly, the site-specific BMPs were developed. Additionally, we have adopted WRI's Ecosystem Services Review tool for identifying site-level impact, dependency, risk and opportunities.
A3. Risk and opportunity measurement and prioritisation	Risks and opportunities were prioritised based on internal understanding of relevance to Hindalco, current risk mitigation effectiveness, and speed of onset (short-term, medium-term, or long-term).
A4: Risk and opportunity materiality assessment	Risks and opportunities identified in A1 were reviewed for their materiality (in relation to the material issues identified earlier) for further management and reporting.
Prepare	
P1: Strategy and Resource Allocation Plans	Overview of the current strategy on management of nature-related issues has been included, with linkage to nature-related materiality issues and risks. Based on the findings of the LEAP exercise, we will further review our internal strategy, management and monitoring to align with national and global goals on addressing nature loss and degradation.
P2: Target setting and performance management	We have already set 2050 as the target to achieve Net Zero and No Net Loss. Further, Hindalco has been taking necessary steps to reduce carbon footprint across its operations and achieve water positivity by 2050 and zero waste to landfill by 2050.
P3: Reporting	We continue to disclose and report on our material nature-related issues through our Integrated Annual Report, which includes information on biodiversity, waste, water and GHG footprints . Starting with this first report on TNFD, we will further align our disclosure and reporting, assessment results, details of improvements, actions taken, and additional metrics within the scope with TNFD. These reports will cover nature-related risks and opportunities as identified and prioritised through periodic assessments and monitoring.
P4: Presentation	Nature-related risks and opportunities will be continuously disclosed in accordance with TNFD recommendations.

Limitations

In this report, our analysis covers only 21 out of Hindalco's 42 locations. BMPs have been developed specifically for these locations and these have not yet been extended to our upstream (suppliers) or downstream (consumers) activities. It is important to note that the initial impact, dependency, and risk ratings presented here are based on high-level estimates that primarily rely on global, sectoral, and regional data.

This report represents an important first step toward managing nature and biodiversity issues in line with global sustainability frameworks. It outlines our strategic goals and commitment to implementing site-specific action plans for key material issues. We acknowledge that ongoing refinement of these assessments will be necessary, and we welcome continued engagement with our stakeholders as we move forward.

S1

Locating Interface with Nature

By adopting TNFD-aligned guidelines and leveraging its sector-specific expertise, Hindalco ensures a robust, location-specific approach to managing nature-related risks and capturing opportunities for sustainable growth.

Hindalco's asset-specific location data related to specific sectors, business units and geographic regions where it operates, plays a pivotal role in evaluating the interaction between its operations and the natural environment. This detailed information is critical for understanding the direct and indirect impact of our activities on biodiversity, ecosystem services, and local communities.

Given our operations across aluminium, copper, and specialty alumina, a sector- and geography-focused approach is most suitable. Each of these sectors presents distinct interactions with nature, necessitating tailored assessments to accurately identify and address risks and opportunities.

Sector-specific, Business Unit Focus

Aluminium (Upstream and downstream) →

Operations such as mining and alumina refining and smelting interact heavily with land use, water resources, and biodiversity in sensitive ecosystems.

Copper (Upstream and downstream) →

We recognise the nature-related risks of our copper operations at Dahej, Gujarat, given its proximity to mangroves, water-intensive processes, and waste management challenges. We are committed to mitigating air emissions, protecting water quality, and preserving biodiversity through advanced pollution controls and enhanced water recycling.

Specialty Alumina

Facilities at Belagavi and Muri interact with local ecosystems and require precise waste and water management strategies.

Priority Locations for Nature-Related Risks and Opportunities

We are aligned with TNFD guidelines to identify priority locations where material nature-related issues arise, including:

Areas of Biodiversity Importance: Regions with critical habitats, endangered species, or high conservation value areas intersecting Hindalco's mining and operational sites.

High Ecosystem Integrity Areas: Locations such as unfragmented forests or undisturbed habitats near our mines and plants.

Regions of Declining Ecosystem Integrity: Sites where operations or external factors (e.g., deforestation, pollution) contribute to the deterioration of local ecosystems.

Water-stressed Zones: Areas like Andhra Pradesh where we have the Kuppam unit, Gujarat where we are operating in Asoj and Dahej, and Karnataka where we have our Belagavi unit, are regions with high physical water risks, necessitating advanced water management practices.

Ecosystem Service Provision Areas: Locations critical for ecosystem services that benefit local communities, such as clean water, soil health, and air quality, particularly in mining-intensive regions.

Key Outcomes and Applications

Our approach enables the identification of risks and opportunities at the intersection of our assets and nature. It involves the following actions:

Biodiversity Action Plans: Implementation of Biodiversity Management Plans (BMPs) across high-priority sites to align with our No Net Loss goals.

Water Stewardship: For enhancing water positivity, we aim to reuse process and domestic water within our operating areas by adopting the Niti Aayog (3M+7R) principle and implementing Zero Liquid Discharge (ZLD) technology, tertiary recycling, and beyond-the-fence water harvesting structures.

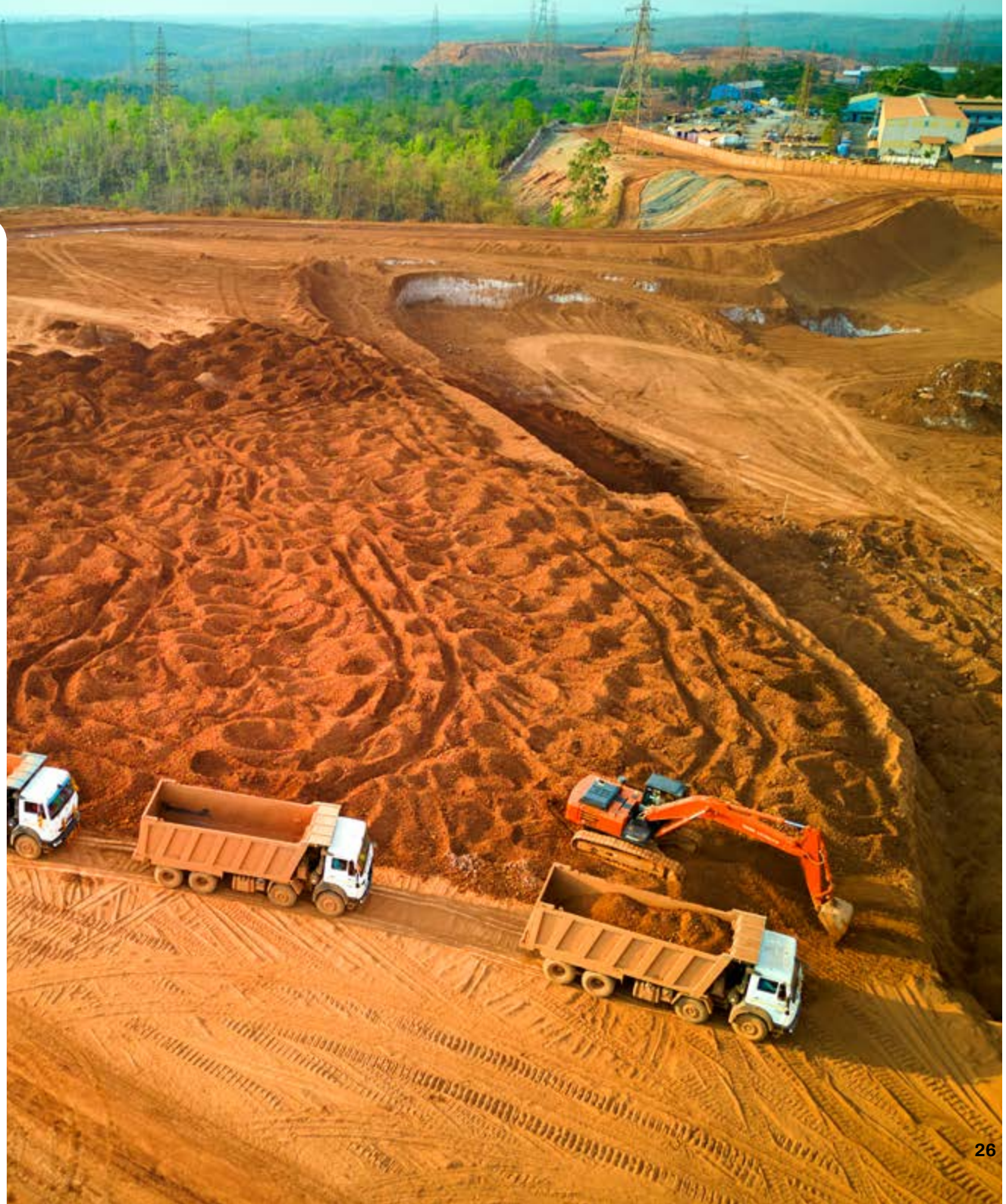
Afforestation and Green Cover Expansion: Investments in planting 4.1 lakh trees and managing 5,705 acres of green cover.

Community and Ecosystem Co-Benefits: Strengthening collaborations with Indigenous Peoples and local communities to sustain ecosystem services critical to livelihoods.

Evaluating Priority Locations with/without Nature-Related Risks and Opportunities

	Important Biodiversity Values				Ecosystem Integrity			Water Stress
Sites*	Presence of Protected Areas and Key Biodiversity Areas	Likely Critical Habitat	Potential high impact on freshwater biodiversity	Potential high impact on terrestrial biodiversity	Natural Habitat converted	High ecosystem intactness	Emerging hotspots	High water risk
Aditya Aluminium	Yes	No	No	Yes	Yes	No	No	No
Utkal Alumina	No	Yes	Yes	Yes	Yes	No	No	No
Belagavi	No	Yes	Yes	Yes	No	No	No	Yes
Taloja	No	Yes	No	No	No	No	No	No
Belur	No	No	No	No	No	No	No	No
Alupuram	No	No	No	No	No	No	No	No
Hirakud FRP	Yes	No	No	No	Yes	No	No	No
Hirakud P&S	Yes	No	No	No	Yes	No	No	No
Kuppam	Yes	No	No	No	No	No	No	Yes
Netrahat Cluster (5 mines)	Yes	No	No	No	Yes	No	No	No
Baphlimali	No	No	No	No	Yes	No	No	No
Samri	Yes	No	No	No	Yes	No	No	No
Garepalma IV	No	No	No	No	Yes	No	No	No
Kathautia	Yes	No	No	No	Yes	No	No	No
Chakla Coal Mines	Yes	No	No	No	Yes	No	No	No

**Only mines and plants where BMPs are available have been covered*



The assessment of our sites highlights varying levels of environmental impact and biodiversity risk, emphasising the need for targeted management strategies. Sites such as Utkal Alumina, Kathautia, and Chakla Coal Mines are located near protected areas and key biodiversity areas (KBAs), requiring careful oversight. Utkal Alumina and Belagavi exhibit likely critical habitats and significant potential impacts on terrestrial and freshwater biodiversity, while sites like Alupuram, Asoj, Dahej and Belur pose lower immediate risks. Water stress is a pressing concern for Belagavi and Kuppam, necessitating focused water conservation initiatives. Sites such as Aditya Aluminium and Utkal Alumina have undergone natural habitat conversion, necessitating proactive measures to prevent further degradation. Although no emerging biodiversity hotspots have been identified, maintaining ecosystem integrity at sites like Hirakud FRP and Hirakud P&S remains a priority. Our approach to sustainability is reinforced through comprehensive BMPs, ensuring compliance with regulatory frameworks and fostering continuous improvement.

We are enhancing our operations through a robust Biodiversity Policy that integrates conservation efforts into all phases of our projects. This policy aims for No Net Loss by preventing, minimising, and offsetting impacts on biodiversity, ensuring compliance with environmental regulations, and focusing on high-priority conservation areas.

~50%

Sites have BMPs in place and all sites focus on continuous improvement to address environmental impact

S2

Evaluating Impacts and Dependencies

We have utilised the ENCORE tool to assess the materiality of nature-related impacts and dependencies across our different manufacturing units and mining sites.

The TNFD recommended tool evaluates both impacts — drivers of nature loss such as resource use/replenishment, climate change — and dependencies — reliance on ecosystem services like water use and climate regulation, and so on.

ENCORE assigns ratings from Very High (VH) to Very Low (VL) to indicate the significance of these nature-related impacts and dependencies. However, it is important to note that the potential impacts identified by ENCORE may differ from actual materiality based on factors such as geography, resource use, and existing risk management practices. The actual materiality of impacts and dependencies can vary and is analysed specifically for each site.

Table 1: Heatmap of Exposure to Nature-related Impacts

Drivers of Nature Change (IPBES)	Resources Use/ Replenishment	Land, Freshwater and Ocean Use Change			Climate Change	Pollution/Pollution Removal				
Business Sector	Water Use	Terrestrial Ecosystem Use	Freshwater Ecosystem Use	Marine Ecosystem Use	GHG Emissions	Non-GHG Pollutants	Water Pollutants	Soil Pollutants	Solid Waste	Disturbances
Metals and Mining	Very High	Very High	High	NA	High	High	High	High	High	High

Source: ENCORE

Table 2: Heatmap of Exposure to Nature-related Dependencies

	Direct Physical Input		Enables Production Process	Protection from Disruption	
Business Sector	Ground Water	Surface Water	Water Flow Maintenance	Climate Regulation	Mass Stabilisation and Erosion Control
Metals and Mining	High	High	Medium	Medium	Medium

Source: ENCORE

As the table shows, the Metals and Mining sector rates very high for water use and terrestrial ecosystem disruption. This is due to extensive land clearing, habitat loss, and intensive water consumption. Freshwater ecosystem use is rated high, reflecting impacts such as water pollution and industrial discharges.

The sector also shows high levels of impact in GHG emissions, non-GHG pollutants, soil pollutants, solid waste generation, and disturbances as a result of resource extraction, processing, and waste disposal.

In terms of dependency, the sector relies heavily on natural resources such as water, land, and ecosystem services for operations like mineral extraction, refining, and waste management. However, the degree of resilience or protection from disruptions caused by these dependencies varies, requiring robust risk management and mitigation measures.

However, the ratings reflect generic global conditions and do not reflect the specific local context of our operations. Site-specific assessments are crucial to understanding the unique conditions, risks, and dependencies at each location for which we are using tools such as BMPs, environmental impact assessments, and stakeholder consultations.

These assessments enable for us to determine the severity, frequency, and potential mitigation of impacts, alongside identifying opportunities for positive outcomes. For example, initiatives such as water recycling, ZLD systems, and biodiversity action plans are tailored to specific sites to address material risks and dependencies effectively. This localised approach ensures that the actual materiality of impacts and dependencies aligns with the unique ecological and socio-economic context of each site.

Table 3: Impact and Dependencies of the Metal and Mining Sector Using the WWF Biodiversity Risk Screening Tool

Impact/Dependency Category	Biodiversity Risk Filter Indicators	Impact Level	Dependency Level
Provisioning Services	Water Availability	No Impact	Very High
	Forest Productivity and Distance to Markets	No Impact	High
	Limited Wild Flora and Fauna Availability	No Impact	No Dependency
	Limited Marine Fish Availability	No Impact	No Dependency
Regulating and Supporting services - Enabling	Soil Condition	No Impact	No Dependency
	Water Condition	No Impact	Low
	Air Condition	No Impact	Medium
	Ecosystem Condition	No Impact	No Dependency
	Pollination	No Impact	No Dependency
Regulating services - Mitigating	Landslides	No Impact	Medium
	Wildfire Hazard	No Impact	Medium
	Plant/Forest/Aquatic Pets and Diseases	No Impact	No Dependency
	Herbicide Resistance	No Impact	No Dependency
	Extreme Heat	No Impact	High
	Tropical Cyclones	No Impact	Medium
Cultural Services	Natural and Cultural Resources	No Impact	No Dependency
Biodiversity Pressures	Land, Freshwater and sea use change	Very High	No Dependency
	Forest Canopy Loss	Very High	No Dependency
	Invasives	Low	No Dependency
	Pollution	Very High	No Dependency

Impact/Dependency Category	Biodiversity Risk Filter Indicators	Impact Level	Dependency Level
Environmental Factors	Protected/Conserved Areas	Very High	No Dependency
	key Biodiversity Areas	High	No Dependency
	Other Important Delineated Areas	High	No Dependency
	Ecosystem Condition	High	No Dependency
	Range Reality	Medium	No Dependency
Socioeconomic Factors	Indigenous Peoples; Local Communities' Land and Territories	Very High	No Dependency
	Resource Scarcity; Food-Water-Air	Low	No Dependency
	Labour/Human Rights	High	No Dependency
	Financial Inequality	Low	No Dependency
Additional Factors	Media Scrutiny	No Impact	Very High
	Political Situation	No Impact	Medium
	Sites of International Interest	No Impact	Medium
	Risk preparation	No Impact	Low

The assessment using the WWF Biodiversity Risk Filter highlights the Metals and Mining sector's reliance on natural resources and its potential environmental impacts.

Provisioning services, such as water availability and forest productivity, demonstrate no direct operational impact but indicate a very high to high dependency, underlining the critical need for sustainable water and resource management to support mining operations. Conversely, limited availability of wild flora, fauna, and marine fish presents no impact or dependency, reflecting minimal reliance on these ecosystem services in the sector's value chain.

Regulating and supporting services, including soil, water, and air conditions, show minimal immediate impact, with dependencies from low to medium. While current mining practices do not significantly affect these factors, ongoing environmental monitoring and mitigation strategies are essential to prevent future risks such as climate-related risks that necessitate adaptive measures to enhance climate resilience in mining operations.

Biodiversity pressures pose significant challenges, with very high-risk levels associated with land, freshwater, and sea use changes, forest canopy loss, and pollution. This highlights the potential for regulatory scrutiny and reputational concerns, emphasising the need for comprehensive land-use planning and pollution control. Also, the presence of protected and conserved areas, key biodiversity areas (KBAs), and other delineated zones present high to very high risks, requiring proactive biodiversity management and compliance with conservation regulations.

From a socioeconomic perspective, interactions with Indigenous Peoples and local communities pose a very high risk, requiring inclusive stakeholder engagement, sustainable land-use policies as well as ethical business practices and social responsibility initiatives within the sector.

Additional factors, such as media scrutiny, present a very high dependency despite no direct operational impact, indicating that reputational risks can significantly influence business continuity and investor confidence. Political and regulatory uncertainties also exhibit medium dependencies, necessitating proactive risk mitigation strategies.

S3

Identification of Key Risks

The use of the WWF Biodiversity Risk Filter (BRF) to evaluate nature-related risks across our operations in the Metals and Mining sector, specifically for aluminium and copper, reveals significant physical and transition risks.

There are also prominent challenges such as extreme heat, water scarcity, and land use changes affecting multiple sites. These pose the risk of potential disruption and emphasise the need for proactive management.

Risk Type	Metals and Mining	
	Aluminium	Copper
Physical Risk	High	High
Transition Risk	High	High

Note: Aggregate based on site scores of total physical and transition risks for each business unit

We are implementing comprehensive risk management strategies to enhance resilience against these environmental challenges. Key initiatives include:

Renewable Energy Integration:
Transitioning to low-carbon operations, including the use of round-the-clock solar and wind power with storage at aluminium smelters.

Water Stewardship Programmes:
Addressing water scarcity through Zero Liquid Discharge (ZLD) systems and advanced recycling at critical sites.

Biodiversity Conservation:
Developing and implementing BMPs at 21 high-priority locations to minimise ecosystem disruption.

Zero Waste to Landfill:
Three of our plants have achieved zero waste to landfill milestone.

Beyond-the-Fence Water Positivity Initiatives:
We have initiated desalination and tertiary water recycling projects to reduce dependency on freshwater sources. Community-focused initiatives, such as afforestation and groundwater recharge programmes are also being expanded to create positive water impacts beyond our operational boundaries.

Beyond-the-Fence Biodiversity Offset Projects:
We are implementing ecosystem restoration, afforestation, and habitat conservation initiatives beyond our operational boundaries to offset biodiversity impacts and enhance ecological.

3

Plants have achieved zero waste to landfill goal

Physical and Transition Risks

Our operations face significant physical and transition risks in the Aluminium and Copper sectors, including challenges from extreme weather, environmental concerns, and stricter regulations.

One of the biggest physical risks is water scarcity, as several of our locations are in water-stressed regions. Other risks include heavy rainfall and flooding, which threaten infrastructure, logistics, and employee safety, as well as landslides and fire hazards. Climate change is worsening these risks.

Transition risks, such as regulatory compliance and reputation, are also significant. Labour and human rights issues tied to waste management and community engagement highlight the need for strong environmental and ethical practices.

Please refer to the Risk and Impact Management chapter on pages 50–67 for more details.

S4

Hindalco at the Site Level

We integrate a comprehensive Ecosystem Services Review (ESR) to understand and manage our dependencies and impacts on ecosystem services effectively.

Ecosystem Services Review Process

Data Gathering

Identifying the ecosystem services utilised or affected by operations within a 10 km buffer of each site. This includes:

- **Provisioning Services:** Resources like water and raw materials essential for operations.
- **Regulating Services:** Functions like water purification and carbon sequestration that support environmental balance.
- **Cultural Services:** Non-material benefits such as recreational and aesthetic values linked to surrounding communities.

Impact and Dependency Analysis

Assessing the relationship between operations and ecosystem services to identify risks and opportunities for sustainable management.

Categorisation of Dependencies and Impacts

Hindalco categories:

Dependencies: Based on the degree of reliance on ecosystem services, dependencies are classified as Low, Medium, or High.

Impacts: Evaluating how operations affect ecosystem services, impacts are categorised as low, medium, or high.

Examples of Application

Water Management: Dependence on water resources is typically rated as high, driving initiatives like water-positivity and innovative water reuse strategies.

Biodiversity: Activities in mining areas often show medium to high impacts, and addressed through BMPs and afforestation efforts.

Air Quality and Carbon Sequestration: Identified as critical regulating services, Hindalco mitigates its impacts through clean energy initiatives and carbon reduction strategies.

Fugitive Emissions Reduction: Implementing advanced dust suppression systems, real-time air quality monitoring, and process optimisations to minimise fugitive emissions and ensure cleaner air on the shop floor.

Benefits

This systematic ESR process helps our operations to:

- Identify and mitigate environmental risks
- Prioritise actions to reduce dependency and impact on critical ecosystem services
- Support sustainability and responsible resource management across our operations

Site-specific impacts and dependencies aligning with the Ecosystem Services are described in the following table.

Table 4: Impacts of Hindalco's Operation on Provisioning Ecosystem Services

Sites	Impact on Provisioning Ecosystem Services													
	Crops	Livestock	Capture fisheries	Aquaculture	Wild foods	Timber & other wood fibres	Fibers and resins	Animal skins	Sand	Ornamental resources	Biomass fuel	Freshwater	Genetic resources	Biochemicals, natural medicines, pharmaceuticals
Aditya Aluminium							NA	NA	NA	NA				NA
Utkal Alumina							NA	NA	NA	NA			NA	NA
Belagavi							NA	NA	NA	NA			NA	NA
Taloja	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA
Belur	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA
Alupuram	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA
Hirakud FRP					NA	NA	NA	NA	NA	NA			NA	NA
Hirakud P&S					NA	NA	NA	NA	NA	NA			NA	NA
Kuppam			NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA
Netrahat Cluster (5 Mines)			NA	NA			NA	NA	NA	NA			NA	
Baphlimali							NA	NA	NA	NA			NA	NA
Samri (3 Mines)			NA	NA			NA	NA	NA	NA	NA		NA	
Garepalma IV			NA	NA				NA	NA	NA			NA	
Kathautia		NA	NA	NA				NA	NA	NA			NA	
Chakla Coal Mines		NA	NA	NA				NA	NA	NA			NA	

High Medium Low NA- Not Applicable

Table 5: Impacts of Hindalco's Operations on Regulating Ecosystem and Cultural Ecosystem Services

Sites	Impact on Regulating Ecosystem Services											Impact on Cultural Ecosystem Services		
	Maintenance of air quality	Global climate regulation	Regional/ local climate regulation	Regulation of water timing and flows	Erosion control	Water purification and waste treatment	Disease mitigation	Maintenance of soil quality	Pest mitigation	Pollination	Natural hazard mitigation	Recreation and ecotourism	Ethical and spiritual value	Educational and inspirational
Aditya Aluminium											NA			
Utkal Alumina											NA			
Belagavi														
Taloja							NA		NA		NA			
Belur							NA		NA		NA			
Alupuram							NA		NA		NA			
Hirakud FRP														
Hirakud P&S														
Kuppam							NA	NA	NA		NA			
Netrahat Cluster (5 Mines)														
Baphlimali											NA			
Samri (3 Mines)											NA			
Garepalma IV											NA			
Kathautia														
Chakla Coal Mines														

High Medium Low NA- Not Applicable

Table 6: Dependencies of Hindalco on Provisioning Ecosystem Services

Sites	Provisioning Ecosystem Services													
	Dependency on Provisioning ESR													
	Crops	Livestock	Capture fisheries	Aquaculture	Wild foods	Timber & other wood fibres	Fibers & resins	Animal skins	Sand	Ornamental resources	Biomass fuel	Freshwater	Genetic resources	Biochemicals, natural medicines, pharmaceuticals
Aditya Aluminium							NA	NA	NA	NA			NA	NA
Utkal Alumina							NA	NA	NA	NA			NA	NA
Belagavi						NA	NA	NA	NA	NA			NA	NA
Taloja	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			NA	NA
Belur	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			NA	NA
Alupuram						NA	NA	NA	NA	NA			NA	NA
Hirakud FRP					NA	NA	NA	NA	NA	NA			NA	NA
Hirakud P&S					NA	NA	NA	NA	NA	NA			NA	NA
Kuppam			NA	NA	NA	NA	NA	NA	NA	NA			NA	NA
Netrahat Cluster (5 Mines)			NA	NA			NA	NA	NA	NA			NA	
Baphlimali							NA	NA	NA	NA			NA	NA
Samri (3 Mines)			NA	NA				NA	NA	NA			NA	
Garepalma IV			NA	NA				NA	NA	NA			NA	
Kathautia		NA	NA	NA				NA	NA	NA			NA	
Chakla Coal Mines		NA	NA	NA				NA	NA	NA			NA	

High Medium Low NA- Not Applicable

Table 7: Dependencies of Hindalco on Regulating Ecosystem and Cultural Ecosystem Services

Sites	Dependency on Regulating Ecosystem Services											Dependency on Cultural Ecosystem Services		
	Maintenance of air quality	Global climate regulation	Regional/ local climate regulation	Regulation of water timing and flows	Erosion control	Water purification and waste treatment	Disease mitigation	Maintenance of soil quality	Pest mitigation	Pollination	Natural hazard mitigation	Recreation & ecotourism	Ethical & spiritual values	Educational and inspirational values
Aditya Aluminium	High	Low	Medium	Medium	Low	Medium	Low	Low	Low	Medium	Medium	Medium	Medium	Medium
Utkal Alumina	High	Low	Medium	Medium	Low	High	Low	Low	Low	Medium	Medium	Medium	Medium	Medium
Belagavi	Medium	Low	Medium	Medium	Low	Medium	Low	Low	Low	Medium	Medium	Medium	Medium	Medium
Taloja	Medium	Low	Medium	Medium	Low	Medium	NA	NA	NA	Medium	Medium	Low	Low	Low
Belur	Medium	Low	Medium	Medium	Medium	Medium	NA	NA	NA	Medium	Medium	Low	Low	Low
Alupuram	Medium	Low	Medium	Medium	Low	Medium	NA	NA	NA	Medium	Medium	Low	Low	Low
Hirakud FRP	High	Medium	Medium	Low	Low	Medium	Low	Low	Low	Medium	High	Medium	Medium	Medium
Hirakud P&S	High	Medium	Medium	Low	Low	Medium	Low	Low	Low	Medium	High	Medium	Medium	Medium
Kuppam	Medium	Low	Low	Low	Medium	High	NA	NA	NA	Low	Medium	Medium	Medium	Medium
Netrahat Cluster (5 Mines)	Medium	Low	Low	Low	Medium	Low	Medium	Medium	Low	Medium	Low	Medium	Medium	Medium
Baphlimali	High	Medium	Medium	Medium	Medium	High	Medium	Low	Low	Medium	Low	Medium	Medium	Medium
Samri (3 Mines)	Medium	Low	Low	Low	Low	Low	Low	Low	Low	Medium	Low	Medium	Medium	Medium
Garepalma IV	Medium	Medium	Medium	Low	Low	Low	Low	Low	Medium	Medium	Low	Medium	Medium	Medium
Kathautia	Medium	Low	Medium	Low	Low	Low	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Chakla Coal Mines	Medium	Low	Medium	Medium	Low	Low	Low	Medium	Medium	Medium	Medium	Medium	Medium	Medium

High Medium Low NA- Not Applicable

Table 8: Site-specific Physical and Transitional Risk and Mitigation Measures Based on Ecosystem Services

Sites	Dependency + Impact	Physical Risk	Transition Risk
Aditya Aluminium	• Provisioning ESR	Acute – Chemical spills and air pollution events, which can immediately harm crops and water quality Chronic water scarcity, soil degradation, and loss of biodiversity, all of which can significantly reduce agricultural productivity over time	Policy – Implementation of stricter regulations on emissions, waste disposal, and water usage to minimise pollution and resource depletion Reputational Risk – Negative public perception and potential backlash over affecting the surrounding crops, excessive water usage and air pollution impacting local communities
	Crops – Intensive water usage, soil contamination, air emission from the plant and disruption in habitat due to change in land use		
	Freshwater – Depletion of local freshwater sources for industrial use	Acute – Sudden water shortages or droughts disrupting operations Chronic – Long-term water scarcity affecting operational sustainability and community water supplies	Policy – Implementation of stricter water usage regulations and higher tariffs Reputational Risk – Negative public perception and potential backlash over excessive water use impacting local communities
	Maintenance of air quality – Emissions from operations leading to air pollution and health issues for employees and local communities	Acute – Episodes of severe air pollution affecting employee health and operational efficiency Chronic – Persistent poor air quality leading to long-term health problems and increased healthcare costs	Policy – Stricter air quality regulations and emission standards Reputational Risk – Public and stakeholder criticism over contribution to air pollution and health impacts
Utkal Alumina	• Provisioning ESR		
	Freshwater – depletion of local freshwater sources for industrial use	Acute – Sudden water shortages or droughts disrupting operations Chronic – Long-term water scarcity affecting operational sustainability and community water supplies	Policy – Implementation of stricter water usage regulations and higher tariffs Reputational Risk – Negative public perception and potential backlash over excessive water use impacting local communities
	Crops – Intensive water usage, soil contamination, air emissions from the plant and disruption in habitat due to change in land use	Acute – Chemical spills and air pollution events, which can immediately harm crops and water quality Chronic – Water scarcity, soil degradation, and loss of biodiversity, all of which can significantly reduce agricultural productivity over time	Policy – Implementation of stricter regulations on emissions, waste disposal, and water usage to minimise pollution and resource depletion Reputational Risk – Negative public perception and potential backlash over affecting the surrounding crops, excessive water usage and air pollution impacting local communities
	• Regulating ESR	Acute – Episodes of severe air pollution affecting employee health and operational efficiency Chronic – Persistent poor air quality leading to long-term health problems and increased healthcare costs Acute – Sudden contamination events leading to health hazards and operational shutdowns Chronic – Gradual degradation of water quality affecting long-term water availability and increasing treatment costs	Policy – Stricter air quality regulations and emissions standards Reputational Risk – Public and stakeholder criticism over contribution to air pollution and health impacts Policy – Tighter regulations on waste management and higher compliance costs Reputational Risk – Damage to reputation from being associated with inadequate waste management practices
	Maintenance of air quality – Emissions from operations leading to air pollution and health issues for employees and local communities Water purification and waste treatment –Pollution of water bodies and overburdening of natural waste treatment capacities		
Belagavi	• Provisioning ESR	Acute – Sudden water shortages or droughts disrupting operations Chronic – Long-term water scarcity affecting operational sustainability and community water supplies	Policy – Implementation of stricter water usage regulations and higher tariffs Reputational Risk – Negative public perception and potential backlash over excessive water use impacting local communities
	Freshwater – Depletion of local freshwater sources for industrial use		

• Risk Indicator

Sites	Dependency + Impact	Physical Risk	Transition Risk
Hirakud (P&S and FRP)	• Regulating ESR **Maintenance of air quality –** Emissions from operations leading to air pollution and health issues for employees and local communities Natural hazard mitigation –Increase in flooding incidents due to loss of natural flood defences	Acute – Episodes of severe air pollution affecting employee health and operational efficiency Chronic – Persistent poor air quality leading to long-term health problems and increased healthcare costs Acute – Severe flooding causing immediate operational disruptions and damage to infrastructure Chronic – Increased frequency and severity of flooding impacting long-term operational stability and increasing insurance premiums	Policy-Stricter air quality regulations and emissions standards. Reputational Risk - Public and stakeholder criticism over contribution to air pollution and health impacts. Policy – Changes in land use regulations and increased investments in artificial flood defences Reputational Risk – Criticism from stakeholders for inadequate flood preparedness and response, and for contributing to the loss of natural flood mitigation services
Kuppam	• Provisioning ESR **Freshwater –** Depletion of groundwater levels and potential contamination of aquifers	Acute – Sudden drop in groundwater levels causing immediate water shortage Chronic – Long-term depletion of groundwater resources leading to reduced availability and increased pumping costs	Policy – Introduction of stringent groundwater extraction regulations and possible restrictions on usage Reputational Risk – Public criticism and stakeholder concerns over unsustainable groundwater use and its impact on local communities and ecosystems
Netrahat Cluster (5 Mines)	• Provisioning ESR **Crops –** Intensive water usage, soil contamination, air emissions from the plant and disruption in habitat due to change in land use	Acute – Chemical spills and air pollution events, which can immediately harm crops and water quality Chronic – Water scarcity, soil degradation, and loss of biodiversity, all of which can significantly reduce agricultural productivity over time	Policy – Implementation of stricter regulations on emissions, waste disposal, and water usage to minimise pollution and resource depletion Reputational Risk – Negative public perception and potential backlash over affecting the surrounding crops, excessive water usage and air pollution impacting local communities
Baphlimali	• Provisioning ESR **Crops –** Intensive water usage, soil contamination, air emissions from the plant and disruption in habitat due to change in land use	Acute – Chemical spills and air pollution events, which can immediately harm crops and water quality Chronic – Water scarcity, soil degradation, and loss of biodiversity, all of which can significantly reduce agricultural productivity over time	Policy – Implementation of stricter regulations on emissions, waste disposal, and water usage to minimise pollution and resource depletion Reputational Risk – Negative public perception and potential backlash over affecting the surrounding crops, excessive water usage and air pollution impacting local communities
	• Regulating ESR **Maintenance of air quality –** Emissions from operations leading to air pollution and health issues for employees and local communities Water purification and waste treatment –Pollution of water bodies and overburdening of natural waste treatment capacities	Acute – Episodes of severe air pollution affecting employee health and operational efficiency Chronic – Persistent poor air quality leading to long-term health problems and increased healthcare costs Acute – Sudden contamination events leading to health hazards and operational shutdowns Chronic – Gradual degradation of water quality affecting long-term water availability and increasing treatment costs	Policy – Stricter air quality regulations and emissions standards Reputational Risk – Public and stakeholder criticism over contribution to air pollution and health impacts Policy – Tighter regulations on waste management and higher compliance costs Reputational Risk – Damage to reputation from being associated with inadequate waste management practices

• Risk Indicator

S5

Nature Related Opportunities and Mitigation Measures

Through the development of its integrated value chain and adherence to global ESG standards, Hindalco proactively addresses ecological challenges and economic opportunities. Initiatives such as advanced recycling programmes, water conservation projects, and the promotion of biodiversity underline its commitment to sustainability.

The Company's operations, spanning global recycling efforts to the development of renewable energy solutions in India, reflect a localised yet comprehensive approach to reducing its ecological footprint. Our mission is to balance economic growth with environmental conservation, ensuring benefits for communities, industries, and ecosystems alike.

Table 9: Site Specific Opportunities and Mitigation Measures on Sustainability Performance

Sites	Dependency + Impact	Opportunities – Sustainability Performance	Mitigation Measures for Physical Risk	Mitigation Measures for Transition Risk
Aditya Aluminium	• Provisioning ESR **Crops--** Intensive water usage, soil contamination, air emissions from the plant and disruption in habitat due to change in land use	**Clean Technology:** Adopting cleaner production technologies can minimise emissions and waste, reducing environmental impacts **Collaboration with Farmers:** Partnering with local farmers to develop best practices for sustainable agriculture can enhance crop resilience and promote eco-friendly methods **Integrated Resource Management:** Implementing integrated approaches to manage water, land, and nutrients can optimise resource use and mitigate negative effects on agriculture	Aditya Aluminium is strengthening its environmental management practices through targeted initiatives. The adequacy of greenbelts is being reviewed and improved to mitigate dust and air pollution while maintaining floristic diversity and width of 50 metres or more. Stormwater management systems are being upgraded to address extreme weather events like heavy rainfall, mitigating risks like erosion, water scarcity, and water quality degradation. The rehabilitation of riparian margins along critical water bodies, including the Bhedan River, Matwali Nadi, and their tributaries, is prioritised to restore ecological balance. Efforts are also being made so that the design and use of refuelling stations, equipment servicing areas, and hazardous material storage facilities minimise spill risks. Secondary containment systems are being installed to prevent contamination of soil and water. Emergency response teams are trained and equipped to handle incidents such as chemical spills and water pollution, with annual reviews of response procedures and hazardous material storage protocols to account for any changes.	Aditya Aluminium prioritises environmental monitoring and continuous improvement in its operations. An independent third-party review will be conducted every two years to evaluate the implementation and effectiveness of air quality and water protection measures as outlined in the Environmental Impact Assessment (EIA), regulatory permits, and BMP. Annual system reviews will focus on integrating new designs, technologies, and operational programmes to enhance efficiency, reduce energy consumption, and lower GHG emissions per unit of production. Regular air quality monitoring will inform immediate corrective actions, with considerations for installing a publicly accessible, real-time ambient air quality monitoring system to enhance transparency. To safeguard water resources, Aditya Aluminium will ensure the efficient water handling, conveyance, and treatment systems to minimise consumption and waste. Regular site inspections will help identify and address risks of soil contamination that could affect groundwater or surface water. Water usage will be tracked and reported both overall and on a per-unit production basis to ensure compliance and drive sustainable water management.
	Freshwater – Depletion of local freshwater sources for industrial use	**Water Efficiency:** Implementing water-saving technologies and practices to reduce overall consumption **Alternative Water Sources:** Investing in rainwater harvesting and recycling systems to lessen dependence on local freshwater sources **Community Engagement:** Collaborating with local communities and stakeholders on water conservation initiatives to enhance reputation and social licence to operate		
	Maintenance of air quality – Emissions from operations leading to air pollution and health issues for employees and local communities	**Emissions Reduction:** Adopting cleaner production techniques and renewable energy sources to minimise air pollution **Health and Safety Improvements:** Enhancing air filtration and monitoring systems to protect employee health and increase productivity **Innovation and Leadership:** Positioning as a leader in air quality management and setting industry standards, boosting reputation and potentially influencing policy in a favourable direction		

• Risk Indicator

Sites	Dependency + Impact	Opportunities – Sustainability Performance	Mitigation Measures for Physical Risk	Mitigation Measures for Transition Risk
Utkal Alumina	• Provisioning ESR **Freshwater –** Depletion of local freshwater sources for industrial use	**Water Efficiency:** Implementing water-saving technologies and practices to reduce overall consumption **Alternative Water Sources:** Investing in rainwater harvesting and recycling systems to lessen dependence on local freshwater sources **Community Engagement:** Collaborating with local communities and stakeholders on water conservation initiatives to enhance reputation and social licence to operate	Utkal Aluminium is committed to sustainability through robust environmental management. Biennial third-party reviews will assess air quality measures under the EIA, regulatory permits, and BMP. Greenbelt adequacy will be evaluated to ensure effective pollution mitigation with diverse vegetation, while all vehicles and equipment will meet strict maintenance and certification standards. Annual reviews will identify opportunities to enhance efficiency, reduce energy use, and lower emissions, with immediate actions to manage air quality and carbon neutrality through offsets, sequestration, and emission reductions. Stormwater systems will be upgraded to address extreme weather risks, while riparian margins of Barha Nadi, San Nadi, and tributaries will be rehabilitated. Waste management will focus on maximum utilisation of red mud and fly ash, with biodiversity improvements targeted at water retention ponds, reservoirs, and riparian areas.	Utkal Aluminium prioritises environmental monitoring and compliance. Air quality and noise monitoring will be conducted as per Environmental Clearance conditions, with noise levels in the mining area measured biannually. Publicly accessible, real-time ambient air quality monitoring systems will be considered, and thresholds for dust emissions will guide suppression activities. Vehicular and GHG emissions will be monitored regularly at the source. A qualified third-party review of water protection measures will be conducted biennially, aligned with the EIA, regulatory permits, and BMP. Water management will focus on compliance to prevent overuse and protect local ecosystems. Efficient water handling and treatment systems are expected to minimise consumption, control pollution, and meet discharge standards. Water usage will be tracked and reported, both in total and on a per-unit production basis.
	Crops – Intensive water usage, soil contamination, air emissions from the plant and disruption in habitat due to change in land use	**Clean Technology:** Adopting cleaner production technologies can minimise emissions and waste, reducing environmental impacts **Collaboration with Farmers:** Partnering with local farmers to develop best practices for sustainable agriculture can enhance crop resilience and promote eco-friendly methods **Integrated Resource Management:** Implementing integrated approaches to manage water, land, and nutrients can optimise resource use and mitigate negative effects on agriculture		
	• Regulating ESR **Maintenance of air quality-** Emissions from operations leading to air pollution and health issues for employees and local communities. **Water purification and waste treatment –** Pollution of water bodies and overburdening of natural waste treatment capacities	**Emissions Reduction:** Adopting cleaner production techniques and renewable energy sources to minimise air pollution **Health and Safety Improvements:** Enhancing air filtration and monitoring systems to protect employee health and increase productivity **Innovation and Leadership:** Positioning as a leader in air quality management and setting industry standards, boosting reputation and potentially influencing policy in a favourable direction **Advanced Treatment Technologies:** Investing in state-of-the-art waste management technologies to reduce environmental impact **Circular Economy Practices:** Implementing recycling and reuse practices of waste to a resource **Partnerships and Collaborations:** Engaging in partnerships with environmental organisations and local authorities to enhance/explore opportunity for repurpose, thereby improving community relations and regulatory compliance		

• Risk Indicator

Sites	Dependency + Impact	Opportunities – Sustainability Performance	Mitigation Measures for Physical Risk	Mitigation Measures for Transition Risk
Belagavi	• Provisioning ESR **Freshwater-**Depletion of local freshwater sources for industrial use	**Water Efficiency:** Implementing water-saving technologies and practices to reduce overall consumption **Alternative Water Sources:** Investing in rainwater harvesting and recycling systems to lessen dependence on local freshwater sources **Community Engagement:** Collaborating with local communities and stakeholders on water conservation initiatives to enhance reputation and social licence to operate	Robust wastewater management practices at the Belagavi Plant conserve local freshwater resources. Wastewater from the manufacturing process is treated in the Effluent Treatment Plant (ETP) and is repurposed for non-potable uses, such as dust suppression in red mud ponds. Domestic wastewater, amounting to 450 KLD, is processed through the Sewage Treatment Plant (STP). Treated water is repurposed for irrigation, gardening, and similar activities, alleviating pressure on local water sources. The plant has achieved Zero Liquid Discharge (ZLD) status, underscoring its commitment to sustainable water management and preservation of regional water resources.	To mitigate the pollution of the Bellary River, primarily caused by the discharge of wastewater from the city, Hindalco Belagavi will collaborate with local authorities as part of its CSR initiatives to rejuvenate the river. This measure will contribute to the restoration of the river ecosystem and support environmental conservation, while enhancing the Company's reputation.

• Risk Indicator

Sites	Dependency + Impact	Opportunities – Sustainability Performance	Mitigation Measures for Physical Risk	Mitigation Measures for Transition Risk
Hirakud (P&S and FRP)	● Provisioning ESR **Freshwater –** Depletion of local freshwater sources for industrial use	**Water Efficiency:** Implementing water-saving technologies and practices to reduce overall consumption **Alternative Water Sources:** Investing in rainwater harvesting and recycling systems to lessen dependence on local freshwater sources **Community Engagement:** Collaborating with local communities and stakeholders on water conservation initiatives to enhance reputation and social licence to operate	The Hindalco Hirakud Plant has implemented comprehensive air quality management measures. A qualified, independent third-party review is conducted every two years to evaluate the implementation of air quality measures prescribed in the EIA, regulatory permits, and the BMP. Greenbelt adequacy is regularly assessed, ensuring the presence of shrubs, fast-growing trees, and dense, long-lived species to enhance air quality. All vehicles and combustion equipment are maintained according to manufacturer specifications and pollution prevention regulations, with No Pollution Vehicle (NPV) certificates secured for all mobile equipment. Annual reviews identify opportunities to enhance energy efficiency and reduce GHG emissions, with immediate corrective actions taken to address air quality concerns. In its pursuit of carbon neutrality, the plant actively engages carbon offset acquisitions, plantations, and forest rehabilitation projects. Stormwater management systems are periodically reviewed and upgraded to mitigate risks associated with climate-induced extreme precipitation events. Also, the rehabilitation and maintenance of degraded riparian zones along Barha Nadi, San Nadi, and their tributaries are prioritised. Efforts are made to minimise waste generation and enhance the utilisation of by-products, such as red mud and fly ash.	The Hirakud Plant's environmental monitoring and management practices ensure compliance and enhance sustainability. Air quality and noise levels are monitored as prescribed in the Environmental Clearance, with noise measurements in the mine area conducted biannually. The plant is considering the installation of an online ambient air quality monitoring system with publicly accessible real-time data for more transparency. Dust emission thresholds guide dust suppression activities, ensuring efficient use of water. Vehicular emissions are regularly monitored, and systems are in place to qualitatively and quantitatively track GHG emissions at their source. A biennial independent third-party review of all water protection measures outlined in the project EIA, regulatory permits, and the BMP is undertaken. The plant is fully compliant while maintaining high efficiency in water handling, conveyance, and treatment systems. Additionally, makeup water consumption is tracked both overall and on a per-unit production basis.
	● Regulating ESR **Maintenance of air quality –** Emissions from operations leading to air pollution and health issues for employees and local communities **Natural hazard mitigation –** Increase in flooding incidents due to loss of natural flood defences	**Emissions Reduction:** Adopting cleaner production techniques and renewable energy sources to minimise air pollution **Health and Safety Improvements:** Enhancing air filtration and monitoring systems to protect employee health and increase productivity **Innovation and Leadership:** Positioning as a leader in air quality management and setting industry standards, boosting reputation and potentially influencing policy in a favourable direction **Ecosystem Restoration:** Investing in the restoration and conservation of natural floodplains and wetlands to enhance flood resilience and biodiversity **Green Infrastructure:** Developing green infrastructure projects that integrate natural solutions with built environments to mitigate flood risks **Risk Reduction and Preparedness:** Enhancing flood risk assessment and preparedness strategies, including early warning systems and community-based disaster risk reduction programmes, to minimise potential impacts and build community resilience		
Kuppam	● Provisioning ESR **Freshwater –** Depletion of groundwater levels and potential contamination of aquifers	**Water Efficiency Improvements:** Implementing advanced technologies and practices to reduce groundwater use and enhance water-use efficiency in operations **Sustainable Groundwater Management:** Developing and adopting sustainable groundwater management plans, including monitoring and replenishment initiatives, to ensure long-term availability **Alternative Water Sources:** Exploring and investing in alternative water sources such as surface water, rainwater harvesting, and water recycling to reduce dependence on groundwater **Community Collaboration:** Engaging with local communities, governments, and stakeholders to collaboratively manage groundwater resources, improve water conservation efforts, and enhance social licence to operate		

● Risk Indicator

Sites	Dependency + Impact	Opportunities – Sustainability Performance	Mitigation Measures for Physical Risk	Mitigation Measures for Transition Risk
Netrahat Cluster (5 Mines)	• Provisioning ESR **Crops –** Intensive water usage, soil contamination, air emissions from the plant and disruption in habitat due to change in land use	**Clean Technology:** Adopting cleaner production technologies can minimise emissions and waste, reducing environmental impacts **Collaboration with Farmers:** Partnering with local farmers to develop best practices for sustainable agriculture can enhance crop resilience and promote eco-friendly methods **Integrated Resource Management:** Implementing integrated approaches to manage water, land, and nutrients can optimise resource use and mitigate negative effects on agriculture	In the Netrahat cluster, greenbelts are periodically reviewed to ensure they include a diverse mix of shrubs, fast-growing trees, and dense, long-lived species, with wider greenbelts (50 metres or more) providing enhanced biodiversity and air quality benefits. Stormwater management systems are assessed to address risks from climate-induced heavy precipitation and safeguards implemented. Regular inspections identify and mitigate erosion or instabilities, while degraded riparian areas are rehabilitated and maintained to restore ecological balance. Spill prevention measures include well-designed and maintained refuelling, servicing, and hazardous material storage areas, along with secondary containment systems to minimise risks. Emergency response teams are trained and equipped to handle environmental incidents, with annual reviews of response procedures, drills, and hazardous material handling to ensure readiness and resilience to potential risks.	An independent third-party review is conducted every two years to evaluate the implementation of air quality and water protection measures under the project EIA, regulatory permits, and BMP. Systems are reviewed annually to improve efficiency and reduce energy consumption and emissions . Regular air quality monitoring ensures timely action. The installation of a publicly accessible, online air quality monitoring system is being considered to enhance transparency. Monthly site inspections identify and remediate any area with potential soil contamination that could pose risks to groundwater or surface water, especially where hazardous chemicals or fuel have been historically stored. Efforts continue to improve local water quality and availability, including rainwater retention, and enhanced waste management systems. Water consumption is closely tracked, both overall and on a per-unit production basis, to promote sustainable resource use.

• Risk Indicator

Sites	Dependency + Impact	Opportunities – Sustainability Performance	Mitigation Measures for Physical Risk	Mitigation Measures for Transition Risk
Baphlimali	• Provisioning ESR **Crops -** Intensive water usage, soil contamination, air emissions from the plant and disruption in habitat due to change in land use	**Clean Technology:** Adopting cleaner production technologies can minimise emissions and waste, reducing environmental impacts **Collaboration with Farmers:** Partnering with local farmers to develop best practices for sustainable agriculture can enhance crop resilience and promote eco-friendly methods **Integrated Resource Management:** Implementing integrated approaches to manage water, land, and nutrients can optimise resource use and mitigate negative effects on agriculture	The Utkal Baphlimali Bauxite Mine promotes effective dust management through regular reviews of greenbelts to ensure a diverse mix of shrubs, fast-growing trees, and dense, long-lived species. Wider buffers, ideally 50 metres or more, enhance biodiversity and improve air quality. Stormwater management is regularly reviewed to manage risks of climate-induced precipitation and safeguards implemented. Routine inspections of erosion-prone areas, including access roads, help identify and mitigate instabilities, while rehabilitation and maintenance of degraded riparian zones along Tej Nadi, Sana Nadi, Kandabindha Nala, and their tributaries are actively supported. All refuelling, servicing, and hazardous material storage areas are designed to minimise spill risks, with secondary containment systems in place. A trained environmental Emergency Response Team conducts regular drills to ensure preparedness for environmental incidents. Internal reviews of emergency response procedures, drills, and hazardous material storage are conducted annually or when significant changes occur, incorporating provisions for worst-case scenarios.	Utkal Baphlimali Bauxite Mine conducts an independent third-party review every two years to assess the implementation of air quality and water protection measures under the project EIA, regulatory permits, and the latest version of the BMP. Annual reviews of all systems help improve efficiency and reduce energy consumption and emissions, including GHG emission per unit of production. Regular air quality monitoring ensures timely actions are taken and the installation of an online, publicly accessible air quality monitoring system is being considered for greater transparency. Monthly site inspections identify potentially contaminated areas that may pose risks to groundwater or surface water, particularly where hazardous chemicals or fuel have been stored or handled historically and remedial actions implemented where necessary. Water handling, conveyance and treatment systems are continually optimised for efficiency, and makeup water consumption is tracked both overall and per unit of production.
	• Regulating ESR **Maintenance of air quality-** Emissions from operations leading to air pollution and health issues for employees and local communities **Water purification and waste treatment-** Pollution of water bodies and overburdening of natural waste treatment capacities	**Emissions Reduction:** Adopting cleaner production techniques and renewable energy sources to minimise air pollution **Health and Safety Improvements:** Enhancing air filtration and monitoring systems to protect employee health and increase productivity **Innovation and Leadership:** Positioning as a leader in air quality management and setting industry standards, boosting reputation and potentially influencing policy in a favourable direction **Advanced Treatment Technologies:** Investing in state-of-the-art waste management technologies to reduce environmental impact **Circular Economy Practices:** Implementing recycling and reuse practices of waste **Partnerships and Collaborations:** Engaging in partnerships with environmental organisations and local authorities to enhance/explore opportunity for repurpose, thereby improving community relations and regulatory compliance		

• Risk Indicator

S6

Mitigation Hierarchy and Classification of Sensitivity of Hindalco's Business Operations

We are committed to achieving No Net Loss of biodiversity across all our operational sites by 2050. We aim to restore degraded ecosystems through targeted restoration and conservation measures, ensuring minimal disruption to local ecosystems and biodiversity.

We have implemented a Biodiversity Policy and developed Biodiversity Management Plans (BMPs) for 21 high-priority sites. These BMPs are designed to address biodiversity conservation holistically, focusing on avoiding and minimising ecological disruptions from project initiation to site closure. We are currently revising our BMPs to ensure they address nature-related risks and opportunities comprehensively. These plans integrate short-, medium-, and long-term strategies to align with the Company's sustainability goals.

Comprehensive biodiversity risk assessments in collaboration with global experts like IUCN and with tools like IBAT inform site-level strategies to mitigate risks and capitalise on conservation opportunities.

We also target to achieve water positivity by 2050 and undertake regular water risk assessments with tools like WBCSD's India Water Tool and the WRI Aqueduct Water Risk Atlas to identify water-stressed regions and inform the development of tailored water management strategies.

Our Biodiversity Targets

Achieve NNL by restoring 10% of degraded ecosystems by 2030, 40% by 2040, and 100% by 2050

- Replacement of invasive species with native vegetation across operational areas
- Plant 1 million trees annually, with a cumulative target of 6 million by 2030
- Conduct biodiversity studies at all operational sites and update BMPs accordingly

Mitigation Hierarchy

The mitigation hierarchy is a structured approach used to manage biodiversity and minimise environmental impacts on natural capital. The mitigation hierarchy framework emphasises Avoid, Minimise, Restore, and Offset approaches towards biodiversity management.

Action Items

Avoid 1

This first and most effective step in the hierarchy focuses on preventing impacts on biodiversity and ecosystems by careful planning and decision-making. We implement this by:

- Avoiding sensitive habitats: Ensuring operations are outside critical zones like World Heritage Sites, IUCN Category I-IV areas, and Ramsar wetlands
- Pre-project assessments: Conducting biodiversity impact assessments to select locations that minimise ecological disruption
- Operational guidelines: Designing operational plans that sidestep environmentally sensitive areas

Potential Impacts

- Proactive compliance with global biodiversity and environmental frameworks, such as the Convention on Biological Diversity and Science-Based Targets for Nature
- Reduces exposure to penalties or regulatory sanctions by ensuring operations are kept away from IUCN-designated sensitive areas or Ramsar wetlands
- Enhances corporate image as a responsible business
- Builds stakeholder trust (communities, investors, and regulators) by visibly committing to ecological sustainability from the outset
- Positions the Company as an industry leader in environmental stewardship, enhancing appeal to ESG-focused investors

Minimise 2

If avoidance is not feasible, efforts are made to reduce the scale and intensity of environmental impacts. Our actions include:

- Reducing invasive species: Reducing invasive species by replacing them with native vegetation in operational zones.
- Green belt development: Implementing vegetation buffers around operations to reduce habitat fragmentation and enhance biodiversity
- Process optimisation: Using technologies to lower emissions, manage waste, and reduce water consumption

Potential Impacts

- Strengthens compliance with national environmental laws and sector-specific regulations (e.g., India's Environmental Protection Act)
- Demonstrates alignment with corporate sustainability policies by mitigating operational risks such as habitat degradation or species disruption
- Reinforces our commitment to sustainable practices, maintaining stakeholder confidence even in high-impact sectors like Mining and Metals
- Improves brand equity by emphasising innovation in eco-efficient operations (e.g., green technologies or waste minimisation)

Mitigation Hierarchy

The mitigation hierarchy is a structured approach used to manage biodiversity and minimise environmental impacts on natural capital. The mitigation hierarchy framework emphasises Avoid, Minimise, Restore, and Offset approaches towards biodiversity management.

Action Items

Restore/Rehabilitate 3

Restoration focuses on repairing ecosystems damaged during operations to return them to their original state or a state that supports biodiversity. We are committed to:

- Habitat restoration targets: Restoring at least 10% of degraded operational areas by 2030, with progressive increases over the decades
- Riparian habitat and wetland restoration: Rejuvenating water bodies and surrounding ecosystems
- Community engagement: Integrating local communities in restoration projects to ensure sustainability and shared benefits

Potential Impacts

- Supports long-term compliance with restoration mandates, ensuring adherence to biodiversity offsetting requirements under frameworks like the Environmental Clearance Process in India
- Reduces future liabilities associated with environmental degradation through demonstrable recovery of ecosystems
- Enhances the Company's legacy as a steward of biodiversity by visibly investing in degraded land and habitat recovery projects

Offset 4

As a final opportunity for impacts that cannot be avoided, minimised, or restored, biodiversity offsets are undertaken to compensate for residual losses. Our strategy includes:

- No Net Loss (NNL): Committing to NNL of biodiversity by 2050, aligned with global frameworks like the Kunming-Montreal Biodiversity Framework
- Tree planting initiatives: Planting 1 million trees annually to enhance carbon sequestration and biodiversity
- Collaborations for biodiversity offsets: Working with conservation organisations to create or enhance habitats equivalent to the impacted areas

Potential Impacts

- Helps fulfil obligations under voluntary or regulatory biodiversity offset programmes, ensuring projects comply with NNL or 'Net Positive' frameworks
- Strengthens reputation by showcasing alignment with global sustainability practices, appealing to environmentally conscious consumers and investors

The use of IBAT enables the Company to evaluate material locations concerning Protected Areas and Key Biodiversity Areas (KBAs). As part of this study, we have analysed our operations within a 10 km buffer zone to identify potential biodiversity sensitivities and ensure alignment with global biodiversity conservation standards. We also leveraged biodiversity assessment reports and EIA reports to map and document species listed on the IUCN Red List. These assessments provide a comprehensive overview of species dependencies and risks, enabling us to integrate data-driven strategies into BMPs.

Nature-related Assessments on Hindalco's Suppliers

We are exploring opportunities to extend BMPs beyond our direct operations to encompass upstream and downstream suppliers and customers. This aligns with our commitment to fostering a sustainable and inclusive value chain, ensuring that biodiversity conservation and ecological stewardship are integrated into every aspect of our operations and partnerships. By engaging stakeholders across the value chain, we aim to create a unified approach to preserving natural ecosystems, mitigating environmental impacts, and promoting sustainable practices industry-wide. In the current year, we have evaluated significant Tier-1 suppliers for sustainability and environmental compliance.

56%

Assessment rate of Tier-1 suppliers in FY 2023-24

Risk and Impact Management

Climate change is identified as a key risk within our risk governance framework due to its potential impact on operations through regulatory changes, extreme weather events, and evolving market dynamics.

We also consider water scarcity and biodiversity loss as critical concerns. Water stress, particularly in high-risk operational zones, is mitigated through initiatives such as Zero Liquid Discharge (ZLD) and advanced water recycling measures. Biodiversity risks are managed through structured mitigation plans aligned with global frameworks, including that of TNFD.

Areas covered

Risk Framework and Monitoring Mechanisms

The Board, with the support of the management, conducts periodic and comprehensive assessments of our principal risks and uncertainties to ensure alignment with our financial and strategic objectives.

Our Risk Management and ESG Committee is responsible for overseeing climate and nature-related risks, ensuring the effectiveness of internal control mechanisms and mitigation strategies. Additionally, our Audit Committee, in coordination with the Risk Management and ESG Committee, continuously reviews and strengthens our risk management frameworks to enhance resilience against emerging environmental and regulatory risks.

Processes for Identifying and Assessing Nature-Related Risks

Our approach to identifying and assessing nature-related risks integrates biodiversity, climate, and water risk assessments, leveraging advanced tools, stakeholder engagement, and best-practice frameworks.

Biodiversity Risks

Our Risk Management Process

S1	S2	S3	S4
Stage 1: Biodiversity Screeing and Risk Assessment	**Stage 2: Impact Assessment and Mitigation Planning**	**Stage 3: Implementation and Monitoring**	**Stage 4: Stakeholder Engagement and Compliance**
Conducting initial assessments to identify biodiversity importance and site-specific ecological sensitivities using secondary data and risk categorisation.	Evaluating potential biodiversity and ecosystem impacts, applying the mitigation hierarchy (avoid, minimise, restore, offset) for developing targeted action plans.	Executing BMPs, integrating conservation measures into operations, and establishing monitoring systems to track progress.	Collaborating with local communities, regulators, and experts while ensuring adherence to biodiversity policies, legal frameworks, and performance reporting.

Biodiversity Risk Screening

We conduct comprehensive biodiversity risk screenings across our operational sites to assess potential impacts on habitats and species. The process includes evaluating biodiversity within the surrounding landscape, identifying Key Biodiversity Areas (KBAs) and Protected Areas (PAs), and integrating advanced assessment tools. Biodiversity screenings align with regulatory requirements and international best practices, incorporating Environmental and Social Impact Assessments, BMPs, and site-specific mitigation strategies.

Risk and Impact Identification Process

We integrate stakeholder consultations to include local socio-economic, geographic, and climatic perspectives into our biodiversity risk assessments.

Key Activities

- Conducting biodiversity assessments to evaluate species and habitat conditions
- Analysing interactions between biodiversity and operational activities
- Assessing ecosystem dependencies and potential project impacts
- Reviewing and strengthening biodiversity conservation measures based on assessment outcomes

Post-Evaluation Outcomes and Actions

Following biodiversity risk assessments, sites are categorised based on their ecological sensitivity and the level of impact. This categorisation informs the selection of appropriate conservation and mitigation actions to align with our No Net Loss (NNL) commitment.

Key Actions

- **Risk-based site classification** – Sites are classified into high, medium, and low biodiversity risk categories
- **Mitigation strategy development** – Conservation measures are designed based on the mitigation hierarchy (avoid, minimise, restore, offset)
- **Ecosystem management planning** – Site-specific BMPs are implemented to address key risks
- **Stakeholder engagement & compliance** – Collaboration with local communities, regulatory bodies, and conservation organisations to ensure adherence to biodiversity commitments
- **Ongoing monitoring & reporting** – Continuous assessment of biodiversity indicators to measure progress against NNL targets and refine management strategies

> “At Hindalco, sustainability is central to our strategy, driving us towards a greener, more resilient future. We are committed to achieving Net Zero by 2050, with the set goal of reducing Scope 1 and Scope 2 emissions by 2030. Our efforts include accelerating the transition to renewable energy, investing in low-carbon technologies, and improving energy efficiency. Water conservation is a priority, and we are aiming for 100% water recycling at key facilities and becoming water positive. We are also dedicated to biodiversity conservation, restoring mined-out and degraded land, reforesting, and protecting natural habitats. Through a circular economy approach, we enhance resource efficiency, increasing co-processing and developing alternative material use. We are setting industry benchmarks in sustainable mining, green manufacturing, and ecosystem restoration.”

S. Kanakanand

Head, Manufacturing Centre of Excellence (MCOE), Hindalco Industries Limited

Water Risks

We recognise that water is a critical resource for our operations, spanning bauxite mining, alumina refining, coal mining, aluminium smelting, and rolling, and in the Copper business , copper smelting, refining and in the continuous casting rod process (CCR).

Given that some of our facilities are in water-stressed regions, we conduct comprehensive water risk assessments to ensure sustainability, operational continuity, and regulatory compliance.

Key Water-related Risks

Water Stress & Scarcity

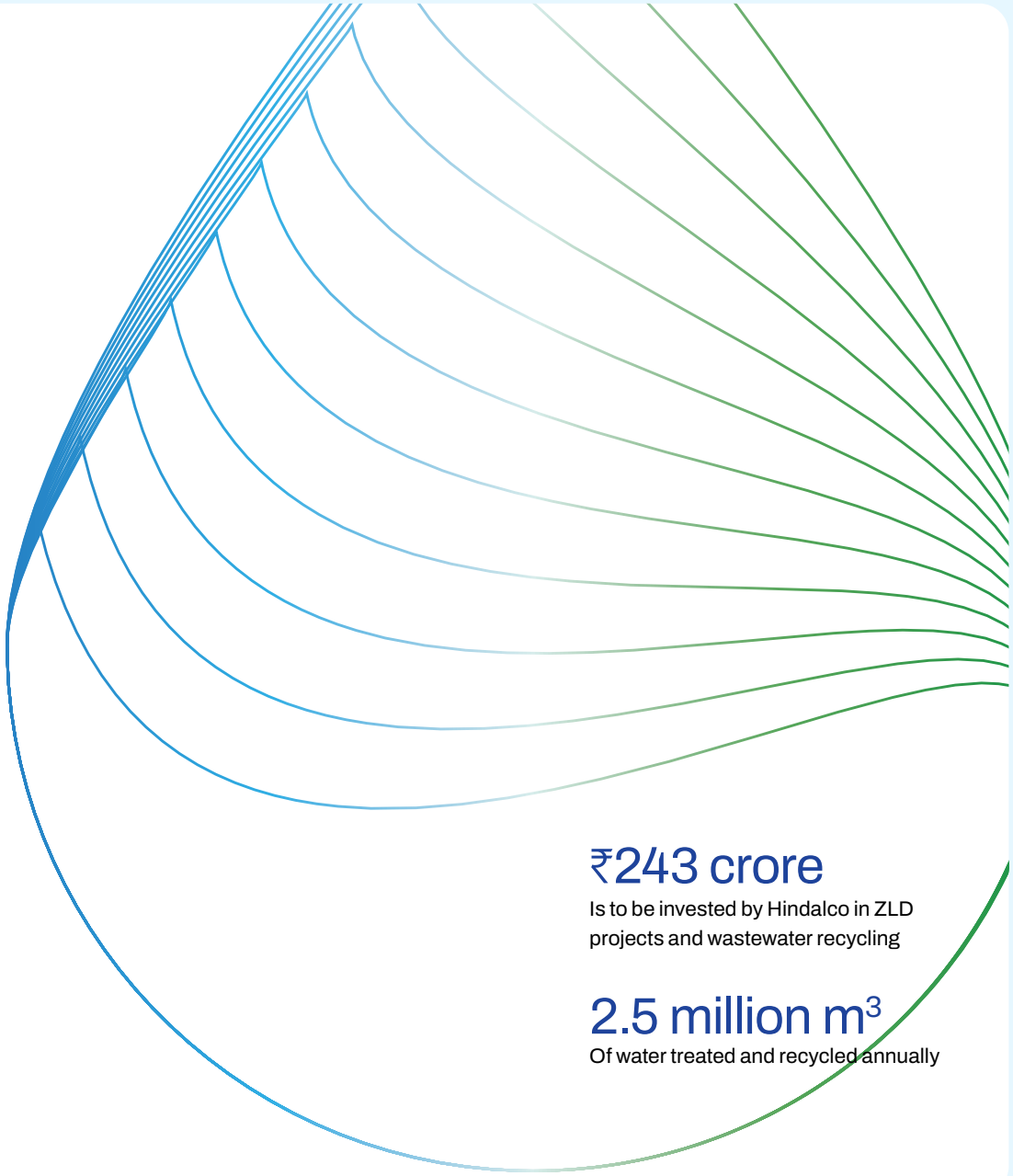
- Four of our plants — Dahej, Belagavi, Asoj, and Kuppam — are in water-stressed zones. Climate change is increasing seasonal variability, raising risks of droughts in summer and floods in monsoon.

Regulatory & Reputational Risks

- Stricter water withdrawal limits and discharge regulations impact our operations. Not meeting water efficiency and conservation targets could harm our reputation and social licence to operate.

Financial & Operational Impacts

- Water risks could cost us over ₹1,084 crore (₹10.84 billion) due to production disruptions, regulatory water costs, and compliance expenses.



₹243 crore
Is to be invested by Hindalco in ZLD projects and wastewater recycling

2.5 million m^3
Of water treated and recycled annually

Water Risk Assessment

We follow a dual-assessment approach to identify and mitigate water-related risks.

Basin-level Risk Assessment

- Examine external water availability, regulatory risks, and climate impact

- ▲ Water stress in major river basins (Brahmani, Mahi, Narmada)
- ▲ Changes in rainfall patterns and increasing drought risks
- ▲ Shared water resource conflicts

- ⬡ WRI Aqueduct Tool & India Water Tool to assess baseline water stress and flood/ drought risks
- ⬡ IPCC RCP Climate Scenarios for long-term projections

Operational Risk Assessment

- Evaluate internal water consumption, efficiency, and facility-level dependencies

- ▲ High water footprint at manufacturing units like Belagavi, affecting business continuity
- ▲ Seasonal variations in water availability impacting refining and smelting

- ⬡ Enterprise Risk Management (ERM) Framework for strategic planning
- ⬡ IEA NZE & B2DS Scenarios for transition risk assessment
- ⬡ AXA Climate's Multi-Peril Analysis for climate-driven water risks

● Focus Area ▲ Key Risks Identified ⬡ Tools Used

Our Mitigation Strategies

1 Water Conservation & Recycling

- Adoption of Niti Aayog (3M+7R) principle for water management across Hindalco sites
- We achieved a recycling rate of 25.12% for aluminium and 28% for copper in FY 2023-24, showing an improvement from 22.67% and 23.73% respectively in FY 2022-23
- Implemented rainwater harvesting ponds and digital water flow meters

2 Zero Liquid Discharge (ZLD)

- 15 out of 19 plants have already achieved ZLD
- We are targeting 100% ZLD implementation for Aluminium business by FY 2025-26 and for Copper business by FY 2029-30

3 Stakeholder Engagement & Compliance

- We collaborate with regulators, local communities, and industry groups to ensure sustainable water use
- Actively monitor and manage water withdrawal permits and regulatory changes

CASE STUDY

Water Positivity at Hindalco

In FY 2023-24, we achieved a significant milestone in water conservation, with five of our mines receiving water positivity certification from DNV. This recognition reflects our ongoing efforts to replenish more water than we consume, with Shrendag leading the way at +16.56 times water positivity. These achievements underscore our commitment to sustainable water management and ensuring long-term water availability for the communities around us.

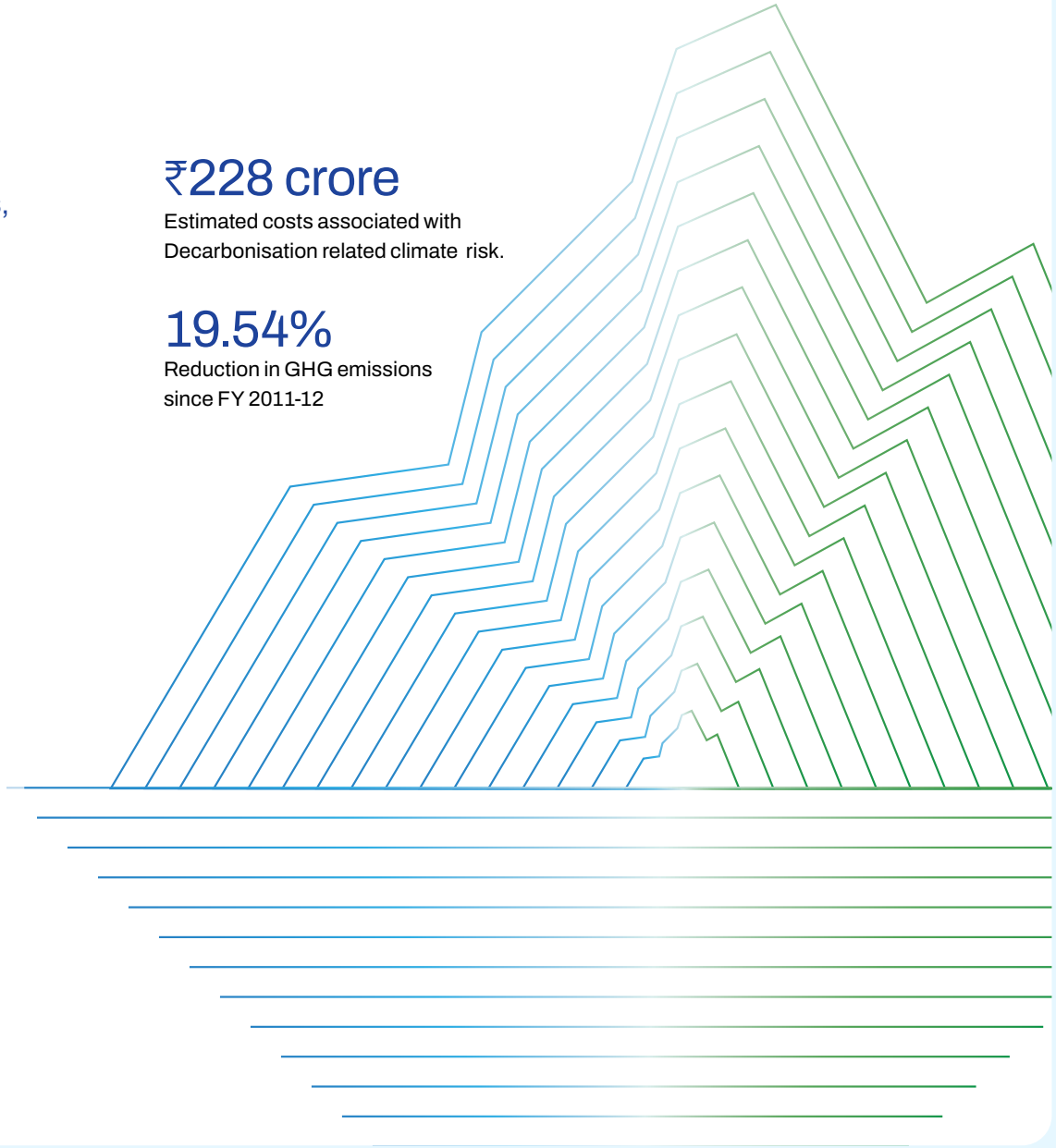
To further strengthen our water conservation initiatives, we have invested ₹250 CR (approx.) in Tertiary Water Recycling Units (TWRU) & ZLD across seven of our sites. These advanced systems enable us to treat and recycle 2.5 million m^3 of water annually, significantly reducing our freshwater dependency and industrial water waste. By embracing the 3R concept (Reduce, Recycle, Reuse), we continue to drive responsible water stewardship.

Climate Risks

At Hindalco, we recognise that climate change poses significant risks to our business, affecting our operations, supply chain, and financial performance. Given our energy-intensive operations, we assess physical and transition risks to ensure resilience and sustainability in a low-carbon future.

₹228 crore
Estimated costs associated with Decarbonisation related climate risk.

19.54%
Reduction in GHG emissions since FY 2011-12



Key Climate Risks

Physical Risks

- **Extreme heat & heatwaves:** Projected maximum temperatures exceeding 50°C by 2080-2099, particularly at Mahan, Aditya Aluminium, and Hirakud
- **Flood & drought risks:** Rising seasonal variability, with increased droughts in summer and floods in monsoon
- **Impact on revenue:** 12 manufacturing plants exposed to these risks generate 91.5% of Hindalco's total revenue

Transition Risks

- **Regulatory & policy risks:** Increased focus on carbon pricing, coal taxation, and emission reduction measures
- **Market risks:** Shifting consumer preferences towards low-carbon aluminium and sustainable products
- **Financial risks:** Estimated ₹677 crore impact due to carbon taxes and compliance costs

Climate Risk Assessments

Hindalco employs two primary risk assessment methodologies to evaluate climate-related threats.

Physical Climate Risk Assessment

- Evaluate the impact of climate change on temperature, precipitation, and extreme weather events

- Extreme heat risks at key sites
- Increase in droughts and floods affecting operations

- IPCC RCP Scenarios (RCP 8.5) for temperature and precipitation variability
- Multi-Peril Climate Analysis (AXA Climate) for extreme event risk

Transition Climate Risk Assessment

- Evaluate policy, market, and financial risks associated with a low-carbon transition

- Increased carbon pricing and emission regulations
- Growing demand for low-carbon aluminium

- IEA Net Zero Emissions (NZE) & Beyond 2°C Scenario (B2DS) for emission reduction planning
- Enterprise Risk Management (ERM) Framework to integrate climate risks into financial strategy

● Focus Area ▲ Key Risks Identified ○ Tools Used

Our Mitigation Strategies

1 Renewable Energy Expansion

- Invested ₹228 crore in FY 2023-24 to enhance renewable energy capacity
- Targeting 300 MW renewable capacity by 2026 (200 MW without storage, 100 MW with storage)

2 Energy Efficiency & Decarbonisation

- Achieved 19.54% reduction in GHG emissions since FY 2011-12
- Investing in carbon capture, waste heat recovery, and fuel-switching technologies

3 Water & Climate Resilience

- Enhancing water security measures, including rainwater harvesting and ZLD implementation

4 Low-Carbon Products

- Expanding production of low-carbon aluminium and recycled content products
- Potential revenue growth of ₹27 crore from sustainable aluminium sales

CASE STUDY

Our Commitment to Renewable Energy and Energy Efficiency

In FY 2023-24, we expanded our renewable energy (RE) capacity and enhanced energy efficiency across our Indian operations to drive sustainability. Our installed RE increased by 60%, reaching 173 MW, including solar, wind, and biomass projects.

Key initiatives include:

- **RE Projects:** We commissioned a 21 MW wind power plant at Belagavi, covering 85-90% of the plant's energy needs, and a 41 MW renewable hybrid project at Dahej, saving 51,000 tCO_2e annually
- **Battery Storage Systems:** We installed solar-powered battery storage at Gare Palma and Bagru mines, reducing emissions by 293 tCO_2e per year
- **Energy Efficiency Measures:** Upgrading the anode furnace at Dahej saved 45,603 GJ of energy and 2,313 tCO_2e emissions, while efficiency improvements at Hirakud cut power losses by 1.3%

These initiatives align with our goal to achieve 300 MW of RE capacity by 2026, reinforcing our commitment to sustainable energy solutions in India.

Pollution-related Risks

We are committed to minimising pollution risks and ensuring that our air, water, and waste management practices align with regulatory standards and environmental best practices.

Our pollution risk assessments focus on air emissions, water discharge, waste management, and regulatory compliance to mitigate risks and drive sustainability.

Key Pollution-related Risks

Air Pollution Risks

- **Emissions from smelting and refining:** Particulate Matter (PM), SO_2, NOx emissions from thermal power plants and industrial processes
- **Compliance** with tightening air quality regulations, especially under Central Pollution Control Board norms
- **Financial risk:** Higher operational costs due to pollution control equipment and carbon taxation

Water Pollution Risks

- **Wastewater discharge risks:** Effluent from alumina refining and metal processing requires extensive treatment
- **Zero Liquid Discharge (ZLD) initiatives:** 15 out of 19 plants have achieved ZLD, with the target of achieving ZLD for all plants in FY 2029-30
- **Real-time water quality monitoring** for BOD, COD, TSS, and pH, reported to regulatory bodies

Waste Management Risks

- Red mud (bauxite residue) and fly ash disposal risks
- Commitment to Zero Waste to Landfill (ZWTL) by 2050
- **Plastic footprint:** 5,168 MT of plastic used in packaging; collaborating with CPCB-authorised recyclers for 100% Extended Producer Responsibility (EPR) compliance
- We have invested ₹483.27 crore in operating expenses and ₹93 lakh in R&D focusing on waste reduction and recycling technologies

Regulatory & Reputational Risks

- Stricter environmental norms for air, water, and waste management could increase compliance costs
- **Non-compliance penalties:** Potential fines under the Polluter Pays Principle (₹25.89 million risk from plastic non-compliance)
- Increased stakeholder expectations for cleaner production methods

15
Of 19 sites that have achieved ZLD status

100%
EPR compliance for plastic packaging waste

Pollution Risk Assessments

Air Pollution Risk Assessment

- Evaluate industrial emissions and regulatory compliance

- ▲ Thermal power plants contribute to SO_2 & NOx emissions
- ▲ Tighter air quality regulations affecting operations

- ⬡ Continuous Emission Monitoring System (CEMS) for real-time monitoring
- ⬡ Flue Gas Desulphurisation (FGD) & Electrostatic Precipitators (ESP) for emission control

Water Pollution Risk Assessment

- Examine wastewater treatment, discharge limits, and ZLD implementation

- ▲ Effluent quality monitored for compliance
- ▲ Targeting 100% ZLD by FY 2029-30

- ⬡ Real-time water quality sensors linked to PCBs
- ⬡ Advanced wastewater treatment plants (ETP, STP)

Waste Management Risk Assessment

- *Evaluate hazardous and non-hazardous waste generation and disposal*

- ▲ 12.7 million tonnes of industrial waste generated annually
- ▲ Red mud and fly ash disposal challenges

- ⬡ Circular economy initiatives for recycling industrial waste

● Focus Area ▲ Key Risks Identified ⬡ Tools Used

Our Mitigation Strategies

1 Emission Reduction

- Installed FGD systems at power plants to reduce SO_2 emissions
- Upgraded bag filters and electrostatic precipitators (ESPs) for particulate matter (PM) reduction

2 Water Pollution Control

- 15 out of 19 sites have achieved ZLD status
- Advanced wastewater treatment technologies for effluent quality compliance

3 Waste Reduction & Circular Economy

- 100% EPR compliance for plastic packaging waste
- Using red mud in cement manufacturing to reduce landfill waste
- Our ongoing R&D initiatives focus on waste-to-value solutions, such as metal recovery, construction materials, and industrial applications, strengthening our commitment to a circular economy

4 Regulatory Compliance & Reporting

- Real-time air & water quality monitoring shared with authorities
- Engaging with policymakers to align business operations with evolving regulations

CASE STUDY

Air Pollution Control at Aditya and Mahan

In FY 2023-24, we implemented semi-dry flue gas desulphurisation (FGD) systems at our Aditya and Mahan to significantly reduce Sulphur Oxide (SOx) emissions. These systems help capture pollutants from flue gases before they are released into the atmosphere. As part of our broader air pollution control strategy, we are also installing FGD technology at Renusagar, further enhancing emission reduction efforts. This initiative underscores our commitment to sustainable industrial operations.

Tailings Management-Related Risks

We manage tailings storage facilities (TSFs) with a strong governance framework, ensuring safety, environmental sustainability, and regulatory compliance. We adhere to the Global Industry Standard on Tailings Management (GISTM) and other best practices to minimise risks associated with tailings dams.

Key Tailings-related Risks

Operational & Structural Risks

- Hindalco operates 19 TSFs (6 active,4 inactive,9 capped) with 3 classified as high-risk and 2 as significant-risk facilities.
- Risks include dyke instability, seepage, and embankment failure due to extreme weather conditions
- Drone surveys and geotechnical monitoring (piezometers, inclinometers) are conducted regularly

Environmental & Water Contamination Risks

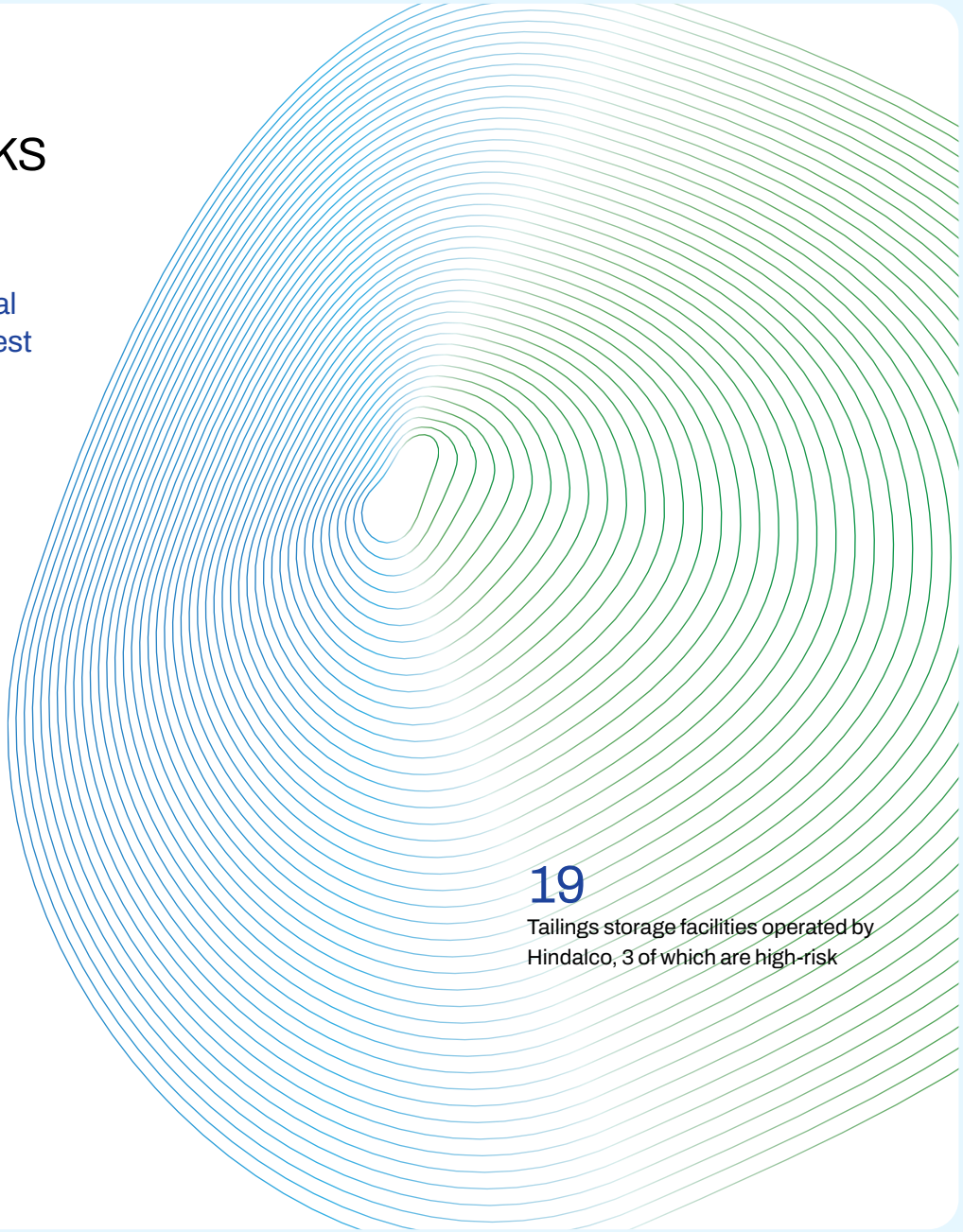
- Leachate and seepage risks affecting surrounding water bodies
- Monitoring to prevent contamination of local ecosystems
- Stringent wastewater treatment to prevent heavy metal contamination

Regulatory & Compliance Risks

- Adhering to GISTM guidelines and waste management standards
- Failure to comply with tailings management regulations could lead to fines, reputational damage, and operational shutdowns

Climate Change & Extreme Weather Risks

- Increased rainfall & flood risks could lead to tailings dam overflow
- Rising temperatures impact dam integrity over time



Tailings Risk Assessments

Structural & Geotechnical Risk Assessment

- Evaluate stability, seepage, and embankment integrity

- ▲ 3 high-risk and 2 significant-risk tailings facilities identified
- ▲ Height reduction strategies in place to prevent failures

- ⬡ Piezometer & Inclinometer Monitoring for pressure & movement tracking
- ⬡ Regular drone surveys for surface monitoring

Environmental & Water Contamination Risk Assessment

- Assess leachate risks and water quality impacts

- ▲ No hazardous tailings dams identified, but monitoring continues
- ▲ Water quality monitoring for heavy metals and dissolved solids

- ⬡ ETPs for wastewater processing

Emergency Preparedness & Response Plan (EPRP)

- Evaluates potential failure scenarios and disaster response

- ▲ Emergency response plans implemented for all TSFs
- ▲ Stakeholder engagement & community warning systems in place

- ⬡ GISTM-based risk assessment framework
- ⬡ Third party geotechnical reviews & remediation studies

● Focus Area ▲ Key Risks Identified ⬡ Tools Used

Our Mitigation Strategies

1 Structural Integrity & Monitoring

- Continuous dyke height reduction through dispatch to cement plants
- Regular geotechnical assessments with independent experts

2 Water & Environmental Risk Mitigation

- Advanced wastewater treatment to prevent seepage and contamination
- Monitoring groundwater quality near tailings dams

3 Emergency Response & Compliance

- All TSFs follow GISTM guidelines
- Emergency response drills conducted periodically

4 Sustainable Tailings Management

- EExploring alternative uses of red mud in manufacturing of bricks and construction aggregates, metal recovery and road construction
- Long-term rehabilitation plans for inactive TSFs and monitoring of closed TSFs

CASE STUDY

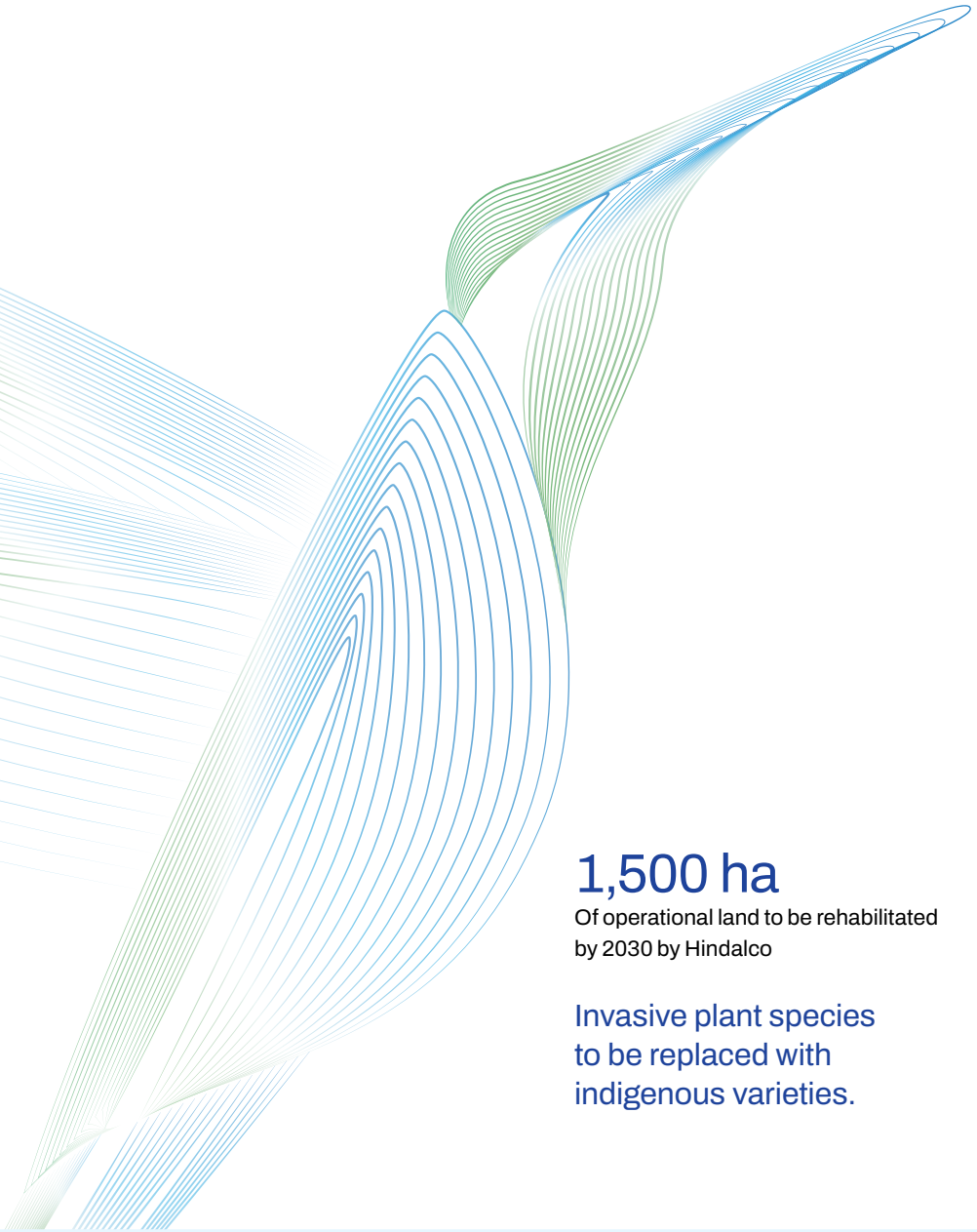
Red to Green: Rehabilitation of Red Mud Disposal Area at Muri

At our Muri refinery, we initiated the Red to Green project in 2023 to rehabilitate the Red Mud Disposal Area (RMDA), transforming it into a sustainable green zone. Using a scientifically designed method developed by TERI, we treated the alkaline red mud with a combination of gypsum, farmyard manure, fly ash, and mycorrhizae to support vegetation growth. Contour terracing was implemented to prevent mud sliding and rainwater runoff, while indigenous trees, shrubs, and grasses were planted to restore biodiversity.

By January 2025, we successfully rehabilitated 38 acres of the 41-acre site, with surface runoff water showing improved pH levels (7.0–8.5). The area has seen the return of birds, butterflies, snakes, and mongooses, indicating ecological recovery. Additionally, we installed piezometers and inclinometers to monitor water accumulation and land stability in real time. This project aligns with our goal of No Net Loss on biodiversity by 2050, showcasing our commitment to restoring disturbed ecosystems through chemical, civil, and biological solutions.

Biodiversity-related Risks

We integrate biodiversity conservation into our operational strategy, ensuring responsible resource management and ecosystem protection. We assess biodiversity risks at all operational sites and align with international frameworks like TNFD and use the Integrated Biodiversity Assessment Tool (IBAT).



PHYSICAL RISKS

- Heatwaves, wildfires, and extreme precipitation threaten local biodiversity
- Soil erosion and degradation impact land stability
- Operations near Key Biodiversity Areas (KBAs) require additional mitigation measures

REGULATORY & POLICY RISKS

- Protected area designation and stricter land-use regulations
- Changes in environmental laws affecting operations near eco-sensitive zones
- Difficulties in obtaining operational permits due to biodiversity risks

REPUTATIONAL RISKS

- Failure to achieve No Net Loss of Biodiversity (NNLB) targets may lead to stakeholder concerns
- Increased scrutiny from investors and environmental groups

LIABILITY RISKS

- Non-compliance with biodiversity laws could result in fines or legal action
- Potential disruptions in operations if biodiversity restoration commitments are unmet

1,500 ha

Of operational land to be rehabilitated by 2030 by Hindalco

Invasive plant species to be replaced with indigenous varieties.

Biodiversity Risk Assessments

Site-Level Biodiversity Risk Assessment

- Identify priority biodiversity areas and conservation challenges

- ▲ 11 sites within 10 km of KBAs
- ▲ Operations near endangered species habitats

- ⬡ IBAT for risk mapping
- ⬡ LEAP approach by TNFD

Environmental Impact Assessments (EIA)

- Evaluate biodiversity dependencies and impacts

- ▲ Soil erosion, habitat fragmentation, and impact on local water bodies
- ▲ Threats to indigenous flora and fauna

- ⬡ ISO 14001 Environmental Management Standard for impact monitoring
- ⬡ Materiality assessment and stakeholder consultations

Biodiversity Action Plan (BAP) Implementation

- Focus on biodiversity conservation & restoration

- ▲ 51-60% of BAP implementation completed
- ▲ Challenges in restoring degraded habitats

- ⬡ Biodiversity Indicators (GRI 101-2023) for performance tracking
- ⬡ TNFD-aligned disclosures

● Focus Area ▲ Key Risks Identified ⬡ Tools Used

Our Mitigation Strategies

1 Ecosystem Restoration & No Net Deforestation

- Committed to No Net Deforestation by 2030
- Rehabilitation of 10% of operational land (1,500 ha) by 2030

2 Invasive Species Management

- Replacing invasive species with native plants to support local biodiversity
- Pilot projects at Renukoot, Utkal, and Lohardaga mines

3 Sustainable Project Design & Habitat Protection

- Mining projects avoid areas with Rare, Endangered, and Threatened (RET) species
- Infrastructure projects incorporate buffer zones around forests and wetlands

4 Water Conservation & Aquatic Biodiversity Protection

- ZLD at 15 out of 19 plants
- Rainwater harvesting and wetland conservation measures will be implemented

5 Stakeholder Engagement & Policy Compliance

- Collaboration with NGOs, regulators, local communities, and indigenous groups
- Adherence to GISTM, TNFD, and biodiversity-related ESG frameworks

CASE STUDY

Habitat Protection at Lohardaga Mines

At our Lohardaga Mines, we have launched Project Vivartana to restore degraded land and promote biodiversity conservation. The area, spanning 400 hectares, was heavily invaded by Lantana, an aggressive species that suppressed native flora and degraded soil quality. To reverse this, we worked with local communities to remove Lantana, which was then repurposed into biomass for handicrafts, bio-composites, and fuel for thermal plants.

This initiative had a dual impact — it restored native biodiversity while generating sustainable livelihoods for 150 community members, who collectively earned around ₹75 lakh annually. Additionally, by utilising Lantana biomass, we prevented 10 tonnes of plastic waste from entering landfills every year. Project Vivartana highlights our commitment to habitat restoration, sustainable resource use, and community-driven conservation efforts.

Metrics and Targets

We are dedicated to sustainability and environmental responsibility, focusing on climate action, water conservation, biodiversity, pollution control, and waste management. Our targets align with India's Nationally Determined Contributions (NDCs) and global sustainability frameworks.

KEY METRICS AND TARGETS

Category	Metric	Target	Progress
Climate Action	Net-Zero Emissions	Achieve Net Zero by 2050	Currently at 19.54% reduction in specific GHG emissions from FY 2011-12 baseline
	Renewable Energy Capacity	300 MW by 2026 (200 MW without storage, 100 MW with storage)	173 MW installed till date (without storage)
	GHG Emission Reduction	25% reduction by FY 2026-27 (vs. FY2011-12 baseline)	19.54% achieved so far
Water Management	Water Positivity	Achieve water positivity for mining sites by 2025 and all operations by 2050	5 mines are water positive certified
	Zero Liquid Discharge (ZLD)	100% ZLD by FY 2029-30	15 out of 19 units have achieved ZLD
	Freshwater Consumption Reduction	25% reduction in specific freshwater consumption by 2030 (vs. FY 2018-19 baseline)	In progress
Biodiversity	No Net Deforestation	Achieve No Net Deforestation by 2030	Site-level Biodiversity Management Plans (BMPs) in place
	Biodiversity Conservation	Implement BMPs across all sites	51-60% implementation in progress
Pollution & Waste Management	Plastic Reduction	Single-Use Plastic-Free by FY 2024-25	5,168 MT plastic used in FY 2023-24
	Zero Waste to Landfill (ZWTL)	100% ZWTL by 2050	Ongoing waste circularity initiatives
	Air & Water Pollution Control	100% compliance with regulatory discharge limits	Continuous monitoring via CEMS (Continuous Emission Monitoring Systems)

METRICS USED TO ASSESS NATURE-RELATED IDRO*

Reference	Indicator	Sub-category 1	Sub-category 2	Sub-category 3	Unit	2024	2023	2022	2021
C1.0 Total spatial footprint	Total surface area controlled/managed by the Company, where the organisation has control	Ownership	-	-	km^2 or Ha	Total own operational sites – 14,115.09 Ha			
C1.0 Total spatial footprint	Total disturbed area	Mine pits	-	-	km^2 or Ha	Total mine lease –8,698.77 Ha Total area mined – 125.84 Ha	Total mine lease – 7,474.99 Ha Total area mined – 104.10 Ha	Total mine lease – 8,569.00 Ha Total area mined – 106.00 Ha	Total mine lease – 9,133.00 Ha Total area mined – 80.00 Ha
C1.0 Total spatial footprint	Total rehabilitated/ restored area	-	-	-	km^2 or Ha	Total area rehabilitated – 59.86 Ha	Total area rehabilitated – 62.22 Ha	Total area rehabilitated – 85.00 Ha	Total area rehabilitated – 57.00 Ha
C1.1 Extent of land/ freshwater/ocean use change	Total area of ecosystems converted due to mining activities	Exploring and Mining	Terrestrial	-	km^2 or Ha				
C1.1 Extent of land/ freshwater/ocean use change	Extent of land/ freshwater/ocean ecosystem conserved or restored	Required by statutes or regulations	-	-	km^2				
C1.1 Extent of land/ freshwater/ocean use change	Extent of land/ freshwater/ocean ecosystem that is sustainably managed	Freshwater	Description of specific practices	-	km^2 or Ha	1. Zero emission surface runoff rainwater harvesting at Baphlimali mines. 2. ~142,940 kl of freshwater water consumption was reduced. 3. 5,705 acres of green area plantation done	5,460 acres of green area plantation done	5,145 acres of green area plantation done	4,672 acres of green area plantation done
C2.0 Pollutants released to soil split by type	Breakdown of total tonnage of pollutants released to soil, categorised by specific types relevant to operations		-	-	million tonnes	Tailings generated – 5.25	Tailings generated – 5.08	Tailings generated – 4.68	Tailings generated – 4.07
C2.0 Significant spills	Total number of spills including-location of spill, volume of spill and material of spill	Location	Volume	Waste	m^3				
C2.1 Wastewater discharged	Total wastewater discharge volume	Low quality water	-	-	m^3				

METRICS USED TO ASSESS NATURE-RELATED IDRO*

Reference	Indicator	Sub-category 1	Sub-category 2	Sub-category 3	Unit	2024	2023	2022	2021
C2.1 Wastewater discharged	Water discharged wrt destination category. Provide temperature of water discharged, where relevant	Surface water	Concentrations of key pollutants in the wastewater discharged, by type of pollutant	-		Surface Water- Not reported Total water discharged – 0.13 million m^3	Surface Water- Not reported Total water discharged – 0.22 million m^3		
C2.2 Waste generation and disposal	Weight of hazardous waste generated by type based on operations		-	-	million tonnes	0.504	0.477	0.45	0.44
C2.2 Waste generation and disposal	Weight of non-hazardous waste generated by type based on operations		-	-	million tonnes	12.2	12.08	11.14	10.47
C2.2 Waste generation and disposal	Weight of hazardous waste disposed	Waste incinerated – with energy recovery	-	-	million tonnes	0.001	0.002		
C2.2 Waste generation and disposal	Weight of non-hazardous waste disposed	Waste incinerated – with energy recovery	-	-	million tonnes	No non-hazardous waste incinerated			
C2.2 Waste generation and disposal	Weight of hazardous waste diverted from landfill	Recycled	-	-	million tonnes	0.404	0.363	0.368	0.16
C2.2 Waste generation and disposal	Weight of non-hazardous waste diverted from landfill	Reused	-	-	million tonnes	10.416	10.713	9.608	9.31
C2.3 Plastic pollution	Plastic footprint as measured by total weight of plastics (polymers, durable goods and packaging) used	-	-	-	tonnes				
C2.3 Plastic pollution	Plastic footprint as measured by total weight of plastics (polymers, durable goods and packaging) sold broken down into the raw material content	-	-	-	tonnes				
C2.3 Plastic pollution	Plastic packaging characteristics	Reusable	-	-	%				

METRICS USED TO ASSESS NATURE-RELATED IDRO*

Reference	Indicator	Sub-category 1	Sub-category 2	Sub-category 3	Unit	2024	2023	2022	2021
C2.4 Non-GHG air pollutants	Non-GHG air pollutants by type	Particulate matter Nitrogen oxides Volatile organic compounds Sulphur oxides Ammonia (NH3) Carbon monoxide (CO) Ground level Ozone (O3) hydrogen sulphide (H2S) Mercury (Hg) Lead (Pb) Hydrogen cyanide (HCN)	Data Validation - Particulate matter - PM2.5, PM10, Dust fallout Nitrogen oxides – NO2, NO, NO3, VOC - VOC, NMVOC, Sulphur oxides - SO_2, SO, SO_3, SOx		thousand tonnes	SOx – 84.68 NOx – 37.42 PM – 14.67 Fluoride – 0.07	SOx – 72.63 NOx – 31.38 PM – 12.98 Fluoride – 0.04		
C3.0 Water withdrawal and consumption from areas of water scarcity	Water withdrawal	Operational water	Surface water	-	million m^3	0.62	0.95		
C3.0 Water withdrawal and consumption from areas of water scarcity	Water withdrawal	Other managed water	-	-	million m^3	2.38	5.59		
C3.0 Water withdrawal and consumption from areas of water scarcity	Water consumption	-	-	-	million m^3	6.43	7.35		
C3.0 Water withdrawal and consumption from areas of water scarcity	Water withdrawal (m^3) in areas of water scarcity	Operational water	Groundwater		million m^3	0.13	0.13		
C3.0 Water withdrawal and consumption from areas of water scarcity	Operational water reused/ recycled	-	-		million m^3				
C3.1 Quantity of high-risk natural commodities sourced from land/ ocean/freshwater	Quantity of high-risk natural commodities sourced	Land	ETC.		tonnes				
C3.1 Quantity of high-risk natural commodities sourced from land/ ocean/freshwater	Quantity of high-risk natural commodities sourced under a sustainable management plan or certification programme	Land	ETC.		tonnes				

**IDRO - Impacts, Dependencies, Risks and Opportunities*

TNFD Content Index

TNFD Pillars	TNFD Recommendations	Page No.
Governance	A. Describe the board's oversight of nature-related dependencies, impacts, risks and opportunities	17-19
	B. Describe management's role in assessing and managing nature-related dependencies, impacts, risks and opportunities	
	C. Describe the organisation's human rights policies and engagement activities, and oversight by the board and management, with respect to Indigenous Peoples, Local Communities, affected and other stakeholders, in the organisation's assessment of, and response to, nature-related dependencies, impacts, risks and opportunities	14-15
Strategy	A. Describe the nature-related dependencies, impacts, risks and opportunities the organisation has identified over the short, medium and long term.	23-24
	B. Describe the effect nature-related dependencies, impacts, risks and opportunities have had on the organisation's business model, value chain, strategy and financial planning, as well as any transition plans or analysis in place	25-50
	C. Describe the resilience of the organisation's strategy to nature-related risks and opportunities, taking into consideration different scenarios	47-50
	D. Disclose the locations of assets and/or activities in the organisation's direct operations and, where possible, upstream and downstream value chain(s) that meet the criteria for priority locations	50
Risk and Impact Management	A (i) Describe the organisation's processes for identifying, assessing and prioritising nature-related dependencies, impacts, risks and opportunities in its direct operations.	51-53
	(ii) Describe the organisation's processes for identifying, assessing and prioritising nature-related dependencies, impacts, risks and opportunities in its upstream and downstream value chain(s)	
	B. Describe the organisation's processes for managing nature-related dependencies, impacts, risks and opportunities	51-68
	C. Describe how processes for identifying, assessing, prioritising and monitoring nature-related risks are integrated into and inform the organisation's overall risk management processes	
Metrics & Targets	A. Disclose the metrics used by the organisation to assess and manage material nature-related risks and opportunities in line with its strategy and risk management process	71-73
	B. Disclose the metrics used by the organisation to assess and manage dependencies and impacts on nature	
	C. Describe the targets and goals used by the organisation to manage nature-related dependencies, impacts, risks and opportunities and its performance against these	70

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