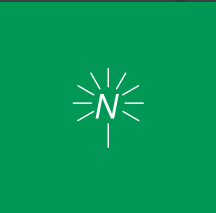




Expanding and Enhancing The Net Zero Ecosystem



Natural Capital

KEY HIGHLIGHTS

Installed renewable capacity till date	470 MW
Reduction in specific greenhouse emissions (GHGs) for aluminium operation from base year FY 2011-12	20.33%
Reduction in specific water consumption for aluminium operation from FY 2024-25	4%
Aluminium Stewardship certification	46
Plants out of 19 achieved ZLD	16
Water recycled and reused in aluminium operations	30.99%

Total rainwater harvested	18 million m³
ZWTL certification	9 Plants
Recycling of non-hazardous and hazardous waste	88%
Recycled content in Novelis products	61%
Cans recycled in Novelis operations	85 billion
Saplings planted in FY 2025-26	8.55 lakh

LINKAGES

Capital Linkages

F	Financial Capital
M	Manufactured Capital

Intellectual Capital
Human Capital
Social and Relationship Capital

Strategic Priorities

SP-4 Strong ESG Commitment, Culture and Digital

Material Topics

M1	Energy and GHG Emissions	M12	Solid Waste & Mineral Waste Management
M2	Circular Economy & End-of-life Recycling	M13	Tailings Management (Bauxite Residue)
M5	Biodiversity & Land Use Change	M14	Mine Closure & Land Rehabilitation
M6	Water and Effluents		
M8	Air Emissions		

Key Risks and Opportunities Addressed

R3	Increased focus on decarbonisation	R10	Depletion of natural reserves
R4	Climate change risk	O2	Development of low-carbon products
R7	Stakeholders' focus on ESG	O3	Recycling and circular economy
R8	Solid waste management		

Contribution to SDGs





Aditya Aluminium at Lapanga, Sambalpur integrates renewable energy with a dedicated solar power plant

At Hindalco, most of our activities are grounded in nature – from the earth to air to water and various other constituents of the ecosystem. We are therefore deeply aware of the importance of conserving and preserving, and have made it our mission to protect as much as we can, while reducing consumption wherever we can.

We chart our activities into targets, constantly measure our achievements and expand our learnings – as we recognise that it's a dynamic process. Our approach towards nature is built in the trust placed in us as an organisation, and we take pains to convert it into measurable and impactful performance across parameters.

We make focussed improvements in energy efficiency, judicious water management, while minimising impact on air quality and contributing to biodiversity. During the reporting year, we are proud to report that a few industry-leading activities in biodiversity and waste utilisation have come to fruition. These initiatives were taken up in collaboration with regulators and other experts, for a scientific approach to problem-solving.

As the nation and the world moves towards Net Zero commitments, we believe we can aid the expansion of this ecosystem. With our low-carbon products, process enhancements, and use of renewables, we aim to meet the decarbonisation objectives of our operations as well our customers.

Our endeavour is to contribute to this massive transition by increasing recycled content in our products, improving and streamlining processes – while consuming lesser resources, without compromising on quality. We are innovating towards greener energy systems, reducing energy consumption, lowering water usage, and renovating and restoring to the best of our abilities.

We have assimilated environment-minded practices at every step of our way – from policies to people and processes – effectively translating our intentions into performance. With a razor-sharp focus from our top management, every employee of the organisation is accountable to drive this transformation. Our aim is to build a future-ready system that ensures that the ecosystem thrives as much as the organisation itself.

Focus Areas

- + Net Zero Emissions
- + Ambient Air Quality- Clean Air to Breathe
- + Circular Economy, Recycling, Safe & Secured Tailings Management
- + Product Stewardship
- + Nature Positivity - No Net Loss and Net Positive Impact on Biodiversity
- + Sustainable Mining
- + Water Stewardship (Zero Liquid Discharge, Water Neutrality & Water Positivity)

Environmental Management

We operate a robust three tier governance structure for Environmental Management to ensure strong oversight, execution, and accountability across the organisation.

Board of Directors			
Board Oversight			
Risk Management and ESG Committee + Comprises of Board of Directors, Chaired by an Independent Director and Permanent Invitees are Chief Financial Officer, Group Chief Economics Officer, Chief Risk Officer, Treasury Head, Chief Sustainability Officer and Company Secretary + Frequency of meeting: Quarterly			
Executive Management			
Apex Sustainability Committee + Chaired by Managing Director, convened by Chief Sustainability Officer and includes CXOs and Business Heads of various functions + Frequency of meeting: Monthly			
Project Implementation			
↓			
↓ Taskforces (Corporate level) + Chaired by Chief Sustainability Officer + Waste + Water + Biodiversity + Air emissions + Frequency of meeting: Quarterly	↓ Cluster level + Chaired by Cluster Sustainability Heads comprising site environment SPOCs for environmental compliance and project review + Risk Ambassadors for risk management at clusters + Frequency of meeting: Monthly	↓ Site level + Chaired by Taskforce head at sites level and comprises of energy managers and sustainability SPOCs + Risk Champions for risk management at site + Frequency of meeting: Monthly	↓ Functional level + Function include Environment, Legal, Energy & decarbonisation, ERM + Frequency of meeting: Weekly

We maintain an environmentally competent Board through a combination of structured internal engagement, external expertise, and continuous capability building. The Board is regularly supported by an internal, permanent subject expert working group, including the sustainability and environment leadership team, which provides inputs on environmental risks, opportunities, and performance. Directors too actively engage with external stakeholders and domain experts to stay abreast of emerging environmental trends, regulatory developments, and best practices.

Environmental knowledge and awareness are also integrated into the Board nominating process, ensuring that they form part of Board composition and succession planning. To strengthen oversight, Directors undergo periodic training sessions on environmental issues, relevant standards, and frameworks such as IFRS S1 and S2 and SBTi. At least one Board member brings specific expertise on environmental matters, enabling effective challenge, guidance, and informed decision-making at the highest level.

To enable accurate, transparent, and real-time tracking of environmental performance, we established a robust, organisation-wide data management ecosystem. We developed an in-house Integrated Portal for manufacturing that monitors regulatory compliance, SOPs, training, and reports, which also provides access to systems such as Enablon, ESG Compass, and Water Management platforms.

A strong governance architecture underpins sustainability performance across Novelis' global operations. Oversight is driven by the Global Sustainability Steering Committee, led by senior executives and meeting quarterly to set strategic direction, review progress, and allocate resources for priority initiatives.

This is supported by the Global Sustainability Council, chaired by the Sr. Director of Global Sustainability, which convenes monthly to bring together regional sustainability leaders and subject-matter experts to define key actions, track implementation and ensure alignment across sites. Environmental governance is strengthened through the Global Waste and Water Council, which works closely with manufacturing plants to monitor waste and water-related performance, oversee improvement projects and evaluate new proposals. These governance structures ensure disciplined oversight, transparent decision-making and consistent delivery of Novelis' sustainability commitments across all operating regions.

Sustainability and Employee Responsibility

Sustainability goal-setting is fully embedded into our organisational performance framework. We follow a 3C + 2S goal-setting model, where one of the "S" pillars stands for Safety & Sustainability. They ensure that sustainability responsibilities are integrated into every employee's Key Responsibility Areas (KRAs). We cascade sustainability expectations across all levels of the organisation, from junior staff to senior leadership, covering performance on air, water, waste, biodiversity, climate action and decarbonisation; and broader ESG outcomes.

We link sustainability outcomes directly to the Annual Incentive

Payout (AIP). Sustainability is a core component of every KRA, and achievement against these parameters influences variable pay, strengthening accountability across teams. Under the AIP, 5% of the total weightage is assigned to Sustainability and Safety, while 1.67% of variable pay is tied specifically to plant-level GHG-reduction performance. The environmental KPIs incorporated in the AIP include climate change, water stewardship and biodiversity. They also include specific expectations such as 100% ash utilisation, a 5% reduction in specific freshwater consumption, achieving and maintaining Zero Waste to Landfill, achieving 100% bauxite-residue utilisation at three refineries, 10% utilisation of the bauxite residue at the Utkal refinery, reducing plastic content in packaging and managing energy consumption; and reduction of Specific GHG Reduction as per approved P&B targets.

We ensure that employees are recognised for their contributions to sustainability and energy efficiency. Their achievements are highlighted through platforms such as Kaizan Mahotsava, PRIDE, Reprism, ABG Sun and Planet Awards.

25% of C-suite and Board level incentives are linked to environmental performance, ensuring leadership accountability and alignment with our sustainability priorities.



Utkal Alumina builds farm ponds to conserve water, support irrigation, recharge groundwater, and boost biodiversity

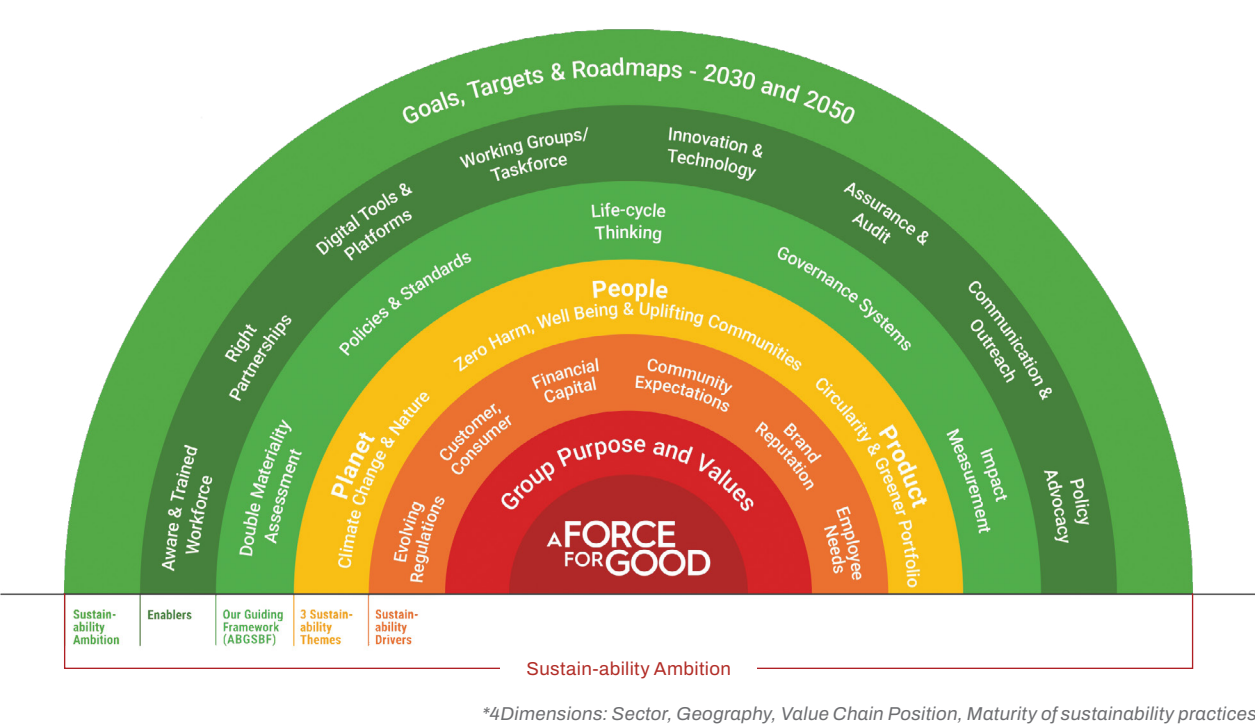
ABG Sustainability 3.0

Sustain-ability 3.0 is Aditya Birla Group's strategic approach to enhancing enterprise value across the Group and its Portfolio Companies in the short and long term with sustainability lens. At Hindalco, we integrate our 2030 and 2050 ambitions that align with our Group Purpose and Values to act as a Force for Good that builds trust.

Sustain-ability 3.0

Overarching Approach For Aditya Birla Group

Enhanced Enterprise Value For Aditya Birla Group And Its Portfolio Companies Over Next 10 Years With Sustainability Lens



Our priorities are shaped by internal and external sustainability drivers that influence enterprise value, stakeholder expectations and business resilience. These include:

Evolving regulatory and requirements		Consumer expectations
Access to financial capital	Employee and community needs	Brand reputation and trust

Our Policies & Manuals

Our policies form the foundation of our approach to sustainable growth, regulatory compliance, and responsible operations. Approved by the Board of Directors, these policies reflect our commitment to environmental stewardship at the highest level of governance. Together, they address key environmental aspects and align with applicable regulatory requirements such as MoEFCC, CPCB/SPCB guidelines, enabling consistent environmental management across all operations.

Hindalco

- + Sustainability Policy
- + Environment Policy
- + Biodiversity Policy
- + Energy & Carbon Policy
- + Tailings Management Policy
- + Aditya Birla Group's Water Stewardship Policy

Novelis

- + Environment, Health, Safety and Quality (EHS&Q) Policy

Governance Manuals: We follow a set of comprehensive governance manuals that translate our commitments into structured, organisation wide practices.

- + Our Corporate Sustainability Governance Manual provides an overarching framework for ESG governance. It defines how we formulate sustainability policies, embed environmental stewardship, manage data governance, ensure regulatory compliance, and oversee sustainability performance across all business units.
- + Our Energy & Carbon Management Governance Manual outlines detailed procedures for energy efficiency, carbon-emission

management, risk and opportunity identification, target-setting, renewable-energy adoption, and monitoring, reporting and verification protocols in line with ABG Technical Standards and ISO frameworks.

We apply additional, structured measures while establishing new operations or undertaking major expansions. We conduct comprehensive Environmental Impact Assessments (EIAs) prior to project initiation, in compliance with applicable statutory and regulatory requirements.

Across all operating plants, we maintain a detailed environmental impact register to identify, assess, and monitor environmental aspects and impacts. This integrated approach supports informed decision making, strengthens regulatory compliance, and drives continuous improvement across our environmental management system.

We maintain a robust certification and audit framework as part of our environmental governance to ensure compliance, manage risk, performance, and continuous improvement.

ISO 14001

- + Hindalco India- 36 sites (19 plants and 17 Mines) (100% of our all our India operations),
- + Novelis- 27 plants (87% of Novelis plants)
- + 94% of our sites are certified

ISO 50001

- + Hindalco India - 13 sites (12 plants, 1 Mine)
- + Novelis- 8 sites

ISO 46001/ ISO 14046

- + Baphlimali Mine
- + Samri Mines
- + Netarhat
- + Bagru
- + Shrengdag
- + Pakhar

ASI

- + Performance Standards - Hindalco India - 10 sites(9 plants, 1 mine) Additional 2 sites with provisional certificates, assessment undergoing at 3 plants
- + Chain of Custody - Hindalco India - 3 plants
- + Perfomance Standard and Chain of Custody
- + Novelis- 22 plants and 14 scrap centres

JOINT DUE DILIGENCE STANDARD CERTIFICATION

- + Copper Mark JDDS certification - Birla Copper Dahej

At Novelis, we ensure that all our wholly owned plants undergo regulatory compliance audits conducted by independent third-party experts at least once every four years. We subject all our sites to internal audits on a four-year cycle to assess compliance with regulatory and EHS requirements. Our remaining two production sites that do not hold ISO 14001 certification are certified to ISO 9001. These certifications and audit processes enhance operational discipline, reinforce transparency, and support continuous improvement across our environmental management systems.



₹689.13 crore Capex

- + ₹671.46 crore Hindalco
- + \$2 Million (₹17.67 crore) Novelis

₹848.64 crore Opex

- + ₹760.28 crore Hindalco
- + \$10 Million (₹88.36 crore) Novelis

₹71.28 crore saving

- + ₹18.27 crore Hindalco (13.44 crore for energy efficiency measures, ₹4.83 crore for other Environmental savings)
- + \$6 million (₹53.016 crore Novelis)

In FY 2025–26, we contributed a Corporate Environment Responsibility spend of ₹48.89 crore.

Focus areas for capex and opex investments

- + Waste Management, including circular economy initiatives, reducing waste to landfill
- + Energy Efficiency, including process improvements, renewable energy and clean technologies
- + Pollution Control, including installation and upgradation of pollution control equipment, ozone depleting substances phase out
- + Water Stewardship
- + Biodiversity Enhancement, including green belt development
- + Mining Operations, including rehabilitation, ecosystem services development, and community strengthening.

At Novelis, we faced three minor violations related to waste labelling and handling concerns and a minor

air permitting issue at a closed facility in FY 2025–26. We did not face any significant fines (> \$10,000 USD) and have not accrued any liability. At Hindalco, we recorded zero instances of non-compliance during the reporting year and have not accrued any liability.

Towards a Climate Ready Future

We view climate action as an integral part of long-term value creation and competitiveness. Aluminium and copper metals are driving overall decarbonisation. As these industries evolve, our ability to adapt, innovate, and progressively decarbonise will influence the resilience of our

operations. Our approach focuses on practical, technology-ready pathways, evolving market conditions, and collaboration across the value chain.

Our governance structure provides strong oversight of climate related risks and opportunities. We have established a dedicated Risk Management (RM) & ESG Committee, convened quarterly by our Chief Sustainability Officer (CSO), and comprising CXOs and Business Heads from across the organisation. During these meetings, the CSO and the Head of Energy & Decarbonisation present updates on ESG performance, highlight emerging issues, and seek strategic direction on key climate and sustainability priorities. We have an Apex Sustainability Committee and Apex

Decarbonisation Committee, chaired by the Managing Director. These committees have monthly reviews, attended by leaderships of all the businesses, functions, and plants.

The RM&ESG Committee evaluates the exposure to carbon pricing, regulatory changes, and broader energy transition risks, as well as operational vulnerabilities arising from climate-induced events. Insights from these assessments ensure that climate considerations are embedded within our strategic planning and long term business priorities. Regular updates from the CSO and the Head of Energy & Decarbonisation support timely decision making and guide the organisation's sustainability pathway.

Our most recent assessment included site specific baseline physical risk analyses, supported by a review of historical climate events and future climate projections.

We are enhancing our climate risk assessment processes to align with the requirements of IFRS S2. As part of this enhancement, we are using the GeoSust tool to assess climate related risks for future projects under the SSP-2, SSP 4.5, SPP-6.5 and SSP 8.5 scenarios. Climate related vulnerabilities are evaluated using a combination of historical climate data and forward-looking climate projections, enabling a robust assessment of potential physical risks over the short, medium, and long term.

Transition risks were analysed by assessing the potential impacts of evolving climate policies, market dynamics, and technological changes on our operations. This assessment drew on recognised pathways, including the International Energy Agency (IEA) approved (STEPS), Net Zero Emissions by 2050 (NZE 2050).

Climate-related Risk and Opportunities

Climate-risk management is fully integrated into our enterprise risk-management framework, enabling us to identify exposures, prioritise actions and build a climate-resilient business.

Climate-related Risks

From a risk perspective, rising energy prices, tightening carbon-regulatory requirements and the need for ongoing investment in emissions-reduction measures may increase operational costs across our aluminium and copper operations. Physical climate risks including water scarcity and extreme weather events have already influenced asset-maintenance needs and supply-chain expenditures and continue to shape our capital-expenditure planning and provisioning.



Climate adaptation study conducted in partnership with CEEW at Taloja plant in April 2025

Impact associated with the identified risk

Financial implications of the risk before actions are taken

Methods for managing risks

Disruption to Operations Due to Extreme Weather Events

- | | | |
|---|---|--|
| <ul style="list-style-type: none">+ Exposure of operational sites and supply chain operations to climate change induced risks such as heat waves, cyclones, which may damage physical assets, impair safe working conditions, and disrupt or reduce production. | <ul style="list-style-type: none">+ Potential revenue losses from decreased production output and higher maintenance costs.+ 10 sites identified under extreme heat-wave risk and 1 site under extreme cyclone risk.+ We have estimated that water-related risks could cost us over ₹0.38 crore due to revenue loss because of extreme weather events based on previous 5 years of experience and insurance claims. | <ul style="list-style-type: none">+ Implemented early-warning systems for extreme weather tracking+ Implemented heat action plans across all sites, including job rotation, hydration measures, and improvements to indoor cooling+ Invested in resilient infrastructure and equipment to withstand extreme weather events+ Considered environmental and disaster-related liabilities in financial planning to account for potential impacts. |
|---|---|--|

Compliance to CCTS Emission Intensity Reduction Targets

- | | | |
|---|--|---|
| <ul style="list-style-type: none">+ Entities that do not meet their plant-wise CCTS mandated emission intensity reduction targets are required to purchase Carbon Credit Certificates (CCCs) equivalent to the shortfall. | <ul style="list-style-type: none">+ Failure to meet the mandated GHG-intensity-reduction targets required us to purchase Carbon Credit Certificates (CCCs) of ₹141 crore.+ Estimated cost of response: ₹ 214.76 crore | <ul style="list-style-type: none">+ Ensured strict plant-wise monitoring of emission-intensity-reduction targets assigned under CCTS.+ Strengthened operational controls by implementing targeted emission-reduction initiatives at each designated plant.+ Integrated CCTS compliance requirements into plant-level planning, budgeting and decision-making processes.+ Invested in process improvements and technology upgrades to reliably achieve the mandated reduction trajectory. |
|---|--|---|

Exposure to Water Related Risks

- | | | |
|--|--|---|
| <ul style="list-style-type: none">+ Operational sites and supply chain operations are exposed to water-related climate risks, including water stress, water depletion, riverine flooding and coastal flooding. | <ul style="list-style-type: none">+ Potential production disruptions and increased costs for alternative water sources or water treatment.+ Four sites have been identified under water stress risk.+ We have estimated that water-related risks could cost us over ₹95 crore due to revenue loss because of extreme weather events, and increase in water cost in the water stressed units. | <ul style="list-style-type: none">+ Analysed surface and groundwater resources, usage patterns and vulnerabilities, integrating datasets from CGWB, CWC and WRI.+ Implemented water-management strategies such as recycling, reuse of process water and rainwater harvesting.+ Estimated capex for FY 2026 was ₹11.93 crore for water stress sites. |
|--|--|---|

Climate Related Opportunities

We are realising clear strategic and financial benefits from our investments in renewable energy capacity, energy efficiency measures and recycling operations through Novelis. These initiatives helped lower input costs, strengthen plant-level efficiency and enhance revenue from sustainable aluminium products. Rising global interest in low-carbon aluminium opened new premium market segments, positively influencing near-term and long-term cash flows.

We are evaluating green bonds and sustainable finance mechanisms, which can strengthen our financial position by enabling cost-effective capital mobilisation for our decarbonisation roadmap and long-term climate-resilience strategy.

By FY 2029-30 we anticipate ~ 18% increase in the revenue from the sale of EcoEdge copper products, 7% from aluminium EcoEdge C products* alongside avoided cross-border

taxes such as CBAM, which improve our competitiveness in regulated markets. As cash flows and budgeting requirements for climate-adaptation and mitigation projects are expected to increase, these investments position us for enhanced resilience, regulatory readiness and future-proofed growth.

We use climate-related scenario analysis to identify opportunities that enhance competitiveness and resilience.

Premium Product Markets:

Scenarios with stricter global carbon regulations signal rising demand for low-carbon aluminium, supporting investments in green aluminium that can earn price premiums.

Cost Efficiency:

Water-scarcity scenarios highlight the value of ZLD systems and water recycling, revealing opportunities to reduce operating costs and limit regulatory exposure.

Energy Transition:

High carbon-price scenarios reinforce the advantage of renewable energy integration (solar, hydro, wind), lowering long-term energy costs and reducing dependence on fossil fuels.

Circular-Economy Revenues:

Waste management scenarios highlight monetisation opportunities through fluoride recovery, red-mud valorisation and scrap-recycling streams, generating new revenue streams.

Innovation Pathways:

Technology scenarios (e.g., inert anodes, low-GWP refrigerants) reveal opportunities to differentiate products and meet tightening global standards such as CBAM.

Investor Confidence:

ESG-driven scenarios show that strong climate performance improves access to sustainable finance, enhances reputation and provides a competitive advantage.

Description	Financial implications of the opportunity before actions are taken	Methods for Managing Opportunity
Investment in sustainable mining and processing practices		
+ Sustainable mining practices address the environmental, economic, health and social impacts throughout the lifecycle.	+ Potential cost savings from efficiency improvements and resource optimisation. + Reduction of regulatory and reputational risks associated with environmental and social impacts.	+ Implement sustainable mining and processing technologies such as water recycling systems, energy-efficient equipment, and waste management initiatives. + Engage with local communities and stakeholders to address social and environmental concerns.

Towards Net Zero

Our pathway to Net Zero is founded on a clear recognition of the pivotal role materials companies play in enabling the global low-carbon transition. As a producer of aluminium and copper industries which is central to clean energy, mobility, and circular-economy systems, we are committed to reducing our climate impact while supporting global decarbonisation goals. Our long-term ambition to achieve Net Zero by 2050 is strengthened by science-aligned strategies, deep investments in renewable energy and circularity, and a disciplined approach to technology adoption. This commitment is reflected in our interim targets, structured GHG-reduction pathways and the decarbonisation levers that guide both Hindalco and Novelis in accelerating a resilient, low-carbon future.

At Hindalco, We are committed to reduce specific GHG emissions by 25% by FY 2026–27, against the FY 2011–12 baseline.

GHG Emission Reduction Plan

Our efforts are reinforced by a range of decarbonisation levers steering our climate action agenda, these are-

Energy Efficiency We are adopting innovative process-efficiency technologies to reduce energy use across operations. As part of our GHG roadmap, we prioritise proven and commercially viable technologies to ensure operational reliability while progressing on emission-reduction goals.	Renewable Energy Adoption We are scaling large-scale renewable-energy projects. Renewable installed capacity reached 470 MW. Our renewable capacity is targeted to reach 884 MW by FY 2026–27 and 1,514 MW by FY 2027–28.
Transitioning to Low-Carbon Fuels We are exploring low-carbon fuel options including Bio-CNG for calcination and electric boilers for green-steam generation. Our roadmap also evaluates the evolving nuclear energy policy landscape to understand potential implications of future fuel-sourcing risks.	Implementing New Technologies We are collaborating with industrial partners to adopt advanced low-carbon technologies such as renewable-hybrid systems, battery-based backup, and emerging electrification solutions. Multiple pilot projects are planned to validate new technologies for feasibility and large-scale deployment.

Description	Financial implications of the opportunity before actions are taken	Methods for Managing Opportunity
Increased demand for sustainable aluminium products		
+ Growing market demand and consumer preference for aluminium products with low-carbon footprint and recycled content.	+ Potential revenue growth from sales of sustainable aluminium products. + Opportunities to enter new market segments with a special focus on enhancing exports. + ~ ₹40 crore of positive financial implication, considering 7% of our primary aluminium production will be low carbon. The estimated costs associated with developing this opportunity is ~ ₹347 crore.	+ Invest in research and development to innovate sustainable aluminium alloys and manufacturing processes. + Enhance marketing and brand campaigning to promote eco-friendly products.

*Based on current primary aluminium productions

At Novelis, we established a structured GHG Emission Reduction Pathway using the endorsed ASI Entity GHG Pathways Method. This pathway applies globally across all Novelis facilities and covers both casthouses and semi-fabrication operations, using FY 2023-24 as the baseline year for decarbonisation planning.

Aligned with our 3x30 vision, Novelis' decarbonisation strategy is centred on three long term priorities:

- 1. **Pushing the boundaries on recycled content**, with a strengthened 2030 target of achieving 75% average recycled content.
- 2. **Winning on carbon**, by reducing carbon intensity to 3 tCO₂e per tonne of FRP shipped by 2030, progressing toward our overarching goal of carbon neutrality by 2050.
- 3. **Fuelling the future**, by leading industry-wide circularity through first-mover investments and long-term innovation partnerships.

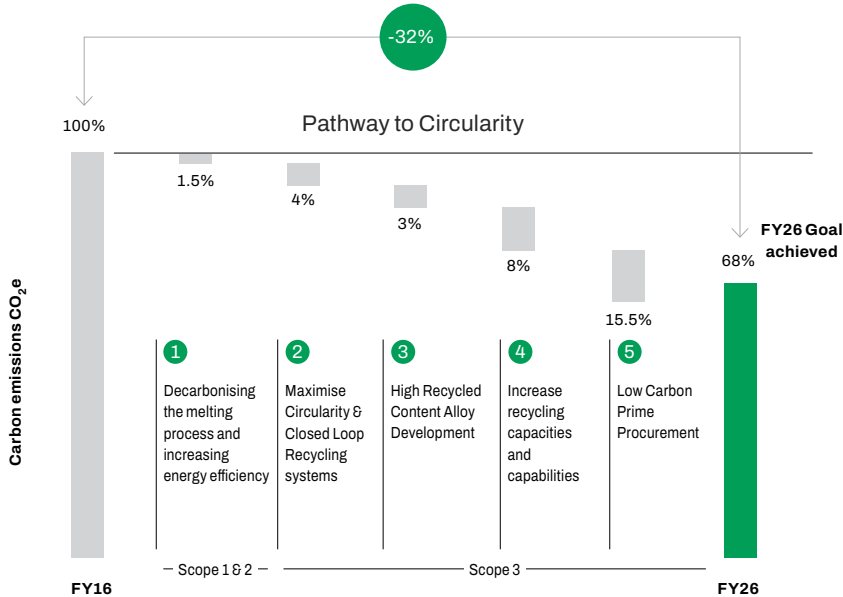
This framework is supported by a defined set of decarbonisation levers that guide implementation across Novelis' operations:

- 1. **Decarbonising the melting processes and energy sources**- Although melting scrap aluminium remains the most energy-intensive process in our operations, we continue to lower emissions by exploring alternative fuels, clean electricity, waste-heat recovery and carbon-capture options. During the reporting year, we advanced hydrogen-fuel trials at our Latchford facility through the NZIP and HyNet programmes, with the potential to reduce CO₂e emissions by up to 90% if hydrogen replaces natural gas in remelting operations.

- 2. **Maximising Circularity**- Increasing recycled content remains central to reducing the carbon footprint of our products. We continue to expand closed-loop programmes and invest in new approaches and partnerships across the value chain to strengthen scrap availability and material recovery.
- 3. **Innovating new high recycled content alloys**- We work closely with customers in beverage packaging, automotive, aerospace and speciality sectors to develop high-recycled-content alloys that meet demanding technical specifications while lowering lifecycle emissions.
- 4. **Increase recycling capacities and capabilities**- Our recycling content has doubled over the past 15 years. In parallel, we have ~US\$5 billion worth of projects currently under

- 5. **Supporting decarbonisation of primary aluminium**- We continue to expand our network of suppliers offering low-carbon primary aluminium and are collaborating with the World Economic Forum's First Movers Coalition (FMC) to accelerate decarbonisation in hard-to-abate sectors. We are assessing renewable-electricity sourcing, self-generation options and electrification pathways as technologies evolve, ensuring a pragmatic and regionally aligned decarbonisation strategy.

execution focused on expanding our capabilities. We will be commissioning new recycling facilities at Bay Minette and Latchford by FY 2026–27. During the reporting year, 35 energy-reduction initiatives were completed under a structured portfolio approach, including key upgrades through the Ideal Furnace programme to improve casthouse furnace efficiency.



Internal Carbon Pricing (ICP)

We have adopted an Internal Carbon Pricing (ICP) mechanism to embed the cost of carbon into business decisions and accelerate progress towards our Net Zero 2050 ambition. The ICP framework enables us to factor climate impact into financial evaluations, identify low-carbon investment opportunities and prioritise projects based on long-term sustainability value rather than financial returns alone. Application of the ICP is mandatory for all our businesses in the decision-making process, ensuring that carbon considerations are firmly embedded in strategic and capital-allocation choices.

The mechanism assigns a defined cost per tonne of CO₂e emitted and is underpinned by clear roles, responsibilities, and internal audit controls to ensure consistent and transparent application across the organisation. Developed through stakeholder inputs and technology assessments, our shadow carbon price is set at US\$31 (₹2,739.16) for 2021–2030, US\$43 (₹3,799.48) for 2031–2040 and US\$59 (₹5,213.24) for 2041–2050. The pricing framework covers Scope 1 and Scope 2 emissions and prepares the business for emerging regulatory carbon pricing scenarios.

Energy Management

Contribution to SDGs



We are strengthening the way we produce and use energy across our operations. We are expanding renewable energy adoption, improving process efficiency, shifting towards low-carbon fuels, and integrating advanced technologies through strategic collaborations.

We have set ambitious internal energy-saving targets, and embedded them into our planning and budgeting processes. A dedicated energy management team continuously tracks progress and drives initiatives to eliminate inefficiencies across sites. At the plant level, our Energy Managers and the Energy Cell play a pivotal role, maintaining strong governance and providing monthly performance updates to the leadership team.

Goals and Targets

Targets

Hindalco

To achieve 884 MW of renewable installed capacity by FY 2026-27 and 1,514 MW by FY 2027-28.

Progress

Hindalco

470 MW of installed renewable capacity till date

At Hindalco, to reinforce on-ground execution, we introduced an employee-incentive programme that motivates plant teams to achieve GHG Emissions reduction and deliver committed energy-saving outcomes. Regular energy audits

across all operating sites help identify improvement opportunities, and findings are systematically converted into actionable plans.

Capability building remains a core enabler of our energy management strategy. We deliver structured training programmes across the organisation to strengthen the technical skills and regulatory awareness of our workforce covering energy conservation and efficiency, climate change, and emerging requirements such as CBAM and CCTS. These interventions ensure that our people remain fully equipped to support the energy transition agenda and drive sustained improvements across operations.

At Novelis, energy governance is enabled through a clearly defined framework spanning site-level to corporate-level roles, supported by standardised processes, consistent metrics and leadership oversight. Regional energy managers meet monthly to review consumption performance, emerging technologies and capital needs. Data quality is reinforced through uniform reporting, internal validation and periodic audits. Novelis applies global best practices particularly from Europe through cross-plant audits, technical exchanges and company-wide training programmes. A dedicated corporate programme also tracks, audits and guides sites using the Treasure Hunt Methodology, supported by targeted capex for energy-reduction projects.

To strengthen technological capability, we invested ₹14 crore in R&D focused on innovative solutions to reduce energy use and emissions, while Novelis continues to advance technology-led improvements through dedicated R&D programmes.

NetZero Lab in Sierre
explores pathways to eliminate emissions

MMP Programme
investigates alternative melting technologies to electrify furnaces

Ideal Furnaces Programme
bringing and scaling innovative furnace-efficiency technologies

Risks & Opportunities in Energy and Emission Management:

Energy and emissions management presents a mix of material risks and emerging opportunities for our operations.

Key risks include exposure to energy-price and cost volatility, which can affect operating expenses and long-term planning certainty. There are also risks around technology-readiness, especially for certain casting and CO₂-abatement technologies that may not reach commercial scalability

before 2027, creating timing and feasibility constraints for specific decarbonisation pathways.

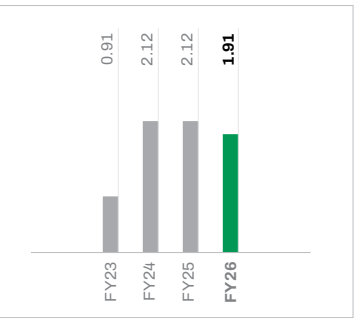
Emerging opportunities include digitalisation of energy-management systems that are improving visibility into consumption patterns. It enables us to identify hidden inefficiencies and quantify savings potential. We evaluate self-supply models and long-term PPAs, including potential collaborations with the Department of Energy, to enhance cost stability, reduce exposure to market fluctuations.

Renewable and Non-renewable Energy Consumption

Our total energy consumption was at 316.82 million GJ, with Hindalco India accounting for 88.49% and Novelis contributing 11.51%. Within Hindalco India, aluminium operations consumed 268.33 million GJ, copper operations consumed 11.24 million GJ, and our mining operations accounted for 0.80 million GJ. During the reporting period, we also purchased 37 lakh Renewable Energy Certificates (RECs) to meet our compliance requirements.

		Total Energy Consumption (million GJ)							
Energy Type		Fossil Fuels	Electricity Purchased	Steam/ Heating/ Cooling and other energy (Non-renewable) Purchased	Total Non-Renewable Energy (Electricity, Heating and Cooling) Sold	Total Non-renewable Energy	Renewable Energy Source	Total Renewable Energy	Total Energy Consumption
FY 2022-23	Hindalco India (Standalone)	249.03	3.49	0.01	1.71	250.82	0.87	0.87	251.69
	Hindalco India (Subsidiaries)	23.09	0.07	-	-	23.16	0.04	0.04	23.2
	Novelis	27.93	9.84	0.23	-	38.01	-	-	38.01
	Total	300.05	13.4	0.24	1.71	311.99	0.91	0.91	312.9
FY 2023-24	Hindalco India (Standalone)	255.67	2.23	0.02	1.81	256.1	1.83	1.83	257.93
	Hindalco India (Subsidiaries)	24.07	0.1	-	-	24.17	0.29	0.29	24.46
	Novelis	27.15	11.06	0.3	-	38.52	0.002	0.002	38.52
	Total	306.89	13.39	0.32	1.81	318.8	2.12	2.12	320.92
FY 2024-25	Hindalco India (Standalone)	254.76	2.05	0.01	1.43	255.39	2.00	2.00	257.39
	Hindalco India (Subsidiaries)	25.22	0.13	-	-	25.36	0.12	0.12	25.48
	Novelis	28.16	11.19	0.30	-	39.65	0.01	0.01	39.66
	Total	308.14	13.37	0.31	1.43	320.40	2.13	2.13	322.53
FY 2025-26	Hindalco India (Standalone)	251.07	1.92	0.11	0.75	252.35	1.86	1.86	254.21
	Hindalco India (Subsidiaries)	25.99	0.13	-	-	26.12	0.04	0.04	26.16
	Novelis	26.83	9.35	0.25	-	36.43	0.01	0.01	36.45
	Total	303.89	11.40	0.36	0.75	314.90	1.91	1.91	316.82

Renewable energy consumption (million GJ)



Initiatives taken to increase the renewable energy capacity

Aditya Smelter Renewable Projects (280 MW):

Commissioned 187.5 MW solar and 92.4 MW wind projects at Bhuj (Gujarat) in FY 2025–26 for the Aditya smelter, taking our cumulative renewable installed capacity to 470 MW as of 31 March 2026.

Ananthpur Wind Project (52.8 MW):

A 52.8 MW wind project at Ananthpur (Andhra Pradesh) is under implementation and scheduled for commissioning by Q2 FY 2026–27, increasing cumulative renewable capacity to 523 MW.

Mahan RE RTC Project (361 MW + Storage):

A renewable round the clock (RE RTC) project for the Mahan smelter is under development, comprising 361 MW of combined wind and solar capacity supported by 60 MW pumped storage (six hour duration). The PPA was signed in FY 2024–25, with phased commissioning expected from Q2 FY 2026–27.

Aditya RE RTC Project (200 MW):

Executed a 200 MW RE RTC PPA for the Aditya Unit in October 2025, backed by 630 MW of wind solar capacity and 50 MW of pumped storage (six hour duration), with commissioning planned in FY 2027-28.

Biomass Co Firing Initiatives:

Expanded biomass co-firing across our power plants, with a cumulative 17000 MT of biomass co-fired up to 31 March 2026, supporting a reduction in fossil fuel dependence.

Grid Connectivity Upgrades:

Upgraded Aditya’s grid connectivity from 220 kV to 400 kV EHV in FY 2025–26. Similar upgrades are underway at Mahan, Renukoot and Dahej to strengthen grid reliability and improve access to renewable rich regions.

Long Term Green Power Procurement (PPAs):

Renewable electricity procurement through market based instruments, including a 10 year green power purchase agreement (PPA) in Germany, electricity sourced from the Pieve solar park, and solar powered collection centres in Brazil.

Renewable Expansion under Evaluation – United States and Brazil:

Evaluation of additional on-site renewable energy opportunities across the United States and Brazil, aligned with site-specific feasibility and regional energy markets.

Strategic Partnerships for Energy Transition:

Established a partnership with the US Department of Energy (DOE) to evaluate renewable energy deployment and decarbonisation possibilities for its large production sites in the United States.

Energy Treasure Hunt Programme – Through Employee Engagement

🔦 Initiative: To identify low cost and no cost energy saving opportunities, Novelis introduced the Energy Treasure Hunt Programme, while strengthening operational discipline. The initiative engages plant operations and maintenance teams, site

leadership, and sustainability teams, by embedding energy awareness into shop floor practices. The programme uses a structured, short duration format where cross functional teams conduct focused walkthroughs to locate energy losses and improvement opportunities. Instead of capital-intensive solutions, the treasure hunt model centres on practical, on-the-ground observations supported by data collection and quantification of potential savings. Opportunities commonly relate to process heating, compressed air, shutdown practices, insulation, combustion tuning, and set point optimisation. Identified actions are prioritised based on feasibility and payback, enabling rapid execution and strong knowledge transfer within the sites.

➡ Outcome: The programme consistently delivers meaningful energy savings with short payback periods while building ownership and plant-level capability. During FY 2025–26, Energy Treasure Hunts were conducted across multiple Novelis sites, reinforcing continuous improvement as a core element of the Company’s energy efficiency and emissions reduction strategy.

Floating Solar at Mahan Aluminium: Dual Gains in Clean Energy and Water Conservation

💡 Initiative: This first-of-its-kind installation in the metals and mining industry at Hindalco, we introduced a 6.4 MW floating solar installation on the raw water pond at our Mahan Aluminium unit. It aims to address two critical challenges renewable energy expansion without land use and conserving water by reducing evaporation in an arid region. Mahan draws raw water from the Gopad river over a 35 km distance, and evaporation from its 8.5 lakh m² pond has been a long standing concern.

➤ **Outcome:** During FY 2025–26, we consumed 12.75 million units of renewable power generated from the floating solar system. IMD evaporation data and global studies indicate around 70% reduction in evaporation with floating PV. We estimate annual water savings of approximately 0.83 lakh m3. The initiative also supports our climate action goals, reducing emissions by around 12,000 tCO₂e each year Based on internal developed methodology for carbon pricing, the floating solar has annual carbon credit potential of ₹1.1 crore.

Hindalco Pioneers Round the Clock Renewable Power for Aluminium Smelting

💡 **Initiative:** As part of our decarbonisation strategy, we commissioned a 100 MW Round the Clock (RTC) renewable energy supply for the Aditya Aluminium Smelter. The hybrid solution integrates solar, wind and pumped hydro storage to deliver firm, dispatchable renewable power with an annual CUF of 85%, significantly enhancing supply reliability for one of our most energy intensive operations.

The RTC solution is supported by geographically diversified renewable energy assets integrated with pumped storage, contracted through the Inter-State Transmission System (ISTS) under an open-access framework.

The RTC supply is backed by 332.7 MW of renewable assets

92.4 MW wind and 187.5 MW solar at Bhuj, Gujarat

➤ **Outcome:** During FY 2025–26, we consumed 114 million units of RTC renewable power, achieving an estimated reduction of around 100,000 tCO₂e. The initiative establishes a scalable pathway to advance our long term net zero ambition.

Energy intensity

We track energy intensity closely across our aluminium and copper operations to assess efficiency and guide improvement initiatives. For the Aluminium business, specific energy consumption is measured as the total energy used per tonne of aluminium produced, covering the full value chain. It includes alumina refining, aluminium smelting, carbon anode manufacturing, and downstream operations such as flat rolled products, extrusion and foils. For the Copper business, specific energy consumption is monitored on the basis of energy consumed per tonne of copper cathode produced.

To improve efficiency and reduce carbon intensity, we implemented targeted fuel switching initiatives, such as replacing furnace oil with natural gas at the anode baking furnace at the Aditya smelter. In addition to product-based metrics, we also monitor energy intensity relative to financial performance.

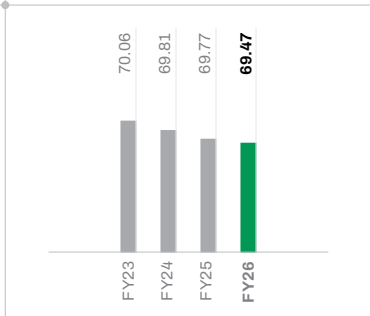
At Novelis, energy intensity is measured as the energy consumed per tonne of flat rolled product

52.8 MW wind at Ananthapur, Andhra Pradesh

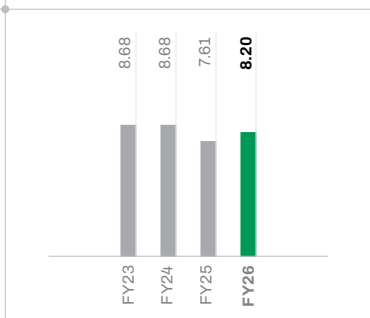
65 MW, 6-hour pumped storage at Pinnapuram, Andhra Pradesh

(FRP) sold. During the reporting period, specific energy consumption stood at 2.85 MWh per tonne of FRP, compared with 3.16 MWh per tonne in the previous year, reflecting ongoing efforts to improve energy performance across operations.

Energy Intensity- Aluminium (GJ/MT)



Energy Intensity - Copper (GJ/MT)



The increase in copper energy intensity compared to the previous year can be attributed to frequent power outages and boiler-related operational issues at Birla Copper, Dahej.

GHG Emission Management

Managing and reducing GHG emissions is a central element of our sustainability strategy, underpinned by continuous innovation, disciplined investment and robust measurement practices. We follow a structured approach to emissions management to deliver measurable reductions while supporting long term business resilience and value creation.

Goals and Targets

Targets

Hindalco

- + To achieve Net Zero by 2050
- + To reduce specific GHG emissions by 25% by FY 2026-27 against the base year FY 2011-12 (24.1 tCO₂e/t)

Progress

Hindalco

- + 20.33% reduction in specific greenhouse emissions (GHGs) for Aluminium from base year FY 2011-12

Targets

Novelis

- + To become carbon neutral by FY 2050 or sooner.
- + To reduce emissions intensity to less than 3 tonnes of CO₂e per tonne of FRP shipped (FY 2023-24 baseline of 4.0 tCO₂e/t FRP).

Progress

Novelis

- + 4% reduction in emissions intensity from the base year FY 2023-24.

In FY 2025–26, our combined Scope 1 and Scope 2 emissions was 29.66 million tCO₂e, with Hindalco accounting for 27.52 million tCO₂e and Novelis 2.14 million tCO₂e. Within Hindalco India, aluminium operations contributed 26.51 million tCO₂e, copper operations 0.95 million tCO₂e, and mining activities 0.06 million tCO₂e of Scope 1 and Scope 2 emissions.

At Hindalco, we tracked Scope 3 emissions across nine categories. During the reporting year, Scope 3 emissions amounted to 24.90 million tCO₂e, comprising 13.42 million tCO₂e from Hindalco and 11.48 million tCO₂e from Novelis. Across both businesses, emissions are dominated by the purchased goods and services category, reflecting the upstream footprint of key materials.

Emissions accounting is undertaken in accordance with the GHG Protocol – Corporate Accounting and Reporting Standard, supplemented by IPCC guidelines.

At Novelis, we guide emissions reduction through a clear long term vision. We calculate absolute emissions across Scope 1, Scope 2 and material Scope 3 categories (1 and 4) in line with GHG Protocol guidance.

		Scope 1 and 2 emissions (million tCO ₂ e)		
		Scope 1	Scope 2 (Location Based)	Total Scope 1+2 (Location Based)
FY 2022-23	Hindalco India (Standalone)	24.83	0.69	25.52
	Hindalco India (Subsidiaries)	1.96	0.01	1.97
	Novelis	1.38	0.86	2.24
	Total	28.17	1.56	29.73
FY 2023-24	Hindalco India (Standalone)	25.28	0.44	25.72
	Hindalco India (Subsidiaries)	2.04	0.02	2.06
	Novelis	1.35	0.83	2.18
	Total	28.67	1.29	29.96
FY 2024-25	Hindalco India (Standalone)	25.19	0.41	25.60
	Hindalco India (Subsidiaries)	2.13	0.01	2.14
	Novelis	1.39	0.86	2.25
	Total	28.71	1.28	29.99
FY 2025-26	Hindalco India (Standalone)	24.91	0.39	25.30
	Hindalco India (Subsidiaries)	2.19	0.03	2.22
	Novelis	1.31	0.83	2.14
	Total	28.41	1.25	29.66

In FY 2022–23, Novelis reported Scope 3 emissions totalling 15.01 million tCO₂e. This comprised 14.58 million tCO₂e from Purchased Goods and Services and 0.43 million tCO₂e from Upstream Transportation and Distribution.

		Scope 3 emissions (million tCO ₂ e)*		
	Category	Hindalco India (Standalone)	Hindalco India (Subsidiaries)	Novelis
FY 2023-24*	Purchased goods and services	1.08	0.42	12.04
	Upstream transportation and distribution	0.20	0.04	0.37
	Downstream transportation and distribution	0.07	0.05	-
	Fuel and energy related activities	0.39	0.10	-
	Waste generated in the operations	0.09	-	-
	Total	1.83	0.61	12.41
FY 2024-25**	Purchased goods and services	0.9	0.26	10.99
	Upstream transportation and distribution	0.24	0.03	0.44
	Downstream transportation and distribution	0.29	0.04	-
	Fuel and energy related activities	0.76	0.11	-
	Waste generated in the operations	0.06	0	-
	Total	2.25	0.44	11.43
FY 2025-26	Purchased goods and services	4.47	0.11	11.09
	Capital goods	0.12	0.01	-
	Fuel- and energy-related activities	1.06	0.23	-
	Upstream transportation and distribution	0.29	-	0.39
	Waste generated in operations	0.12	-	-
	Business travel	0.01	-	-
	Employee commuting	0.01	-	-
	Downstream transportation and distribution	0.17	-	-
	Processing of sold products	0.66	6.16	-
	Total	6.91	6.51	11.48

*1. The computation for Scope 3 emissions for Hindalco India (Standalone) is limited to – Muri, Renukoot, Mahan, Aditya and Hirakud units and Hindalco India (Subsidiaries) is limited to Utkal. 2. Emissions from waste generated in the operations is partially computed for fly ash and bauxite residue only.

**1. The computation for Scope 3 emissions for Hindalco India (Standalone) includes all mines, aluminium upstream & downstream units, and Hindalco India (Subsidiaries) includes Utkal. External validation audit has been completed, and the improvement opportunities identified are currently under implementation.

2. Emissions from waste generated in the operations are partially computed for fly ash and bauxite residue only.

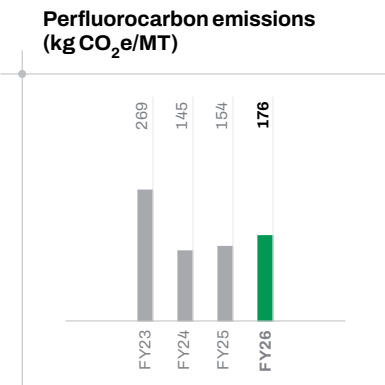
GHG Emissions (million tCO₂e)

At Hindalco, we are implementing advanced initiat

Upstream	Production	Downstream
Scope 3 Emissions	Scope 1 Emissions	Scope 3 Emissions
Purchased Goods and Services		Downstream transportation and distribution
Hindalco (Standalone) - 4.47	Hindalco (Standalone) - 24.91	Hindalco (Standalone) – 0.17
Hindalco (Subsidiaries) - 0.11	Hindalco (Subsidiaries) – 2.19	
Novelis - 11.09	Novelis – 1.31	
Total -15.67	Total – 28.41	
Capital goods	Scope 2 Emissions	Processing of sold products
Hindalco (Standalone) – 0.12	Hindalco (Standalone) – 0.39	Hindalco (Standalone) – 0.66
Hindalco (Subsidiaries) - 0.01	Hindalco (Subsidiaries) - 0.03	Hindalco (Subsidiaries) – 6.61
Total - 0.13	Novelis – 0.83	Total -6.68
Fuel- and energy-related activities	Total -1.25	
Hindalco (Standalone) – 1.06		
Hindalco (Subsidiaries) - 0.23		
Total -1.29		
Upstream transportation and distribution		
Hindalco (Standalone) – 0.29		
Novelis – 0.39		
Total - 0.68		
Waste generated in operations		
Hindalco (Standalone) – 0.12		
Business travel		
Hindalco (Standalone) – 0.01		
Employee commuting		
Hindalco (Standalone) – 0.01		

Perfluorocarbon emissions (PFCs)

At Hindalco, we are implementing advanced initiatives to reduce PFC emissions comprising two gases CF₄ and C₂F₆, significantly tackling a key challenge in aluminium production. Some initiatives focus on optimising alumina feeding cycles and advanced process control systems. Our PFC emissions accounted for 176 kg CO₂e/MT, an increase of 14.29% from the previous year.



Year	Tonne PFC produced	PFC in million tCO ₂ e
FY 2022-23	50.81	0.36
FY 2023-24	27.60	0.19
FY 2024-25	29.13	0.20
FY 2025-26	33.69	0.24

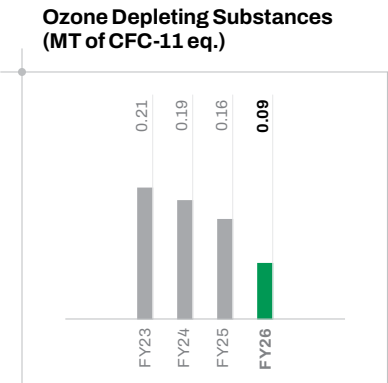
The increase compared to the previous year was primarily due to a higher number of pot start-ups and frequent power outages at Renukoot.

Ozone Depleting Substances (ODS)

To protect the ozone layer and comply with international environmental conventions, we continue to reduce the use of ozone-depleting substances (ODS) across our operations.

In the reporting year, our ODS accounted for 0.094 MT of CFC-11 equivalent, representing a 41.4% reduction compared to the previous year.

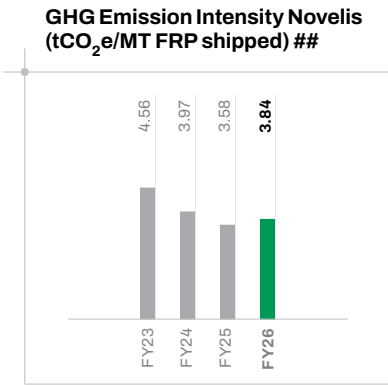
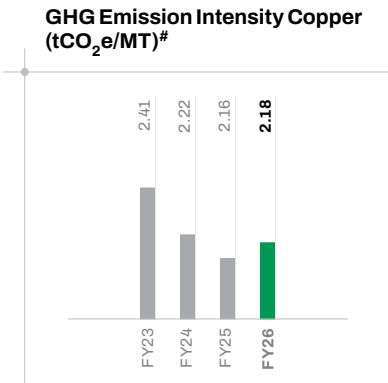
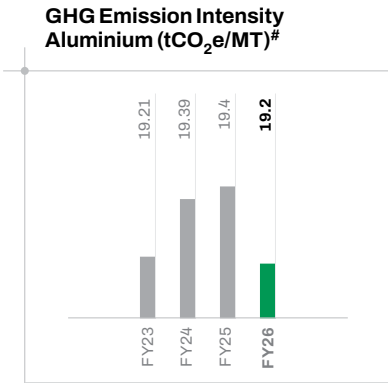
We are systematically phasing out ODS by replacing older equipment with ODS-free alternatives, in alignment with the Montreal Protocol, and remain committed to becoming ODS-free by FY 2027-28. During FY 2025–26, 276 units of equipment were replaced, bringing the cumulative total replacements to 2,141 units to date.



Emission Intensity

We closely monitor emission intensity (Scope 1 and Scope 2) as a key indicator of our progress against long term sustainability objectives.

At Novelis, emission intensity is measured as the total Scope 1, 2, and 3 emissions per ton of flat-rolled products (FRP) shipped. Through continuous sustainability efforts, we successfully reduced emission intensity to 3.84 tCO₂e per metric tonne, from the 2023-24 baseline of 4.05 tCO₂e per metric ton of FRP shipped.



GHG Emission Intensity- Scope 1+2
GHG Emission Intensity- Scope 1+2+3



Air Emissions
Goals and Targets

Targets

Hindalco

- + 10% reduction in absolute SOx emissions by FY 2029-30 from baseline FY 2024-25*
- + 10% reduction in absolute TPM emissions by FY 2029-30 from baseline FY 2024-25
- + Zero days in the Moderate AQI category (101–200) or worse i.e. all monitored days within Good & Satisfactory category (0–100) at all units by 2035**

Progress

Hindalco

- + 4.28% SOx reduction from FY 2024-25
- + 27.6% TPM reduction from FY 2024-25
- + Baseline stage- FY 2025-26 set as baseline year

* For existing operations
** AQI computed using CPCB's National AQI methodology

We established a robust governance and monitoring framework to manage air emissions effectively across our operations. Each unit operates an Air Task Force, chaired by the respective Operations Head and comprising representatives from Operations, Environment, Utilities and other relevant functions. These Task Forces function under clearly defined Terms of Reference, enabling coordinated planning, execution and monitoring of air-emission reduction initiatives.

The Air Task Forces regularly track projects and operational activities related to the reduction of SOx, NOx, Particulate Matter (PM) and fugitive emissions. Progress, gaps and emerging concerns are reviewed periodically, with key issues escalated to the Factory or Unit Head for close oversight.

Strategic governance is reinforced through reviews by the Apex Sustainability Committee, chaired by the Managing Director, which assesses air emission performance and key initiatives as part of its oversight agenda. In addition, the Chief Sustainability Officer conducts quarterly reviews of Air Task Force performance across units to ensure alignment with corporate sustainability priorities. Updates on key projects and material issues are also communicated to the Board of Directors and external stakeholders as required.

At Novelis, governance of air emissions is supported by a Global Sustainability Steering Committee, comprising senior leadership to ensure alignment and progress against carbon-reduction objectives. It also operates a Global Environmental Committee, focused on reducing air emissions through best-practice sharing, regulatory compliance and identification of emissions-reduction projects and associated capital investments. We continue to deploy advanced pollution-control solutions. During FY 2025–26, the Guthrie recycling centre commenced operations with enhanced pollutant-control systems, including aluminium-scrap decoating kilns, baghouses, cyclones and dry scrubbers. The YeongJu facility installed a new venturi scrubber system to treat furnace emissions, while Korean facilities have adopted best-practice operating procedures for furnaces and air-pollution-control equipment to minimise emissions.

Across Novelis sites, air pollution control equipment is designed to meet or exceed local permitting requirements, with emissions of major air pollutants reported annually in the public sustainability report.

Emission Data: At Hindalco, emission data is primarily calculated using direct measurements from Online Continuous Emission

Monitoring Systems (OCEMS) installed at applicable sources. Real-time data is captured and managed through Enablon, enabling accurate aggregation, validation and reporting. Data quality is periodically reviewed through internal audits and supplemented by offline sampling and analysis conducted by NABL-accredited third-party laboratories.

At Novelis, emissions are estimated at the site level using a combination of prior test data, published or internally developed emission factors, and site-specific guidance. Emissions calculations follow the Novelis Environmental Directive, with methodologies varying by site and pollutant to reflect operational and regulatory conditions.

Hindalco’s multi-pronged strategy to reduce air emissions across operations:

1. **SOx emission reduction at captive power plants** through the commissioning of Flue Gas Desulphurisation (FGD) units at two units each at Aditya and Mahan. Coal quality monitoring for sulphur content.
2. **Reduction of particulate matter (PM) and SOx emissions** by transitioning from heavy fuel oil to cleaner fuels, including piped natural gas (PNG) and premium LSHS, across furnaces and smelters, use of dust suppressant.
3. **Improvement in ambient air quality**, with an objective to achieve a 'Good' and 'Satisfactory' Air Quality Index (AQI: 0-100) in and around operations, in line with national standards. Interventions: Avenue plantation and Wind Screen.
4. **Control of fugitive emissions** Fugitive emissions are managed through a combination of

engineering controls and operational best practices, including closed and covered conveyors, fog cannons, automated water-sprinkling systems, wind barriers, dense green cover and high-efficiency bag filters. These measures minimise dust generation and limit the dispersion of airborne particulates across operating areas.

5. **Promotion of clean transportation:** Electric vehicles have been introduced for the movement of rolling ingots and hot rolling coils between Hirakud FRP and Aditya FRP (part of Aditya Aluminium), reducing vehicular emissions, lowering dependence on fossil fuels and minimising air-pollution impacts from inter-unit logistics.

We implemented several initiatives to minimise air emissions across our operations. Fugitive emissions are managed through a combination of engineering controls and operational best practices, including closed and covered conveyors, fog cannons, automated water-sprinkling systems, wind barriers, dense green cover and high-efficiency bag filters. These measures minimise dust generation and limit the dispersion of airborne particulates across operating areas.

Dust suppression at material-handling and storage areas: Automated water-sprinkling systems have been deployed at Red Mud Ponds (RMPs) to effectively control fugitive dust emissions, particularly during dry and windy conditions. Additionally, floticor is used in RMP areas to stabilise surface layers and further minimise dust generation. To address dust emissions at source, Dry Fog Dust Suppression (DFDS) systems have been installed at wagon tippler areas and bulk material handling areas. These systems capture fine dust particles during material unloading,

thereby improving ambient air quality within the plant premises and supporting compliance with environmental regulations.

Enhanced emissions monitoring and compliance: In alignment with the Environment (Protection) Fifth Amendment Rules, 2025, additional Continuous Emission Monitoring Systems (CEMS) are being installed on applicable stacks to enable real-time monitoring of particulate matter (PM), sulphur dioxide (SO₂) and flue-gas flow. Emissions data generated through CEMS is integrated with the CPCB-operated Online Continuous Emission Monitoring System (OCEMS) portal, enabling continuous surveillance, transparent reporting and strengthened compliance with statutory requirements.

Air Wash System in the CRM to recover oil from the mist: The Air Wash System installed in the CRM is designed to recover oil from oil mist, with a capacity of 210 KL(90-95% recovery) per annum. It captures exhaust fumes escaping through the CRM stack after the demister, thereby reducing air emissions and resulting in an annual cost saving of ₹1.7 crore.

Emission Control Upgrades at YeongJu Plant: At Novelis, we strengthened our emission control and environmental compliance at the YeongJu Plant through two key upgrades: the installation of a Venturi scrubber system with NaOH injection in the RCMU and the introduction of a slaked lime based HCl reduction system in the RMU. These enhancements were implemented to meet tightening regulatory requirements and ensure stable, effective control of acid gas emissions, particularly hydrochloric acid. The systems significantly improved pollutant removal efficiency, enabling the plant to maintain HCl concentrations below 80% of the permissible limit in FY 2025-26.

Transition to Low Emission:
Dual Fuel Furnaces at
Aditya FRP

🔗 **Initiative:** In line with our commitment to cleaner downstream operations and tighter air quality compliance, we adopted dual fuel firing technology in the new cast house furnaces at Aditya FRP facility. We utilised Piped Natural Gas (PNG) as the primary fuel with Premium Low Sulphur Heavy Stock (LSHS) as an alternative option. Designed in line with State fuel policies and CPCB norms, it supports a planned transition away from high sulphur fuels while ensuring operational continuity from commissioning.

Following a detailed fuel feasibility assessment, we leveraged the Urja Ganga Gas Pipeline Project to secure PNG connectivity through GAIL in FY 2023-24. In FY 2025-26, we commissioned three dual furnaces supported by a ₹3.8 crore investment, 3.4 km of internal PNG pipelines, and advanced burner and control systems.

➡ **Outcome:** The initiative resulted in significant reductions in SOx, NOx and particulate matter, improved ambient air quality, strengthened regulatory compliance, and a reduced environmental impact.

Electrostatic Precipitator
Upgrade at Muri to
Enhance Air Quality

🔗 **Initiative:** As part of our plant modernisation programme, we upgraded the Electrostatic Precipitator (ESP) of Boiler 3 at our Muri Co Generation Power Plant (CGPP) to enhance particulate matter control and improve system reliability under varying load conditions.

The initiative addressed the need to enhance particulate matter capture efficiency, improve system stability, and ensure reliable performance of air quality control equipment under varying boiler load conditions. The



upgrade was also aimed at future proofing the plant against stringent environmental standards while reducing operational risks associated with particulate emissions.

We executed a comprehensive refurbishment of the ESP system, which included installation of a high efficiency Coromax transformer rectifier to improve electrical performance, renewal of emitting electrodes for consistent dust charging, replacement of approximately 30% of collecting plates, and upgradation of the gas distribution screen to ensure uniform flue gas flow.

» **Outcome:** These interventions strengthened the ESP’s particulate control capability, improved system reliability, and reduced operational disruptions linked to fluctuating load conditions. Enhanced particulate control helped reduce PM emissions and associated dust dispersion, contributing to improved local air quality. The initiative demonstrates our continued commitment to modernising critical assets, enhancing operational resilience, and improving environmental performance across our power plants.

Improving Air Quality through Fume Treatment Plant Improvements

🔗 **Initiative:** At Hindalco’s Hirakud Power & Smelter, we implemented a comprehensive Fume Treatment Plant (FTP) improvement programme to reduce hydrogen fluoride (HF) and particulate matter (PM) emissions, while strengthening pot-gas flow balance and equipment reliability. The focus is to deliver measurable improvements in air emission key performance indicators while enhancing system reliability.

The programme addressed the need for improved pot gas collection efficiency and uniform gas flow through FTP units, both critical for effective HF and dust removal, and for improving ambient air quality in the surrounding communities. We undertook targeted technical upgrades, including replacement of rotary feeders, installation of insulated air slides and variable frequency drives, renewal of emitting electrodes, and replacement of approximately 2.5 km of worn ducting to eliminate leakages. These interventions improved system stability under varying operating conditions.

Operational measures complemented the hardware upgrades and included systematic pot gas flow balancing, arresting duct leakages, replacement of filter bags, and strengthening of preventive maintenance routines. It was aided by capability building with subject matter experts, and deployment of digital dashboards for real time monitoring of key parameters.

» **Outcome:** Collectively, these measures delivered a 15–20% reduction in HF and PM emissions, improved control over both stack and fugitive emissions, and enhanced ambient air quality. The initiative also generated estimated cost savings of ₹5.2 crore over five years through improved operational efficiency and reduced maintenance related disruptions.

		Air Emissions ('000 MT)					
	Category	Oxides of Sulphur (SOx)	Oxides of Nitrogen (NOx)	Total Particulate Matter (PM)	Fluoride	Volatile Organic Compounds (VOCs)	HCl
FY 2022-23	Hindalco India (Standalone)	72.63	31.38	12.98	0.04	-	-
	Hindalco India (Subsidiaries)	6.49	3.17	0.61	-	-	-
	Novelis	0.15	2.30	0.65	-	2.08	0.12
	Total	79.27	36.85	14.24	0.04	2.08	0.12
FY 2023-24	Hindalco India (Standalone)	84.68	37.42	14.67	0.07	-	-
	Hindalco India (Subsidiaries)	5.52	2.63	0.50	-	-	-
	Novelis	0.12	1.98	0.74	-	1.87	0.16
	Total	90.32	42.03	15.91	0.07	1.87	0.16
FY 2024-25	Hindalco India (Standalone)	87.04	42.05	14.86	0.13	-	-
	Hindalco India (Subsidiaries)	3.58	1.85	0.28	-	-	-
	Novelis	0.08	1.91	0.73	-	1.69	0.14
	Total	90.70	45.81	15.87	0.13	1.69	0.14
FY 2025-26	Hindalco India (Standalone)	81.99	40.01	10.51	0.13	-	-
	Hindalco India (Subsidiaries)	5.14	2.55	0.45	-	-	-
	Novelis	0.07	1.92	0.67	-	1.52	0.17
	Total	87.20	44.48	11.63	0.13	1.52	0.17

57 Projects
(Hindalco-35, Novelis- 22)

→

675,294.8 GJ Energy Saved
(Hindalco- 324,153 GJ, Novelis- 351,141.84 GJ)

→

166,591 tCO₂e Emissions saved
(Hindalco - 146,888 tCO₂e, Novelis - 19,702.9 tCO₂e)

→

₹66.456 crore Cost Savings
(Hindalco - ₹13.44 crore, Novelis - ₹53.016 crore (6 million USD))

Performance management: We continue to implement targeted initiatives to improve energy performance and reduce emissions across our operations, supported by regulatory frameworks and technology adoption. They are in line with Perform, Achieve and Trade (PAT) guidelines. At the Mahan, Aditya, Hirakud, Renukoot, Belagavi, and Taloja units Measurement and Verification (M&V) energy audits conducted by external accredited auditors were successfully completed during FY 2025–26. For the Muri unit, which falls under PAT Cycle-8, the M&V audit is scheduled for FY 2026–27, with annual energy returns and Form-3 submissions completed, detailing energy-efficiency measures already implemented.

Eight Hindalco plants that were earlier notified as Designated Consumers under the PAT scheme have transitioned to the Carbon Credit Trading Scheme (CCTS), reflecting a shift from energy-intensity based targets to emission-intensity based performance management.

⊕ **During FY 2025–26, two additional units were notified under the CCTS, increasing the total number of designated consumers to 10.**

This transition reinforces our focus on emissions reduction aligned with national climate mechanisms. In support of these efforts, Hindalco invested ₹216.03 crore, while Novelis

invested ₹137.84 crore (US\$ 15.6 million) during the year in energy conservation equipment and energy efficiency projects.

We adopted fuel-switching measures to reduce carbon intensity, including the use of physical power-purchase agreements (PPAs) with grid-connected generators and targeted transitions from higher-carbon fuels to cleaner alternatives. Waste-heat recovery systems, such as those implemented at Dahej, further contribute to energy efficiency and emissions reduction.



Circular Economy and Waste Management

Raw Material Management

As we operate across resource intensive aluminium and copper value chains, we recognise the importance of strengthening the resilience and sustainability of our raw material ecosystem. As global demand for aluminium continues to grow, driven by the transition to low-carbon technologies and sustainable packaging, we are sharpening our focus on responsible sourcing and efficient material use. We are deepening our commitment to circularity by expanding the role of recycled inputs, improving resource productivity, and enhancing the reliability of our captive assets.

Material Consumption- Hindalco (KT)

Material type	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Bauxite	10,386.72	10,637.86	11,385.42	11,431.74
Aluminium fluoride	18.27	16.40	19.85	20.45
Calcined petroleum coke	497.59	513.46	511.20	511.46
Caustic soda	254.23	275.41	305.97	317.00
Pitch	112.30	113.10	115.17	113.95
Lime	95.20	112.29	104.14	125.07
Copper Concentrate	1,227.62	1,149.17	1,172.44	1,275.30

At Novelis, we see our role as the world’s largest recycler of aluminium as central to advancing a truly circular metals value chain. We are deepening circularity across our global operations and are working towards achieving 75% average recycled aluminium content in our products. Through strategic investments and expanded recycling capabilities, we are strengthening resource efficiency and advancing our circular-economy commitment. In the reporting year, we recycled more than 85 billion used beverage cans, processed 2,155 KT

Through these efforts, we aim to support long-term growth while reducing our environmental impact and reinforcing our position as a trusted, future ready metals manufacturer.

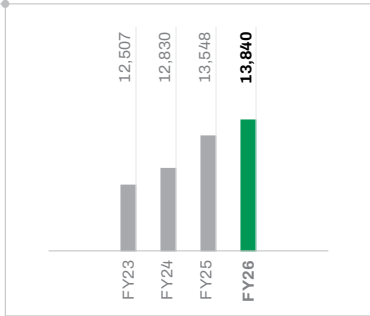
In FY 2025-26, at Hindalco we consumed 13,839.86 KT of total materials, of which 13,828 KT accounted for raw materials and 11.86 KT for associated materials. These associated materials included alloying elements, oils (hot rolling and cold rolling), solvents, and lubricants, and accounted for approximately 0.086% of total material consumption. Packaging material consumption included 21.87 KT of wood, 2.13 KT of paper and 9.36 KT of other materials. Additionally, total scrap consumption (internal and external) amounted to 449 KT.

of scrap and achieved 61% average recycled content, supported by 1,298 KT of primary ingots and alloys for production needs.

Optimising raw material consumption across operations

At Hindalco, we have undertaken a range of initiatives to optimise the raw-material consumption in line with our 5R + 1S waste management framework, with a strong focus on increasing recycled-material use and improving material efficiency across operations.

Raw Material Consumption (KT)



There is an increase in raw materials consumption by 2% due to increase in primary aluminium production, aligned to our strategy of double down on upstream capacity and achieving 4x EBITDA growth in downstream by FY 2030.



Plastic packaging materials used across operations contained an average of 20% recycled content.

Hindalco India (Standalone)

- + 6.69% of total input material came from end-of-life aluminium and copper scrap, compared with 5.97% in the previous year.

Hindalco India (Subsidiaries)

- + 0.18% of total input material was sourced from recycled scrap

- + To enhance circularity and reduce reliance on virgin aluminium in downstream operations, we increased the reuse of internal scrap generated from rolling mills and extrusion plants through in house re melting.
- + Other initiatives include reuse of refractory waste in construction activities and used anode butts are utilised for the manufacturing of green anodes, reducing the consumption of fresh pitch and calcined petroleum (CP) coke.
- + In our upstream operations, our alumina refineries continue to rely on the Bayer process, which enables the closed-loop recycling of caustic soda with only minimal top-ups required.
- + Within our smelting operations, we have further reduced AlF₃ and pitch consumption through fluorine enrichment, process optimisation, and strengthened operational controls.

Compared with FY 2021–22, we achieved a 6.11% reduction in AlF₃ consumption and a 17.29% reduction in pitch consumption across our smelters, supported by real-time monitoring and enhanced process discipline through distributed control systems (DCS).

Minimising use of Hazardous substances

All hazardous substances are treated, labelled, stored, handled and transported in full compliance with the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989, the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996, and relevant

provisions under the Factories Act, the Environment Protection Act, and the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016. We are also aligning our systems with the draft India REACH rules. Emergency Preparedness Plans (EPPs) are developed for each site and are reviewed regularly to ensure readiness. Mock drills are conducted periodically to assess and strengthen response capabilities in the event of chemical spillages or mishandling of hazardous substances. To support safe operations, both online and offline training programmes are conducted by subject matter experts (SMEs) and external experts, focusing on the safe handling and management of hazardous materials.

We conduct HIRA and HAZOP assessments for all new projects and processes, and wherever feasible, we prioritise the use of less hazardous chemicals based on these evaluations. As part of this transition, HCl has been replaced with H₂SO₄ for pH correction in cooling-tower systems, and we continue to advance ODS phase-out initiatives across our operations. We are also replacing R22 in refrigerants, air-conditioning systems and chillers with safer alternatives such as HFC-134a, HFC-410A, R407C and R32.

Single use plastic management:

We monitor and manage single use plastics (SUPs) across the full value chain, including mining operations, manufacturing plants and downstream distribution. To date, 22 sites (19 plants and 3 mines) have been declared single use plastic-free,

ensuring zero consumption of banned SUP items in line with Government of India regulations. For the remaining sites, SUP consumption is minimal and limited to essential applications where alternatives are still under evaluation or scale up. We continue to work towards transitioning all such locations to full SUP free status.

Replacing Single Use Plastics with Biodegradable Packaging Solutions

Initiative: To reduce our plastic footprint, we developed biodegradable packaging solutions to replace conventional single use plastics used for continuous cast rods, aluminium ingots, and foils. The aim is to transition to an environmentally safe, compliant, and performance equivalent alternative across key product lines.

We focused on developing a biopolymer system capable of meeting industrial requirements for mechanical strength, durability, thermal performance, and weather resistance, while retaining compostability. A formulation based on polybutylene adipate terephthalate (PBAT), enhanced with polylactic acid (PLA) derived from renewable feedstock, was developed. The packaging film meets specifications for thickness, tensile strength, elongation, transparency, and stretchability, and validated in accordance with ISO 17088:2021.

We followed a structured five phase approach, including collaborative design with CIPET Bengaluru, biodegradability approval from CPCB, pilot scale production, plant level trials at Birla Copper, Taloja, and Renukoot, and finalisation of specialised vendors.

Outcome: The initiative supports compliance with Government of India regulations and advances sustainable packaging practices across our operations. As an outcome, 1 MT of biodegradable packaging material has been procured, with positive customer feedback reinforcing our commitment to responsible material stewardship.



Sustainable resource utilisation towards packaging, wooden pallets used at hitrakaud FRP

Optimising Packaging to Reduce Wood Consumption

Initiative: To minimise the use of wood in pallets and runners used for transporting finished coils and sheets, we implemented in-house modifications and continuous improvement initiatives (Kaisens). The initiative supports circular economy principles by lowering reliance on virgin wood while improving cost efficiency.

The initiative focused on engineering-led packaging optimisation. We applied load-distribution analysis to maintain strength while reducing wood use. Shape optimisation was implemented to match coil curvature and eliminate excess material. Runner designs were simplified by replacing full wooden bases with strategically placed supports.

In parallel, we introduced a pallet reuse programme under which used pallets are collected from customers and reused, with the programme gradually expanded across operations.

Outcome: These interventions delivered measurable and sustained results. Wood-consumption intensity reduced from 0.86 CFT/MT in FY 2023–24 to 0.81 CFT/MT in FY 2024–25, and further to 0.60 CFT/MT in FY 2025-26, despite higher throughput. This sustained improvement resulted in a financial saving of ₹0.17 crore. The initiative strengthens sustainable packaging practices, reduces waste, and enhances operational efficiency.

Waste Management

We recognise that responsible waste stewardship is fundamental to operating sustainably across our aluminium and copper value chains. Given the scale and nature of our operations, effective waste management is not only an environmental priority but also a key component of our commitment to safeguarding communities and natural ecosystems. We endeavour to manage waste thoughtfully, efficiently, and transparently across every stage.

Contribution to SDGs



At Hindalco, all our manufacturing units are guided by a unified waste management philosophy, underpinning our long term commitment to achieve Zero Waste to Landfill by 2050. This commitment is embedded across our operations through robust systems, consistent practices and a focus on continuous improvement.

We maintain full compliance with waste and hazardous material management requirements through a well-defined governance and oversight framework aligned with our Sustainability and Environment Policies, ISO 14001 Environmental Management System, and applicable regulatory obligations.

To ensure consistent implementation, comprehensive Standard Operating Protocols (SOPs) guide all aspects of waste and materials management, enabling disciplined, safe and environmentally responsible practices across sites. These are reinforced through periodic online and offline training programmes conducted by internal subject matter experts and external specialists, with a focus on waste reduction and segregation practices.

At the operational level, Waste Management Taskforces (WaMTFs) have been established across plants to drive execution and accountability. Each taskforce comprises a leader, a convenor and cross-functional members who collaborate with operational teams to plan, implement and monitor waste management strategies. The taskforces meet monthly to review performance and progress, while the Corporate Sustainability Team undertakes half yearly reviews to ensure alignment across locations. WaMTFs also conduct regular on site training to strengthen operational capabilities.

Oversight is further enhanced through unit level inspections, supported by the Chemical Safety Task Force, which monitors hazardous material storage and compliance. At the enterprise level, ESG dashboards, annual audits and periodic reviews by the Risk Management & ESG Committee provide additional monitoring and governance. We further have waste reduction KPIs linked to management accountability to reinforce performance discipline.

All waste streams are channelled through authorised third party recyclers, refurbishers and co processing partners. Hazardous waste is managed in accordance with the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, and is routed

through authorised, accredited third parties, co processing facilities or secured landfills. These practices are validated by CPCB accredited auditors, while external geotechnical experts periodically assess the stability and environmental performance of ash and bauxite residue storage areas.

To extend compliance across the value chain, we evaluate all business partners involved in waste handling including contractors, recyclers and disposal agencies through a structured due-diligence framework. We extend our commitment to waste reduction and responsible practices to suppliers through our Supplier Code of Conduct, ensuring that sustainability expectations are embedded at every level.

At Novelis, our Global Waste Management Committee, comprising experts from operations, R&D, and engineering, guides in advancing waste reduction strategies. Reporting to our Global Sustainability Steering Committee, this team develops targeted waste minimisation plans, shares best practices, prioritises key initiatives, and secures funding for impactful projects. We are guided by the Novelis Waste Management Performance Standard, ensuring correct waste classification, handling, storage, segregation and disposal, supported by annual training and audits. Waste data is tracked monthly through the EtQ system, with quarterly validation by the Corporate EHS team.

Waste Related Risks and Mitigation Actions

1Regulatory and Compliance Risks	2Operational and Structural Risks
3Waste Disposal Risks	4Pollution Risks

1Regulatory and Compliance Risks Impact: + Non-compliance with waste and tailings management regulations may result in penalties, reputational harm or operational disruption.	Actions Taken: + We adhere to all applicable environmental regulations across operations. + All tailings storage facilities (TSFs) for bauxite residue comply with GISTM guidelines. + Periodic internal audits and independent geotechnical stability assessments are conducted to ensure TSF integrity and preparedness for risks such as overtopping or subsidence.
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2Operational and Structural Risks Impact: + We have 19 TSFs, including facilities classified as high-risk or significant-risk. + Operational risks include dyke instability, seepage, structural damage and potential failures triggered by extreme weather events.	Actions Taken: + Commissioned direct silo to rail wagon fly ash loading at Mahan, significantly reducing handling risk, improving logistics safety and enhancing structural integrity by eliminating long pneumatic conveying lines. + Rehabilitation of Ash mounds and Red mud storage areas with greenbelt development. Periodic Geotechnical Investigations, stability assessment, drone survey, cross-site internal audits and real time monitoring of dykes with execution of measures for FoS improvement.
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3Waste Disposal Risks Impact: + Insufficient recycling and refurbishing capacity, especially in remote areas, can lead to improper disposal of waste. + Operational delays and waste accumulation may result in regulatory non-compliance and damage reputation. + Higher costs for alternative disposal methods can strain resources. + Challenges in waste management may hinder progress towards Zero Waste to Landfill (ZWTL) goals.	Actions Taken: + Enabled full circular utilisation of SPL refractory at Aditya, reducing disposal volumes and lowering dependency on secured landfills. + 88% of our waste is sent for recycling to authorised recyclers, pre-processors and co-processors. + We ensure 100% compliance with Extended Producer Responsibility (EPR) regulations for plastic packaging waste, earning the plastic EPR credits. + Invested in R&D initiatives to develop waste to value solutions, including metal recovery, construction materials, and industrial applications.
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4Pollution Risks Impact: + Improper storage, handling, or leakage of waste could result in land, air, and water contamination, posing environmental and health risks. + Pollution concerns may lead to scrutiny from surrounding communities, potentially affecting trust and social license to operate.	Actions Taken: + We follow standard operating procedures (SOPs) to ensure safe handling and storage of waste. + We conduct periodic audits to uphold compliance and best practices. + We continuously engage with communities to address concerns and promote awareness. + Reduced fugitive emissions and dust pollution at Mahan through enclosed conveyor based fly ash handling and minimised truck movement. + Green belts and structural safeguards are developed around storage areas to minimise ecological impact.
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Waste Management Approach

Our waste management plan is built on the 5R + 1S framework, designed to minimise environmental impact, optimise resource use, ensure regulatory compliance and generate value from waste.

1Reduce Lower waste generation through alternate raw materials and process improvements.	2Recycle Utilise waste in cement industry, construction, road-making, and backfilling.	3Redesign/Repurpose Modify processes to enhance the quality of waste for diverse applications.
4Recover Extract valuable elements from waste, such as rare earth elements.	5Rehabilitate Restore and rehabilitate waste storage areas that have reached the end of their capacity	6Storage Safe and compliant storage of wastes like bauxite residue and ash in dedicated storage facilities.

Waste identification and segregation: It is the first step where process residues such as bauxite residue, fly ash, aluminium scrap, spent pot lining and effluents are categorised into hazardous and non-hazardous streams. Reduction at source remains central to our approach and is achieved through cleaner technologies, process improvements and increased in-process recycling. Aluminium scrap is internally re-melted, while

copper smelter gases are converted into sulphuric acid. Internal sorting and disposal of waste according to waste streams are ensured through systematic segregation, where wastes are sorted into different streams and managed as per dedicated site-specific SOPs. To ensure effective waste management, no two different types of hazardous or bulk wastes are mixed. Non-hazardous wastes, including MSW, are segregated into appropriate

categories and either processed or responsibly recovered through authorised channels.

Reuse, Recycling and Recovery: In this step the by-products are repurposed to reduce reliance on virgin materials. Bauxite residue is used for mine/quarry backfilling or construction materials, fly ash is supplied to cement plants, and fluoride rich compounds are recovered for reuse in smelting.

Goals and Targets

Targets

Hindalco

- + To achieve Zero Waste to Landfill by 2050
- + Interim Target- To achieve Zero Waste to Landfill by 2030

Progress

Hindalco

- + 9 Plants achieved ZWTL certification
- + 22 single-use plastic-free sites till date (19 plants, 3 mines)
- + 88% recycling of non-hazardous and hazardous waste
- + 65 hectare of RMP and 139 hectare of ash area restored
- + 2.05 Million MT of legacy waste evacuated

Targets

Novelis

- + To reduce waste to landfill intensity by 20% by FY 2025-26 and FY 2019-20 (25.55 kg/t FRP)

Progress

Novelis

- + 19% reduction in waste to landfill intensity from the baseline

Waste Generation and Utilisation

From raw material extraction to refining, smelting, fabrication and downstream packaging, each stage contributes to distinct waste streams that require careful and responsible management. Broadly, waste is classified into four categories:

- + **Bulk waste:** Bauxite residue, ash, spent pot lining (SPL), aluminium dross, vanadium sludge, and copper slag
- + **Hazardous waste:** ETP sludge, used oils, fluoride-contaminated residues, and used anode butts, etc.
- + **Non-hazardous waste:** Engineering scrap, refractory waste, rubber, packaging materials, and waste alumina, etc.
- + **Other waste** includes- Biomedical, battery, Plastic, E Waste, MSW, C&D.

Waste generated

Hazardous Waste

0.58 Million MT

Non-hazardous Waste

13.84 Million MT

Waste diverted from disposal

Waste recycled

12.64 Million MT (88%)

Waste directed to disposal

Waste Sent to Landfill

0.15 Million MT (1%)

Waste Incinerated

0.01 Million MT

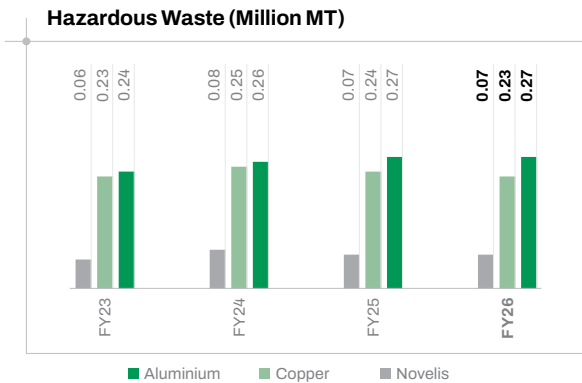
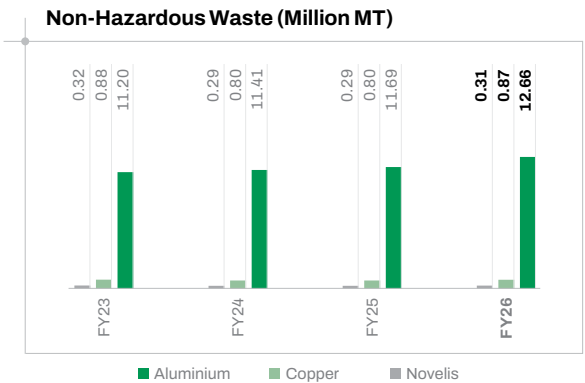
There is an increase in waste generation by 8% due to increase in primary aluminium production, aligned to our strategy of double down on upstream capacity and achieving 4x EBITDA growth in downstream by FY 2030.

To minimise waste generation at source, we invest in process improvements and technology upgrades, including pilots such as biodegradable plastic packaging in the copper cluster to reduce plastic waste. We remain committed to meeting our Extended Producer Responsibility (EPR) obligations; 13 of our 19 units fall under EPR compliance. In FY 2025–26, our plastic EPR compliance stood at 6,108 MT. Our waste-collection plan aligns with Pollution Control Board submissions to ensure responsible recovery, recycling and management of post-consumer packaging waste. We also work closely with regulators, suppliers, contractors, distributors and downstream partners to strengthen circular-economy outcomes and reinforce long-term sustainability objectives.



		Non-Hazardous Waste (Million MT)				
		Waste Generation	Recycled and reused	Landfill/TSFD	Stored in approved structures	Incineration
FY 2022-23	Hindalco India (Standalone)	8.858	10.321	0.002	-	-
	Hindalco India (Subsidiaries)	3.229	0.396	-	2.833	-
	Novelis	0.320	0.290	0.026	-	0.002
	Total	12.407	11.007	0.028	2.200	0.002
FY 2023-24	Hindalco India (Standalone)	8.945	9.995	-	-	-
	Hindalco India (Subsidiaries)	3.263	0.422	-	2.602	-
	Novelis	0.290	0.260	0.029	-	0.007
	Total	12.499	10.677	0.029	2.602	0.007
FY 2024-25	Hindalco India (Standalone)	9.014	10.131	0.000	0.003	0.000
	Hindalco India (Subsidiaries)	3.476	0.511	0.001	2.971	0.000
	Novelis	0.288	0.263	0.024	-	0.002
	Total	12.778	10.905	0.025	2.974	0.002
FY 2025-26	Hindalco India (Standalone)	9.100	10.909	0.000	0.004	0.000
	Hindalco India (Subsidiaries)	4.423	0.883	0.001	3.663	-
	Novelis	0.312	0.289	0.022	-	0.002
	Total	13.835	12.081	0.023	3.667	0.002

		Hazardous Waste (Million MT)				
		Waste Generation	Recycled and reused	Landfill/TSFD	Stored in approved structures	Incineration
FY 2022-23	Hindalco India (Standalone)	0.477	0.363	0.116	0.004	0.002
	Hindalco India (Subsidiaries)	0.0002	0.0002	-	-	-
	Novelis	0.060	0.050	0.006	-	0.002
	Total	0.537	0.413	0.122	0.004	0.004
FY 2023-24	Hindalco India (Standalone)	0.504	0.405	0.240	-	0.001
	Hindalco India (Subsidiaries)	0.0004	0.0001	-	0.0003	-
	Novelis	0.080	0.072	0.005	-	0.002
	Total	0.584	0.477	0.245	0.001	0.003
FY 2024-25	Hindalco India (Standalone)	0.515	0.448	0.159	0.000	0.001
	Hindalco India (Subsidiaries)	0.0006	0.0005	-	0.0001	-
	Novelis	0.070	0.064	0.005	-	0.002
	Total	0.585	0.512	0.164	0.000	0.003
FY 2025-26	Hindalco India (Standalone)	0.503	0.497	0.127	0.001	0.002
	Hindalco India (Subsidiaries)	0.001	0.001	0.000	0.000	0.000
	Novelis	0.071	0.065	0.004	-	0.002
	Total	0.575	0.563	0.131	0.001	0.004



		Total Waste (excluding tailings waste) (Million MT)				
		Waste Generation	Recycled and reused	Landfill/TSFD	Stored in approved structures	Incineration
FY 2025-26	Hindalco India (Standalone)	7.13	8.17*	0.13	0.01	0.00
	Hindalco India (Subsidiaries)	0.45	0.58	0.00	0.00	0.00
	Novelis	0.38	0.35	0.03	-	0.00
	Total	7.96	9.10	0.15	0.01	0.01

*Including legacy waste

During the reporting year, Renukoot (plant) received ZWTL certification, bringing our total to 9 certified sites.

Residue Utilisation:

We continue to strengthen bauxite residue utilisation through technology upgrades, process optimisation and research driven development of alternative applications such as cement manufacturing, construction materials, road construction and mine/quarry backfilling. This approach supports circular economy principles and our Zero Waste to Landfill (ZWTL) ambition by reducing long-term storage requirements, lowering land and environmental risks, conserving natural resources and reducing carbon emissions.

We are also expanding our R&D efforts to develop new utilisation pathways for bauxite residue, ash, copper slag and other by products. For the same, we are investing ₹5.82 crore towards R&D and ₹477.49 crore towards operating expenditure. We are piloting innovative applications such as bauxite residue-based road-construction materials showing strong potential for large-scale use.

Other Key Initiatives:

We undertook a major environmental remediation initiative at Birla Copper to safely excavate, remove and dispose of legacy hazardous waste stored across three captive secured landfills. These landfills, spanning 25,000 m², historically contained

around 167,000 MT of ETP sludge and mixed hazardous waste, with total disposal estimated at 230,000 MT including liners and associated materials. The initiative is being executed in full compliance with regulatory requirements, supported by GPCB’s one-time approval and carried out under the technical guidance of NEERI, Nagpur, with onsite supervision from SVNIT, Surat.

At Aditya Aluminium, we implemented an innovative SPL recycling initiative to convert the refractory fraction of Spent Pot Lining traditionally sent to landfills into valuable secondary resources. This involves a closed loop treatment system, including alkaline treatment for fluoride and cyanide removal, followed by thermal decomposition at 500°C in a rotary kiln. The treated material is now safely utilised in refractory mortar and ramming mass. The initiative has increased hazardous waste recycling rates from 91.5% to 96.47%, significantly reduced landfill dependency, and delivered notable cost efficiencies, including nearly 50% lower transport and disposal costs and a 98% reduction in transport distance, thereby lowering Scope 3 emissions. To minimise waste generation at source, we invest in process improvements and technology upgrades, including pilots such as biodegradable plastic packaging in the copper cluster to reduce plastic waste.

At our Mahan operations, we introduced a first-of-its-kind system to transform fly-ash handling and transportation by enabling direct loading from silos into rail wagons (BTAP, BCFC and BOXN). This replaces long-distance pneumatic conveying with an efficient drag-chain conveyor and silo-to-rail loading mechanism, supported by newly developed rail infrastructure. Through in-house innovation and collaboration with partners, project costs were reduced from ₹130 crore to ₹60 crore, while eliminating a 1-km pneumatic conveying system. Reduced truck movement has lowered vehicular emissions and dust generation, improved ash utilisation and strengthened alignment with circular economy objectives.

Waste to Biofuel: Biomass Briquette Production at Renukoot

🌱 **Initiative:** To promote reduce dependence on fossil fuels, we identified the need to utilise locally available agricultural waste as an alternative source of clean energy for captive power generation at our Renukoot operations.

We established a biomass briquette manufacturing unit at Renukoot with a production capacity of 15 tonnes per day to convert agricultural residues into biofuel. The plant

utilises locally sourced biomass, including sugarcane bagasse, cotton stalk, rice husk, coir pith, wood chips and mustard husk, procured from the surrounding farming community. The facility is equipped with a 90 mm biomass briquetting machine (87 HP) and operates with minimal water requirements. The process involves shredding, automated material handling, high pressure compaction, cooling and storage, ensuring consistent briquette quality. The briquettes produced are supplied to the Renukoot Co Generation Power Plant for use as boiler fuel. To strengthen long term feedstock availability, we also support biomass supply through tissue culture bamboo plantations, distributing approximately 50,000 saplings annually.

➡ **Outcome:** The initiative enables partial substitution of coal in boilers, reduces air emissions, and supports cleaner energy generation. The briquettes have a gross calorific value of approximately 3,500–4,000 kcal/kg, making them suitable for industrial fuel use.

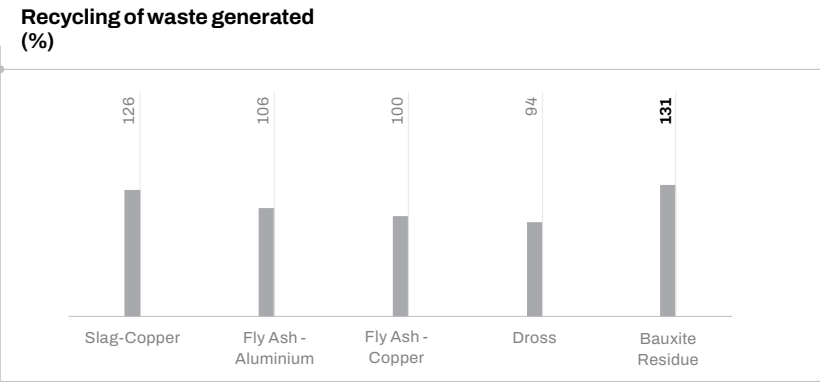
The project facilitated productive utilisation of agricultural residues, improved local air quality, reduced coal consumption, and generated additional income opportunities for farmers. It demonstrated a scalable and socially inclusive waste to biofuel model.

Recycling of Baghouse Dust for Sustainable Material Recovery

🌱 **Initiative:** Driving meaningful progress towards circularity, this initiative transformed how lime based baghouse dust is managed across our aluminium processing operations. We are diverting this byproduct, composed of lime and particulate matter captured from the air pollution control systems from becoming landfilling waste. The material is systematically collected, properly

stored to prevent contamination, carefully characterised to confirm its non-hazardous nature, and channelled to an approved recycling partner for beneficial industrial use.

➡ **Outcome:** In FY 2025–26, approximately 1,371,590 kg of baghouse dust were diverted from landfill across the Guthrie, Berea and Uhrichville sites delivering measurable sustainability impact.



For Novelis, the waste-to-landfill intensity accounted for 20.44 kg/ MT of FRP shipped.

Tailings Management

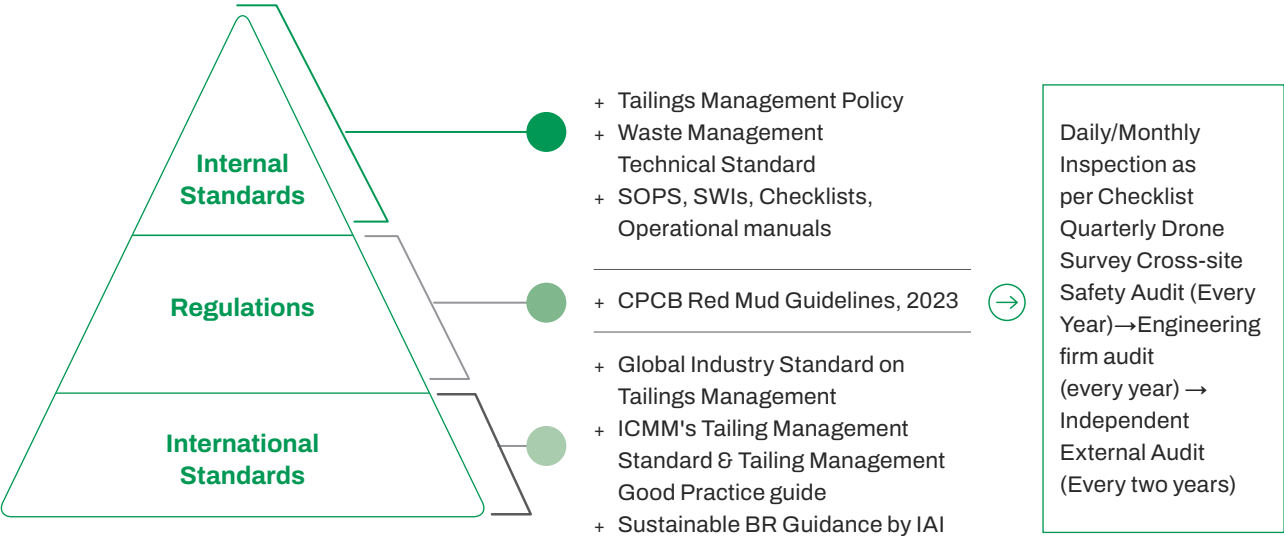
Responsible management of tailings and bauxite residue is a core pillar of our mining and refinery operations, reflecting both our commitment to environmental stewardship and alignment with global industry expectations. Our approach is guided by the Tailings Management Policy, which is fully aligned with the Global Industry Standard on Tailings Management (GISTM) and reinforced by the ABG Technical Standard on Solid and Hazardous Waste Management and the Mining Waste Management Guidance. Together, these frameworks form the basis of our Tailings Management Plan, ensuring that tailings governance is integrated into planning, operations, monitoring, closure and post-closure of the Tailings Storage Facilities (TSFs).

Our tailing governance structure is supported by a multi-layered oversight structure that clearly defines accountability. Each facility is managed by a Responsible Tailings Facility Engineer (RTFE), supported by an Engineer of Record (EoR), both reporting to the Accountable Executive (Unit Head). Oversight

is further strengthened through an Independent Tailings Review Board, comprising geotechnical specialists from reputed institutions, who provide independent evaluation and technical guidance. At the corporate level, an Apex Tailings Management Committee comprising ExCom members and external experts provides strategic direction and reviews performance.

The safety of our tailings storage facilities is supported through continuous digital monitoring of pore-water pressure and subsurface movement using piezometers and inclinometers, with data integrated into interactive dashboards for proactive risk management.

Emergency Preparedness and Response Plan (EPRP), centred on prevention, control and recovery, has been established for all TSFs and is supported by SOPs for responding to breaches in bauxite residue ponds. As a result of these comprehensive governance, monitoring and preparedness measures, none of our facilities has experienced a failure, including leakages, overflows or breaches, in the last five years.



At our refineries in Utkal, Renukoot, Muri and Belagavi, tailings (red mud) storage is supported by a well defined network of Advanced Plate & Frame filter presses (reducing moisture less than 28%), conveyor system, Red Mud Disposal Areas (RMDAs), railway sidings, Weighbridges and RFID enabled-loading and transportation system. Across these locations, Belagavi and Utkal each have two active Red Mud Disposal Areas (RMDAs). At Muri, there are a total of four RMDAs, of which one is currently active, while the Renukoot unit has 11 RMDAs, with one active at present.

Given increasing climate variability, we conducted a detailed climate-risk assessment, which identified Belagavi, Renukoot and Muri as extreme-risk zones, and Utkal as high-risk. Key climate drivers include heat stress, flooding, drought, geophysical hazards, wildfires, wind and precipitation extremes. Based on these findings, we have implemented climate-adaptation measures across plants to strengthen resilience.

A preliminary risk assessment based on GISTM Consequence Classification Methodology risk assessment was conducted across

all 19 TSFs, classifying three as high risk, two as significant risk and the remainder as low risk. Potential risks related to bauxite residue overtopping and embankment failure have been identified and integrated into the Enterprise Risk Management (ERM) and Hazard Identification and Risk Assessment (HIRA) systems at each refinery to ensure consistent mitigation and monitoring.

Tailings risk potential	Total number of facilities	Number of facilities identified as 'high-risk potential'	Percentage of high-risk potential sites
Active facilities	6	3	50%
Inactive facilities (including facilities in care and maintenance or closed)	13	0	0
Planned facilities (FY 2028 onwards)	2	0	0

Community engagement is integral to our tailings-management approach. We actively engage with neighbouring communities to build trust, identify risks and co-develop post-closure land-use objectives. Village-level committees support an effective grievance redressal system, ensuring timely resolution of concerns.

We have also undertaken rehabilitation work at Belagavi, Renukoot and Muri, converting inactive red-mud areas into ecologically restored zones, spanning around 65 hectares under our “Red to Green” programme, supporting long-term environmental recovery and land reuse.

Our mineral-waste streams primarily comprise overburden and tailings, and we remain focused on reducing both through innovative recycling and reuse strategies. The values for waste rock generation and reuse from previous years have been restated to align with the standardisation of reporting and processes, ensuring greater transparency.

Mineral Waste (million MT)

	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Waste Rock generated	25.32	25.68	16.91	15.34
Tailings Generated	5.08	5.25	5.56	6.45
Waste reused/repurposed	28.20	28.33	19.78	18.89
Waste Disposed	2.20	2.60	2.69	2.90

Preventing and Managing Spills

Taskforces: At Hindalco, we have established chemical and material-handling taskforces at all factory sites to proactively assess the probability and impact of potential spillages and leakages. These taskforces analyse root causes such as equipment failures (corrosion, worn seals, pipeline ruptures), improper handling practices, inadequate training, storage issues (poor containment, overfilled tanks, inadequate labelling) and process inefficiencies linked to outdated systems or lack of preventive maintenance.

Spills and leaks are tracked through our Environmental Aspect-Impact Register, which documents risks and the corresponding precautionary, preventive and control measures. Safety SOPs support daily operations, and CCTVs are installed at waste-storage and material-handling areas to monitor compliance. For spills during off-site material transportation, we use fishbone analysis to determine the root cause such as packaging issues, transport-related events or procedural gaps and undertake corrective actions accordingly. Once a root cause is identified, we collaborate with in-house and external subject-matter experts to implement appropriate mitigation measures. In the reporting year, no spills or leakages were recorded at any of our plants, mines or during material transportation.

Spill management and remediation actions include:

Immediate Response
Spill containment, neutralisation, and safe disposal of affected material.

Infrastructure upgrades
Replacement of pipelines, tanks and seals; installation of secondary-containment systems.

Training and awareness
Regular safety drills, updated SOPs and competency-building programmes.

Monitoring systems
Leak-detection sensors, automated alarms and routine inspections.

Reporting and review
Annual audits, ESG Committee reviews and corrective-action tracking.

At Novelis, spill prevention is guided by the Spill Prevention Performance Standard, which ensures proper storage and handling of materials across operations.

Circular Economy

We are strengthening our leadership in circularity by expanding the use of recycled materials and accelerating technological innovation in waste recycling and reuse. With the growing global shift toward low-carbon materials and resource efficiency, circularity has become a strategic priority across our value chain. We are enhancing our scrap-sourcing

ecosystem by tapping into both domestic and international markets, building an organised and reliable network for securing high-quality scrap. Our ambitious expansion of aluminium-recycling capacity scaling to 200 KTPA by FY 2028-29 will be driven through strategic third-party tolling partnerships and infrastructure investments.

As we continue to expand circularity in products, we are also enhancing resource efficiency across operations through innovation-led material-handling solutions.



Aluminium scrap is sorted, cleaned, melted, refined, and cast into aluminium ingots at Lapanga

Strategies to Scale Circularity

Design for Recycling

- + We are innovating new high recycled content alloys and focusing on uni-alloy design for efficient sorting and segregation.

Improve Sortation and Segregation Technologies

- + We are investing in sorting and segregation technologies to meet the growing demand for recycled aluminium. We are also launching the Automotive Circularity Platform with Thyssenkrupp for end-of-life vehicle materials and partnering with Cornell University on tech to recover critical metals and store carbon using aluminium manufacturing residues.

Support Recycling Awareness and Education

- + We run community-based recycling awareness programmes globally. We also support STEM education and learning events like Global Safety Week. These programmes aim to build long-term recycling behaviours and empower future generations to engage in circular economy practices.

Advocate for Recycling Policies

- + We supported two bipartisan federal recycling bills—the Recycling Infrastructure and Accessibility Act and the Recycling and Composting Accountability Act—which have passed the U.S. Senate and await action in the House. If enacted, these bills will advance aluminium recycling and foster broader circular economy policies.

Expand Closed-loop Recycling Programmes with Customers

- + We are collaborating with our automotive customers to enhance closed-loop recycling, as the average automotive stamping process turns 30–40% of an aluminium coil into scrap. We use this scrap to create new coils, which can be reused in the manufacturing process and support a more sustainable supply chain.

Develop End-of-life Ecosystems

- + We actively advocate for circularity in the EU, supporting aluminium’s designation as a strategic material and its inclusion in sustainability regulations. We collaborate with industry partners on policies like the End-of-Life Vehicle Regulation to enhance aluminium recycling. Our focus remains on advancing recycled content and recycling rate targets to drive demand for sustainable aluminium products.

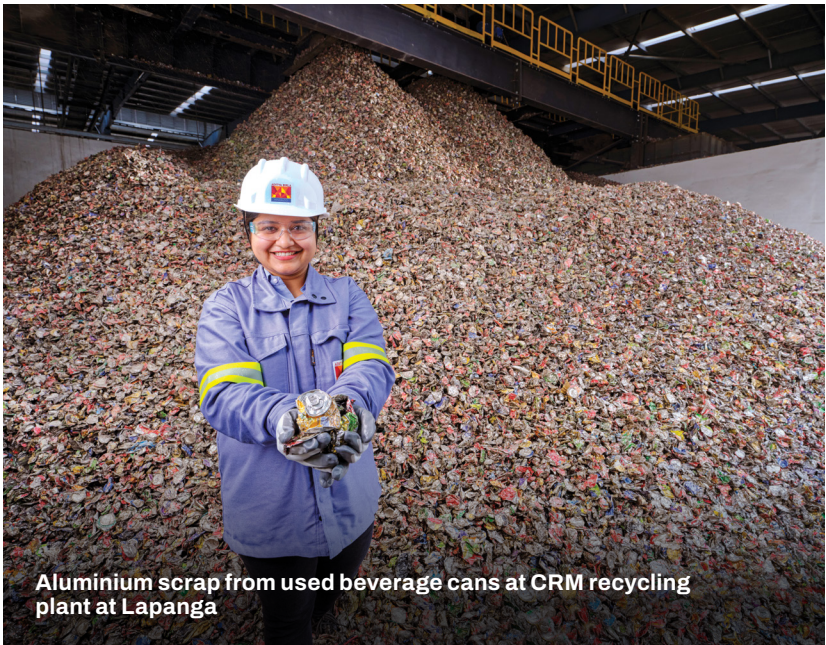
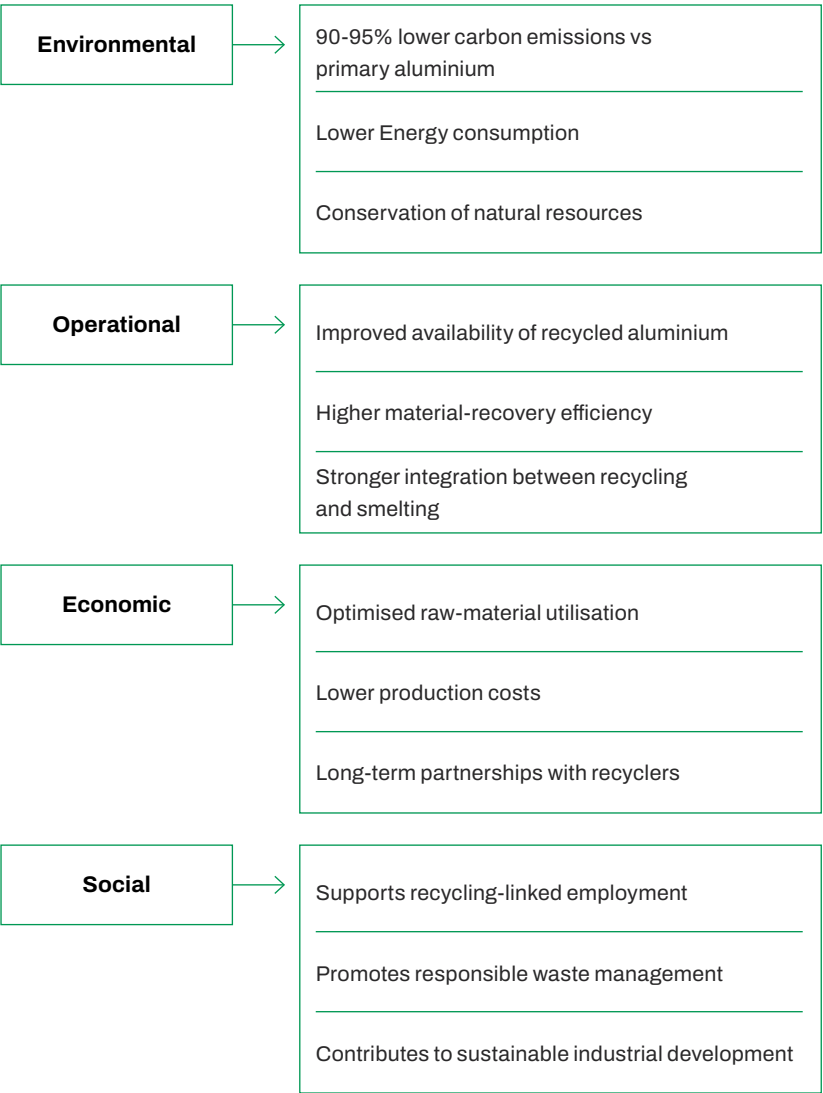
Integrating Recycled Aluminium to Accelerate Circular Economy at Aditya Aluminium

Initiative: We integrated 1 LTPA of recycled aluminium metal at Aditya Aluminium, Lapanga, sourced from the adjacent secondary metallurgical facility of M/s CMR Aluminium Pvt. Ltd. We entered into an MoU with CMR, which operates a recycling facility co located with the smelter. CMR sources aluminium scrap - primarily Used Beverage Can (UBC) scrap - from approved domestic and international suppliers. The scrap is systematically sorted, cleaned, melted, refined, and cast into recycled aluminium ingots or molten metal.

They are supplied directly to Aditya Aluminium, ensuring efficient logistics, reliable supply, and close operational integration. We identified recycled aluminium as a critical enabler of our circular economy and decarbonisation strategy. Not only is demand rising for low carbon aluminium, it also meets our need to reduce energy intensity in primary production.

Aluminium recycling consumes only around 5% of the energy required for primary production, which typically requires about 16 kWh per kg. Recycled metal is a strategic lever for reducing emissions and resource intensity across our value chain.

Outcome: In FY 2025-26, the initiative enabled the use of 11,600 MT of recycled aluminium. It lowered energy consumption and emissions, reduction by more than 90%, improved material recovery, and established a scalable model for future circular economy expansion. The use of recycled aluminium delivers significant benefits across multiple dimensions.



Aluminium scrap from used beverage cans at CRM recycling plant at Lapanga

From Residue to Resource: Turning Skimmed Coke into Value

📌 Initiative: To strengthen resource circularity and reduce hazardous waste in aluminium smelting operations, we implemented a multidirectional strategy for the sustainable utilisation of skimmed coke. The initiative focuses on controlled material recovery and waste to resource conversion and is aligned with Central Pollution Control Board (CPCB) requirements.

The process begins with a controlled carbon burning operation in a bed furnace, where optimised thermal treatment selectively removes carbon while preserving the cryolite rich bath fraction. This enables effective recovery of bath material, which is directly reused in plant operations. As a result, the need for fresh bath input has been reduced and hazardous waste generation has been significantly lowered.

Skimmed coke is repurposed as a raw material for synthetic slag manufacturing. We conducted a detailed compositional analysis which confirmed its suitability as a substitute for conventional slag forming materials. Through controlled processing and blending, skimmed coke is converted into a value-added product, reducing disposal requirements and reliance on virgin resources.

➡ **Outcome:** These pathways create a circular solution that reduces waste and lowers the environmental footprint of smelting operations. To embed this practice over the long term, we are pursuing amendments to State Pollution Control Board (SPCB) authorisation, enabling safe, transparent, and scalable waste to resource utilisation.

Bauxite Residue Backfilling Pilot: A Scalable Solution for Legacy Waste

📌 Initiative: We launched a first-of-its-kind Bauxite Residue Backfilling Pilot Project to transform legacy bauxite residue (red mud) storage from an environmental challenge into a scientifically managed solution. It enables safe, scalable, and regulated reuse of abandoned mine voids. While we have achieved 100% utilisation of current red mud at three refineries, historical stockpiles continue to require robust long term management solutions. Under the pilot, an abandoned mine void was selected for controlled backfilling using red mud.

The mine void has been engineered with a triple liner base system, geosynthetic clay liners on side walls, leachate collection systems, and piezo wells to ensure groundwater protection. The pilot involves backfilling 1.31 lakh metric tonnes of red mud and approximately 10,000 metric tonnes of fly ash, followed by a 60 cm soil cover and three tier plantation to enable ecological restoration. We plan to monitor environmental performance and site stability over a three year period. This pilot involved a multi institutional collaboration, think tanks involving IIFM, the Uttar Pradesh Forest Department, and Hindalco (as a representative of AAI), supported by a national technical committee comprising CPCB, SPCB, CGWB, IIT BHU, and IIFM. The project is designed to inform a nationally replicable standard operating procedure (SOP) to be developed by IIFM and endorsed by CPCB.

➡ **Outcome:** The initiative provides a viable pathway for legacy red mud management, rehabilitates degraded land, and reduces dust and air pollution risks associated with surface storage. It also improves cost efficiency by limiting the need

for new red mud ponds and long term maintenance.

By May 2026, a 0.55 hectare abandoned mine void is expected to be fully capped and scientifically reclaimed. The pilot represents a meaningful step towards scalable, circular solutions for industrial waste.



Product Stewardship

Building A Sustainable Product Portfolio

We take a lifecycle driven approach to product stewardship, ensuring that the materials we deliver are not only high performance but also aligned with global expectations for circularity, low emissions and responsible sourcing. As markets demand sustainable and traceable products, we are strengthening our methodologies, expanding our sustainable product portfolio and ensuring that every green claim is supported by robust data, validated processes and independent verification.

Our product stewardship framework focuses on designing solutions that reduce environmental impact, increase recycled content, integrate renewable energy and support our customers' transition to a low carbon, resource efficient future.

Sustainable Products:

We define low-carbon aluminium using two internationally recognised and transparent approaches.

The first approach follows the methodologies of classifying aluminium as low carbon when cradle-to-gate emissions are below 4 tCO₂e per tonne of primary aluminium, based on International Aluminium guidelines and following GHG Accounting (ISO 14064). As per ISO 14040/44 & ISO 14067 standard, covering the full lifecycle from mining through smelting. This threshold is

typically achieved through the use of renewable electricity (RE) or a low-carbon energy mix during production.

The second approach is the recycling route for Hindalco India, where more than 75% of aluminium input (circle stock) is derived from pre-consumer scrap. This route delivers a significantly lower carbon intensity of less than conventional route, inclusive of emissions associated with collection, transportation and processing.



This brand offers low carbon aluminium & copper products using renewable energy and having low carbon footprint.



This brand offers circular and value-added products, including recycled aluminium ingots, aluminium foil, copper continuous cast rods and cathodes containing pre- and post-consumer recycled content.



At Novelis, we extend this commitment through our AL:sust™ portfolio, which features two specialised aluminium products — HRC73A® and HRC57S® both engineered for architectural applications and produced with at least 80% recycled content.

Our Eco edge Products enable customers to achieve emissions reduction, meet recycled content targets, ensure regulatory compliance, and support ESG-aligned procurement without compromising performance, consistency, or traceability.

Augmenting Our Recycling Capacities: We are strengthening our Eco Edge portfolio through the development of new large-scale recycling capacities. This catalyses our efforts towards low carbon product development some examples are as follows:

+ At the Aditya complex, another 50 KT aluminium recycling facility in collaboration with CMR Aluminium Private Limited is currently under execution stage to reach the plant capacity in totality 100KT. End of life scrap of aluminium products

such as used beverage cans (UBC) is utilised for making new products, Eco Edge-C.

+ At Pakhajan, Hindalco E-Waste Recycling Private Limited, we are establishing a 60 KT copper recycling facility to recover copper and high value metals such as gold, silver, platinum and palladium from printed circuit boards (PCBs) and copper scrap and coming years by 2032 targeting to achieve total capacity of 240KT.

Products emerging from these assets will be classified under the EcoEdge Recycling Route, strengthening our circularity credentials. All sustainable product classifications under EcoEdge undergo site specific validation, ensuring consistency, traceability and alignment with international environmental standards.

Our New Low-Carbon Brands: Eco Edge portfolio reflects the strategic shift, offering products that combine low emission production practices with increased recycled content inputs (Pre consumer & Post consumer waste), while reducing dependence on extractive natural resources and adoption of Renewable Energy.

We conduct internal audits and independent third party verification of our product claims.

+ For low carbon aluminium produced through renewable energy, we follow IAI Methodology, and ISO 14064 (GHG Accounting), with third party verification for primary products from Aditya and Mahan.

+ For recycled aluminium circle stock used in cookware and home applications, independent third-party verification is obtained for pre-consumer scrap utilisation at the Belur unit.

In the reporting year, at Hindalco our sustainable products accounted for 0.38% of total operational revenue.

	FY 2022-23		FY 2023-24	FY 2024-25	FY 2025-26
Hindalco					
Sustainable Products Sales (MT)	15,342.10	21,364.59	29,271.06		46,376.92
Revenue from Sustainable Products (₹crore)	338.80	406.73	586.33		1,057.45

At Novelis, during the reporting period, sustainable product sales stood at 1,245 MT, generating revenue of ₹127.73 crore. Disclosures on sustainable product sales and revenue for Novelis have been initiated from FY 2025–26 onwards.

Renewable Energy Integration in Product Manufacturing: Integrating Renewable Energy in Our Products

Renewable energy (RE) plays a key role in reducing product footprints:

- + Roofing, façade and bus body solutions produced at Taloja and Renukoot are supported by a combined 22 MW of installed renewable capacity, comprising 10 MW solar, 5 MW wind and 4 MW hydel at Taloja, and 3 MW solar at Renukoot. These installations collectively met approximately 46% of Taloja's site level electricity demand in FY 2025–26, supporting reduced carbon intensity and improved sustainability performance across our product portfolio.
- + At Belagavi, over 90% of electricity demand is met through renewable sources, supporting the production of flame retardant materials.

These RE-enabled manufacturing practices help our customers strengthen their low carbon footprint product portfolio, meet regulatory sustainability thresholds and improve performance under ESG aligned procurement frameworks.

Scaling Low Carbon Aluminium Through Renewable Energy Integration

🔗 **Initiative:** We are advancing primary aluminium production by integrating renewable energy at Aditya Aluminium (30MW Ground mounted solar) and Mahan, (35 MW Ground Mounted Solar & 6.4 MW floating solar) enabling low carbon ingots and billets. Renewable power from solar assets is allocated via mass balance, with product emissions independently verified in line with ISO 14064 standards.

➡ **Outcome:** In FY 2025–26, this initiative enabled the avoidance of approximately 88,000 tCO₂e emissions and generated ₹145.63 crore in premium revenue, supporting decarbonisation across value chains.

Sustainable Product Programme

Our Sustainable Product Programme provides the organisational backbone for developing, scaling and commercialising low carbon and high-performance aluminium and copper products. The

programme is underpinned by focused investments, enabling infrastructure, aligned commercial incentives and continuous capability building across our aluminium and copper businesses.

1. Dedicated R&D Infrastructure for copper recycling plant in Hindalco, Dahej

We operate state-of-the-art R&D and pilot facilities to support sustainable product development. At Dahej, we established a dedicated R&D pilot setup (investment of ₹0.7 crore) to develop and establish processes for recovery of copper and other precious metals from printed circuit boards (PCBs) and post consumer e-waste. This facility supports product innovation, process optimisation and sustainability led research for our copper business.

The R&D teams comprise metallurgists, material scientists, process engineers and environmental experts who work closely with plant operations and customers to ensure that innovations are practical, scalable and market relevant.

2. Focus Areas for Sustainable Product Development

Our R&D efforts are strategically directed towards:

Low-carbon aluminium and copper products, including high-recycled-content offerings	Light-weighting solutions for automotive, mobility and renewable-energy applications	Advanced alloys that enhance strength, durability and energy efficiency	Green building materials, including aluminium solutions for energy-efficient construction	Sustainable packaging solutions with enhanced recyclability and reduced material usage
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These focus areas ensure sustainability is embedded at the design stage of products and services.

3. Circular Economy and Recycling Innovation

Significant R&D resources are deployed across Hindalco to drive circular economy outcomes. At Hindalco Belur, we are producing circle stock which is raw material for cookware applications, containing more than 75% of pre-consumer scrap. At Aditya aluminium we have set up a 50KT recycling plant which produces Aluminium ingots through secondary melting of post-consumer used beverage cans (UBC). In the copper business, we are investing approximately ₹7,000 crore in a large-scale recycling ecosystem based on end-of-life printed circuit boards (PCBs) and copper scrap, starting 60KT recycling facility by FY 2026-27, and gradually targeting to increase the capacity to 240 KT by FY 2032. Products emerging from these facilities will be classified under the EcoEdge Recycling Route, strengthening our circularity credentials and supporting customer requirements related to GHG-emission-intensity reduction, regulatory compliance and ESG-aligned sourcing. Building on these efforts, we are strengthening our EcoEdge portfolio through additional large-scale recycling capacities.

In addition, at Hindalco, under the 360-pot expansion project at Aditya, we are progressing towards sourcing 50% of total energy demand from renewable sources, which is expected to result in nearly a 50% reduction in product carbon footprint compared to

conventional production processes. Products emerging from these pots will be classified under EcoEdge G product line.

We are also investing in renewable energy round the clock (RE-RTC) projects to further decarbonise primary aluminium production. We are targeting an increase in renewable electricity intake to 2.7 Million MWh by 2030, strengthening long term energy security and emissions performance. In the first phase, renewable installed capacity (Solar + Wind) is being expanded by 1,324 MW by 2028 at the Mahan and Aditya plants. This will enable us to increase the production of primary aluminium certified for low carbon intensity under ISO 14064 (GHG Accounting) and ISO 14067 (Product Carbon Footprint), reinforcing the credibility and traceability of our sustainable product offerings.

At Novelis, all our European manufacturing sites are certified to the Aluminium Stewardship Initiative (ASI) Performance Standard and the Chain of Custody Standard, reflecting our ongoing commitment to responsible sourcing and sustainable production across the value chain.

Across the value chain, we pursue continuous improvements in metal recovery rates, yield optimisation and waste minimisation. Our R&D teams also support product designs that enable easy re-meltability and recyclability without loss of quality, strengthening long-term circularity.

Advancing Circular Aluminium Through Closed-Loop Manufacturing at Belur

🔗 **Initiative:** We are embedding circularity into aluminium production by converting in house scrap into high quality aluminium circle stocks for cookware applications. Using pre consumer scrap from our rolling, trimming, and edge cutting operations, we produce aluminium circles from recycled scrap at our Belur unit, reducing reliance on primary aluminium.

Approximately >75% of the input material is sourced from recycled aluminium, with the balance met through primary metal.

➡ **Outcome:** This closed loop process eliminates Pre-Consumer process aluminium scrap, improves material efficiency, lowers procurement costs, and delivers consistent quality to our customers. The initiative strengthens operational efficiency while providing high quality products from recycled aluminium that supports customer sustainability goals.

Team Capability Building and Brand Sustainability Enablement – FY 2025-26

In collaboration with the Aditya Birla Group Sustainability team, we have conducted several training programmes.

Technical Capability Building and Responsible Sustainability Communication:

In FY 2025–26, LCA FE software training initiative, strengthened LCA capabilities across Aluminium and Copper business, with a total of thirteen team members trained on LCA FE software for developing inhouse LCA modelling capabilities to use in EPD (ISO 14025) and PCF (ISO 14067) certifications. A cross functional workshop on brand sustainability commitment to standardise and enhanced alignment, ensuring transparent communication and eliminating greenwashing risks in product sustainability claims.

Sustainable product development: In the copper recycling plant programme, focused capacity building initiatives were undertaken to strengthen both technical capabilities and sustainability expertise. Internal training programmes were conducted to enhance operational understanding. In addition, approximately 66 team members received specialised training at CMET, Hyderabad, covering the operational and sustainability aspects of Kaldo Furnace technology, which underpins the copper recycling process. To build advanced capabilities, 5–6 senior technical leaders went for international site visits to facilities where Metso smelter technology is operational, enabling hands on learning and strengthening operational readiness. In aluminium operations, process improvements and energy efficiency initiatives are at an advanced stage with institutional support. We are implementing targeted projects at upstream smelting operations to reduce energy intensity, improve yield and reinforce long-term sustainability outcomes.

Sustainability is embedded in commercial strategy and sales enablement to drive market impact. Sales teams are incentivised through metrics promoting sale of sustainable



Product stewardship training in Mumbai office for Sustainability champions across all plants

solutions such as circular aluminium and copper products (EcoEdge C) and low carbon aluminium & Copper products (EcoEdge G). Key attributes like recyclability, carbon reduction, and energy efficiency are integrated into customer value propositions and targets.



Nature and Biodiversity

Biodiversity Management Protecting and Restoring Nature

Guided by the Kunming–Montreal Global Biodiversity Framework (KMGBF), we are pursuing a long term ambition of achieving No Net Loss of biodiversity by 2050, supported by clear interim targets and strong conservation actions. Safeguarding biodiversity is essential to the long-term sustainability of our business and the ecosystems we depend on.

Our operations intersect with diverse natural habitats, making it imperative that we manage, restore and enhance biodiversity across the entire value chain. With science-based planning, lifecycle-driven environmental management and deep engagement with communities and stakeholders to protect natural ecosystems, we aim to strengthen ecological resilience and ensure responsible growth.

Our Biodiversity Policy aligned with the Aditya Birla Group’s Technical Standard on Biodiversity Management applies across all owned, managed and operated

sites, including the supply chain. Employees, suppliers, contractors, customers, local communities and authorised partners are all covered under its commitments.

We evaluate our biodiversity performance through a robust measurement and review framework that combines ecological indicators with strong governance oversight. Progress is assessed using metrics such as the type and number of habitats created or restored, along with biodiversity scores captured through the IUCN’s Biodiversity Indicator and Reporting System (BIRS), which tracks site biodiversity class, index and threat levels across our operating areas. Governance is reinforced through quarterly reviews by the RM & ESG Board Committee, supported by quarterly site-level assessments conducted by the Biodiversity Taskforce, chaired by the Chief Sustainability Officer. Additionally, biodiversity performance and strategic direction are reviewed at the Apex Sustainability Board, chaired by the Managing Director, ensuring continuous improvement, oversight and accountability across the organisation.

Our Contribution to the SDG targets:



In line with our No Net Loss (NNL) 2050 target, we have defined clear short, medium and long-term milestones to guide our ecosystem-restoration efforts.

BIODIVERSITY ROADMAP 2025-2050 NO NET LOSS (NNL) of Biodiversity

Introduction	Phase 1 (Short Term) LEAP Assessment, BMP Baseline & NNL Initiatives 2025-2030 (Short Term) + BMPs: for all location + DIRO by location + NNL for 4 sites + RET conservation at all high priority sites	Phase 2 Ecosystem Restoration & Mainstreaming 2030-2040 (Medium Term) + NNL >40% + 15 Million trees (native) + 100% invasive species removal + +20% species diversity + Reporting ecosystem service financial value	Phase 3 No Net Loss & Nature-Positive Operations 2040-2050 (Long Term) + NNL 100% + 100% habitat restored + Net Positive Impact + 30% species diversity from baseline
Corporate Overview	LEAP Assessment, BMP Baseline & NNL Initiatives 2025-2030 (Short Term) TNFD LEAP & DIRO DISCLOSURE + BMPs at all operational locations + LEAP DIRO by location ENCORE, IBAT & STAR-R tools for dependency & risk assessment + BIRS with YoY tracking for all sites NNL MITIGATION HIERARCHY ONSITE & OFFSITE HABITAT + RET conservation at all high priority sites + Implement a habitat initiative at each site with NbS(e.g., butterfly gardens, reptile conservation & avian conservation) + Afforestation with native species with YoY increase of number of species + Create public spaces create awareness knowledge + NNL for ≥ 10% of all operational HIL units by 2030. GOVERNANCE, DISCLOSURE & COMMUNITY (BY 2030) + Financial value methodology for ecosystem services (all-site baseline by 2030 + Digital biodiversity monitoring with YoY improvement + Integrated TNFD LEAP, GRI-101, BRSR nature-related report for all sites + Collaborate with local NGOs and communities to implement community-based biodiversity initiatives, leveraging local knowledge for shared benefits in 15 villages through CSR.	Ecosystem Restoration & Mainstreaming 2030-2040 (Medium Term) NNL EXPANSION & HABITAT RESTORATION + NNL for >40% of all operational HIL units by 2040 + 15 Million trees planted (native species) + Sustainable land use + Implement biodiversity-supportive water structures at all water-stressed sites to achieve water positivity. + Review and update Biodiversity Management Plans for all sites ECOSYSTEM INTEGRITY + 100% invasive species replaced with native flora + Initiate 2 keystone species programs + RET species conservation at 100% sites + +20% species diversity from baseline. + Assess and track improvements in ecosystem services against the baseline. NATURE DIVIDEND, OFFSETS & COMMUNITY + Publish ecosystem services -value alongside financial results fully embedded in Annual Report + Residual impact offsets at scale integrate with India's biodiversity credit registry + 100 CSR villages with biodiversity-linked livelihoods align to KM-GBF Targets 3, 14 & 15	No Net Loss & Nature-Positive Operations (Long Term) FULL NNL & ECOLOGICAL INTEGRITY + NNL 100% of all HIL locations + 100% degraded ecosystem restoration by 2050 + 5% mined-out area converted to water bodies for ecosystem resilience + Achieve water positivity across all sites by 2050 to enhance biodiversity and habitats, delivering Net Positive Impact NATURE-POSITIVE IMPACT + 2 RET faunal species with positive population outcomes + +30% species diversity from baseline + Net Positive Impact biodiversity better than pre-operational state + Biodiversity credits tradable in voluntary nature markets (surplus from Net Positive sites) LEGACY DISCLOSURE + Sustained TNFD LEAP, GRI-101, BRSR aligned with Kunming-Montreal GBF + Nature dividend (ecosystem services value) fully embedded in Annual Report
Strategic Overview			
Creating and Sustaining Value			
Awards and Recognition			
Standards and Frameworks			
Statutory Reports			
Financial Statements			



Mirchadhuri Pond is part of Hindalco’s environmental and community initiatives around its Renusagar power plant

Our Biodiversity Roadmap targets achieving No Net Loss to biodiversity by 2050 and strive towards building a Nature Positive future, progressing through phased implementation of BMPs, restoration projects, and large-scale conservation initiatives across all sites.

We aim to transition toward Net Positive Impact by enhancing species diversity, restoring ecosystems, rehabilitating native fauna and strengthening community-linked biodiversity programmes.

Our Indian operations comply with the Biological Diversity Act, 2002 and the Biological Diversity Rules, 2004. We are committed to ensure that any access to biological resources within or adjacent to our operational areas including bauxite mining clusters in Jharkhand and refinery/smelter sites is undertaken in consultation with the State Biodiversity Boards (SBBs) and local Biodiversity Management Committees (BMCs), as mandated by the National Biodiversity Authority (NBA).

Prior to accessing biological resources or associated traditional knowledge, we obtain the requisite approvals and ensure fair and equitable benefit-sharing arrangements with local and indigenous communities, including Adivasi communities (such as the Asur, Uraon, and Munda tribes) in the Netarhat cluster.

Beyond statutory obligations, we voluntarily support community-led biodiversity documentation through People’s Biodiversity Registers (PBRs), in partnership with local BMCs. This enables communities to record, retain ownership of, and derive benefits from their traditional ecological knowledge.

Our CSR programmes in operational geographies including livelihood enhancement, forest-based income generation, and non-timber forest produce (NTFP) value chain support serve as voluntary benefit-sharing mechanisms that complement regulatory compliance.

During the reporting year, no instances of non-compliance with Access and Benefit Sharing (ABS) regulations were recorded during the reporting period across our Indian operations.

Restoring Coastal Ecosystems and Strengthening Biodiversity at Dahej

Initiative: Mangroves play a critical role in restoring degraded coastal ecosystems as they stabilise shorelines, reduce the impact of storm surges, support biodiversity, and act as long term carbon sinks. We undertook mangrove plantation beyond the fence of the Birla Copper plant at Dahej to restore degraded intertidal land and strengthen coastal resilience.

The initiative which began with the identification of degraded coastal areas was undertaken in technical collaboration with the Ecological Society of Gujarat. It was to ensure science based site selection,

plantation design, and appropriate species choice. We established a dedicated mangrove nursery to ensure the supply of site appropriate saplings and enable phased plantation aligned with tidal and seasonal conditions.

Outcome: During FY 2025–26, we completed plantation across 50 hectares, achieving 125,000 mangrove saplings at a density of 2,500 saplings per hectare; aided by regular monitoring and maintenance. The initiative strengthened progress towards our No Net Loss of Biodiversity commitment by 2050, delivering ecological value beyond our operational boundary.

Advancing No Net Loss through Landscape Restoration

Initiative: To address residual biodiversity impact beyond our plant boundary and advance our ambition of achieving No Net Loss (NNL) of biodiversity, we identified the need to restore degraded forest landscapes within the buffer area surrounding our operations at Aditya Aluminium.

Based on detailed ecological assessments, we mapped and prioritised degraded forest areas outside the plant boundary for restoration. We implemented the initiative in partnership with a local NGO and through multiple rounds of stakeholder consultations with local communities to ensure scientific species selection and context appropriate restoration design. We planted over 20,000 saplings representing more than 12 native tree species across ~11 hectares, with strong emphasis on ecological suitability and long term habitat improvement. We also integrated biodiversity awareness and capacity building programmes into implementation, to strengthen community understanding of conservation and sustainable resource use.

Outcome: The initiative enhanced native biodiversity and habitat quality, improved ecosystem services such as soil stability and water retention, increased carbon sequestration potential, and contributed to improved local air quality. It has strengthened community stewardship and participation in forest governance, supporting the long term protection and sustainability of restored forest areas.

Taskforce on Nature related Financial Disclosures (TNFD)

Across the aluminium value chain, we operate in processes that interact closely with natural systems. Bauxite mining leads to land-use change, loss of green cover and dust generation. Alumina refining involves significant water consumption (mainly as steam) and generates bulk residue such as red mud. Also, aluminium smelting is energy-intensive, with a large share of our indirect emissions arising from thermal-power-based electrolysis. These activities shape both our impacts on nature and our dependencies on critical ecosystem services.

As part of our TNFD-aligned disclosure, we undertook a structured DIRO analysis using the Locate, Evaluate, Assess, Prepare (LEAP) approach. We began by mapping all operational sites and assessing our reliance on provisioning and regulating ecosystem services. Through this exercise, we identified key risks such as depletion of water resources affecting community water availability, pollution risks to nearby water bodies, and air-emission impacts that may affect our workforce and surrounding communities. In parallel, we identified opportunities, including alternative and innovative sourcing options and investments in ecosystem restoration to mitigate these risks.

In our TNFD report for FY 2023-24, we used tools including ENCORE, WRI Aqueduct 3.0, STAR-R and IBAT to evaluate nature-related impacts and dependencies. ENCORE helped identify sector-level drivers of nature loss such as resource extraction, emissions and land transformation as well as dependencies on ecosystem services like water provision and climate regulation. The tool categorises these interactions from Very High (VH) to Very Low (VL), highlighting where nature-related risks may be most material. However, ENCORE results are contextualised through site-specific analysis, as actual impact materiality varies by geography, resource use and the strength of existing risk-management practices.

Nature-related Impacts

Our industry inherently interacts with the environment in multiple ways. The extraction of minerals, metals, and fossil fuels demands large-scale operations that directly affect land, water, soil, and air quality. One impact is the disruption of terrestrial ecosystems caused by mining and infrastructure development, often resulting in habitat destruction and fragmentation.

Water is another essential resource critical to our operations. Our processes place significant demand on local water sources, especially in regions already experiencing scarcity. If effluent discharge quality is not maintained, it may pollute nearby water bodies and affect the aquatic ecosystems and communities that rely on the resource.

Beyond water, our operations also contribute to greenhouse gas (GHG) emissions and other pollutants, which can degrade air quality and accelerate climate change. Additionally, if not appropriately treated, the disposal of mining residues and other waste in landfills can negatively impact the soil quality.



A view of plantation in Backfilled Area at Baphlimali Bauxite Mines

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

Source: ENCORE

Nature-related Dependencies

We rely heavily on natural resources particularly water, land and ecosystem services to support mining, mineral extraction, refining and waste management activities. These dependencies vary in their level of vulnerability, underscoring the need for robust risk-management and mitigation strategies. While

provisioning services such as water availability and forest productivity show very high to high dependency, ecosystem services related to wild flora, fauna and marine resources show minimal dependency, reflecting limited reliance of our sector on these services. Regulating and supporting services such as soil stability, water regulation and air quality

currently indicate low to medium dependency, although strengthening climate-resilience measures remains essential to safeguard operations against future disruptions.

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

Biodiversity Risk Management Process

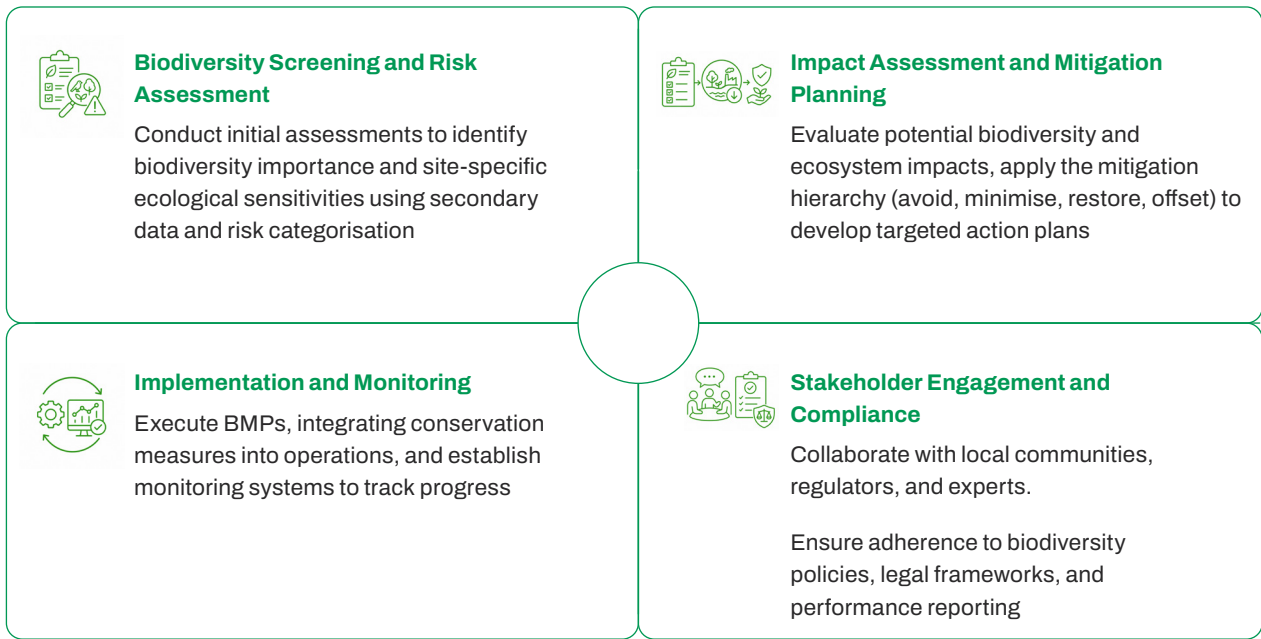
Our enhanced biodiversity-risk framework draws on global best practices, advanced spatial analytics and site-specific ecological assessments, enabling us to understand how our activities depend on and impact local ecosystems, and to take informed, science-based action to protect and restore them.

Biodiversity risk assessment is fully integrated into our Enterprise Risk Management (ERM) framework,

ensuring that nature-related considerations inform both strategic planning and operational decisions. This enables a proactive and forward-looking approach, helping us identify and mitigate potential biodiversity risks early in the project lifecycle.

We follow a structured four-stage risk-management process that includes biodiversity screening, ecosystem-services assessment, impact and risk evaluation, and development of mitigation plans. Our assessments cover not only our

own operations but also downstream and outsourced activities, as well as areas surrounding our sites. Using tools such as IBAT, we screen for Key Biodiversity Areas (KBAs) and Protected Areas (PAs) and undertake more detailed risk assessments in collaboration with global ecological experts, including the IUCN, to inform site-level strategies and conservation opportunities.



GeoSust: Biodiversity Assessment Tool

To strengthen our risk assessment capability, we introduced GeoSust, a spatial intelligence platform developed with the ABG Sustainability Cell and Geo Climate Risk Solutions Pvt. Ltd. GeoSust enables the mapping of biodiversity hotspots, KBAs, endemic bird zones, tiger reserves, Ramsar wetlands and wilderness areas, integrating authoritative datasets such as the IUCN Red List and IBAT. It also provides satellite-derived insights such as NDVI-based vegetation-health monitoring and above-ground biomass (AGB) analysis, improving our understanding of ecosystem condition, early risk signals and long-term restoration needs.

Each site is prioritised based on ecological sensitivity using a structured categorisation system:

- + High Priority – sites within a 10 km buffer of a Key Biodiversity Area (KBA).
- + Medium Priority – sites not within a KBA buffer but with the presence of Schedule I species.
- + Low Priority – sites with neither a KBA within 10 km nor Schedule I species.

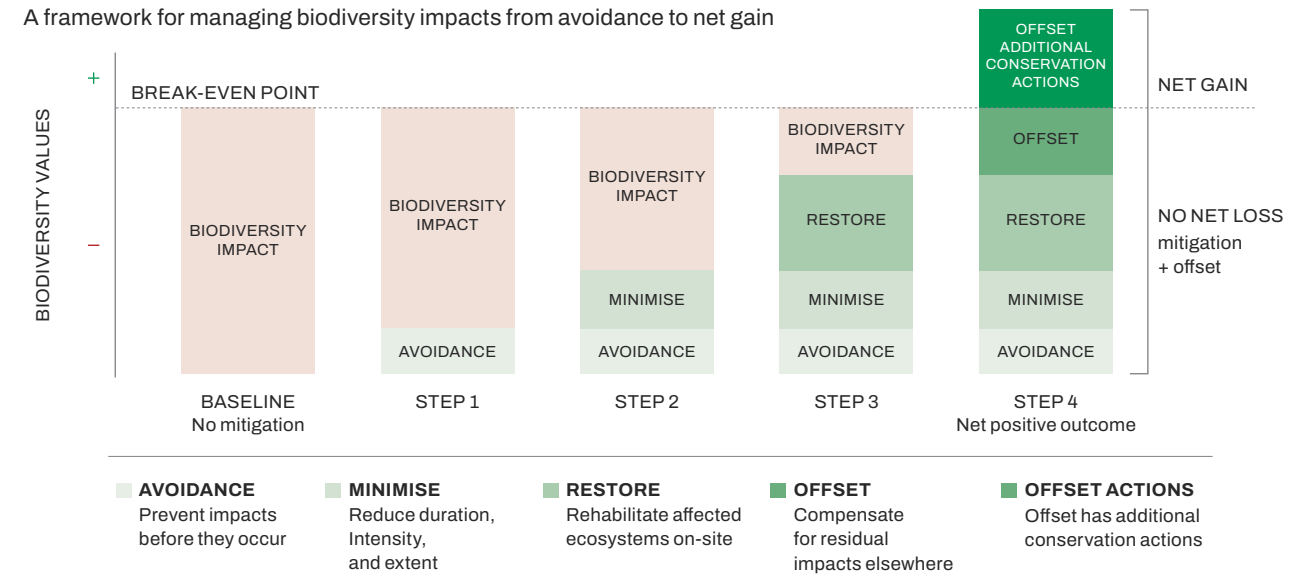
Our focus remains on high-priority sites containing sensitive biodiversity values, followed by medium-priority sites with rare, endangered and threatened species. Once sites are prioritised, we conduct a detailed Ecosystem Services Review (ESR) to understand dependencies and impacts on provisioning, regulating and cultural services. Through

the ESR conducted during BMP development, we identified material ecosystem-service pressures associated with our operations, including impacts on air and water quality, habitat integrity, wildlife movement (land and air), GHG emissions, and local community well-being, particularly in relation to rehabilitation and resettlement (R&R). These insights guide the mitigation of environmental risks, support responsible resource management and help us prioritise actions to reduce dependency on sensitive ecosystem services.

To manage biodiversity risks effectively, we follow the mitigation hierarchy- Avoid, Minimise, Restore and Offset ensuring that site specific action plans, including BMPs, are grounded in a structured and science based approach.

Mitigation Hierarchy Framework

A framework for managing biodiversity impacts from avoidance to net gain



STEP-1 AVOID	STEP-2 MINIMISE/REDUCE	STEP-3 RESTORE/REHABILITATE	STEP-4 OFFSET/TRANSFORM
Avoiding sensitive habitats: We ensure operations are outside critical zones such as World Heritage Sites, IUCN Category I-IV protected areas, and Ramsar wetlands. We make operational guidelines and conduct impact assessments for these areas.	Reducing invasive species: Invasive species are replaced with native vegetation in operational areas. 7 hectares of invasive species removed in FY 2025-26.	Legacy Waste dump restoration: Target to restore legacy waste disposal areas through progressive eco-restoration and creating habitat to support local biodiversity (65 hectares of Red Mud Disposal Area and 139 hectares of ash storage area ecologically restored).	No Net Loss (NNL): Commitment to achieve No Net Loss (NNL) of biodiversity by 2050, while progressing towards Net Positive Impact, aligned with global frameworks such as the Kunming-Montreal Global Biodiversity Framework.
Avoid tree felling: For upcoming greenfield & brownfield project sites (Aditya refinery, Aditya Aluminium expansion and others), we avoided tree felling during the project planning phase.	Process optimisation: Technologies are deployed to reduce emissions, manage waste, and optimise water consumption.	Tree transplantation: Over 1,600 trees were transplanted during the reporting year. Tree transplantation is undertaken during greenfield and brownfield project implementation (Aditya Refinery, Aditya Aluminium expansion, and others), with a total of 2,650 trees transplanted to date.	NNL Project: Target to plant 1 million trees annually to enhance carbon sequestration and biodiversity. Restoration of 61 hectares of degraded land beyond site boundaries is being undertaken through projects near Aditya Aluminium (Lapanga) and Birla Copper Dahej (Bharuch) in FY 2025-26.

STEP-1 AVOID →	STEP-2 MINIMISE/ REDUCE →	STEP-3 RESTORE/ REHABILITATE →	STEP-4 OFFSET/TRANSFORM →
	Green belt development: Vegetation buffers are developed around operations to reduce habitat fragmentation and enhance biodiversity.	Habitat Development Butterfly Enhancement initiatives: In FY 2025-26, developed more than 16,000 m² of butterfly garden Riparian and wetland restoration: Riparian and wetland restoration initiatives focus on rejuvenation of water bodies and associated ecosystems, including watershed development beyond operational boundaries, with 363 structures created to date, including 19 in FY 2025-26. Avian Conservation: Bird nesting structures have been installed across sites to support avian habitats. Conservation measures include the creation of dedicated nesting spaces, such as artificial islands for migratory birds at Aditya, as part of site-level biodiversity initiatives.	Biodiversity offsets and partnerships: Strengthening partnerships with local NGOs, communities, and conservation organisations to deliver measurable biodiversity offset and habitat enhancement outcomes addressing residual impacts, through collaborations with BRLM, MYRADA, Sewak, SHGs, FPOs, and other stakeholders.
	Native species Enhancement: Target a 10% year-on-year increase in native species diversity.	Community engagement: Local communities are engaged in restoration initiatives to enable shared benefits (Madhuban, Muri Bio-Park under development; Bagru Nakshatra Park; seed collection and sapling distribution and local knowledge).	

Site-specific actions are implemented by dedicated taskforces in accordance with the Biodiversity Management Plans (BMPs). Stakeholder engagement remains integral throughout this process. BMPs typically begin with extensive consultations, involving all relevant stakeholders such as local communities, Indigenous groups, government agencies, NGOs, scientific experts and businesses. By involving stakeholders from the outset, we ensure that diverse perspectives, local socio-economic conditions, geographic considerations and climate-related factors are incorporated into the assessment. We also communicate the key findings of our studies to all stakeholders regularly through our Integrated Annual Report and other digital platforms, promoting transparency and shared understanding of our biodiversity performance.

This inclusive approach strengthens decision-making, ensures that the needs and concerns of all stakeholders are appropriately reflected, and enhances the effectiveness and acceptance of biodiversity actions across our operating areas.

Together, the ERM framework, BMPs, GeoSust and supplier-risk assessments form a comprehensive system that ensures biodiversity risks are assessed robustly and managed through informed, data-driven and context-specific interventions across all our operations.

Biodiversity-related Risks

We acknowledge that biodiversity-related risks are among the most significant nature-linked challenges facing the mining and metals sector. The loss of ecosystems, species decline and habitat fragmentation can lead to permanent and irreversible impacts,

affecting not only the natural environment but also the long-term viability of our operations. These risks extend beyond compliance they influence our access to land and water, community relationships, regulatory expectations and our long-term licence to operate. As global and national conservation norms become more stringent, the need for early identification and active management of biodiversity risks becomes critical.

We strengthened our biodiversity-risk approach to ensure that nature considerations are integrated into governance, planning and site-level execution. Our mitigation measures are grounded in scientific assessment, resilience thinking and ethical responsibility, ensuring that biodiversity protection is systematically embedded into our operational processes and corporate governance systems.



Butterfly garden at Dahej: We developed over 16,000 m² of butterfly gardens

Type of Risk	Risk	Mitigation Measures
Physical risk	Heatwaves, wildfires, and extreme precipitation could threaten local biodiversity.	Ecosystem Restoration and No Net Deforestation + Committed to No Net Deforestation by 2030
	Soil erosion and degradation may impact land stability.	Invasive Species Management + Replacement of invasive species with native plants + Pilot projects at Renukoot, Utkal, and Lohardaga mines
	Operations near KBAs require additional mitigation measures.	Sustainable Project Design and Habitat Protection + Mining projects avoiding areas with RET species + Infrastructure projects incorporating buffer zones around forests and wetlands
Regulatory risk	Protected area designation and stricter land-use regulations may pose risks.	Water Conservation and Aquatic Biodiversity Protection + ZLD at 16 out of 19 plants + Rainwater harvesting and wetland conservation efforts
	Changes in environmental laws could affect operations near eco-sensitive zones.	Stakeholder Engagement and Policy Compliance + Collaboration with NGOs, regulators, local communities, and indigenous groups + Adherence to GISTM, TNFD, and biodiversity-related ESG frameworks
	There may be difficulties in obtaining operational permits due to biodiversity risks.	
Reputational risk	Failure to achieve No Net Loss of Biodiversity (NNL) targets may lead to stakeholder concerns.	
	There may be increased scrutiny from investors and environmental groups.	
Liability risk	Non-compliance with biodiversity laws could result in fines or legal action.	
	There could be potential disruptions in operations if biodiversity restoration commitments are unmet.	

Biodiversity Management Plans (BMPs)

Biodiversity Management Plans (BMPs) serve as a strategic framework to conserve, restore and enhance biodiversity across our operational footprint. When aligned with climate-change mitigation and adaptation efforts, BMPs help maximise synergies and minimise trade-offs between ecosystem protection and climate action. Through BMPs, we integrate

ecosystem restoration, nature-based climate solutions, sustainable land-use practices and community participation, ensuring long-term ecological resilience.

BMPs strengthen the linkages between biodiversity and climate action in several ways:

- + **Habitat restoration and carbon sequestration:** Restoring forests, wetlands and grasslands enhances biodiversity while acting as natural

carbon sinks, contributing to climate-change mitigation.

- + **Ecosystem-based adaptation (EbA):** BMPs incorporate EbA measures such as conserving coastal buffers, maintaining forest cover for water regulation and reducing flood risks—benefiting both ecosystems and communities.
- + **Sustainable land-use practices:** Agroforestry, rotational grazing and organic agriculture support biodiversity, enhance soil health and increase carbon sequestration.

- + **Climate-friendly development:** BMPs ensure that climate-mitigation actions—such as renewable-energy installations or reforestation programmes are designed to protect native species, maintain connectivity and enhance habitat quality.
- + **Community engagement:** BMPs integrate local knowledge and traditional practices to strengthen ecosystem resilience and promote sustainable, biodiversity-linked livelihoods.
- + **Monitoring and adaptive management:** Regular monitoring of biodiversity and climate indicators enables BMPs to adjust conservation actions as ecological or climatic conditions evolve.

The BMP implementation was carried out in a phased manner.

- + Phase 1 covered pilot projects across all aluminium business.
- + Phase 2 covered high-priority sites, while Phase 3 covered medium and low priority sites ensuring full BMP coverage across all operating areas.

At Hindalco, we have a total of 41 sites, comprising 38 operational and 3 non-operational sites. Biodiversity Management Plans (BMPs) have been prepared for 40 sites. In the reporting period, we completed the ecological study for the one mining cluster & seven manufacturing sites. For Novelis, we have carried out biodiversity assessments for 22 ASI-certified plants, strengthening nature-related governance across our global operations.

Biodiversity-related impacts were assessed across our operating sites, with 11 priority sites identified as being near ecologically sensitive areas and having the most significant actual or potential biodiversity impacts. These sites collectively cover 6,073.98 hectares. The assessment identified key direct drivers of biodiversity loss, including

land-use change, water withdrawal and consumption, air emissions, and invasive alien species. Across these sites, 322.47 hectares of natural ecosystem conversion and 94.02 hectares of modified ecosystem conversion were recorded, while total water withdrawal and consumption stood at 23.36 million m³. Applicable air emissions included 15.70 KT of NOx, 46.70 KT of SOx, 2.49 KT of TPM and 0.05 KT of fluorides. No direct harvesting or exploitation of wild species was reported. Where invasive alien species were identified, management measures focused on their removal and replacement with native species to reduce ecological pressure and support habitat restoration.

Changes in the state of biodiversity were assessed using site-specific base years between 2020 and 2023, based on the availability of biodiversity baseline data. The base-year natural ecosystem area across the assessed sites was 1,630.99 hectares, with 322.47 hectares of natural ecosystem converted since the baseline year. The ecosystems assessed included tropical and subtropical dry broadleaf forests, tropical and subtropical moist broadleaf forests, and Deccan thorn scrub forest. The assessment also identified affected biodiversity,

including flora, butterflies, reptiles, birds and mammals, comprising species classified as Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT) and Least Concern (LC) under IUCN classifications or protected under national schedules.

Ecosystem services affected or potentially affected across the priority locations were also assessed, covering provisioning, regulating and cultural services. Provisioning services include crops, livestock, freshwater, wild foods, timber and other wood fibres, biomass fuel, fisheries, aquaculture, genetic resources, and biochemicals, natural medicines and pharmaceuticals. Regulating services included maintenance of air quality, global and regional/local climate regulation, regulation of water timing and flows, erosion control, water purification and waste treatment, maintenance of soil quality, pollination, disease mitigation and natural-hazard mitigation. Cultural ecosystem services included recreation and ecotourism, ethical and spiritual values, and educational and inspirational benefits. The key beneficiaries of these ecosystem services included Indigenous Peoples, local communities and internal stakeholders.

	Number	Operational Areas (ha)
Total own operational sites	41	14,640.68
Own operational sites where biodiversity impact assessments are conducted	41	14,640.68
Own operational sites in close proximity to critical biodiversity	28	8,727.79
Own operational sites in close proximity to critical biodiversity and for which biodiversity management plants are prepared	28	8,727.79
Other low-priority sites for which biodiversity management plans are prepared	12	4,656.72

Conservation and Restoration of Biodiversity

We are strengthening biodiversity conservation and restoration efforts across our aluminium and copper operations, particularly in locations undergoing expansion such as Aditya Aluminium, the Aditya Alumina Refinery, Birla Copper (Dahej), Hirakud FRP and the Taloja unit. As part of these initiatives, we have successfully transplanted more than 2,650 mature trees, including over 1,600 in the current financial year. To enhance survivability, we treated every transplanted tree with anti-termite, antibacterial and antifungal applications, along with root-hormone treatments. With support from certified arborists, the trees were carefully relocated and replanted at ecologically appropriate sites. This large-scale transplantation forms a key component of our commitment to No Net Deforestation by 2030, ensuring we protect natural capital while responsibly supporting business growth.

At our Belagavi operations, we undertook a comprehensive No Net Loss (NNL) baseline study covering a 123.1 hectare core area and an additional 44 hectare buffer zone. This assessment helped identify reference ecosystems, develop zoned restoration plans and design targeted ecological interventions.

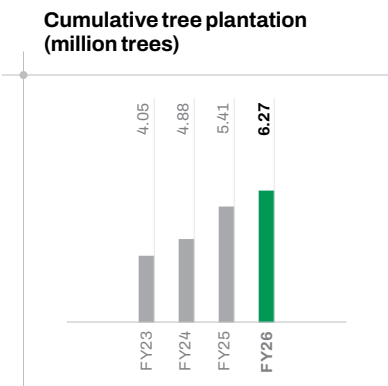
In FY 2025–26, to enhance native biodiversity within our operational boundaries, we implemented targeted nature-based interventions, including approximately 17,000 m² of Miyawaki plantations and 69,000 m² of invasive-species removal. As part of our habitat development initiatives, we established a 16,000 m² butterfly garden to support local biodiversity and pollinator populations.

At Aditya Aluminium, we also planted mature native trees (10–15 ft) along the site boundary to create a dense green barrier that helps mitigate

fugitive dust from the adjoining highway and reduces noise levels.

We planted about approximately 8.55 lakh saplings during the reporting year, including Miyawaki technique. We are also advancing landscape-scale restoration initiatives, including a 11 hectares off-site habitat restoration project in Sambalpur, and a 50-hectare mangrove plantation in Gujarat, designed to enhance ecosystem services, strengthen coastal resilience and support long-term biodiversity regeneration across the regions where we operate.

These initiatives form an integral part of our biodiversity management efforts within plant boundaries, supporting measurable reductions in biodiversity loss and the progressive recovery of native habitats.



From Industrial Residue to Bio-Park: Bauxite Residue Pond Restoration at Muri

Initiative: We undertook one of our most complex land rehabilitation projects to restore the inactive Bauxite Residue Pond at Muri. It aims to address the long term environmental risks associated with highly alkaline industrial residues.

We implemented a scientifically designed land rehabilitation programme to transform the bauxite residue pond area into a functional bio park. The focus is to improve soil

health, enhance biodiversity, and ensure long term landscape stability. Restoration measures included soil conditioning through gypsum and fly ash-blending, bioremediation using mycorrhiza, vermicompost and farmyard manure, and erosion control interventions such as gully plugging. We applied coir matting on slopes to prevent erosion and support early plant establishment. To accelerate ecological recovery, we adopted the Miyawaki technique and a three tier plantation model across 17.4 hectares, introducing more than 10 native plant species suited to alkaline soil conditions.

Outcome: The initiative reduced dust emissions, improved soil quality and moisture retention, stabilised surface alkalinity, and created habitats for butterflies and native bird species. In FY 2025–26, we opened the restored bio park for controlled public access, strengthening awareness through native species zones and butterfly gardens. The project demonstrates our ability to rehabilitate complex industrial landforms, transforming a former red mud disposal site into a resilient natural ecosystem.



Sustainable Mining

Mining is a foundational part of our value chain, and our approach is anchored in the belief that responsible mining must go well beyond regulatory compliance. As a steward of natural resources, we recognise our responsibility to balance economic development with environmental protection and social well being. Our mining strategy is built on a lifecycle approach that integrates sustainability into every stage of planning, operation, and closure, while prioritising the long term resilience of ecosystems and communities around us.

Our mining governance framework is built on a clearly defined, multi tiered structure that embeds accountability, sustainability and regulatory compliance across every level of our organisation. Oversight begins at the Board of Directors, where the Risk Management & ESG Committee plays a central role in guiding mining strategy and ensuring alignment with our long term corporate vision. This committee provides strategic direction, reviews mining expansion plans, evaluates operational and regulatory risks and oversees key environmental and social aspects such as land rehabilitation, biodiversity protection and community engagement. It also ensures compliance with national mining regulations and international sustainability standards, while holding senior leadership accountable through regular performance reviews and transparent reporting.

At the executive level, our Sustainable Mining Committee comprising cross functional leaders from Mine Planning and Operations, Sustainability, CSR, Health and Safety, Technology, Finance, HR and Legal & Compliance work alongside the Managing Director and the Business Head – Mining, to ensure that operational excellence, environmental stewardship and social responsibility are integrated into mining operations. The committee oversees planning, resource allocation, technology adoption, training, mine closure KPIs, risk management and cross-sector partnerships. This committee meets monthly and is responsible for reviewing long-term closure liabilities and monitoring progress on concurrent reclamation. Corporate functions support this structure by developing policies, frameworks and monitoring systems that reinforce statutory compliance and uphold responsible mining practices.

At the operational level, mine managers and functional heads translate governance directives into daily execution. They oversee extraction activities, workforce safety and community engagement, while also conducting weekly and monthly reviews with supervisors and engineers to track progress, address deviations and refine action plans. At the site level, officers manage day to day operations and monitor key parameters such as land rehabilitation, water conservation, waste management and biodiversity performance to ensure adherence to established protocols. Site based mining committees further support this structure by tracking operational performance, driving improvement initiatives, engaging with stakeholders and addressing location specific issues.

Regional management holds quarterly performance reviews, ensuring alignment with corporate standards. At the Board level, the Risk Management and Sustainability Committee receive consolidated reports, evaluates performance against strategic and ESG benchmarks, and provides guidance for corrective actions. Independent audits and external assessments further strengthen transparency and accountability. This integrated

1 Sustainable Land Use	2 Water Use
3 Waste Management	4 Emissions Reduction
5 Biodiversity Management	6 Health & Safety
7 Community Development	

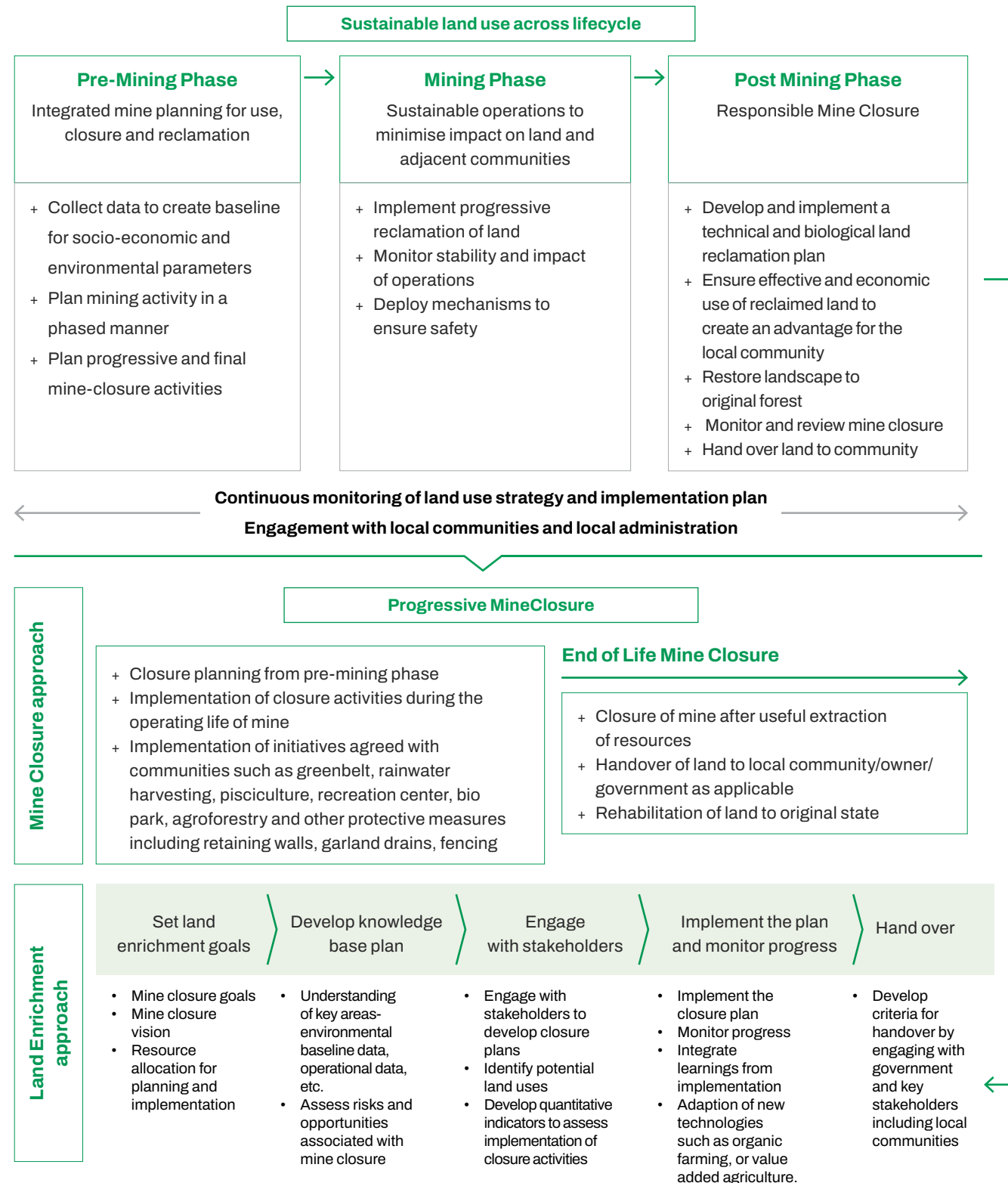
framework ensures that mining targets are not only achieved but are pursued responsibly, with continuous monitoring and structured reviews safeguarding compliance, efficiency, and sustainability.

This governance structure strengthens our reputation as a responsible miner and mitigates risks associated with regulatory non compliance, reputational impacts and community concerns.

Our Approach

In the metals and mining sector, where sustainability has rapidly evolved from a compliance requirement to a core business imperative, our Sustainable Mining Charter, introduced in 2021, reflects our commitment at Hindalco to move beyond compliance-driven mining towards sustainability-led operations. As demand for metals and minerals continues to rise in support of infrastructure development and the energy transition, we recognise the need for a more integrated and responsible mining approach. Anchored in a mine-lifecycle perspective, the Charter provides a holistic framework aligned with seven thematic focus areas, recognising the interconnected nature of mining activities and stakeholder impacts.

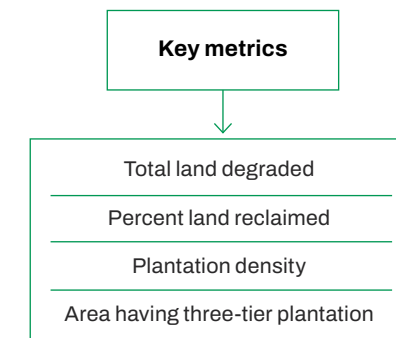
Sustainable Land Use is one of the key focus areas of our Sustainable Mining Charter, aimed at strengthening local environmental and social infrastructure through effective conservation, restoration, rehabilitation, resettlement and responsible mine-closure practices. Through this approach, we seek to minimise risks to natural resources, biodiversity, livelihoods, socio-cultural values and natural heritage, while ensuring that land transformation arising from mining activities supports long-term community well-being and ecological resilience.



The Framework and pathway for action is built on three strategic approaches, supported by clearly defined metrics to track and monitor our progress.

Sustainable land use across life cycle:

Mining is a long-term activity that results in significant land disturbance over time, making a lifecycle perspective essential for identifying impacts early and implementing effective mitigation measures throughout the mine's life. By adopting this approach, we ensure that progressive reclamation is integrated into operations, enabling land to be restored and enhanced well before closure and ultimately returned in a better state.



	Pre-mining Phase	Mining Phase	Post mining phase
Introduction			
Corporate Overview			
Strategic Overview			
Creating and Sustaining Value	In the pre-mining phase, we conduct detailed baseline assessments including socio-economic studies, environmental baselines, and surveys of flora, fauna, water bodies and habitats. These studies, along with extensive community and stakeholder consultations, provide the foundation for mine design, progressive closure planning and post-mining land-use strategies. The Gare Palma mining area, a demographic baseline study covering 11 villages within a 10-km radius was conducted in 2019–20 to understand local socio-economic conditions, enabling targeted development interventions and future transition planning. This practice has now been standardised across all new coal mines.		
Awards and Recognition			As the mine advances through its operational life, the closure plan is regularly updated, integrating insights from baseline data, stakeholder expectations and periodic regulatory reviews. The Mine Closure Plans (MCPs) are reviewed jointly with local communities, environmental authorities and district administration during lease renewals, expansion proposals, permit amendments and Environmental Impact Assessment (EIA) reviews.
Standards and Frameworks			The Mine Closure Management Plan includes measurable KPIs for progressive and final closure, addressing land rehabilitation, waste dump stabilisation, biodiversity conservation, soil/air/water protection, and socio-economic transition. Targets are developed in consultation with local communities and regulatory bodies.
Statutory Reports			We conduct regular internal reviews to track progress against approved plans and to ensure that the scope of work remains comprehensive, up-to-date and incorporates emerging technologies. A detailed closure-compliance report is prepared and discussed as part of this review process to ensure the timely completion of all agreed closure commitments.
Financial Statements			To maintain transparency and regulatory alignment, a statutory mine closure audit is carried out annually or once every five years, depending on the regulatory requirement. During the operational phase, we actively collaborate with government agencies, skill development institutions and development organisations to strengthen

A comprehensive Social Baseline Study (SBS) is conducted at each mine to understand the socio economic context of villages within the area of influence. This includes demographic profiling, livelihood patterns, education and health status, infrastructure availability, cultural aspects and vulnerabilities. The SBS helps us plan community development programmes, identify livelihood diversification opportunities and prepare for long term social transition beyond mining.

Mine closure planning begins at the project planning stage, where a conceptual mine closure plan is prepared based on anticipated mining methods, waste generation, land disturbance and post mining land use objectives. Developing closure requirements upfront allows us to embed reclamation, infrastructure planning and progressive rehabilitation into the mine design itself, reducing long term environmental and social liabilities.

alternative livelihood options for communities in mining regions. These initiatives focus on agriculture and allied sectors, MSME development, services, and self employment, reducing dependency on mining linked employment and building economic resilience well before closure occurs.

As the mine nears closure, we undertake a Social Closure Impact Assessment (SCIA) to evaluate potential impacts on workers and surrounding communities. This assessment informs livelihood transition measures, skill development programmes, enterprise development, and collaborations with government schemes to ensure a just and inclusive socio economic transition.

In FY 2025–26, we continued to strengthen our mine-closure planning and compliance across both bauxite and coal operations.

For our bauxite mines,

- + Jalim, Sanai and Kujam–1 have approved Final Mine Closure Plans (FMCPs); implementation completed for Kujam–1 (certification pending), while implementation for Jalim and Sanai is currently in progress.
- + Chirokukkud, Orsapat and other mines have submitted FMCPs and are progressing through the approval process.

For our coal operations,

- + Kathautia received its approved Mine Plan and Mine Closure Plan in December 2025.
- + The Ministry of Coal (MoC) has directed the submission of a Temporary Mine Closure Plan (TMCP), for which an Independent Report is being prepared for submission to CMPDI.

Land Enrichment Approach:

We recognise that even after mining activities cease, there is an opportunity to generate lasting positive outcomes for local communities. This requires an integrated land-enrichment plan developed in close consultation with communities and other stakeholders from the mine-planning stage itself, particularly around land use, rehabilitation and post-mining development priorities.

Mine Closure Approach:

To ensure sustainable post-mining land use, we integrate closure planning from the earliest stages of mine development. Closure considerations are embedded into mine design, project sequencing and operational planning, enabling us to anticipate long-term environmental and social impacts and implement mitigation measures in a timely manner. This proactive approach ensures that both progressive closure and end-of-life closure strategies are clearly defined well in advance, reducing cumulative land disturbance and future rehabilitation liabilities.

1. Progressive closure: By restoring mined out areas in phases, we are able to minimise ecosystem disruption, stabilise landforms, manage waste dumps and improve soil conditions well before final closure. Progressive closure also allows us to pilot rehabilitation methodologies, evaluate ecological outcomes and refine interventions based on field performance. Importantly, this phased approach strengthens community engagement, as stakeholders can observe tangible restoration outcomes and provide feedback, enabling ongoing course correction where required.

To ensure responsible closure, closure related mitigation plans are integrated into the MCP and implemented progressively. Our mining operations are fully

governed by statutory mine closure requirements, and 100% of our operational mines have approved Mine Closure Plans (MCPs) in place, as mandated under the Mineral Conservation and Development Rules (MCDR), 2017. These plans are periodically reviewed and updated to ensure alignment with evolving regulatory expectations and best practice standards.

2. End of life mine closure:

This phase focuses on completing all remaining reclamation works, dismantling infrastructure safely, restoring landforms and vegetation, and ensuring long-term environmental stability. Land is rehabilitated and handed over to land owners or communities in strict accordance with statutory and regulatory requirements, ensuring that restored land supports agriculture, forestry, water conservation or other agreed post-mining uses. Effective end-of-life closure is critical to enabling communities to derive long-term environmental and socio-economic benefits after mining activities cease.

Through this structured closure planning and adherence to statutory requirements, we ensure responsible end of life mine management, long term environmental protection and alignment with our broader commitment to sustainable mining.

Across both progressive and final closure phases, we ensure continuous monitoring and post-closure maintenance, supported by defined performance indicators and regulatory oversight. This ensures that rehabilitation outcomes remain stable over time and that land contributes positively to local ecosystems and livelihoods.

Building on our lifecycle based mine closure approach, we also prioritise socio economic transition planning to ensure that communities remain supported well beyond the operational life of the mine. Our mine closure

planning incorporates progressive closure activities but also focuses on enabling a smooth social and economic transition through ongoing collaboration with local communities, administrative bodies and other stakeholders. Closure related social planning includes creating future livelihood opportunities, supporting skill development and determining the most beneficial use of infrastructure after mine closure.

A key thematic area within our Sustainable Mining Charter is local economic development, designed to foster an integrated,

equitable and sustainable growth model for communities in mining regions. Through our 3C strategy — Communication, Collaboration and Consultation we engage closely with communities to understand local aspirations, prioritise development needs and co design programmes that address both short and long term socio economic goals. This participatory approach ensures transparent communication around mine operations and closure timelines, while also empowering communities to take part in planning and decision making processes.

Through this integrated development strategy, we support the creation of sustainable livelihoods, strengthen employability, enhance access to essential services such as education and healthcare, promote inclusive social development and help build resilient community infrastructure. To ensure these initiatives remain effective and relevant, we follow an end to end design approach, beginning with stakeholder consultation and extending through programme implementation, monitoring, and impact assessment.

We have also identified risks that may arise during the closure and adopted mitigation actions to minimise them.

Risk	Impact	Mitigation Strategies
Physical risk	+ Inadequately planned progressive and final closure + Improper implementation of a progressive closure plan increasing the likelihood of environmental and social challenges during final closure + Failure to anticipate the environmental issues and challenges that may arise during mine closure + Failure to prevent acid mine drainage	+ We strengthen closure planning through IBM/ MoC-approved PMCP and FMCP, embedding closure requirements into mine design and operational sequencing. + Concurrent backfilling, landform stabilisation, reclamation, drainage control, water-harvesting structures and plantations are executed throughout the mine life cycle to reduce final-closure burden. + Closure plans undergo periodic technical reviews, with dedicated ownership, adequate financial provisioning and KPI-based performance monitoring. + Annual IBM reviews for bauxite mines ensure continuous regulatory alignment. + Long-term ecological restoration is supported through topsoil conservation, VAM-based bio-fertilisation, native species plantation and continuous environmental monitoring. + Acid mine drainage is prevented through proactive collection, treatment and reuse of seepage water.
Regulatory risk	+ Non-compliance with regulations during mine closure and rehabilitation + Unsuccessful land rehabilitation, leading to greater regulatory scrutiny of current and future projects	+ We ensure full adherence to IBM- and MoC-approved closure plans, supported by strong internal audits and compliance protocols. + Rehabilitation is prioritised through native species plantation, MMI-based monitoring, and systematic maintenance of restored areas. + A multi-disciplinary expert team guides adoption of best-in-class rehabilitation practices, ensuring regulatory and environmental expectations are met. + Continuous assessment ensures alignment with evolving central and state regulatory requirements.

Risk	Impact	Mitigation Strategies
Stakeholder risk	+ Impact on community wellbeing and safety due to unsafe mine closure + Poor land rehabilitation practices, leading to an adverse impact on traditional livelihoods such as agriculture + Long-term environmental problems due to inadequate rehabilitation, including an adverse impact on water sources, changes in microclimatic conditions, and soil contamination	+ We involve communities throughout closure planning to identify preferred post-mining land uses and ensure outcomes that support local needs. + Rehabilitation follows a scientific, community-inclusive framework focusing on land productivity, soil restoration and biodiversity revival. + Soil health is strengthened through organic amendments, targeted microbial restoration, VAM bio-fertilisers and native vegetation. + Ecological resilience is enhanced through three-tier plantation, grassland development and restoring natural drainage systems. + Water quality is protected via runoff-control structures, drainage engineering and regular monitoring. + Long term community well being is supported through livelihood programmes, SHG initiatives and rehabilitation support.
Financial risk	+ High remediation costs of land rehabilitation during closure due to poor closure planning that does not incorporate site-specific conditions	+ We lower final closure costs through progressive rehabilitation, integrating closure requirements into routine mine operations. + We strengthen closure-cost estimation through benchmarking, periodic reviews and insights gained from progressive-closure performance. + We use a structured costing methodology grounded in MoC (2025) and IBM guidelines, applying approved activity quantities and standard Schedule of Rates to ensure accurate financial assurance.

Stakeholder engagement is integral to mine closure planning and post mining land use decisions across our mining operations.

- + We work closely with workers, contractors, suppliers and local communities from early in the mine life cycle to plan workforce transition, retraining opportunities, safe demobilisation and progressive rehabilitation.
- + Each mine follows a site specific stakeholder identification process that maps the area of influence and ensures representation of directly and indirectly affected groups, including Scheduled Tribe communities, women, landless households and other vulnerable groups.
- + These insights are informed by socio economic baseline studies

and updated continuously through field visits, village meetings, focus group discussions and grievance redressal interactions.

- + Regular consultations help us prioritise community needs and guide the design of targeted social and economic transition measures.
- + We jointly identify preferred post mining land use options through Gram Sabha meetings and discussions with traditional leaders and community institutions. To ensure equitable participation, including dedicated engagement with women through separate consultations, safe meeting spaces and programmes tailored to their needs.
- + Engagement efforts also include transparent communication on mine development, potential impacts and closure timelines,

as well as support for community employment across different phases of operations. It translates into locally relevant closure pathways. Reclaimed areas are converted into afforestation zones, water conservation structures, grasslands and livelihood supporting plantation models, reflecting priorities identified by communities.

We have a total of 35 mining assets, comprising 17 operational mines, 11 non-operational mines, and 7 greenfield projects. In terms of lease type, the portfolio includes 31 Mining Leases (ML) and 4 Composite Licenses (CL).

Our rehabilitation approach focuses on balancing our footprint by backfilling overburden dumps,

Mining Area Details (Ha)

Parameter	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Total mining area leased (operational)	8,770.38	8,770.38	8,770.38	8,711.71
Total area mined	114.93	121.38	130.07	145.02
Total area reclaimed	100.85	91.76	110.69	116.32
Total area rehabilitated	96.81	86.89	103.61	112.69

conserving topsoil for reclamation and restoring land progressively. In FY 2025–26, our ratio of land disturbed to land rehabilitated stands at 1:0.78, supporting long term environmental recovery and community value creation.

Our mining operations follow a risk-based Emergency Preparedness and Response Plan (EPRP) developed through consultations with communities, workers, first responders and local authorities. The plan is grounded in comprehensive hazard identification and outlines clear roles, communication protocols and response triggers for various

emergency scenarios. Quarterly mock drills help ensure operational readiness, strengthen coordination among stakeholders and build confidence in response systems, while monthly testing of EPRP procedures ensures continuous effectiveness. A structured mechanism is also in place to identify and classify critical incidents based on severity, resource availability and potential impact.

To ensure continuity of responsibilities through the mine life cycle, we have established a divestment mechanism that safeguards against abandonment

of closure obligations when mine ownership changes. Under this mechanism, all financial and legal liabilities are transferred to the incoming operator, who assumes full responsibility for mine closure, reclamation and post-closure monitoring. This includes the transfer of allocated closure funds or financial sureties such as escrow accounts or bank guarantees, ensuring that closure commitments remain financially supported. Legal safeguards protect us from residual liabilities, while regulatory oversight ensures that closure plans remain updated, adequately provisioned and legally binding on the new operator.

Our divestment framework includes the following key components:

Formal agreement with closure clauses We ensure compliance with the Mineral Conservation and Development Rules (MCDR) and the Mine Closure Guidelines through formal agreements that include robust closure clauses.	Transfer of Financial and Legal Liabilities We facilitate the transfer of liabilities in accordance with Progressive Mine Closure Plans (PMCP) and Final Mine Closure Plans (FMCP) and ensure that environmental clearances and mining leases are maintained or renewed as per statutory requirements.	Regulatory Oversight and Approval We seek approval for our divestment and closure plans from the Central Government or designated regulatory bodies such as the Indian Bureau of Mines (IBM) or the Coal Controller's Office (CCO).
Community and Environmental Safeguards We remain committed to the rehabilitation of displaced communities, restoration of local ecology, and promotion of sustainable land use post-mining.	Monitoring and Enforcement We implement mechanisms to monitor and enforce compliance with all closure-related obligations.	

Baphlimali Mines: Setting a New Benchmark through ASI Certification

📌 Initiative: The Baphlimali Bauxite Mines became the first bauxite mine in India to achieve Aluminium Stewardship Initiative (ASI) Performance Standard certification, marking a major milestone in responsible mining.

A comprehensive transformation programme was undertaken to align Baphlimali Bauxite Mines with the 59 criteria of the ASI Performance Standard, covering environmental management, social responsibility, and governance. Key measures included — strengthened biodiversity management through progressive mine rehabilitation and slope stabilisation; enhanced water stewardship based on conservation and zero liquid discharge principles; and reinforced health, safety, and workforce welfare systems.

➡ **Outcome:** Community engagement was deepened through structured dialogue, grievance redressal mechanisms, and livelihood initiatives. They are supported by transparent reporting, audits, and robust traceability systems.

The certification positions Baphlimali as a national benchmark for responsible bauxite mining, strengthens trust with global customers.

Rehabilitating Land Through Sustainable Horticulture at Lohardaga

📌 Initiative: We developed a mango orchard in the Lohardaga cluster to transform mined out and underutilised land into a productive green asset. The sustainable land use and livelihood enhancement initiative focuses on restoring ecological value while creating resilient llivelihoods via horticulture.

Established on reclaimed land, the orchard comprises young mango saplings supported by fencing, native vegetation buffers, and early stage ground cover. Community participation is central to the programme, with local stakeholders actively involved in orchard maintenance and capacity building activities.

➡ **Outcome:** This initiative represents a balanced model of sustainable horticulture and agroforestry. The orchard is expected to mature into a productive ecosystem, delivering lasting environmental benefits and sustainable economic opportunities for communities.



Water Stewardship Building Water Resilience

We recognise that effective water management is critical to sustaining our operations and supporting business resilience. We set a new target for all existing Aluminium and Copper operations to become Zero Liquid Discharge (ZLD) by FY 2029-30, supported by a clear and actionable roadmap. This ZLD pathway underscores our commitment to sustainable water stewardship, operational resilience and environmental responsibility, further strengthened by a Scope 1 neutrality assessment based on NITI Aayog’s framework, to identify additional water-saving opportunities.

To translate these commitments into consistent on ground action, we have established a structured governance and implementation mechanism across all sites. Each site has a dedicated Water Taskforce team focused on monitoring performance, identifying new water projects and driving implementation. Progress and action plans are reviewed quarterly in Water Taskforce meetings chaired by the Chief Sustainability Officer,

ensuring strong governance and accountability across all operations.

Our approach to water resource management is guided by the Aditya Birla Group’s Water Stewardship Policy, complemented by the Hindalco Environment Policy’s strong focus on water.

This is further reinforced through Aditya Birla Group’s technical standards on water and wastewater management, supported by internal guidance notes on wastewater management plans, rainwater harvesting, and water recycling. To strengthen our overall approach, we also refer to international references such as the EU Integrated Pollution Prevention and Control (IPPC) Best Available Techniques for the Non Ferrous Metals Sector (2001). In line with regulatory requirements, discharge standards are applied based on the receiving environment, including inland surface water, public sewers, land for irrigation or marine coastal areas, as classified under the EP CPCB Norms.

Regular trainings are conducted for Water Taskforce members on topics such as STP, WTP, ETP, ZLD and Cooling tower operations. We also organise awareness programmes and classroom sessions for shopfloor employees, township residents and contract workers, supported by demonstration skids to strengthen practical understanding. Each month, unit wide sustainability themes are rolled out, with training sessions aligned to these focus areas. We also celebrate World Water Day, Environment Week and other key events through campaigns, competitions and community engagement activities involving employees, contractors, township residents and children.

At Novelis, our plants have been trained to use Water Quality Intelligence Data Management Tool a digital solution that provides

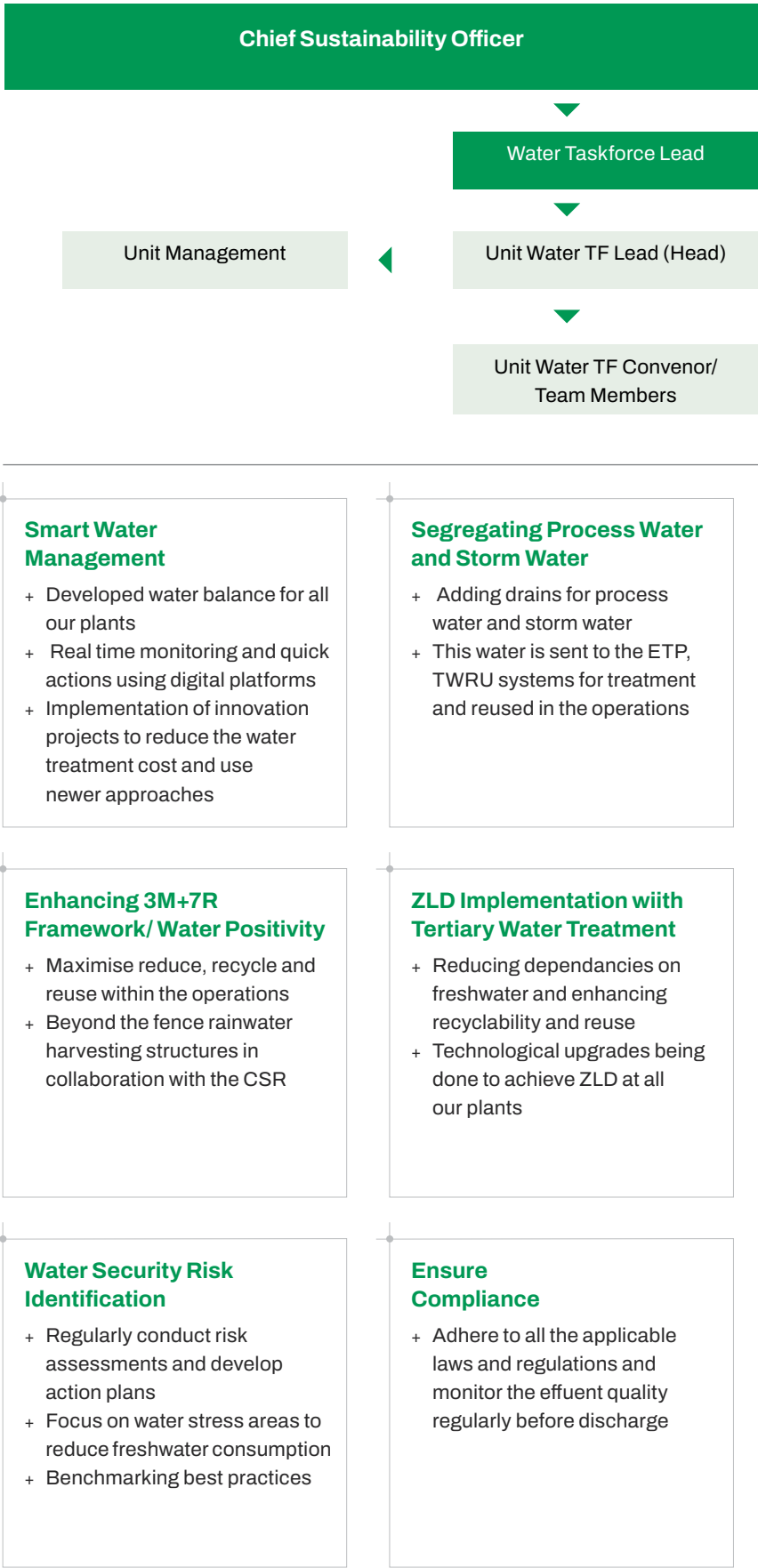
enterprise-wide visibility of utility-asset performance, enabling faster diagnostics and action. Our facilities are working with an external third party to identify water saving opportunities and support continuous improvement in water stewardship. We adhere to all applicable laws and regulations; however, we encountered two minor violations. A minor one-time BOD and oil/grease exceedance of wastewater limits at the Davenport Casting plant and there was an unapproved discharge at the Spokane R&D facility while producing saleable products.

At Hindalco, there was a minor violation at Asoj for exceeding the discharge norm which was immediately acted upon.

We conduct a comprehensive cross-unit water assessment across our operations, analysing consumption patterns in production, cooling-tower systems, utilities, loss trends and facility maintenance. This exercise identified various opportunities, such as standardisation of ETP, STP, WTP and CT operation optimisation and SOP across all our units.

These improvements are reviewed monthly with senior management and discussed during APEX sustainability reviews with the Managing Director, ExCom members and respective units, who present progress updates and action plans. Unit level task force reviews are conducted quarterly with the Chief Sustainability Officer (CSO).

Our structured six-pillar approach to drive water stewardship integrates operational efficiency, circularity, watershed development and compliance.



Goals and Targets

Targets

Hindalco

- + To achieve water positivity on 10 mining sites by FY 2030 and across all our operations by FY 2050.
- + All existing operations to become ZLD by FY 2029-30 for both Aluminium and Copper business.
- + To achieve 20% Specific freshwater consumption reduction by 2030 against the baseline of FY 2024-25.
- + Increase water recycling rate at water stress sites to 40% in FY 2029-30 from the baseline of 32% in FY 2025.

Progress

Hindalco

- + 5 mines—Bagru, Netarhat, Pakhar, Shredang and Samri have already achieved Water Positive status, with certification underway for five more mines.
- + Mouda- Water neutral plant
- + 16 plants out of 19 achieved ZLD.
- + 4% specific freshwater consumption reduction in aluminium operations.
- + Five plants (Aditya, Hirakud, Utkal, Alupuram, Belagavi) have secured Scope 1 (Aspiring Category) certification and additionally six sites (Renukoot, Renusagar, Mahan, Muri, Dahej and Asoj) are under way for the assessment and certification.
- + The recycling rate improved from 32% in FY 2024-25 to 34% in FY 2025-26, demonstrating steady progress towards the target.

Targets

Novelis

- + To reduce water intensity by 10% at all our operations by 2026 from the base year of 2020 (2.62m³/FRP).

Progress

Novelis

- + 4.6% reduction in water intensity from the base year of 2020.

Under the NITI Aayog 3M+7R Water Neutrality Framework, we continue to strengthen water stewardship across our operations. Five of our units - Aditya, Utkal, Hirakud, Belagavi and Alupuram have already completed the CII Scope 1 Water Neutrality assessment and certification, through which 22 water-saving opportunities (5 million m³) were identified, with 3.89 million m³ to be saved through 15 feasible projects. Our Mouda unit also achieved Water Neutral status in FY 2024-25.



A water body at Mahan, reinforcing our commitment to conservation and ecosystem resilience

During the upcoming financial year, six additional units - Dahej, Asoj, Mahan, Renukoot, Renusagar and Muri are scheduled for assessment. In parallel, five of our mines Bagru, Netarhat, Pakhar, Shredang and Samri have already achieved Water Positive certification, with certification underway for five more mines. Together, these initiatives reinforce our long-term roadmap and continue to unlock new water-saving opportunities across sites, advancing our commitment to responsible water stewardship.



Pond Mirchadhuri at Renusagar where we completed beyond-the-fence watershed projects

Roadmap for Hindalco water positivity by 2050:

Short Term
(FY 2025-2030)

- + 20% Specific freshwater reduction by 2030 against the baseline of FY 2025
- + 10% minimum rainwater usage in processes
- + ZLD implementation across all units by 2030
- + Water Positivity (Scope 1) assessment and certification completion
- + 3 factories /year-Digitalisation of Water Monitoring
- + Achieve Mines Water Positivity for 10 mines
- + 30 million m³ RWH-Cumulative interventions within and beyond the fence.

Medium Term
(2030–2040)

- + 100% elimination of groundwater withdrawal
- + Maximum utilisation of desalinated water
- + Achieve Water positivity at identified water-stressed units (Asoj, Belagavi, Dahej, Kuppam)
- + 15 mines- To achieving water positivity
- + 60 million m³ RWH-Cumulative interventions within and beyond the fence

Long Term
(2041–2050)

- + Water Positivity (Scope 2 & 3) assessment and certification
- + 100% rainwater harvesting potential utilisation wherever applicable
- + 90 million m³ RWH-Cumulative interventions within and beyond the fence
- + All mines- Achieving water positivity
- + Water positivity across all sites (plants & mines), including new sites

Water Risk Assessment

As water scarcity grows, the risks associated with water availability and quality also rise. To evaluate the potential effects on our operations, we conducted a water risk assessment utilising the WBCSD's India Water Tool (IWT) and the WRI Aqueduct Tool. Our analysis examined several key aspects, such as baseline water stress, annual and seasonal fluctuations, occurrences of flood, drought intensity, upstream storage capacity, and groundwater stress, while also considering dependency and impact-related risks. The results showed that four plants—Dahej, Belagavi, Asoj, and Kuppam—are situated in water-stress regions. We have identified scenario wise risks and their operational impact on each plant and the assessment revealed a high risk of seasonal variability across our plants.

To measure the seasonal variability, we took into account scenarios such as flash floods, changes in rainfall patterns due to climate change, droughts, and a declining groundwater table. To identify the impact on local community we conducted water needs assessment studies. Further, using the comprehensive reports on the hydrogeological characteristics of the watershed, water levels in the CGWB observation wells in the vicinity, and rainfall predictions for the next 30 years at Utkal, Aditya, Hirakud, and Renukoot currently similar studies have been carried out our copper cluster units as well. We have identified the potential of 2.19 million m³ of water intervention projects beyond the fence.

We periodically forecast the cost and availability of water, to identify potential demand and supply

changes, in view of future expansion and the impact of regulatory changes on the operations. We have estimated that water-related risks could cost us over ₹100 crore due to revenue loss because of extreme weather events, increase in Water cost in the water stress units and regulatory compliance expenses.

At Novelis, 22 sites are certified under the ASI Performance Standard, which requires water mapping, detailed risk assessments, management plans, monitoring and disclosure of water use and associated risks. This ensures a consistent and high rigour approach to water risk management across the Novelis network.

Risk	Impact	Mitigation Actions
Discharge of contaminated storm water into the sea	+ Possibility of contamination in storm water discharge if released without treatment. + Potential impact on coastal ecosystem and mangrove areas in case of laying pipelines into the intertidal zone.	+ We engaged expert agencies to assess rainwater-management options and identify sustainable alternatives to direct stormwater discharge. + Identified eight micro-catchments and recommended rainwater harvesting and reuse of collected water in plant processes. + Six ponds with a total capacity of 132,000 KL over 6.6 hectares were proposed to support reuse and non-potable applications. + No stormwater will be discharged outside the premises during the non-monsoon period.
Water Stress & Scarcity	+ Increased operational risk due to seasonal variability, with droughts in summer and floods in monsoon affecting overall water availability. + Higher dependency on external water sources, increasing vulnerability to supply disruptions. + Potential constraints on production capacity and increased costs associated with securing a reliable water supply. + In water-stressed areas such as Asoj, we are currently dependent on groundwater sources.	+ We have adopted the Niti Aayog (3M+7R) principle for water management across all our plants. + We are strengthening water security by enhancing reuse and recycle through TWRU and ZLD operations. + We have built rainwater-harvesting ponds and installed digital water-flow meters and dashboards across our operations to improve monitoring and efficiency. + To reduce the impact on ground water source, diversion has been identified. Currently, Asoj unit is working for pipeline to bring surface water.
Regulatory & Reputational Risks	+ Stricter withdrawal limits and discharge regulations may lead to compliance challenges and higher operational costs. + Failure to meet efficiency and conservation targets could damage reputation, weaken stakeholder trust, and threaten social license to operate. + Greater scrutiny from regulators and communities, requiring proactive engagement and transparency.	+ We collaborate with regulators, local communities, and industry groups to ensure sustainable water use. + We actively monitor and manage water withdrawal permits and regulatory changes.

Risk	Impact	Mitigation Actions
Water Pollution Risks	+ Untreated or inadequately treated effluents pose risks of contamination, seepage, and leachate affecting local water bodies and groundwater. Non-compliance with discharge standards could result in penalties, reputational damage, and community opposition. + Long-term ecological impacts may increase remediation costs and regulatory oversight.	+ 16 plants have achieved ZLD status. + We have deployed advanced wastewater treatment technologies to ensure compliance with CPCB/SPCB norms, while preventing seepage and contamination. + We regularly monitor groundwater quality and collect samples using piezometers. + We conduct a biannual water survey through CGWA authorised third-party auditors.

Water Withdrawal

Water is a scarce and increasingly stressed resource, and hence our approach is designed to balance efficiency, sustainability and resilience. To understand and manage our risks, we assess whether our withdrawals significantly affect local sources. While surface water sources are not significantly impacted, groundwater sources may be affected. Hence, all groundwater withdrawal is carried out in strict adherence to Central Ground Water Board (CGWB) guidelines.

Our water sources include surface water, groundwater, seawater, and third-party supply. As part of our long-term ambition to become water positive by 2050, we are undertaking initiatives to maximise rainwater utilisation in our processes and implementing innovative projects to enhance the use of recycled water.

We work to ensure diversification of water sources to enhance resilience and reduce dependency on any single source. During the reporting year, at Hindalco India, 86.46% of our water was sourced from surface water, 4.65% rainwater, 3.74% from

third-party suppliers; 0.67% from groundwater; and the remaining 4.49% from seawater, supported by desalination where required. This diversified supply strategy reduces concentration risk and supports responsible extraction and conservation.

In the reporting year, our total water withdrawal was 90.30 million m³, of which 81.38 million m³ was attributable to Hindalco and 8.91 million m³ to Novelis. At our mining locations, we withdrew 0.58 million m³, comprising 56.10% groundwater, 36.35% surface water, and 7.54% rainwater.

At Hindalco, a 2.29% reduction in water withdrawal has been achieved through a focused effort to increase the recycling and reuse of water within our processes. This has been driven by regular audits of ETPs and STPs, implementation of audit observations, Zero Liquid Discharge (ZLD) projects, and optimisation of Cycles of Concentration (CoC). As a result, the water recycling rate in the aluminium business has increased to 30.99% in FY 2025–26, up from 25.80% in FY 2024–25. Additionally, the use of rainwater in our processes has risen to 17% compared to the previous financial year.



Sustainable aquaculture creating livelihoods from mines ponds

Water Withdrawal (million m³)

	FY 2024-25				FY 2025-26			
	Hindalco India (Standalone)	Hindalco Subsidiaries (India)	Novelis	Total	Hindalco India (Standalone)	Hindalco Subsidiaries (India)	Novelis	Total
Surface Water	69.16	6.90	2.33	78.39	64.64	5.73	2.12	72.49
Groundwater	0.65	0.10	3.82	4.57	0.47	0.08	3.72	4.27
Seawater	3.65	-		3.65	3.65	-	-	3.65
Third-Party Water	2.63	0.01	2.95	5.59	3.03	0.01	3.07	6.11
Total	76.09	7.01	9.10	92.20	71.79	5.82	8.91	86.52
Rainwater	0.14	0.07	0.001	0.21	3.23	0.55	0.001	3.78
Total Water Withdrawal	76.23	7.08	9.10	92.41	75.02	6.37	8.91	90.30

Our water withdrawal from water-stressed areas at Hindalco was 7.38 million m³, accounting for 9.06% of our total water withdrawal. Freshwater withdrawal in these water-stressed regions stood at 3.62 million m³, representing 4.45% of the total withdrawal. In these locations, 49.53% of the water withdrawn is seawater, which is desalinated and used in operations, thereby reducing dependence on freshwater sources and supporting responsible water use.

Water withdrawal from water stress areas (million m³)

	FY 2024-25			FY 2025-26		
	Hindalco India (Standalone)	Hindalco Subsidiaries (India)	Total	Hindalco India (Standalone)	Hindalco Subsidiaries (India)	Total
Surface Water	0.74	-	0.74	0.63	-	0.63
Groundwater	0.03	0.10	0.13	0.03	0.08	0.11
Seawater	3.65	-	3.65	3.65	-	3.65
Third-Party Water	2.51	-	2.51	2.89	-	2.89
Others	-	-	-	0.10	-	0.10
Total	6.93	0.10	7.03	7.30	0.08	7.38

Water Consumption

During the reporting year, we used 82.34 million m³, of which Hindalco India consumed 78.86 million m³ and Novelis 3.48 million m³. Our freshwater use was 78.69 million m³, of which Hindalco India consumed 75.22 million m³ and Novelis 3.48 million m³. At Hindalco India, we consumed 7.33 million m³ of water in the water stress areas, of which 3.72 million m³ was freshwater.

Water consumption (million m³)

	FY 2024-25				FY 2025-26			
	Hindalco India (Standalone)	Hindalco Subsidiaries (India)	Novelis	Total	Hindalco India (Standalone)	Hindalco Subsidiaries (India)	Novelis	Total
Total Water Consumption	74.44	7.07	3.27	84.78	72.50	6.36	3.48	82.34
Fresh Water Consumption (excluding seawater)	70.79	7.07	3.27	81.13	68.85	6.36	3.48	78.69

Water consumption in water stress areas (million m³)

	FY 2024-25			FY 2025-26		
	Hindalco India (Standalone)	Hindalco Subsidiaries (India)	Total	Hindalco India (Standalone)	Hindalco Subsidiaries (India)	Total
Total Water Consumption	6.90	0.10	7.00	7.25	0.08	7.33
Fresh Water Consumption (excluding seawater)	3.25	0.10	3.35	3.64	0.08	3.72

We also implemented Cycles of Concentration (CoC) optimisation across 10 cooling towers at Aditya and Hirakud, improving CoC from four to six and achieving 5.76 lakh m3 of annual freshwater savings and 16,000 m3 of makeup water saving. We have also rolled out a structured Cooling Tower Audit programme, with 97 out of 146 towers completed till FY 2025-26.

Improving Water Efficiency through Condensate Reuse at Utkal Alumina

🌱 **Initiative:** To reduce freshwater consumption and strengthen water positivity, we implemented a Condensate Polishing Unit (CPU) at our Utkal Alumina Refinery to enable the reuse of process condensate as boiler feedwater. The initiative enables consistent availability of high-quality feedwater for reliable and efficient steam generation for our Power Plant.

Earlier, refinery process condensate was discharged into the caustic pond without recovery, resulting in higher freshwater demand and avoidable heat loss. We conducted a detailed technical analysis which indicated that by reducing conductivity and silica levels, the condensate could be treated and reused in boilers. Accordingly, we installed a mixed bed polisher system equipped with cation and anion resins to treat the condensate and recycle it back into the steam generation cycle, converting a waste stream into a valuable resource.

➤ **Outcome:** The reuse of hot condensate also enabled heat recovery, leading to reduced coal consumption and improved overall energy efficiency, thereby delivering both environmental and operational benefits.

The project delivered measurable improvements including:

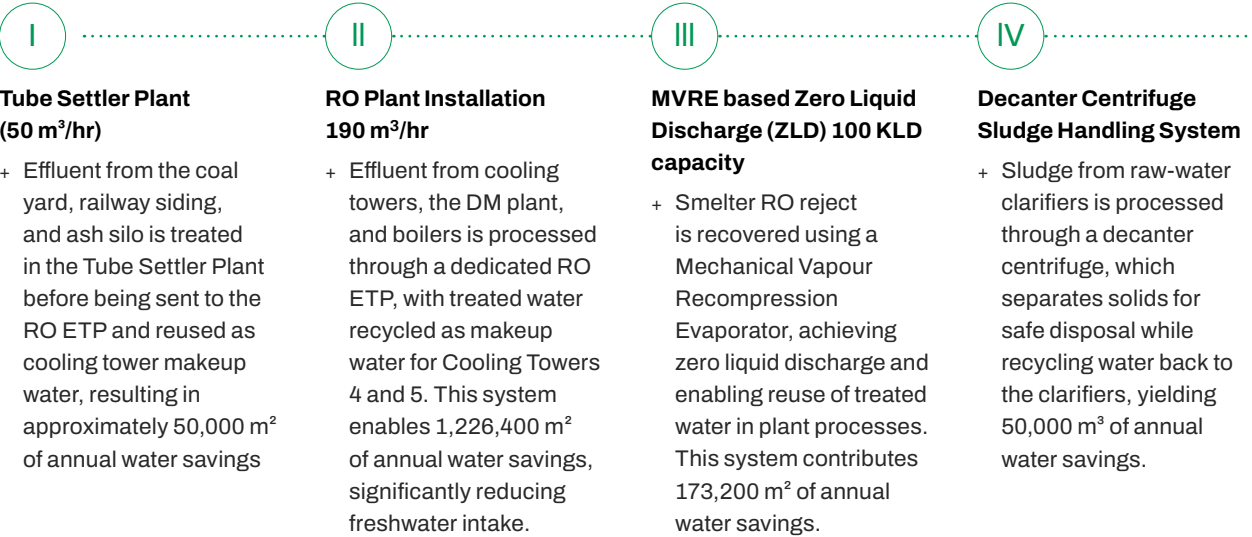
- + ~938 m³/day reduction in freshwater consumption at the DM plant
- + ~13 MT/day reduction in coal consumption through heat recovery
- + ~10% reduction in overall specific freshwater consumption

The initiative strengthened water use efficiency at the Utkal Alumina Refinery, enhanced steam system performance, and contributed to our water related targets.

Driving Water Efficiency through Integrated Solutions at Hirakud

Initiative: We implemented a suite of integrated water saving solutions across the Water Treatment Plant and utility operations at our Hirakud Smelter & Power (S&P) plant. These interventions were designed to maximise water recycling and reuse while reducing dependence on external freshwater sources.

The programme comprised four integrated systems implemented across refinery and power plant operations.



Outcome: Through these integrated solutions helped Hirakud S&P achieve approximately 1.5 million m³ of annual water savings. It reduced freshwater dependency, enhanced water use efficiency, and improved the overall performance across smelter and the power plant.

Initiatives to reduce water consumption in water stressed areas

Reducing Consumption In Water-Stressed Regions

Four of our units are located in water stressed regions, and each has undertaken targeted interventions to reduce freshwater dependency and enhance water security.

Kuppam:

Freshwater availability is a key challenge for this unit. Following a comprehensive assessment of water consumption and treatment systems, the unit optimised stream-wise usage and adopted a ZLD scheme to achieve 100 % recycling of treated water back into the process. To recharge groundwater, recharge structures are constructed, collectively enabling 7,500 KL of annual recharge. Digital water-flow meters were installed at borewells

and major consumption points, and RO reject water is now reused in washrooms for toilet flushing and urinals.

Birla Copper, Dahej:

Situated near the Gulf of Khambhat, the unit is fully dependent on the Narmada River for water. Based on a detailed risk study, the unit invested ₹114 crore in a 10 MLD desalination plant, meeting more than 50 % of its total water demand. Additionally, ₹57.4 crore was invested in a 2,000 KLD TWRU plant to increase recycled-water content. Major water-saving initiatives such as the 1.2 MLD STP upgrade with closed-loop integration and the 2.4 MLD ETP Green Tank upgrade are progressing well and will further enhance recycled-water use. To reduce dependence on freshwater, the unit also undertook a comprehensive rainwater harvesting study through an expert

agency. The study identified eight micro-catchments within the plant premises and proposed solutions such as rainwater harvesting and its utilisation in process and other non-potable applications. This includes the development of six ponds with a cumulative capacity of 132,000 KL over an area of 6.6 hectares.

Asoj:

The unit has installed a 100 KLD ETP and ZLD system to maximise recycled-water use with potential of 30,485 m³ per year and reduce dependence on groundwater. Three recharge pits have been developed within the premises to support groundwater replenishment. A watershed assessment study has recently been conducted to identify additional opportunities for water conservation. To reduce the impact on ground water, source diversion has been identified and currently Asoj unit is working for pipeline to bring surface water.

Belagavi:

The unit achieved 252,000 KL of water savings in six months using Flotisor chemical aid, which reduced the sprinkling load at the red-mud storage area. Freshwater use reduced by 17 % in FY 2025-26 compared with FY 2024-25 by enhancing the use of treated water through specialty biocide-based improvements. The unit is also constructing an 80,000 KL rainwater-harvesting pond, which is currently under development. In addition, approximately 518,912 m³ of surface runoff water from the RMP has been collected during the current financial year and reused in the process after treatment, thereby reducing freshwater consumption.



Advancing Refinery Sustainability through Enhanced Water Management – Belagavi

Initiative: Located in a critically water stressed region and dependent on the rain fed Hidkal reservoir, our Belagavi Alumina Plant faces increasing freshwater scarcity driven by declining and erratic monsoon rainfall.

To strengthen long term water security, we implemented a structured water allocation framework that prioritised maximum substitution of freshwater with treated water from the Effluent Treatment Plant (ETP).

While the reuse of treated ETP water enabled significant freshwater substitution, prolonged storage resulted in algal growth, leading to challenges related to odour, colour, and suspended solids.

To address these challenges, we adopted two key initiatives:

Use of Flotisor Chemical Aid

- + Focused on significantly reducing water consumption for red mud dust suppression while maintaining 100% compliance with fugitive-dust requirements the Belagavi Alumina Plant developed an innovative chemical dust suppression aid, Flotisor. The biodegradable, UV- and alkali-resistant polymeric dispersion forms a durable film by agglomerating fine particles.
- + Optimisation from a 1:10 to a 1:15 dilution extended effectiveness to up to 30 days per application, significantly reducing water demand. This significantly reduced water consumption for red-mud fugitive-dust suppression by 252,000 KL annually, strengthened red-mud stability by reducing water ingress, and delivered ₹70 lakh annual savings in water and energy use.

Use of Biocide Chemical Aid

- + The introduction of a targeted biocide marked a step-change in water management. The biocide eliminated biological contamination, consistently producing clear, colourless, odourless, suspended-solid-free water making it fully compatible for wider process reuse. This upgrade not only helped reduce freshwater intake but also eliminated hazardous chemicals, including hypochlorite in the ETP and EcoClean in cooling towers, significantly lowering handling risks and improving operational reliability. This improved the usability of ETP-treated water, reduced Freshwater Intake by 78,500 m³/annum, yielding ₹33 lakh annual cost savings and improved operational safety.

Outcome: We achieved a 17% reduction in specific freshwater consumption, improving from 1.62 t/t in FY 2024–25 to 1.35 t/t in FY 2025-26, setting a new performance benchmark for the plant. This initiative led to overall savings of ₹1.53 crore. The initiative strengthened the water runway at Belagavi, significantly reduced reliance on freshwater particularly during low or erratic monsoon periods and enhanced operational resilience and long term sustainability in a highly water stressed environment. Through awareness campaigns and optimised supply cycles we have reduced colony freshwater consumption by 136,000 m³/ annum resulting in annual savings of ₹32 lakhs.

Rainwater Harvesting

To reduce dependence on external water sources, we have undertaken extensive onsite and offsite initiatives focused on rainwater capture, conservation, and efficient utilisation. We are upgrading our Water Treatment Plants (WTPs) to handle varying input water quality and ensure reliable treatment performance throughout the year.

We have installed rainwater harvesting systems across multiple sites and set a target for all downstream plants to meet at least 10% of their process water requirements through harvested rainwater. In FY 2025–26, major

Kuppam

To recharge groundwater, Recharge structures constructed collectively enabling 7,500 KL of annual recharge.

Beyond our operational footprint, we are strengthening community water security through watershed programmes across 14 blocks in four states. The initiatives have benefited 10,850 farming families in 176 villages by creating 363 watershed structures, enabling irrigation for 3,708.13 hectares, adding 106.70 lakh m³ of storage capacity, facilitating 42.67 lakh m³ of annual groundwater recharge and conserving over seven billion litres of water each year.

Reuse and Recycling of Water

We follow an integrated approach to water reuse across our operations. Recovered water from ETP and RO followed by Tertiary Water Recovery System (MVR and Innovative Solutions) to maximise recovery and reuse back in the system. While

beyond-the-fence watershed projects were completed at Renukoot, Renusagar, Mahan, Aditya, Belagavi, and Utkal through CSR initiatives. Under our Corporate Environmental Responsibility (CER) initiatives, we are focusing on the rejuvenation and deepening of ponds across the watersheds of Asoj, Phakajan, Dahej, IGT Waghodia, and Aditya Kansariguda, significantly enhancing rainwater retention and groundwater recharge. At Dahej, rainwater harvesting and reuse systems ensure that no water is discharged outside the site during non-monsoon periods, thereby safeguarding nearby drains, water bodies, and marine ecosystems.

Mouda

A 1.30 lakh KL water harvesting system provides enough water for two years of process requirements and supported the site's achievement of Water Neutral status in FY 2024-25 (CII GreenCo).

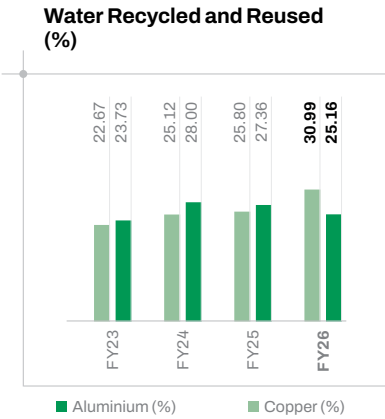
treated sewage water supports toilet flushing, green-belt irrigation and cooling-tower make-up. Effluents from coal yards, railway sidings and ash silos are treated in tube-settler systems and reused for cooling towers and sprinkling. At our refineries, condensate recovery and primary and secondary treatment system enables high levels of recycling into utility systems. Across major units, filter backwash water is reused, and closed-loop quenching systems in downstream units further reduce freshwater consumption. Common vehicle-washing facilities have been established in township areas at the Aditya and Renukoot units, with plans to extend similar facilities across all major townships. To optimise water use in dust suppression, mist cannons have been installed in major coal and raw material handling areas, significantly

To protect sensitive ecological zones, our pipeline projects in intertidal areas undergo detailed environmental assessments to minimise potential impacts on coastal and mangrove ecosystems. Localised studies are conducted using BMPs, environmental assessments and stakeholder consultations to understand water-related risks, dependencies and opportunities specific to each site. These insights guide context-appropriate mitigation actions, including water recycling, ZLD systems and biodiversity action plans, ensuring responsible and resilient water management across our operations.

Hirakud FRP

A 10,000 m³ harvesting pond constructed with similar systems planned at Silvassa, Alupuram and Belagavi for implementation by FY 2026-27.

reducing water consumption. All major units have mechanised road-sweeping machines for road cleaning, thereby minimising the use of water for dust suppression during transportation.



Due to the shutdown of the tertiary water recycling system, recycling for copper operations was lower than in the previous year.

In the reporting period, our commitment to water stewardship resulted in recycling and reusing 21.78 million m³ of water. This included 19.86 million m³ recycled at our aluminium facilities, achieving a rate of 30.99%, and 1.92 million m³ recycled at our copper operations with a rate of 25.16%.

We continue to strengthen site-specific initiatives to maximise recycling and reduce freshwater dependency.

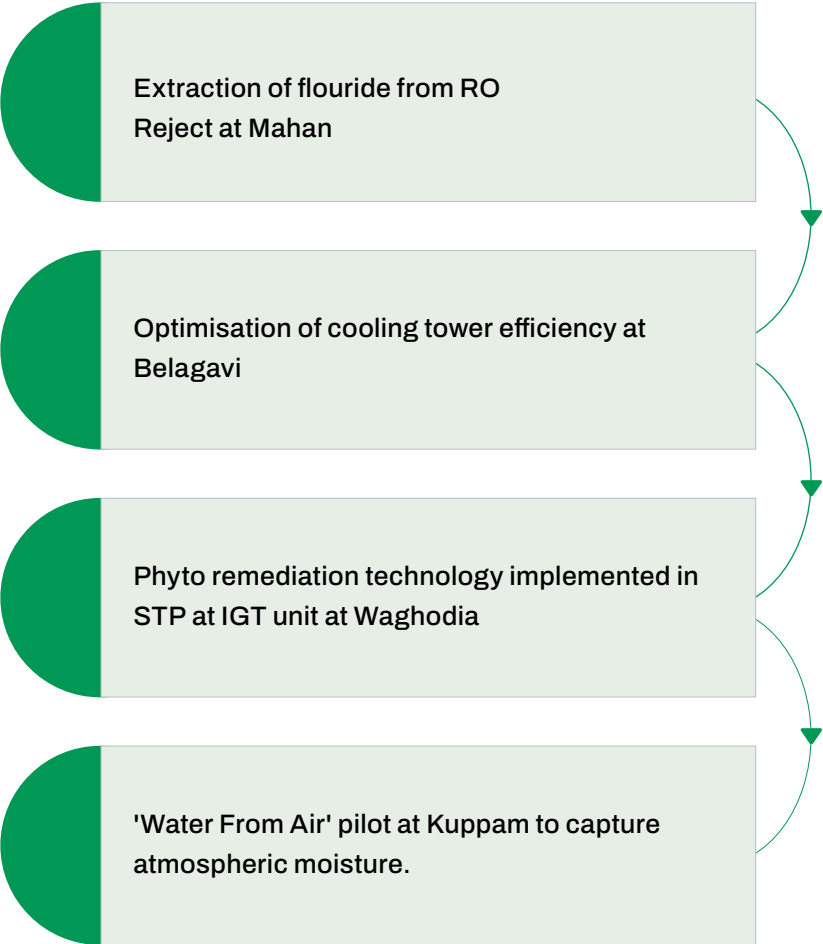
Our Targeted Interventions: We implemented targeted interventions to further improve recycling efficiency.

- + At Belur, replacing the ADM AC water-cooling system with natural air-cooling reduced groundwater consumption by 1,600 KL annually.
- + At Hirakud S&P, a 50 m³/hr surface runoff treatment unit Tube settler and a decanter centrifuge sludge handling system generated annual savings of 100,000 m³.
- + At Muri, enhancements in condensate return to the CGPP cooling tower enabled recovery of around 10 m³/hr of clean condensate and saved an additional 7 m³/hr of make-up water.
- + At Utkal, the commissioning of a Condensate Polishing Unit (CPU) now recovers regenerative condensate as boiler feed, saving 938 KLD.

These interventions significantly boost recycling, reduce freshwater reliance and strengthen sustainable water management across our operations.

We also deployed innovative, low-capital and low-chemical water-treatment pilots aimed at improving recycling and reducing freshwater consumption.

Key initiatives include:



At Novelis, we strengthened our water stewardship efforts through reverse osmosis system installations at the Yeong Ju and Zhenjiang Plants. At YJ, a multi stage RO process enabled high quality recovery of final effluent, recycling around 500 m³ of water per day in FY 2025–26, thereby reducing freshwater dependence. Similarly, at ZJ, an RO system was introduced to recycle remelt cooling tower water using multimedia, activated carbon and security filtration followed by RO, enabling the recovery of approximately 43,200 m³ of water per year.

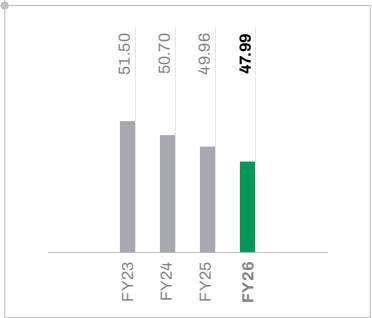
Specific Freshwater Water Consumption

The impact of freshwater consumption is assessed through Watershed Studies and ESR conducted as part of our BMP, and the valuation of these impacts will be incorporated into our upcoming IFRS S1 study.

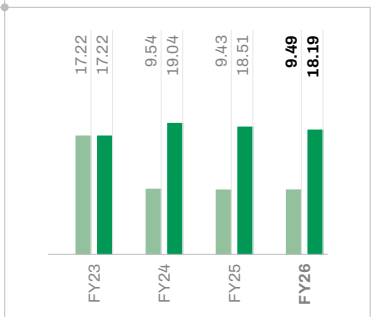
We continue to track progress towards our target of achieving a 20% reduction in specific water consumption by 2030, against the FY 2024–25 baseline.

During the reporting year, the specific water consumption for our aluminium and copper operations was 47.99 m³/MT and 9.49 m³/MT, respectively. Specific water consumption is calculated using metered process water use and does not include losses from evaporation or percolation from source/reservoir.

Specific Water Consumption- Aluminium (m³/MT)



Specific Water Consumption- Copper (m³/MT)



While calculating the specific water consumption, we take into account the water used (measured through flow meters). This does not include the losses from evaporation and percolation.

At Novelis, water intensity for the reporting period stood at 2.50 m³/MT of flat-rolled products.

Installation of sensor based low flow fixtures in restrooms across all units, deployment of digital meter dashboards at locations such as Renukoot, Hirakud and Muri, expansion of recycled water use in processes, and the introduction of AI enabled smart meters for real time monitoring have strengthened our water efficiency efforts.

At Novelis, we implemented a range of water reduction initiatives and progressed several water quality enhancement projects in FY 2025-26.



Terre Haute Plant

+ We upgraded the cooling-water system at the Terre Haute plant from a once-through setup to a closed-loop system, enabling water reuse and resulting in nearly 90% of all cooling water being recycled.

Zhenjiang Plant

+ We installed a new online monitoring system to track and optimise water quality parameters in real time.

Changzhou Plant

+ We upgraded its containment system to prevent leakage from its Water Treatment Plant (WTP) and minimise environmental impact.

Nachterstedt Plant

+ We introduced buffer tanks, measuring devices, and process refinements to reduce the discharge of dissolved solids and improve water treatment efficiency.

Norf JV Plant

+ We expanded the cooling tower capacity and integrated a reverse osmosis system, effectively lowering wastewater discharge and enhancing cooling tower recycling.

Water Discharge

Towards Zero Liquid Discharge

Efficient treatment of effluents and sewage is a key element of our journey towards Zero Liquid Discharge (ZLD). Hindalco India (Subsidiaries) have already achieved ZLD, setting the pace for ongoing efforts across other locations. We have set a goal for all aluminium and copper operations to achieve ZLD by FY 2030, and 16 out of 19 plants have already achieved this milestone.

We are steadily expanding our ZLD infrastructure to maximise recycled-water utilisation. Our high-capex ZLD programme includes the 5,000 KLD RO-ZLD system at Renukoot and the 400 KLD RO-based ETP upgradation at Hirakud FRP. At Hirakud S&P, the MVRE-based ZLD system is already treating 100 KLD of RO reject, delivering annual water savings of 173,200 m³ at an investment of ₹18.5 crore. Additionally, the installation of a 190 m³ per hour RO plant is generating a further 1,226,400 m³ of annual water savings, with a capex of ₹53 crore.

These systems consistently achieve over 90% water recovery, significantly reducing our dependence on freshwater. ZLD is now being incorporated at the design stage for all our upcoming projects to ensure long-term water sustainability.

While we have defined a clear roadmap to achieve Zero Liquid Discharge (ZLD) across all Aluminium and Copper operations, we continue to progress steadily towards meeting this target by FY 2030.

At locations that are yet to achieve ZLD, only treated effluent that meets regulatory norms is discharged. All units strictly comply with the discharge standards prescribed under the Environment (Protection) Act, 1986 (Schedule VI – General Standards for Discharge of Environmental Pollutants), as well as norms set by the MoEFCC, CPCB and respective SPCBs.

To maintain the quality of treated wastewater, we have established robust monitoring systems across all facilities. Internal laboratories routinely analyse effluent from ETPs,

STPs and cooling-tower blowdown systems, while third-party monitoring is conducted at prescribed intervals by Pollution Control Board-approved agencies, with reports submitted in a timely manner. This dual-layered monitoring framework ensures data integrity, strengthens regulatory

compliance and enhances overall environmental performance.

With ZLD implemented at most sites and stringent compliance at the remaining ones, we ensure that treated wastewater poses no negative impact on surrounding communities

or ecosystems, reinforcing our commitment to responsible water stewardship. Alongside these systems, we continue to advance wastewater-quality improvements through multiple R&D and innovation projects across our operations.

Water Discharge (million m³)

	FY 2024-25			FY 2025-26		
	Hindalco India (Standalone)	Novelis	Total	Hindalco India (Standalone)	Novelis	Total
(i) To Surface water	-	3.283	3.283	-	3.000	3.000
No treatment	-	2.835	2.835	-	2.737	2.737
With treatment	-	0.449	0.449	-	0.263	0.263
(ii) To Groundwater	-	0.119	0.119	-	0.227	0.227
No treatment	-	0.119	0.119	-	0.227	0.227
With treatment	-	-	-	-	-	-
(iii) To Seawater*	0.030	-	0.030	0.043	-	0.043
No treatment	-	-	-	-	-	-
With treatment	0.030	-	0.030	0.043	-	0.043
(iv) Sent to third parties	0.001	-	0.001	0.001	-	0.001
No treatment	-	-	-	-	-	-
With treatment	0.001	-	0.001	0.001	-	0.001
(v) Others	0.002	2.431	2.433	-	2.201	2.201
No treatment	-	-	-	-	-	-
With treatment	0.002	2.431	2.433	-	-	-
Total water discharged	0.033	5.834	5.866	0.044	5.43	5.472

*TWRU was in shutdown in Dahej unit resulting in the decrease in the recycling rate and accordingly the discharge has been slightly increased in the reporting year.

We have reported the sewage generated discharge separately. During the reporting year, our treated sewage discharge from Renukoot (colonies) and Belur accounted for 2,449,834.99 m³ and 19,845 m³ respectively. In FY 2024-25, the treated sewage discharge was 1,761,370 m³ and 1,485,401.15 m³, respectively.

Water Discharge in water stress areas (million m³)

	FY 2024-25		FY 2025-26	
	Hindalco India (Standalone)	Total	Hindalco India (Standalone)	Total
To Seawater (with Treatment)	0.030	0.030	0.043	0.043
To Surface water (without Treatment)	-	-	-	-
To Ground water (without Treatment)	-	-	-	-
Others (without treatment)	-	-	-	-
Sent to third parties (with treatment)	0.001	0.001	-	-
Total water discharged	0.031	0.031	0.043	0.043