HINDUSTAN ZINC
Zinc & Silver of India


# Hindustan Zinc Limited Climate Action Report

FY 2025

SAFE SMART SUSTAINABLE

# About this Report

This Climate Action Report (this "Report") pertains to Hindustan Zinc Limited (Hindustan Zinc) and covers the qualitative and quantitative data for the year ended March 31, 2025.

Hindustan Zinc's progress towards its climate change goals is described in detail in the Climate Action Report (CAR), including the performance against targets and the implementation of the relevant projects. The report provides insights into the HZL's climate change strategy and actions taken to mitigate its impacts.

## Perspective included in this Report

This is our fifth edition of the Climate Action Report (formerly known as TCFD report) which is being aligned with the principles contained in the IFRS S2 'Climate-related disclosures', issued by the International Sustainability Standards Board's (ISSB).

This report focusses on climate-related disclosure and provides comprehensive and comparable information about the impact of climate change and our mitigation strategies.

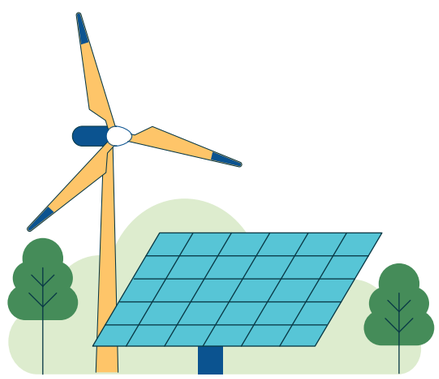
In addition to the Sustainability Report, which Hindustan Zinc issued for disclosures pertaining to other Environmental, Social, and Governance (ESG) parameters following the GRI, SASB, UNGC and FIMI frameworks, this report focusses on risks and opportunities related to climate change.

## External Assurance

We safeguard the quality of information contained in this report through a robust assurance process. The content and data disclosed in this report have been externally assured by S.R. Batliboi & Co LLP in accordance with the requirement of the Assurance Standard ISAE 3000 (Revised) 'Assurance Engagements other than Audits or Reviews of Historical Financial Information'.

# What's Inside





# Key Highlights FY 2024-25

**EcoZen**
Launched Low carbon Zinc with <1 tonne of GHG emissions per tonne of Zinc

Started receiving
**Green Power**
from 530 MW RE-RTC power delivery agreement (PDA), enhancing the share of RE in the power mix, increasing 7% to 13%.

**100% Renewable Power**
sourcing for Pantnagar Metal Plant

**180 LNG vehicles**
deployed for the transport of finished goods & IUT movement saving 1066 $TCO_2e$ in FY2025

HZL has been certified to be
**3.32 X Water Positive**
company

Commissioned Dry Tailing Plant (DTP) at the Rajpura Dariba Complex, building on the success of India's first DTP at Zawar Mines, recovering over
**80%**
of water from the tailings

Commissioned a
**1.8**
Mtpa paste-fill plant at Rajpura Dariba Complex, boosting daily Water Recovery

Fumer plant deployed in Chanderiya lead Zinc smelter helped eliminate
**~39,682 tonnes**
of Jarosite (smelting waste) generation

**4,000 KLD**
water treatment plant established Rampura Agucha mines

Collaborated with JNCASR for new-age
**Zinc-based Battery**
technologies

Partnership with IIT Madras for Advanced
**Zinc-Air Battery**
technology

Signed MoU with Aesir Technologies, Inc., which specialises in development and commercialisation of next-generation
**Nickel-Zinc battery**
technologies

# Key Facts

## GLOBAL

**Largest**
integrated zinc producer globally[2]

**Among Top 5**
largest silver producers globally[1]

**World's largest**
underground zinc mining operations at Rampura Agucha[2]

**Among Top 5**
global silver producing mines at Sindesar Khurd[1]

**Ranked 1st**
for the 2nd consecutive year in the S&P Global Corporate Sustainability Assessment in the metals and mining sector

**2nd Largest**
Zinc reserves and resources globally[2]

## DOMESTIC

**Largest and the only**
integrated producer of zinc, lead and silver in India

**c. 77%**
market share in India's primary zinc industry

**25+ years**
mine life[3]

**Amongst India's largest**
wind power producers, with a generation capacity of 273.5 MW across 5 states

(As on March 31, 2025)
Source:
1 World Silver Institute for silver producer/mine rankings
2 Wood Mackenzie for global mine/smelter rankings for zinc-lead mine and cost
3 Mineral Resources and Ore Reserves (R&R) at current rate of metal production

# Message from the Chairperson

> Hindustan Zinc's induction into the International Council on Mining and Metals (ICMM) marks a proud milestone – not just for our company, but for India. HZL is the first company from India to join this council. It reaffirms our commitment to sustainability, innovation, and responsible resource development, while creating new opportunities to collaborate with some of the world's most respected leaders in mining. This is our moment to lead from the front, power the global energy transition and set new benchmarks for the industry.

To Our Valued Stakeholders,

At Hindustan Zinc, sustainability is the foundation of everything we do. It is a responsibility we carry with purpose and passion. Our true success is measured not just by financial performance, but by the positive and lasting impact we create for our people and our planet. Every action we take is guided by a simple belief: we must leave behind a cleaner, healthier, and safer world for generations to come.

I am proud to share Hindustan Zinc's 5th Climate Action Report, which reflects our collective dedication and the significant progress we have achieved on our path toward a sustainable future.

Aligned with the Science Based Targets initiative (SBTi), we have set ambitious goals: to reduce Scope 1 and 2 emissions by 50% and Scope 3 emissions by 25% by 2030, targeting Net Zero by 2050 (FY 2020 baseline). A major step forward has been the 530 MW Power Delivery Agreement, advancing our focus on renewable energy, low-carbon zinc production, green mobility, and sustainable logistics.

Currently, we operate 40.70 MW of captive solar and 48.46 MW of Waste Heat Recovery capacity, alongside conventional power. With renewable energy from Serentica, we plan to source 70% of our power from clean sources by FY 2028. These steps mark the start of our strong, long-term commitment to a sustainable future.

Our efforts have garnered international recognition. **Hindustan Zinc was ranked #1** in the **metals and mining sector** in the **S&P Global Corporate Sustainability Assessment in 2024** for the second consecutive year. Such achievements reinforce our resolve to lead the way in sustainable innovation.

We are also proud members of the I**nternational Council on Mining and Metals (ICMM),** aligning ourselves with global best practices in sustainability, responsible mining, and ethical practices.

**Innovation will play a pivotal role** in our net-zero journey. We are actively exploring the potential of **zinc-based energy storage,** with zinc batteries emerging as a promising alternative to lithium technologies. These initiatives position zinc as a key enabler in the global energy transition.

Looking ahead, our unwavering commitment to sustainability drives us forward. Powered by the dedication of the HZL team, we are creating a greener future and a lasting legacy of positive change.

Warm regards,

**Priya Agarwal Hebbar**
Chairperson
Hindustan Zinc

# Message from the CEO

> We are cognizant of the need to progress rapidly towards our stated goal of becoming Net Zero by 2050. We remain steadfast in our mission to lead by example and contribute meaningfully to the global sustainability agenda.

To our Valued Stakeholders,

At a time when urgent climate action is imperative, Hindustan Zinc is deeply committed to integrating sustainability into every aspect of our operations. We believe that responsible business and sustainability are inseparable, and the decisions we make today will shape the planet's future. Our vision is to lead the transition to a greener, more resilient world. Mining, we believe, has a pivotal role in this journey, by providing the essential minerals that power clean energy technologies and drive the shift to a low-carbon economy.

It is with great pride that I share our 5th Climate Action Report, which aligns with the International Financial Reporting Standards (IFRS) S2 recommendations. This alignment significantly improves our transparency, enabling stakeholders to better understand how climate-related risks and opportunities influence our business and financial outcomes. The report aims to drive informed conversations and sustained climate action through clear insights into our governance, strategy and performance.

This year, we have made significant strides in decarbonisation. The acceleration of our **530 MW** Renewable Energy project, with the initial phase completed ahead of schedule, marks a major milestone. We also launched EcoZen, Asia's first low-carbon zinc product, crafted using renewable energy and offering a carbon footprint nearly 75% lower than the global average. These developments solidify our commitment to ESG excellence and product innovation in the transition to a low-carbon economy.

In line with our climate commitments, we continue to support the global clean energy shift by investing in research and development of zinc-based batteries as a promising alternative to lithium solutions. Our journey in water stewardship has reached a new milestone with the establishment of paste-fill and dry tailing plants at Rajpura Dariba Complex in Rajasthan, contributing to our 3.32X water positivity achievement. Our Fumer plant at Chanderiya in Rajasthan stands as a strong example of how advanced waste management and metal recovery can drive sustainability in practice.  We are making continued strides to reduce Scope 3 emissions through LNG trucks, EV deployment and sustainable logistics partnerships across operations.

As climate science evolves, so does our approach. We remain committed to regularly reassessing our climate-related risks and refining our strategies. This report reflects our comprehensive outlook, encompassing governance, risk, opportunities and clear targets to support informed stakeholder engagement.

Hindustan Zinc is now a proud member of ICMM, reinforcing our commitment to global sustainability standards and responsible mining. Through ICMM's 2025+ Strategy, focused on performance, standards, and engagement, we continue to strive for safer, transparent and environmentally sound operations, contributing to a just and sustainable future.

I hope this report serves as a call to action and the foundation for collaboration, innovation and continuous momentum toward a safe, and sustainable future.

Best Wishes,

**Arun Misra**
CEO & Whole Time Director
Hindustan Zinc

# Executive Summary

Hindustan Zinc is the world's largest integrated zinc producer and among Top 5 silver producer globally. We have placed sustainability at the centre of our business model and built our ESG strategy on the foundation of economic prudence. This helps us to ensure that our initiatives deliver both positive societal impact and robust financial performance.

We consistently strive to achieve our vision of **Zero Waste, Zero Harm and Zero Discharge** by minimising our environmental footprint. We have committed to Science Based Target initiative (SBTi) and are proactively working to reduce our direct and indirect GHG emissions.

We believe that a robust governance structure will help us manage our climate-related risks and opportunities. The Board of Directors of the Company has a clear oversight on climate-related issues, as they are updated on a quarterly basis with the recent developments and wherever required they also provide their inputs on a regular basis. We have a unique three-tiered sustainable governance structure which promotes sustainability practices from highest decision-making body in the organisation to shopfloor at sites. It is to be noted that all our operational sites are ISO 50001:2018 certified.

We have also implemented a robust Enterprise Risk Management framework across all our locations. Our risk management framework incorporates the identified climate-related risks and continuously monitors them. This is a component of our proactive risk management and mitigation approach for any impending climate-related risks.

Our climate-related metrics such as GHG emissions, Energy, Water, Waste & Air emissions are transparently disclosed and monitored. Further, the Company's Annual Sustainability Report, Integrated Annual Report and CDP Climate change response contains disclosures related to climate change.

As a responsible corporate, we intend to take more actions to boost the usage of renewable energy in our operations. Our commitment is to safeguard environmental, social, and business values for our people, communities, and nature. Although transitioning to a low-carbon and sustainable business can be difficult; however, we have already begun this process and plan to develop it further. In-line with the same, we have also launched EcoZen, a low carbon Zinc product, we have also been certified to be a 3.32 times water positive company.

# Climate Change Risk Assessment

| | PHYSICAL RISK | TRANSITIONAL RISK |
|---|---|---|
| Definition | Risks related to physical impacts of climate change, which includes:<br>▪ Acute weather events, such as water stress, drought, heat waves, extreme precipitation, and floods<br>▪ Chronic climate-related changes, such as sea level rise and sustained temperature increases | Risks arising from changes in policy, regulations, technology, and socioeconomic factors expected during the transition to a low-carbon economy, such as:<br>▪ Policy & Legal<br>▪ Technology<br>▪ Market<br>▪ Reputation |
| Potential Impacts | Impact due to physical risk can be defined as:<br>▪ Damage to direct assets<br>▪ Indirect impacts including:<br>- Disruption in operations, e.g., heavy rainfall affecting production, supply chain disruption, health, and safety of employees | Depending on the nature and pace of the change, various financial and reputational risks may emerge, which includes:<br>▪ Decrease in revenue as with change in consumer preferences<br>▪ Increased cost of production<br>▪ Impacts on asset values<br>▪ Obsolescence of tangible and intangible assets |
| Timing | ▪ We anticipate an increase in the severity and frequency of acute risks<br>▪ Long-term chronic risks are more likely to emerge, particularly after the middle of the century | ▪ Timing and speed of the occurrence of events are uncertain, with the transition more likely to happen in short to medium-term<br>▪ The likelihood of a more chaotic, disruptive, and abrupt transition increases with delay |

## Climate Scenarios

We considered various climate scenarios covering a broad spectrum of outcomes to help us provide insights into some of the risks and opportunities that may arise and can impact Hindustan Zinc Limited.

## Modelling Assumptions

Our current portfolio and value chain were modelled using historical data basis the tools available in the public domain. The model incorporated Hindustan Zinc's physical & financial inputs. Following points summarises the input data and the methodology used:

### Physical data included:

- Business unit locations
- Raw material used
- Sourcing location of raw materials
- Revenue associated with production volumes

### Financial data included:

- Sales and Profit related to our finished goods
  - Tools such as ThinkHazard, WRI Aqueduct & Network for Greening the Financial System (NGFS) were used to analyse physical risk on direct operations, Analysis was done for RCP 2.6, RCP 4.5, RCP 6.0, RCP 7.0 & RCP 8.5
  - Scenarios considered from IEA were Stated Policies Scenarios (STEPS), Announced Pledges Scenario (APS) & Net Zero Emission Scenario (NZE) for transitional risk assessment
  - WWF's Biodiversity risk filter was used for risk assessment of upstream and downstream value chain partners
  - Each risk was considered in isolation/independently and trade-offs between risks were not considered
  - Time horizon used was Medium-Term 2030 and Long-term 2050

| TIMELINE | YEARS | DESCRIPTION |
|---|---|---|
| Short-Term | 0-2 | Climate risks and opportunities impacting the business within 2 years are classified as short-term. At HZL, business risk assessments align with this climate-related timeline. |
| Medium-Term | 3-5 | Potential climate-related risks and opportunities that may impact company's business in the future (3-20 years) are categorised into medium-term. |
| Long-Term | 6-20 | Long-term business risks and opportunities and those impacting beyond 20 years and are identified using scenario analysis, IEA guidelines, and market forecasts, aligning with our Net-Zero 2050 goal. |

## Scenario Analysis Outcomes

The Strategy section of this report explains outcomes of scenario analysis for physical and transitional risks on Hindustan Zinc's current portfolio and value chain in short, medium and long-term. Value chain risk assessment section provides brief about risks associated with our upstream and downstream value chain.

# Journey Towards Net Zero

**2007**
123.2 MW Wind Power

**2012**
Total 273.5 MW Wind Power

**2013**
Published Energy & Carbon Policy, Initiated reporting on CDP

**2017**
16 MW Solar Power, Initiate reporting on Scope 3 emissions

**2018**
SBTi targets approved 14% reduction in Scope 1 & 2 and 20% reduction in Scope 3 by FY 2027

**2019**
22 MW Solar Power-Rampura Agucha Mine

**2020**
Sustainability goals 2025, CDP Score A

**2021**
Committed to SBTi Net Zero target and US$ 1 Bn investment in Green initiatives, Signed MoU for BEVs (Normet, Sandviks, Epiroc), Environment product declaration for Zinc


**2023**
Deployment of 1st UG Mining Electric Vehicle, Biomass utilisation in CPP, 450 MW RE RTC (PDA signed), PMP - 100% Green energy sourcing, Agreement for deploying 180 LNG, Validated and approved SBTi targets in alignment with the 1.5°C Paris Agreement

**2024**
RE REC PDA increased up to 530 MW. Launched Low Carbon Zinc 'EcoZen'

**2025**
Launched Sustainability Goals 2030, Received 3.32x water positivity certification, Deployed 180 LNG vehicles & 10 EV, signed contract for additional 100 LNG & 100 EV for IUT & FG transport

**2050**
Net Zero

**2040**
100% Green Power across HZL units

**2030**
Reduce emission by 50% (Scope 1 & Scope 2) and Scope 3 by 25% from baseline 2020

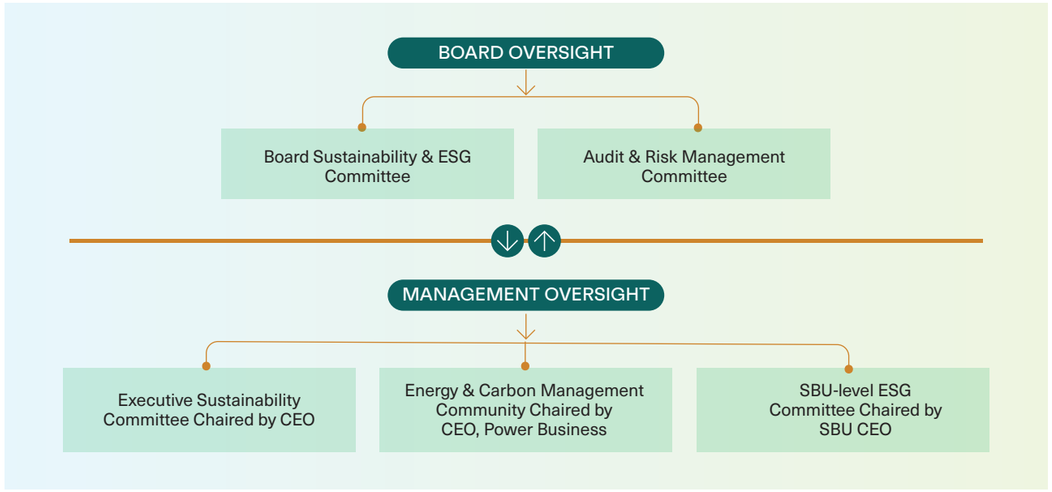
**2028**
Delivery of 530 MW RE-RTC to help reduce emissions by 3.5 million $TCO_2e$

# Governance

## Climate Change Governance

Governance is a core part of our climate risk framework, defining directions, roles, and decision-making processes to support climate goals.

It clarifies the Board and Management's roles in managing climate risks and opportunities, guiding stakeholders on the company's commitment.




## Board Oversight

Board primarily oversees sustainability across the organisation, with the CEO ultimately responsible for climate change issues. Recognising climate change as vital for long-term business sustainability, the Board integrates related considerations into business strategies, investments, targets, and risk management. It also reviews performance against goals like SBTi and HZL's Sustainability Goals. To support oversight, the Board committee receives bi-annual updates on key climate metrics, challenges, opportunities, projects, and risks.

More specifically, the Audit and Risk Management Committee (ARC) oversees HZL's overall risk management, including climate-related risks and opportunities. As a key part of Enterprise Risk Management, ARC monitors these risks at a macro level and reports mitigation progress to the Board quarterly. The ARC also reviews potential impacts on the production disruptions due to the climate-related physical and transition risks that may impact HZL's core business in short-term or long-term.

Composition of ARC

| Name of the Member | Position |
|---|---|
| Pallavi Bakhru | Chairperson |
| Anoop Kumar Mittal | Member |
| Ashish Chatterjee | Member |

## Sustainability and ESG Committee

Another important Committee at Board which plays decisive role into climate risk management is the Sustainability and ESG committee. This Committee assists the Board and is considered Tier 1 level of the governance framework in overseeing ESG, sustainability, and Net Zero goals. Chaired by an Independent Director, it oversees strategy, climate action, policy implementation, and sets & reviews long-term targets to achieve net-zero by 2050 while strengthening commitment. To ensure common approach and consistency with the HZL's strategy and policy on climate change, our CEO is one of the members of the Committee.

Composition of Sustainability & ESG Committee

| Name of the Member | Position |
|---|---|
| Anoop Kumar Mittal | Chairperson |
| Arun Misra | Member |
| Dinesh Mahur | Member |

In terms of the broad objectives of the Committee, it is entrusted with the following responsibilities:

- Laying out Sustainability Strategy, short-term and long-term objectives
- Providing guidance to ensure continual improvement in sustainability performance and implementation of appropriate processes and policies across the Company

Our ESG & Sustainability Committee of Board meets bi-annually to discuss climate-related strategies and reviews progress against the targets and goals.

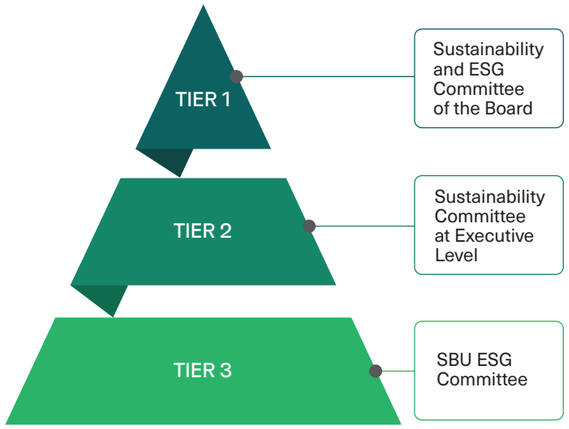
To strengthen ESG and Sustainability efforts, the Committee undergoes Learning and Development programs covering health and safety, asset integrity, climate change, and social responsibility. These areas also guide the nomination and selection of Committee members. Following were the areas wherein the Committee underwent the training on:

- Key Risks (Global Risks Report 2024)
- Risk Management Awareness Session
- ESG Awareness Session including Climate Change
- ICMM principles & position statements.

## Management Oversight

Besides managing other duties, our Management is responsible for evaluating climate change management throughout the Company and executing HZL's climate change strategies. The CEO, a member of the Board's Sustainability and ESG Committee, is the top executive responsible for climate change decisions, including approving CAPEX, OPEX, and resources for climate adaptation and mitigation.

Furthermore, we, at Hindustan Zinc have established a three-tiered sustainable governance framework as depicted below, which governs the risks and opportunities related to sustainability including climate change.




**Executive Level Sustainability communities**


To help us achieve our eight Sustainability Goals, we have established 12 sustainability communities. These communities, made up of champions from all units, regularly assess progress toward their respective goals. They meet on a monthly basis to review and discuss developments.

## Executive Level Sustainability Committee

This committee is chaired by the CEO of the Company is responsible for formulating sustainability strategies and long-term goals and targets. The committee strategically guides business decisions to ensure workplace safety, prevent environmental harm, uphold stakeholder commitment, and protect our reputation.

The committee, comprising the CEO, CFO, functional heads, community chairperson, and SBU CEOs, reviews monthly progress on Sustainability Goals including climate targets. Performance and future plans are presented bi-annually to the Board-level Sustainability and ESG Committee.

### Key decisions taken by Executive Level Sustainability Committee

- Pledge to strengthen Zero Liquid Discharge
- Adoption of an internal carbon (shadow) price of US$15 per tonne of $CO_2e$
- 100% renewable energy usage at the Pantnagar Metal Plant, Uttarakhand
- Transition to electric mobility at smelters and underground mining sites
- Plan to install Tail Gas Treatment (TGT) plants at all roasters
- Implementation of dry tailing stacks at all three tailings storage facilities
- Disclosure aligned with Taskforce on Nature-related Financial Disclosures (TNFD)
- Compliance with Business Responsibility and Sustainability Reporting (BRSR)
- Installation of EV charging stations at along with EV trucks deployment for inter-unit transport
- Launched Asia's first low-carbon Zinc, 'EcoZen'

## Energy and Carbon Management Community

This taskforce, under the Executive Sustainability Committee and chaired by the CEO of Power Business, includes energy managers from each site. It ensures strong climate governance, focusing on resilience, risk assessment, carbon pricing, energy conservation, and identifying low-energy, low-emission solutions.

## Responsibilities of the Energy and Carbon Management Community

- To drive the agenda for achieving Net Zero by 2050 or sooner aligned with SBTi
- To conduct audits and energy/ carbon risk assessments, implementing recommendations
- Guide continuous improvement in energy and carbon management through policies and processes
- To implement IFRS S2 recommendations including scenario analysis

The community tracks the Company's performance on energy conservation and CDM projects, reporting progress monthly to the Executive Sustainability Committee and seeking the chairman's guidance.

## SBU ESG Committees

Each Strategic Business Unit (SBU) has an ESG Committee to implement sustainability practices, identify and mitigate risks, and advance the ESG agenda. Over 100-line managers are aligned within a structural governance framework to monitor risks, assign responsibilities, and track progress. Energy and carbon representatives coordinate audits, risk assessments, mitigation, and report on energy conservation and emissions at the site level.

# Alignment of Remuneration Policy with Climate Goal

## Annual Performance Bonus

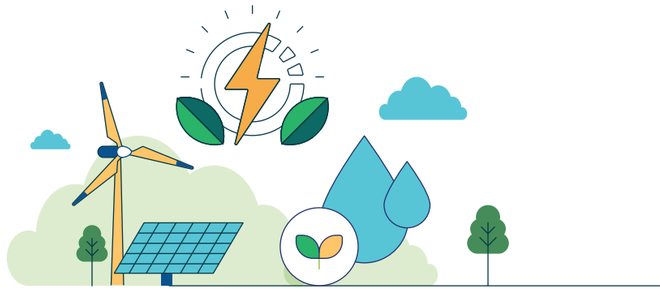
The annual performance bonus of our employees including CEO is determined by a balanced scorecard that considers financial, operational, sustainability and strategic metrics with appropriate weightage for people and individual performance.

Every employee, including the CEO and other business heads such as chief Health Safety & Environment & Sustainability (HSE&S) and Power business head are eligible for incentive plans, and are also held accountable for the Company's success in terms of health, safety, and sustainability based on the Sustainability Assurance Programme (SAP) scores as per the HZL's performance-based compensation structure.
Further, the CEO's performance KPIs in terms of the ESG parameters, are also cascaded to the Executive Committee of the Company and ultimately to the employees of the organisation. Furthermore, the Individual performance criteria of the Business Heads consider KPIs related to their performance in line with our Net Zero commitments of SBTi.
For example, the Chief HSE & Sustainability's annual bonus is tied to climate-related targets like GHG reduction, and lower freshwater use.

## Linking Employees' Compensation to ESG Performance

### Short-term incentive plan (STIP)

Variable annual pay of all employees including CEO, executive members and other senior management is linked to the sustainability performance (10% of the annual bonus) which includes climate-related goals and related KPIs which includes reduction in absolute emissions, energy & water consumption, waste generation, it also includes number of sustainability-related trainings to employees and workers and achievement of climate-related targets and Sustainability Goals and initiatives to drive production of low-carbon products. It also focusses on the Company's performance in climate-related sustainability index.



| Bucket | Performance Parameter | Weightage | Multiplier | |
|---|---|---|---|---|
| | | | APA Rating | Nil Fatality |
| **Organisational Parameters** | Volume, COP & Reserves Creation<br>EBITDA, FCF<br>Strategic/Regulatory Objectives | 60% | | |
| **HSE Parameters** | Safety (5%)<br>Sustainability/VSAP (10%) | 15% | A - 125%<br>B - 100% | Nil-100%<br>1-90% |
| **People Metrics** | MIP<br>Talent Retention/Development<br>Employee Engagement | 5% | C - 75%<br>D - 0% | 2-80%<br>>2-75% |
| **Individuals Performance** | APA Rating | 20% | | |
| **Total** | | **100%** | | |

### Long-term incentive plan (LTIP)

In the form of Employee Stock Option Scheme (ESOS) of parent company rewards employees' performance on pre-determined performance criteria (includes sustainability & climate goals, ESG and carbon footprint, like energy and water efficiency, emission reduction targets, supply chain engagement and GHG transition and water positivity) and continued employment with the Company during the vesting period of 36 months from the date of grant. Climate change considerations (ESG/Carbon footprint) constitute 15% part of our employees' stock option scheme (ESOS). The performance against carbon footprint is related to absolute emission reduction and bringing in innovative technologies to reduce dependency on non-renewable energy also increase energy efficiency to reduce emission intensity.

### Performance Parameters

| Business Category | Business Performance (40%) | | | | Individual Performance[2] | Management Discretion | Multiplier | |
|---|---|---|---|---|---|---|---|---|
| | Vol | COP | NSR | ESG / Carbon Footprint | | | APA Rating | Nil Fatality[3] |
| **Hindustan Zinc** | 60% | 15% | 10% | 15% | 40% | 20% | Sustained 3 years rating | 110% |

1. In November 2024 grant the weightage has been revised 50%
2. In November 2024 grant the weightage has been revised 30%
3. In November 2024 grant the weightage has been revised 105%

## Additional Incentives and Recognitions Being Offered to Employees

Furthermore, as part of the yearly competitions, such as Kaizen for improvement project (FIP), HZL acknowledges and rewards employees (including business heads like Chief HSE & Sustainability and Head Power business) who actively contribute to HZL's sustainability objectives, thereby minimising the Company's operational impact on the environment while being in line with our business plan.

The champions who present the most innovative ideas resulting in notable reductions in emissions and energy consumption are duly recognised and rewarded. Individual employees or teams who undertake innovative initiatives are also acknowledged and nominated for the prestigious 'Star of the Month' and 'Star Team of the Month' awards, which comes with a monetary reward of ₹ 50,000 for the team. The CEO then recognises these exceptional individuals and teams during a monthly townhall meeting called "Sampark".

The prestigious Chairman Award (Vedanta) is presented for innovative climate initiatives that support business growth, such as the deployment of a fumer plant to enhance waste utilisation and minimise transport from pant to secured landfills, thereby reducing Scope 1 emissions in line with our SBTi commitments. Additionally, the team that introduced India's first underground battery electric vehicle at the SK mine received the award for contributing to our SBTi Net Zero goals and further lowering Scope 1 emissions.

These incentives motivate leaders and employees to actively pursue projects in energy efficiency, water conservation, waste utilisation, supply chain sustainability, and emission reduction.

Furthermore, Vedanta's electric vehicle policy provides financial incentives for employees to buy 2- and 4-wheeler EVs, encouraging them to shift from conventional vehicles and aligning with our commitment to a greener future.



# Climate Policy Engagement & Advocacy Approach

**We support the Paris Agreement signed in 2015 to limit the global average temperature to well below 2°C and to take actions to limit it further to 1.5°C. In line with the same, we have SBTi validated targets to achieve Net Zero by 2050. We are also aligned with India's Nationally Determined Contributions (NDCs).**

## Governance

The Executive Sustainability Committee, led by the CEO (who also serves on the Board's Sustainability & ESG Committee), provides our feedback either by responding to consultation requests, commenting on public draft releases, or by submitting suggestions through various industry associations or representative bodies.

Members of the Executive Sustainability Committee, in collaboration Corporate Affairs team, deciding on associations and memberships with external organizations. The Corporate Affairs team ensures these affiliations align with Hindustan Zinc's climate policies and strategies. They also survey associations to confirm alignment with Hindustan Zinc's climate stance, such as support for the Paris Agreement. Additionally, the team regularly engages with stakeholders involved in climate-related policies and activities including our suppliers, customers, government bodies, industry peers, and trade groups to review and align climate-related policies, positions, and actions.

## Climate Change Policy Position

- We acknowledge the importance of adaptation and resilience for business and all our stakeholders to a changing climate
- We do not advocate for policies that undermine the Paris Agreement or discount Nationally Determined Contributions (NDCs)
- We encourage effective climate policy for private sector investment in low-carbon technologies while maintaining the competitiveness of the metals industry.
- We support the outcomes of the Paris Agreement and the long-term goal to limit global average temperature rise to well below 2°C and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels
- We support the government as they raise the ambition of their Nationally Determined Contributions (NDCs)
- We believe policy should be efficient, equitable, practical, market-driven, and promote free trade
- We welcome increased transparency in climate related disclosures, and support for consistency across standards & metrics
- We incentivise and encourage use of low emission technology and products like electric vehicles and rooftop solar

## Climate Policy and Industry Commitments

Hindustan Zinc engages with industry associations at a global, regional, national and local level to work collaboratively on best practices align on standards and regulations which may impact us.
Hindustan Zinc contributes to associations and organisations to collaborate with them and represent interest of the mining sector, non-ferrous mining in particular to the government as part of the policy making process. These associations and organisations assist policymakers by sharing information from external sources, research, and visions regarding sustainable growth for India. We provide our feedback either by responding to consultation requests, commenting on public draft releases, or by submitting suggestions through various industry associations or representative bodies.

For example, consultations on matters which might impact our business such as green credit and upcoming clean technology.

## Alignment of Advocacy Through Industry Associations

Where our membership is significant, we will collaborate with industry associations to ensure that their policy positions and advocacy are consistent with the Paris Agreement and our own public position.

## Climate and Energy Advocacy

Our responses to government consultations are guided by our overall policy positions that include support for market mechanisms, as we believe this is the best way of stimulating innovation and achieving emissions reductions at least cost. Our submissions are typically developed by subject matter experts, reviewed by government relations and legal teams, and then approved by the relevant head of the department.

### Direct Advocacy

We have engaged with the below-mentioned trade and industry chambers/associations on various subject matters:

**Green Credit:** In July 2023 we submitted comments on draft Green Credit Programme Implementation Rules, 2023, released by the Ministry of Environment, Forest and Climate Change, wherein we suggested that, credits granted may be determined based on the different types of lands restored and different climatic and geographical area, e.g., higher credit can be awarded for utilisation of barren land; innovative approaches in water stress areas, or for innovation-driven programmes which would help reduce environmental footprints related to both GHG and Non-GHG emissions, water and waste

**Suggestions and Inputs for Ministry of Mines Task Force on Greening of Mining Operation and Mineral Processing:** HZL provided inputs regarding resource use efficiency, waste management and restoration, emission reduction and frontier technology adoption. For the Taskforce incorporated by Ministry of Mines, our suggestions focused on positive incentives for value added products generated from waste and alignment of emission monitoring framework with national (BRSR) and International Standards (TNFD, etc.)

**Confederation of Indian Industries (CII):** CII works to create and sustain an environment conducive to India's development, by partnering with industry, Government and civil society, through advisory and consultative processes. We also participate in their programmes such as Climate Action Programme (CAP 2.0), which allows to share industry best practices and is in line with Paris Agreement. We are also a part of Steering Committee of CII Mission on Water, the CII Mission on Water envisions to create a Water Neutral Group 2030, this initiative will drive actionable solutions to improve water efficiency in Indian industries. Additionally, We are also part of CII National Committee on Environment, and IBBI (India Business and Biodiversity Initiative)

**International Zinc Association (IZA) Climate Change Task Force:** As part of its active participation in defining the carbon footprint of recycled content in SHG zinc production and the societal benefits of improved resource recovery in a circular economy, HZL became a member of the IZA Climate Change Task Force. The creation of a Decarbonisation Roadmap for the global zinc industry will be spearheaded by this organisation. Furthermore, IZA is striving to offer guidelines about high-quality global average SHG zinc production data so that businesses can compute product carbon and water footprints with precision.

**Task Force on Nature-related Financial Disclosures (TNFD):** We have collaborated with TNFD members to establish a market-driven framework that enables organisations to disclose and address emerging nature-related risks. Our aim is to facilitate a transition in global financial investments, redirecting them from activities that harm nature to those that have positive impacts on nature.

**Federation of Indian Mineral Industries' Sustainable Mining Initiative (SMI):** The FIMI's Code of Conduct is a voluntary commitment by the mining companies to adhere to the 10 Sustainable Mining Principles outlined in the SMI Code of Conduct. HZL, as a Governing Council Member, aligns its BRSR Disclosures with the FIMI principles. Understanding the importance and relevance of green energy transition and ease of mining, SMI initiated a study in 2024 on the adoption of cleaner vehicles in mining.

### Indirect Advocacy

**UN Global Compact:** We are a signatory member of UN Global Compact. In line with the ten principles of the UNGC, we have developed a performance matrix that is integrated into all of our strategic business functions.

**International Council of Mining & Metals:** Hindustan Zinc became a member of ICMM in August'25. Our sustainability framework is aligned with ICMM's Mining Principles, which emphasize responsible mining, environmental protection, and community engagement.

**Zinc Mark:** Aligning with the Zinc Mark initiative, an ESG assurance scheme developed by the International Zinc Association (IZA) & Copper mark, reflects our commitment to responsible sourcing and transparent reporting.

Further, we survey our memberships and keeps an eye on the advocacy efforts of all our industry associations and review them on an annual basis. This assessment includes:

- Alignment with HZL's commitment to climate change
- Impact of memberships on HZL's operations/business
- The adequacy of governance structures within the industry association
- Policy positions and advocacy
- Related to HZL's commitment to the implementation of the Paris Agreement

During our annual review, if gaps continue to persist, we conduct an internal cost/benefit analysis to determine if HZL should remain a member.

The memberships in business and industry organisations that advocate on policy issues related to mining, business and ethical industry practices are listed in the table below. This list includes organisations whose mission is advocating for public policies that may have an impact on climate policy.

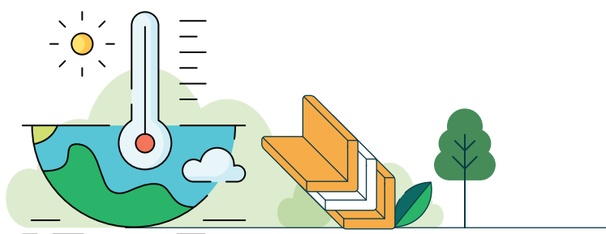
| National/ International | Organisation | Membership Fees FY 2025 | Leadership Role | Policy Positions Supporting Paris Agreement | Alignment with HZL's Position |
|---|---|---|---|---|---|
| **Global** | IZA | ₹ 57,440,877 | Member | Yes | Yes |
| **National** | UN Global Compact - INDIA | ₹ 623,550 | Member | Yes | Yes |
| **Rajasthan, India** | Confederation of Indian Industry | ₹ 330,000 | Member | Yes | Yes |
| **India** | FICCI | ₹ 120,000 | Co-Chair, Non Ferrous Mining Committee | Yes | Yes |
| **India** | Indian Chamber of Commerce | ₹ 70,000 | Member | Yes | Yes |
| **India** | Federation of Indian Mineral Industries | ₹ 150,000 | Member Managing Committee, Non Ferrous Mining Committee | Yes | Yes |
| **Gujrat** | GujMin Industry Association | ₹ 10,000 | Managing Committee | Yes | Yes |
| **Udaipur** | Udaipur Chamber of Commerce and Industries | ₹ 31,000 | Managing Committee | Yes | Yes |



# Strategy

HZL has identified and classified climate-related risks and opportunities across short-, medium-, and long-term horizons, covering both physical risks (e.g., rising temperatures, droughts, floods, extreme weather) and transition risks (e.g., policy shifts, technological changes, market dynamics, and reputational impacts). In line with IFRS S2 recommendations we used scenario analysis to assess these risks. Our strategy incorporates a broad range of risks and opportunities, mapped across two key timeframes 2030 and 2050 to address both physical and transition risks.

- For, physical risks, we used Advanced Climate Modelling and Representative Concentration Pathway (RCP) 2.6, 4.5, 6.0, 7.0 and 8.5
- For transition risks, we used IEA's Stated Policies Scenario (STEPS), Announced Pledges Scenario (APS) & Net Zero Emissions by 2050 (NZE) scenario



## Physical Risk Assessment

We conducted baseline assessment of our business units by using ThinkHazard tool to assess potential baseline physical risks.

## Direct Operations

**ThinkHazard**

| Site | Water Scarcity | Extreme Heat | Wildfire | Earthquake | River Flood | Urban Flood | Cyclone | Landslide |
|---|---|---|---|---|---|---|---|---|
| Chanderiya (Chittorgarh) | High | High | High | Medium | Low | Low | Low | Very Low |
| Rajpura Dariba Mines & Smelter (Rajsamand)* | High | High | High | Medium | Very Low | Low | Very Low | Low |
| Debari Smelter (Udaipur) | High | High | High | Medium | Very Low | Low | Low | Low |
| Kayad Mines (Ajmer) | High | High | High | Medium | Low | Low | Low | Very Low |
| Pantnagar Metal Plant (Udham Singh Nagar) | High | High | High | Medium | Medium | Low | Very Low | Very Low |
| Rampura Agucha Mines (Bhilwara) | High | High | High | Medium | Low | Low | Very Low | Very Low |
| Zawar Mines (Udaipur) | High | High | High | Medium | Very Low | Low | Low | Low |

* Rajpura Dariba Mines & Smelter consists of Rajpura Dariba & Sindesar Khurd Mines & Dariba Smelting Complex.

High Medium Low Very Low

## Climate-related physical risks

Our climate-related Physical Risk assessment is studied using the following scenarios for medium-term 2030 & long-term 2050:

| | | |
|---|---|---|
| IPCC Emission Scenario 1 | RCP 2.6 | SSP 1 (Optimistic) |
| IPCC Emission Scenario 2 | RCP 4.5 | |
| IPCC Emission Scenario 3 | RCP 7 | SSP 3 (Business as usual) |
| IPCC Emission Scenario 4 | RCP 6.0 | |
| IPCC Emission Scenario 5 | RCP 8.5 | SSP 5 (Pessimistic) |



As part of the physical risk assessment, acute risks arising out of increasing severity of extreme weather events and chronic risks resulting from longer-term changes in climate patterns were studied for all our business units.

For future hazard trends, climate change scenarios based on IPCC Representative Concentration Pathways (RCP) were used for medium-term 2030 and long-term 2050. We used WRI Aqueduct's future predictions basis Pessimistic, Business as usual and Optimistic scenario for the years 2030 and 2050.

| Site Unit | Pessimistic | | | | Business as usual | | | | Optimistic | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Risk | Water Stress | | Seasonal Variability | | Water Stress | | Seasonal Variability | | Water Stress | | Seasonal Variability | |
| Years | 2030 | 2050 | 2030 | 2050 | 2030 | 2050 | 2030 | 2050 | 2030 | 2050 | 2030 | 2050 |
| CLZS | Extremely High | Extremely High | High | Medium to High | Extremely High | Extremely High | High | Medium to High | Extremely High | Extremely High | Medium to High | Medium to High |
| ZSD | Extremely High | Extremely High | High | Medium to High | Extremely High | Extremely High | High | Medium to High | Extremely High | Extremely High | Medium to High | Medium to High |
| PMP* | Extremely High | Extremely High | High | High | Extremely High | Extremely High | High | High | Extremely High | Extremely High | High | High |
| DSC | Extremely High | Extremely High | High | Medium to High | Extremely High | Extremely High | High | Medium to High | Extremely High | Extremely High | Medium to High | Medium to High |
| RDM | Extremely High | Extremely High | High | Medium to High | Extremely High | Extremely High | High | Medium to High | Extremely High | Extremely High | Medium to High | Medium to High |
| SKM | Extremely High | Extremely High | High | Medium to High | Extremely High | Extremely High | High | Medium to High | Extremely High | Extremely High | Medium to High | Medium to High |
| RAM | Extremely High | Extremely High | High | Medium to High | Extremely High | Extremely High | High | Medium to High | Extremely High | Extremely High | Medium to High | Medium to High |
| ZWM | Extremely High | Extremely High | Medium to High | High | Extremely High | Extremely High | Medium to High | Medium to High | Extremely High | Extremely High | Medium to High | High |
| KYD | Extremely High | Extremely High | Medium to High | Medium to High | Extremely High | Extremely High | Medium to High | Medium to High | Extremely High | Extremely High | Medium to High | Medium to High |

* It is to be noted that as per Central Ground Water Board (CGWB), India, Pantnagar metal plant is not in water stress area, however, to maintain uniformity as per WRI Aqueduct, it is being reported in water stress area.

Extremely High High Medium to High Low to Medium Low

## Pantnagar Metal Plant's Flood Risk

| Site Unit | Pessimistic | | Business as usual | | Optimistic | |
|---|---|---|---|---|---|---|
| Years | 2030 | 2050 | 2030 | 2050 | 2030 | 2050 |
| PMP | Extremely High | Extremely High | Extremely High | Extremely High | Extremely High | Extremely High |

Extremely High High Medium to High Low to Medium Low

We used Network for Greening the Financial System (NGFS) for physical risk such as mean air temperature and employee productivity related to the states of Rajasthan and Uttarakhand in India where our operations are based. The baseline scenario in case of NGFS scenario analysis was 1986-2006. A summary of how the regions where our business units are located will face the risk to climate change under four RCP scenarios are presented in the table below:

| Region | Physical Risk | RCP 2.6 | | RCP 2.6 | | RCP 2.6 | | RCP 2.6 | |
|---|---|---|---|---|---|---|---|---|---|
| | | 2030 | 2050 | 2030 | 2050 | 2030 | 2050 | 2030 | 2050 |
| **Absolute change in mean air temperature** | | | | | | | | | |
| **Rajasthan** | Increase/decrease from baseline | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |
| **Uttarakhand** | Increase/decrease from baseline | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |
| **Relative change in labour productivity due to heat stress** | | | | | | | | | |
| **Rajasthan** | Percentage points increase/ decrease from baseline | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| **Uttarakhand** | Percentage points increase/ decrease from baseline | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |


## Overall Result from the Physical Risk Assessment

We have compiled potential risks that our businesses could encounter due to physical risks. We have also examined the impacts of different climate change scenarios namely RCP 2.6, RCP 4.5, RCP 6.0, RCP 8.5, which are as follows:

- Basin Water stress is extremely high for all our locations
- Riverine flood risk is high for Pantnagar, whereas Low to Medium for all other locations
- Urban Floods, Landslides and Cyclones are very low to low for all our locations
- Seasonal variability measures the average within year variability of available water supply, including both renewable surface and groundwater supplies. Higher values indicate wider variations of available supply within a year

The table below presents how each of our businesses will be impacted by climate change, this considers the risk level based on hazard, sensitivity, and adaptive capacity of the unit. This table also elaborates the impacts of climate change on the organisation's businesses, strategy, and financial planning:

| Physical Risks | Reason | Expected Impacts |
|---|---|---|
| **Raw Material Supply** | ▪ Increased Temperature<br>▪ Heat Waves<br>▪ Water Stress | **High Impact**<br>▪ High temperatures, water shortage and extreme weather variability possibly causing lower production, revenue generation and business continuity |
| **Operation Disruption** | ▪ Water Stress<br>▪ Increased Temperature<br>▪ Extreme Rainfall | **Medium to High**<br>▪ Operational disruptions or downsizing due to limited water availability<br>▪ Increased cost due to installations of cooling devices<br>▪ Supply chain disruptions due to extreme weather-related events<br>▪ Increased damage to infrastructure/structural stability due to flooding/wind speed |
| **Market Disruption** | ▪ Setback in upstream and downstream supply | **Low to Medium**<br>▪ Consumer demand might get impacted by physical events<br>▪ Revenue levels and demand forecasting might also get disrupted by extreme weather events<br>▪ Short-term impacts on trends in consumption pattern due to extreme weather events |
| **Impact on Workforce** | ▪ Direct Impact on productivity | **High Impact**<br>▪ Employee heat exhaustion and dehydration leading to lower productivity<br>▪ Increased electricity cost due to installations of air conditioning devices<br>▪ Rising temperatures in Rajasthan may lead to higher attrition rates, resulting in a loss of skilled talent and increased production costs due to rising salary expectations from the workforce. |

## Physical Climate Risk Adaptation and Mitigation

HZL has its strategic plan in place to adapt to physical climate risks across its operations for more than 10 years

| Strategy | Short-Term | Medium-Term | Long-Term |
|---|---|---|---|
| **Raw Material Supply & Operation Disruption** | ▪ Implement heat stress management programmes and establishment of LOMP ventilation requirement and chiller plant<br>▪ Storm water drains are upgraded to cater to torrential rains in all units<br>▪ Monsoon preparedness plans developed across all locations<br>▪ Alternate fuel vehicles (LNG) deployed for IUT & FG transportation | ▪ 530 MW Rrenewable Energy Round the Clock<br>- (RE-RTC) for all our locations<br>▪ Harnessing potential of RE in line with Indian commitment 500 GW NDC by 2030<br>▪ Dual sourcing and safety stock to ensure no operation disruption | |
| | ▪ Zero Liquid Discharge plants in all the mines for water recycling<br>▪ Fumer plant in CLZS to reduce jarosite (smelting waste) generation | | ▪ Increased use of renewable energy in operations thus reducing freshwater demand in Captive Thermal Power plants<br>▪ Deployment of EV vehicles in mines & transportation, contributing to lowering ambient temperatures in underground mines, thereby reducing the need for additional ventilation. |
| | ▪ Natural restoration of biodiversity by eradication of Lantana Camara and using it as alternate source of energy<br>▪ 100% fly ash utilization | ▪ Increased use of recycled water like treated municipal wastewater (sewage)<br>▪ Tailings recycling / recovery plant<br>▪ Biodiversity Park & natural forest development at CLZS | |
| | ▪ Ground water recharge systems near our operating locations to cater to water security needs to local community<br>• Infrastructure resilience through Geotextile on slope of waste dump used for green belt development and slope stability of waste dump<br>▪ Dry Tailing plant in mining operations for water recycling & infrastructure resilience | | |
| **Market Disruption** | ▪ Public Advocacy to improve durability<br>▪ Continuous interactions with value-chain partners both upstream & downstream for value chain resilience | | |
| **Impact on Workforce** | ▪ Heat stress awareness campaigns and monitoring<br>▪ Water coolers provided for all the employees. ORS & hydrants are provided to the employees Deployment of chiller units<br>▪ Health care facilities present for employee well-being & periodic health check-ups undertaken<br>▪ Monsoon preparedness plan along with emergency management plan and mock-drills<br>▪ Alerts to employees to avoid work during any extreme climate event. Employees are provided with alert notifications based on the severity of weather event | | |

| Sites | Adaptation & Mitigations in place |
|---|---|
| **Chanderiya Lead Zinc Smelter** | M: Fumer plant to reduce jarosite (smelting waste)<br>M: EV & LNG vehicles for in-house & inter-unit transportation<br>M: Miyawaki plantation<br>M: 100% fly ash utilization from CPP<br>M: Biodiversity Park & natural forest development<br>M: Development of a 16-hectare greenbelt as part of the restoration efforts for the Jarofix yard, with 6 hectares already completed<br>M: Biomass consumption for power generation<br>M: Jarofix and Jarosite utilization in cement production & road construction respectively<br>A: Zero Liquid Discharge plant<br>A: Ancillary plant for metal recovery from waste residue<br>A: Commission the tail gas treatment (TGT) plant to reduce SOx emissions in FY 2026 and FY 2027 |
| **Dariba Smelting Complex** | M: Renewable power (Solar & WHRB)<br>M: Sewage Treated water for operations<br>M: 100% fly ash utilization from CPP<br>M: Biomass consumption for power generation<br>A: Zero Liquid Discharge plant<br>A: Ancillary plant for metal recovery from waste residue<br>A: Utilization of Sewage treated water for operations |
| **Zinc Smelter Debari** | M: Renewable power (Solar & WHRB)<br>M: Sewage Treated water for operations<br>M: 100% utilisation of Jarosite in cement<br>A: Rainwater harvesting in storm water pond<br>A: Zero Liquid Discharge plant<br>A: Commission the tail gas treatment (TGT) plant in FY 2027<br>A: Utilization of Sewage treated water for operations |
| **Pantnagar Metal Plant** | M: 100% renewable power for operations<br>A: Rain-water harvesting for operational consumption |
| **Rampura Agucha Mines** | M: 4,000 KLD water treatment plant deployed in FY25<br>A: Commission India's first 10 Mtpa tailings reprocessing plant<br>A: >8.7 MCM/annum total groundwater recharge potential created in RAM for rainwater harvesting<br>A: Infrastructure resilience through Geotextile on slope of waste dump used for green belt development and slope stability of waste dump<br>A: Transition from wet to dry tailing disposal facility at Rampura Agucha in FY 2027 |
| **Zawar Mines** | M: Revamping of STP supply pipeline for reducing dependency on freshwater<br>A: Dry Tailing plant for infrastructural resilience & recycled water<br>M: Biomass consumption for power generation |
| **Rajpura Dariba & Sindesar Khurd Mines** | M: RE power consumption (Solar)<br>A: 3 underground Electric Vehicle Deployment in SKM<br>A: Dry Tailing plant for infrastructural resilience & recycled water<br>A: Utilization of Sewage treated water for operations |
| **Kayad Mine** | M: Deployed electric road sweeper to reduce annual GHG emission by c.6,000 kgCO2e |

A: Adaptation

M: Mitigation

## Transitional Risk Assessment

Key external factors like regulations, energy mix, consumer behaviour, and mineral demand for renewables were considered to model climate scenarios and assess short-, medium-, and long-term transition risks. As integrated producers of zinc, lead, and silver, we evaluate these risks and opportunities across the entire business.

Acknowledging uncertainties, we employed scenario planning to examine energy transitions over the next 20-30 years, factoring in changes in regulations, technology, markets, and reputational impacts. This included various transition risks such as shifts in carbon pricing, energy efficiency, water management rules, renewable energy regulations, technology obsolescence, and supply-demand changes for zinc, lead, and silver, as well as public and community perceptions. For these risks, we used IEA scenarios: Stated Policies Scenario (STEPS), Announced Pledges Scenario (APS), and Net Zero Emissions (NZE) 2050.

The following parameters and assumptions were considered:

- We identified transition risks, financial impacts, and vulnerabilities for scenarios with global warming exceeds 2°C and scenarios well below 2°C, focussing on the time periods of 2030 and 2050
- Scenarios were developed using publicly available data and reports from the International Energy Agency (IEA)
- Each risk was evaluated independently, without considering trade-offs between different risks
- The assessed transition risk includes policy and legal risks technology risks, and market risks

**A variety of transition risk factors were reviewed for our scenario analysis and following Transitional risk and impact were identified:**

| Risk Map | STEPS | | APS | | NZE | |
|---|---|---|---|---|---|---|
| | 2030 | 2050 | 2030 | 2050 | 2030 | 2050 |
| **Policy Action to constrain emission intensive activities & Legal increase in climate-related litigation claims.** | ▪ No foreseeable Carbon price in India, the Carbon Capture and Trading Scheme (CCTS) could impact business operations and compliance strategies<br>▪ India has no plans to pull out completely from coal will take a couple of decades through "a phase down" | ▪ No foreseeable Carbon price in India | ▪ No foreseeable carbon price in India, however as per IEA APS Scenario Emerging market and developing economies with net zero pledges to have high Carbon Price<br>▪ The Carbon Capture and Trading Scheme (CCTS) & Green taxonomy could impact business operations and compliance strategies | ▪ No foreseeable carbon price in India, however as per IEA APS Scenario Emerging market and developing economies with net zero pledges to have high Carbon Price | ▪ No foreseeable carbon price in India, however as per IEA APS Scenario Emerging market and developing economies with net zero pledges to have high Carbon Price<br>▪ Global coal supply declines by around 70% to 2035<br>▪ The Carbon Capture and Trading Scheme (CCTS) & Green taxonomy could impact business operations and compliance strategies | ▪ No foreseeable carbon price in India, however as per IEA APS Scenario Emerging market and developing economies with net zero pledges to have high Carbon Price<br>▪ Global coal supply declines by around 90% |

India Specific Regulations:
- Renewable Purchase Obligations
- Carbon Capture Trading Scheme (CCTS)
- Energy Conservation Act

The above can increase indirect (operating) cost.

| Risk Map | STEPS | | APS | | NZE | |
|---|---|---|---|---|---|---|
| | 2030 | 2050 | 2030 | 2050 | 2030 | 2050 |
| **Technology Development of emerging technology to support a lower-carbon economy** | ▪ Regulatory authority mandating use of more energy-efficient systems<br>▪ Annual intensity improvements worldwide from today to 2030 average 2.3%<br>▪ Share of unabated fossil fuels by 2050 declines from today's level by 30%<br>▪ In India coal use increases in power to 2030 and in industry to 2050 and its energy-related $CO_2$ emissions continue to rise before peaking around 2035<br>▪ Battery storage capacity sees upward trend in all the scenarios<br>▪ Total emissions of fine particulate matter (PM2.5) air pollution are largely unchanged through to 2050 | ▪ Investments required in storage systems as flexibility needs arise | ▪ Decline in unabated coal use for electricity generation.<br>▪ Rise in flexibility requirements for reliable source of renewable energy<br>▪ Annual intensity improvements worldwide from today to 2030 average 3%<br>▪ There is a 30% reduction in PM2.5 emissions between 2023 and 2050 | ▪ Phasing out of unabated coal use for electricity generation by 2040<br>▪ Rise in flexibility requirements for reliable source of renewable energy<br>▪ India's pledges to reach net zero emissions by 2070 drive a faster decline in coal demand than in the STEPS<br>▪ Expansion of wind and solar PV is complemented by stronger growth of other renewables drives down unabated coalfired power by almost 60% by 2035 | ▪ End of unabated coal use for electricity generation worldwide by 2040 | ▪ Costs to adopt/ deploy new practices and processes by changing the current processes such as phasing out Pyro Metallurgical Processes<br>▪ Increased cost due to investment in carbon capture technology |
| | ▪ STEPS sees a threefold increase in renewables that brings fossil fuel use down from 80% of total energy demand in 2023 to 58% in 2050<br>▪ By 2035, the share of solar PV and wind in electricity generation exceeds 40% globally in the STEPS, and by 2050 increases to nearly 60%.<br>▪ Critical minerals supply is also highly concentrated, and there is risk of future gaps between prospective supply and demand in all scenarios | | ▪ By 2035, clean energy meets 40% of global energy demand in the APS, and this rises to nearly three-quarters by 2050.<br>• The rapid rise of solar PV increases the need for power system flexibility to ensure electricity security<br>▪ Increased research and development (R&D) expenditures in new and alternative technologies & physical modifications | | ▪ Clean energy meets 90% of global energy demand in 2050.<br>▪ The rapid expansion of solar photovoltaic (PV) systems heightens the demand for greater flexibility in power systems to maintain electricity reliability<br>▪ Increased research and development (R&D) expenditures in new and alternative technologies & physical modifications | |

| Risk Map | STEPS | | APS | | NZE | |
|---|---|---|---|---|---|---|
| | 2030 | 2050 | 2030 | 2050 | 2030 | 2050 |
| **Market Shifts in supply and demand as consumers prefer sustainable alternatives** | ▪ Carbon Border adjustment mechanism to directly impact any EU-related expansion plans<br>▪ Low Value-Added Levelised cost of electricity from Solar PV & Offshore Wind | ▪ The projected share of EV sales in total road vehicle sales reaches 55% in 2035<br>▪ Coal production peaks around 2025 and then falls by nearly 30% to 2035, dropping by 25% in emerging market and developing economies. | ▪ Carbon Border adjustment mechanism to directly impact any EU-related expansion plans<br>▪ High Levelised cost of electricity (LCOE) from Coal<br>▪ Low Value-Added Levelised cost of electricity from Solar PV & Offshore Wind | ▪ The projected share of EV sales in total road vehicle sales reaches 70% in 2035<br>▪ Loss of market share to competitors producing cleaner products<br>▪ Global production falls by around 50% to 2035 and by nearly 80% to 2050. | ▪ Carbon Border adjustment mechanism to directly impact any EU-related expansion plans. As of now, there is no direct impact on Zinc industry in near to medium term however, our customers in steel industry look forward to low carbon zinc for galvanisation<br>▪ High Levelised cost of electricity (LCOE) from Coal<br>▪ Low Value-Added Levelised cost of electricity from Solar PV & Offshore Wind | ▪ Near universal adoption of EVs by 2035, with significant rise compared to STEPS<br>▪ Loss of market share to competitors producing cleaner products<br>▪ Global coal supply declines by around 70% to 2035 and by over 90% to 2050 |
| **Reputation Perception of an organisation's contribution to a lower-carbon economy** | ▪ Increasing consumer awareness leading to isolating companies with significant emissions<br>▪ Low emission electricity generation increases as a % of total electricity generation<br>▪ The direct use of renewables in total final energy consumption – including modern bioenergy, solar thermal and geothermal – expands significantly in each scenario | | ▪ Consumer activism will lead to loss of revenue and missed growth opportunities<br>▪ Disruption in Social Licence to operate<br>▪ Decrease in revenue due to demand for low carbon products<br>▪ Increased competition for natural resources and tensions between mining sites and local communities | | ▪ Consumer activism will lead to loss of revenue and missed growth opportunities<br>▪ Disruption in Social Licence to operate<br>▪ Decrease in revenue due to demand for low carbon products<br>▪ Increased competition for natural resources and tensions between mining sites and local communities | |
| **Liability** | ▪ The Company's strategy consists of mitigation and adaptation measures and is committed to reducing its carbon footprint by limiting its exposure to coal-based projects and reducing its GHG emissions through high impact initiatives such as investment in Renewable Energy (530 MW Power delivery agreement ('PDA') signed on a group captive basis, fuel switch, electrification of vehicles and mining fleet and energy efficiency opportunities. However, renewable sources might have inherent limitations in supplying regular power/power on timely basis, therefore existing power plants would support transition and fleet replacement is part of normal lifecycle renewal. | | | | | |

## Result from Transitional Risk Assessment

In IEA scenarios, we find that Carbon price/tax will have a high impact in 2030 and 2050. However, local regulations and policies such as Renewable purchase obligations & Carbon Credit Trading Scheme (CCTS) and Green Taxonomy are expected to impact on our business strategy as well.

As the share of renewable energy in energy mix rises, the demand for flexible system will also rise. The unavailability of the desired technology at an economical cost could directly impact the business. While our metals, Zinc and silver are vital to a green future. Zinc supports sustainable infrastructure and energy storage, while silver powers solar and electronic technologies. Both metals are essential for building a low-carbon, high-tech, and environmentally resilient economy. we anticipate a decline in demand for lead due to the obsolescence of lead-acid batteries in electric vehicles. However, lead will remain important as cost-effective and readily available component in energy storage systems.

Any negative impact on the cost of coal due to a decrease in supply from international suppliers to increase our cost of operations. Market regulations such as CBAM will directly have an impact on expansion plans. Consumer activism will lead to loss of revenue and impact the social licence to operate. With an increase in consumer demand for low-carbon products, there can be loss of market share to competitors producing cleaner and greener products.

### Considering the analysis, we summarise the strategy towards Transitional risks as follows:

| Strategy | Short-Term | Medium-Term | Long-Term |
|---|---|---|---|
| **Policy & Legal** | **Energy & Climate Change**<br>▪ Implement policies and infrastructure to promote the increased use of Renewables<br>▪ Take actions to achieve commitment to Science Based Target initiative (SBTi)<br>**Circular Economy**<br>▪ Develop policies and establish infrastructure for waste management schemes, increase recycling rates, promote circular economies & ensuring gainful utilisation of waste<br>**Commitment to Nature**<br>▪ Commitment to achieving No Net Loss (NNL) for biodiversity<br>▪ Adopting the guidelines of the Taskforce on Nature related Financial Disclosures (TNFD) | | |
| **Technology** | **Research & Development**<br>▪ Invest in new technologies to increase energy efficiency & maximise output while minimising emissions<br>▪ Utilise biomass (5-8%) as a substitute of coal<br>▪ Implement technology upgrades in phased manner<br>▪ Deploy battery electric vehicle for underground operations.<br>▪ Collaborating for the next-gen Zinc battery<br>**Adoption of best available technology to reduce freshwater consumption**<br>▪ Maintain Zero Liquid Discharge (ZLD) at all our locations<br>▪ Use of treated sewage water for operations<br>**Logistics**<br>▪ Transport of upstream goods via trains<br>▪ Deployment of LNG & EV vehicles for Interunit & Finished goods transport | **Logistics**<br>▪ Use electric vehicle/alternate fuel (LNG) vehicles for Inter Unit Transport and for transport of finished goods<br>**Energy Storage System**<br>▪ Introduction of battery/pump storage systems to meet flexibility requirements<br>**Manufacturing**<br>▪ Adoption of best available technologies to increase our use of renewable electricity, including signing a Power Delivery Agreement (PDA) for 530 MW of Renewable Energy-Round the Clock (RE-RTC)<br>**Harness Renewable Energy commitment by India**<br>▪ Aligning with India's NDC of 500 GW commitment by 2030<br>**Flexible Power System**<br>▪ Implement Storage Systems to enhance the reliability of renewable energy | **Commitment towards harnessing Green Hydrogen**<br>▪ Rajasthan has huge potential for solar power & HZL plans to harness it for green hydrogen generation to support mobility, smelter operations & energy storage<br>**Abate residual emissions**<br>▪ Implement carbon capture, utilisation and storage (CCUS)<br>▪ Hydrogen use as a replacement of coke and fuel for vehicle |

| Strategy | Short-Term | Medium-Term | Long-Term |
|---|---|---|---|
| **Market** | **Carbon Neutrality**<br>Individual commodity achieving carbon neutrality in line with customer preference for sustainable finished goods. Changing consumer preferences for low-carbon products and decarbonised upstream mining commodities will have a direct short-term impact on our revenue as the requirement of recycled input materials increases.<br>▪ We enhanced VAP share to c.22%, and remain on track to enhance it to 50% by FY 2030 through ramping up alloy plant, and developing new products like Zinc Aluminium Magnesium products, toning alloys, and special CGG products.<br>▪ We have entered into strategic agreements, including to supply zinc for innovative zinc-nickel battery development, and to undertake research and development of next-gen zinc-based batteries.<br>▪ Increase in demand for Low Carbon Zinc & Silver due to energy transition<br>▪ Use of by-products such as Fly Ash & Jarosite in cement production & road construction, contributing to a reduction in GHG emissions from consumption of virgin material<br>▪ EcoZen: Offer a low carbon Zinc (<1 $MTCO_2eq$ per MT of Metal produced) product to capture premium market opportunities | | |
| **Reputation** | **Transparent Disclosures**<br>▪ Provide transparent disclosure of our GHG emissions by scope<br>▪ Introducing Internal Carbon Price (Shadow Price)<br>▪ 3.32x water positive | | |

## Capitalising Climate Change Opportunities

- EcoZen: Offer a low carbon Zinc (<1 $MTCO_2eq$ per MT of Metal produced) product to capture premium market opportunities
- Improvement in energy efficiency and transition to clean energy sources
- Application of circular economy principles like jarosite being used by our suppliers as a substitute to gypsum
- Reducing exposure to climate-related risks can lower costs and preserve or enhance revenues
- Explore increased opportunities for collecting freshwater through rainwater harvesting which reduces exposure to climate-related risks leading to improved community relationships
- Leverage first mover advantage by expanding electrification and utilising cost-effective renewable energy resources
- Achieve low carbon emission through the use of lower emission sources of energy, supportive policy incentives, and new technologies
- Increase in demand for decarbonised/low carbon metals like Silver and Zinc providing access to new markets
- Employ new technologies and resource substitutes for diversification
- Signed MoU with Aesir Technologies, Inc., under this MoU, we will be the preferred supplier of zinc, a critical raw material for these cutting-edge next generation zinc battery technologies
- Hindustan Zinc and JNCASR collaborate for new-age Zinc-based battery technologies, this partnership aims to advance research and development of cost-effective & durable sustainable energy storage solutions with next-generation Zinc-based batteries

## Our Transitioning Pathway to a Low-Carbon Economy

**2030**

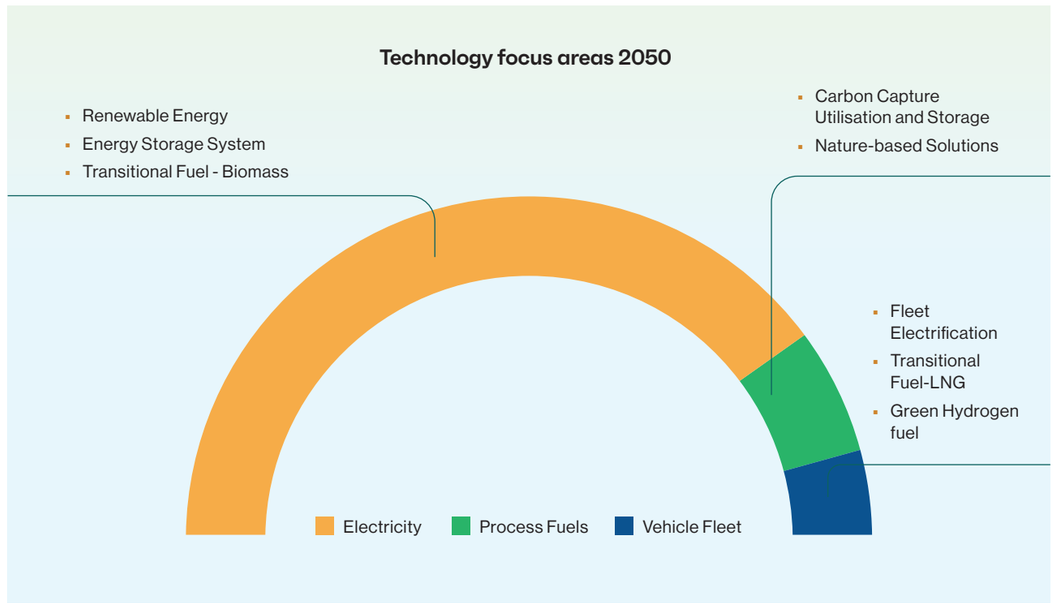
**Scope 1 & Scope 2 – Reduction by 50% Scope 3 – Reduction by 25%**

- Integrate low-carbon zinc products into our portfolio by capitalizing on the projected increase in renewable energy.
- Sourcing 70% electricity from renewable sources by FY 2028, will significantly reduce our freshwater consumption and non-GHG (SOx & NOx) emissions
- Implement energy efficiency measures to reduce energy consumption
- Drive innovation in product development to achieve recyclability and other emission during the use of final products
- Establishment of India's first zinc tailings reprocessing plant at Rampura Agucha to extract metals like zinc and silver from previously processed tailings
- Engage rigorously with the supply chain to reduce emissions associated with upstream purchased goods
- Deploy electric vehicles & alternate fuel vehicles (LNG) for IUT and finished goods transportation
- Increasing reliance on renewable energy will significantly reduce emissions associated with category 3 of scope 3
- Engage with value chain partners who are committed to achieving Net Zero commitment

**2050**

**Net Zero GHG emissions**

- Achieve 100% firm 24x7 renewable electricity at all sites
- 100% shift towards Electric or Hydrogen-driven vehicles
- Use 100% hydrogen as a substitute for Coke (as a reducing agent)
- Secondary material in production
- Offsetting of the remaining GHG emission
- Utilise Direct Air Capture (DAC) & CCUS technology to capture residual emissions
- MoU with battery manufacturers for Zinc-based batteries



# Impact of Identified Climate related issues on HZL's Strategy and Financial Planning

We recognise climate-related transition risks, driven by policy and technology as major factors currently influencing our business and likely to continue doing so. Regulatory changes such as carbon pricing and emission limits could affect metal demand and raise operational costs. While adopting low-emission technologies (like hydrogen, CCUS, and biofuels) may benefit our operations, they may also require significant capital investment and increase expenses. Additionally, physical climate risks such as water scarcity and rising temperatures could affect the health and safety of workers as well as mining operations.

In nutshell, the potential impacts of climate change may also be on assets and liabilities that are measured based on an estimate of future cash flows. The principal ways in which potential climate change impacts have been considered in the preparation of the financial statements, pertain to (a) inclusion of capex in cash flow projections, (b) recoverable amounts of existing assets, (c) review of estimates of useful lives of property, plant and equipment, and (d) assets and liabilities carried at fair value, etc. The following table summarises the financial attributes and the corresponding impacts of the same.

| | Financial Attribute | Impact |
|---|---|---|
| Capital Expenditures | ▪ Investments in Low-Carbon Solutions:<br>- We are committed to investing in innovative technologies that reduce carbon emissions<br>- Piloting projects focused on reusing/recycling waste generated in our operations<br>▪ Capital Expenditure for Emission Reduction:<br>- There is a significant capital expenditure which is allocated to achieve our greenhouse gas emission reduction targets<br>- Increasing the integration of renewable energy sources into our portfolio requires substantial investment<br>▪ Capital Expenditure for Water Management:<br>- Employ various mitigation and adaptation practices. These practices include managing water demand and supply, implementing risk management measures, adopting new technologies like ZLD's, and accounting for infrastructure costs | ▪ Climate change can exacerbate the frequency and severity of extreme weather events, leading to more frequent significant repairs and maintenance of infrastructure<br>▪ At the same time, failing to implement mitigation and adaptation strategies may lead to negative financial consequences. However, the Company is committed to taking positive steps towards its journey of becoming net zero managing water demand and supply, implementing risk management measures, adopting new technologies like ZLD's, and accounting for infrastructure costs |
| Liabilities | As the Company's assessment of the potential impacts of climate change and the transition to a low-carbon economy continues to mature, any future changes in the Company's climate change strategy, changes in environmental laws and regulations and global decarbonisation measures may impact the Company's significant judgements and key estimates and result in changes to financial statements and carrying values of certain assets and liabilities in future reporting periods. However, as of the balance sheet date, the Company believes that there is no material impact on carrying values of its assets or liabilities. | The Company's strategy consists of mitigation and adaptation measures and is committed to reducing its carbon footprint by limiting its exposure to coal-based projects and reducing its GHG emissions through high impact initiatives such as investment in Renewable Energy (530 MW Power delivery agreement ('PDA') signed on a group captive basis, fuel switch, electrification of vehicles and mining fleet and energy efficiency opportunities. However, renewable sources might have inherent limitations in supplying regular power/power on timely basis, therefore existing power plants would support transition and fleet replacement is part of normal lifecycle renewal |

## Addressing Risks and Harnessing Opportunities

### Climate-Related Risk

**Risk:** Water Scarcity

**Risk Type:** Acute Physical || Drought

**Impact:** Increased direct cost

**Timeframe:** Medium- & Long-term

**Risk**

WRI Aqueduct identifies all our Rajasthan sites as facing extreme water stress and seasonal variability, making drought the top acute physical risk in the medium to long term. Water is essential for our mining and smelting operations, and its scarcity could lead to operational disruptions and increased costs, for example, impacting the functioning of our Captive Power Plant.

**Mitigation strategy**

To manage this risk, we focus on maximizing water recycling and reuse, while also implementing rainwater harvesting to help replenish groundwater. We aim to cut freshwater use by 50% and secure low-quality water for smelting operation (from the FY2020 baseline). The 530 MW RE-RTC project will support this by reducing both freshwater reliance and carbon emissions.

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**Risk:** Carbon Tax

**Risk Type:** Transitional || Regulatory

**Impact:** Increased cost of production

**Timeframe:** Medium- & Long-term

**Risk**

There is a growing global focus on climate action, leading to the EU and UK introducing Carbon Border Adjustment Mechanisms (CBAM) that charge carbon prices on imported goods based on their emissions. The EU will start charging importers on steel and aluminum by 2027, expanding to all products by 2034. The UK's CBAM, launching in 2027, will cover emissions-intensive sectors like aluminum and steel. For Hindustan Zinc, direct impact is minimal due to low EU exposure, but indirect effects may arise if its products are used by exporters to these regions, potentially affecting demand and prices.

**Mitigation strategy**

Hindustan Zinc is shifting to renewable energy and launching products like Asia's first low-carbon zinc, EcoZen. Having reduced GHG intensity by 15% since FY2020 and goals to achieve 70% renewable energy by FY2028, the company is well-prepared for EU/UK CBAM regulations.

Hindustan Zinc has implemented internal carbon pricing at US$15/$TCO_2e$ to drive decarbonisation across operations. Pantnagar plant now runs on 100% renewable power, cutting over 30,000 $TCO_2e$. The PDA for 530 MW RE-RTC will further reduce GHG emissions

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**Risk:** Coal Availability & Cost

**Risk Type:** Transitional || Supply chain

**Impact:** Increased cost of production

**Timeframe:** Short & Medium-term

**Risk**

Hindustan Zinc operates six captive power plants powered by coal, making production sensitive to coal supply disruptions. Global trends, including IEA's APS and NZE scenarios, indicate a decline in coal availability and fossil fuel use. Additionally, geopolitical events like the Russia-Ukraine conflict impact coal cost and access, posing risks to operational continuity and revenue.

**Mitigation strategy**

Keeping this in mind, we have already started increasing our dependency on renewable energy by signing a PDA for 530 MW RE-RTC. This will not only meet more than 70% of our electricity needs by 2028 but also help reduce our carbon footprint by 3.5 mn $TCO_2e$.

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**Risk:** Regulatory

**Risk Type:** Transitional || Non-compliance to Environmental Regulations

**Impact:** Increased cost of production

**Timeframe:** Short & Medium-term

**Risk**

Non-compliance with regulatory norms on emissions (SOx, NOx, PM), waste management (hazardous waste, jarofix), effluents management, noise and green belt area poses a significant risk to the business.

**Mitigation strategy**

- Mechanisms in place to track and monitor compliance
- Investment in new technologies to minimise emissions and zero liquid discharge (ZLD) plants
- Waste management techniques, such as dry tailings stacking in place of wet disposal methods, and processing of jarosite with quick lime for sale to the cement industry, etc.
- Upgradation and installation of new systems for beyond compliance – new dust extraction system and crusher revamping at mills, and installation of additional wastewater treatment facility at locations

### Climate-Related Opportunity

| Opportunity Type | Impact | Timeframe |
|---|---|---|
| Resource Efficiency | Reduced direct cost | Short, medium and long-term |

**Opportunity**

**Resource efficiency:**

At Hindustan Zinc, our commitment to nature drives us to continually refine our practices. Given the energy and water intensity of our operations, we see sustainability as a key opportunity to boost resource efficiency and reduce environmental impact.

**Low-emission sources of energy:**

As part of its net-zero ambition, Hindustan Zinc is shifting to low-emission energy sources, supporting compliance with regulations like RPO and future schemes such as CCUS and carbon markets. The deployment of 180 LNG vehicles has already helped abate ~1,066 $TCO_2e$ emissions.

**Actions taken to realise Opportunity**

Initiatives such as improving cell house rating, installing no-load sensors on conveyors and implementing other energy-saving measures across Hindustan Zinc have resulted in cumulative energy savings of 1,04,149 GJ in FY 2025 and emission savings of 20,687 $TCO_2e$.

Hindustan Zinc is advancing water stewardship by enhancing efficiency, recycling, and rainwater harvesting. ZLD plants at all smelting sites have 31,300 KLD water saving capacity. We also collaborate with communities on watershed management to improve local water security.

With ~90% of energy needs met through electricity, Hindustan Zinc is prioritizing low-emission sources to support its net-zero goals. 530 MW RE-RTC power agreement under a group captive scheme will reduce coal dependency and operating costs.

## Opportunity: Metal Demand

| Opportunity Type | Impact | Timeframe |
|---|---|---|
| Market demand | Increased demand of Zinc, Lead and Silver | Medium-term & Long-term |

In accordance with India's ambitious renewable energy target of achieving 500 GW from non-fossil sources by 2030. we believe that our products will be at the forefront.

Zinc plays a key role in renewable energy by protecting solar panels and wind turbine structures from corrosion through galvanization. Since these systems last 25–30 years, zinc helps extend their durability. As per IEA, solar PV and wind offshore generation to see a rise in all scenarios.

Rising demand for renewables presents a strong opportunity for organic growth in our zinc business. To meet this, we have planned capacity expansions and launched Asia's first low-carbon zinc, EcoZen, with a carbon footprint 75% lower than the global average.

### Impact Due to Physical & Transitional Risk

| Impact Area | Cost occurred in FY 2025 (₹) | Mitigation Measures | Impact |
|---|---|---|---|
| Capital Expenditure | 4,970,008,806 | Tail gas treatment, zero liquid discharge, renewable energy, dry tailings plant and other positive environmental-related expenses | Lower freshwater usage, greater reliance on renewable energy, and other positive environmental-related impacts |

### Internal Carbon Pricing

Hindustan Zinc has adopted internal carbon pricing at US$15/$TCO_2e$ (₹1268.29) to guide low-carbon decision-making across all units. Integrated into capital and procurement planning, this approach supports energy efficiency, renewable investments, and alignment with SBTi targets. Despite a lower calculated price (< USD 5/ $TCO_2e$) due to the 530 MW RE-RTC agreement, the company continues using a shadow price to future-proof projects and encourage sustainable innovation. ICP is helping drive investment in clean technologies, low-carbon innovations, and renewable energy to reinforce sustainability-focused capital decisions.

### Objectives to implement ICP:

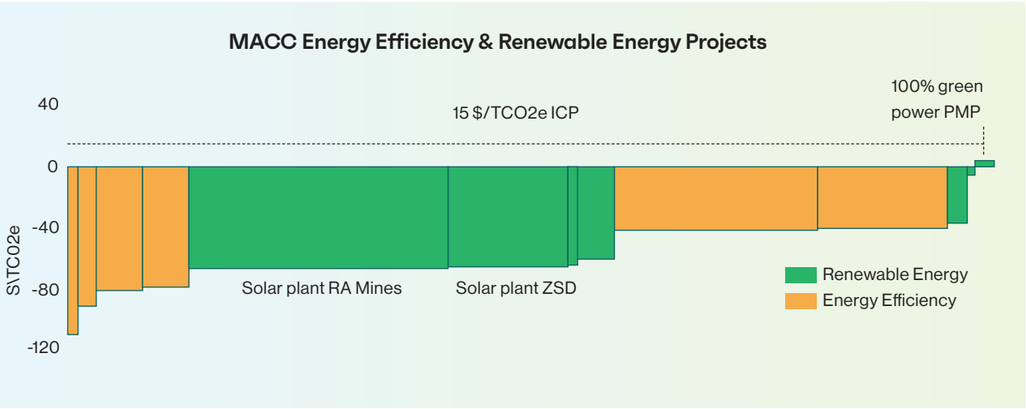
- Conduct cost-benefit analysis
- Drive energy efficiency
- Drive low-carbon investments
- Incentivize consideration of climate-related issues in decision making
- Incentivize consideration of climate-related issues in risk assessment
- Identify and seize low-carbon opportunities
- Influence strategy and/or financial planning
- Navigate regulations
- Reduce upstream value chain emissions
- Setting and/or achieving of climate-related policies and targets

### Marginal Abatement Cost Curve (MACC)

Hindustan Zinc uses a Marginal Abatement Cost Curve (MACC) to identify energy and carbon-saving opportunities. Projects are selected based on resource optimization potential, with financial viability driven by savings in electricity, diesel, and fuel use—helping reduce emissions and improve efficiency.

The MACC includes energy efficiency projects identified at Hindustan Zinc providing savings throughout the year for last 3 financial years. RE projects have been considered for their entire project life.

Most of our projects have a positive NPV. For example, installing a no-load sensor in one of our mines in FY 2023, saved over 32,000 $TCO_2e$ in a year with a negative cost of abatement, i.e., a positive NPV. Many positive NPV projects are zero operational cost projects such as process optimisation projects to increase the energy efficiency of systems.




### Notes:

- Includes Scope 1 and 2 emissions only on a $CO_2e$ basis; Scope 3 emissions excluded
- Assumes a US$ 0/t carbon tax for analysis purposes
- The MACC does not include cost or abatement related to 530 MW RE-RTC project
- Cost data for energy efficiency projects is sourced from respective project owners & site teams. This information is conceptual and will be advanced over time

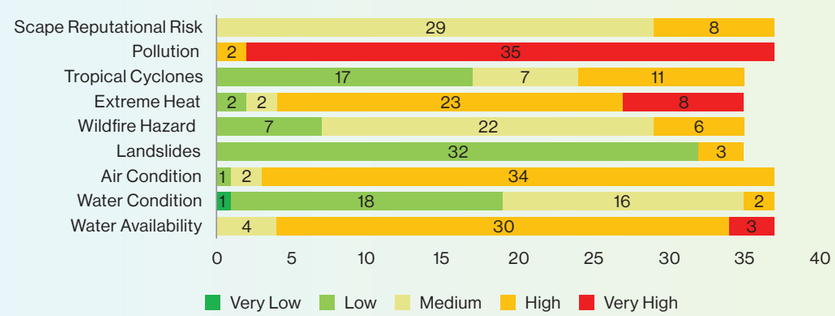
# Value Chain Risk Assessment

## Supplier Risk Assessment

Hindustan Zinc, as a responsible producer, has assessed risks related to key commodities like lime, soda ash, cement, and chemicals. A total of 37 key commodity supplier sites (cement, chemicals, diesel), parts & spares suppliers.

HZL used the WWF's Biodiversity risk filter to identify climate-related impact and dependencies of our suppliers. Using the said filter, we were able to sort the suppliers based in terms of different risk factors on overall very high-risk, high-risk, medium-risk, low-risk and very low-risk.

**Number of Supplier Sites Under Different Risk Level**




Most supplier sites face medium to high risks across categories like pollution, extreme heat, and water availability. While some risks like air and water condition show lower levels, others such as tropical cyclones and reputational risk require mitigation strategies.

## Sustainability through Supplier Collaboration

We are currently in the process of evaluating the impact of the identified climate-related risk and opportunities of our supply chain. Having a diverse set of operations, we are working towards creating a synergy with our value chain partners on decarbonisation. We are focussing on making upstream supply chain sustainable by:

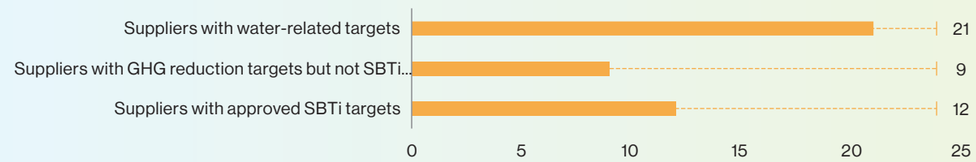
- Creating awareness and assessing ESG-related performance of suppliers (Climate/Water/Biodiversity)
- Assessing whether Sustainable Supply Chain initiatives are in line with HZL's Sustainability goal of Sustainable Sourcing
- Identifying areas of collaboration like circular economy

As part of our collaboration, we supplied slag and jarosite to our suppliers as substitutes for red ocher and mineral gypsum. This substitution reduced raw material use and GHG emissions, supporting a circular economy. For example, replacing 1% of mineral gypsum with jarosite lowers emissions linked to gypsum import. One supplier reported that using Hindustan Zinc's slag and jarosite cut transportation-related GHG emissions by 1,171 $tCO_2e$ annually. This partnership also helped Hindustan Zinc reduce landfill waste.

We connected with our suppliers by a special programme "Wednesdays for Transition", which was a series of online ESG awareness sessions with our suppliers in which we discussed topics such as Climate change, Biodiversity & Human rights etc. This programme itself helped us cover 52% of our total suppliers. 95% of total supplier by value (total 378 suppliers) have been assessed by third party for sustainable sourcing and ESG criteria during the year.

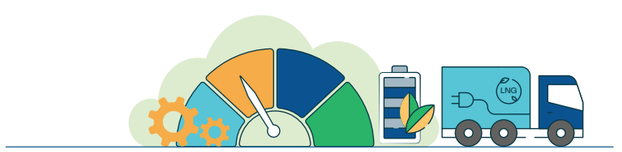
We strive to work with all our suppliers for them to set climate-related targets in the public domain.

**Suppliers with targets in public domain**



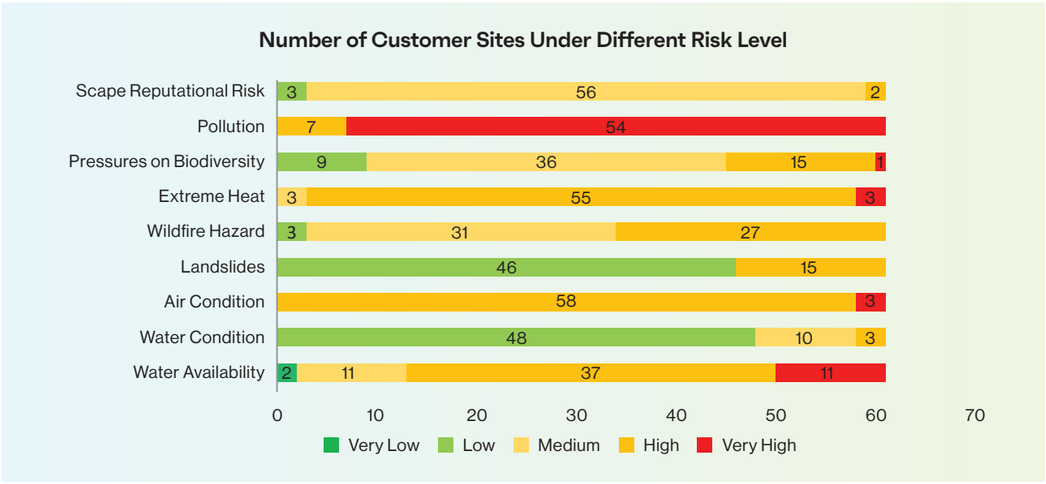

**Some actions taken by our suppliers:**

- Achieving Water positivity
- Increase in renewable energy in power mix
- Using secondary raw materials
- Environment Fund for activities and research linked to the conservation and use of ecoservices
- Sustainable Sourcing
- Use recycled/sewage treated water




## Customer Risk Assessment

We used WWF's Biodiversity risk filter to assess 61 sites of our key customers for their climate change dependencies and impacts. We identified our key customers with public climate targets and engaged with them on GHG reduction plans, offering solutions like EcoZen to support Scope 3 emission reduction targets. Responding to the galvanising industry's demand for lower-carbon products, we introduced CGG zinc alloy, reducing our and our customers' climate impact and mitigating market demand risk. CGG offers 5–10% savings in water, energy, and cost, with operational benefits. As a result, our Value-Added Product (VAP) portfolio grew to ~22% in FY 2025 and remain on track to enhance it to 50% by FY 2030.




Most customer sites fall under medium risk for reputational impact, biodiversity pressure, and wildfire hazard. Air condition risks are largely low or very low, while water availability shows a concerning number of sites in high and very high risk categories.

**The following table is the basis of the risks and mitigation being reported by some of our customers in public domain.**

| | Financial Attribute | Impact |
|---|---|---|
| Physical Risk | ▪ Operational Disruption due to extreme climate events<br>- Increased temperature<br>- Water stress<br>- Floods<br>- Cyclones<br>- Landslides | ▪ Use of sewage treated water and water recycling at operational units to reduce dependency on fresh water<br>▪ Augment structural design to avoid damage during extreme weather events like high wind speed or cyclones |
| Transitional Risk | ▪ Climate change related regulations<br>▪ Customer expectations of green products<br>▪ Increased in cost of technology for greener energy<br>▪ Cost of Carbon border taxes | ▪ Increased in consumption of renewable energy<br>▪ Increase in secondary material consumption<br>▪ Sustainable sourcing<br>▪ Ensuring zero effluent discharge<br>▪ Long-term capital expenditure plans aimed at reducing carbon emissions<br>▪ Developing Low carbon products<br>▪ Offsetting through carbon sequestration<br>▪ Our customers of lead utilise up to 80% of recycled lead |

In FY 2025, we interacted with our key customers and shall continue this exercise to align their and our ESG goals in the future.

## EcoZen: Low Carbon Zinc

Hindustan Zinc is committed to creating sustainable value for all stakeholders. As part of this, we plan to offer low-carbon zinc to support a low-carbon value chain. In FY 2022, we published our first Environmental Product Declaration (EPD) to provide transparent, comparable data on the life-cycle environmental impact of our zinc products, please click EPD.

We undertook Product Carbon Footprint of Average Low Carbon SHGZ product based on mass balance approach as per ISO 14067 Standards along with Third Party Verification by an Independent International reviewer. As per the latest verification carried out for Low carbon Zinc, the total emissions associated with our zinc produced is 5.882 $TCO_2e$/tonne of Zinc & emissions associated with low carbon Zinc is 0.939 $TCO_2e$/Tonne of Zn, which is less than 1 tonne.

Production projection of Average Low Carbon Special High Grade Zinc Product is calculated based on mass balance approach of renewable electricity and total electricity consumption mix. The graph depicts the percentage of low carbon zinc over the years.

## Features of EcoZen

- Groundbreaking Certification: Asia's First-Ever Low-Carbon Special High-Grade Zinc
- Exceptional Carbon Footprint: Less than 1 tonne of carbon equivalent per tonne of zinc produced which is 75% lesser than global industry average
- Our eco-friendly zinc is being manufactured using renewable energy
- Global Recognition - Certified through a comprehensive Life Cycle Assessment (LCA), cradle to gate approach by a renowned global sustainability firm
- Eco-Friendly Advantage - For customers looking to decarbonise their own and their customers' value chains

It helps customers manage current and future carbon regulations related to Scope 3 emissions, gives them a market advantage, and boosts their brand reputation among eco-conscious consumers.

# Risk Management


HZL leverages Enterprise Risk Management (ERM) framework, which serves as a robust mechanism to identify, assess, monitor, and respond to climate-related risks. Our ERM framework is based on Risk Management Standard, is in line with the requirements of Companies Act, 2013, SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015, and is in accordance with the leading standards and guidelines which includes ISO 31000:2018 – Risk Management, Committee of Sponsoring Organisations (COSO): Enterprise Risk Management – Integrating with Strategy and Performance (2017) and various regulations applicable in India that delineates process of risk assessment, compilation of risk registers and associated action plans, mapping of events and its mitigation. HZL's risk management system is certified as per ISO 31000:2018 risk management framework.

## Risk Identification

At HZL, risk identification focuses on recognizing uncertainties that could impact our objectives or business continuity. We follow a multi-stakeholder approach, involving employees, customers, suppliers, and business partners to identify internal, external, and emerging risks. This includes surveys, assessments, and global risk sensing for benchmarking. We also consider regulatory insights to anticipate potential risks early.

## Risk Analysis, Evaluation and Prioritisation

Our risk assessment considers causes, impacts, likelihood, and velocity (how quickly a risk affects us). We use a 5-point scale to score these factors, creating a risk score that helps management prioritize and respond effectively. Climate risk is a key part of our ERM framework, and we use a '5x5' Risk Matrix for evaluation and planning.

We have defined risk appetite and tolerance limits to assess and measure risks objectively. The Board sets the risk appetite, indicating the risks the Company is willing to take, while risk tolerance applies this through quantitative metrics. Risks impacting over 10% of projected EBITDA are rated as 'Very High' (score of 5), representing a breach of risk tolerance.

## Focus on ESG Risk Management

- Hindustan Zinc is committed to open, transparent stakeholder engagement to build trust and drive sustainable growth. We continuously engage with stakeholders to understand their perspectives and respond to evolving market conditions.
- Through regular materiality assessments, we identify key ESG topics that shape our risk management and opportunity strategies. Currently, climate change & decarbonisation, air emissions & quality, and water management are our top material priorities.
- Biodiversity and climate change are key components of our enterprise risk management due to their regulatory, financial, operational, and reputational implications. ESG considerations are integrated into our business strategy from project inception, ensuring potential impacts are assessed and mitigated early.
- Our ESG risk management approach is holistic, recognising the interconnected nature of these issues to effectively manage risks and unlock long-term value.

## Continuous Monitoring and Review

Given the dynamic nature of risks, we continuously monitor and review them through defined forums and quarterly tracking. This ensures timely responses and mitigation. We also use Key Risk Indicators (KRIs) for principal risks, serving as early warning signals to help management closely monitor risk exposure.

## Risk Governance and Oversight

The Board of Directors oversees risk management and approves policies for high-risk areas. The Audit and Risk Management Committee reviews risk practices quarterly and reports to the Board.

## Risk Infrastructure and Management

The Management Committee (MANCOM) of the Company includes risk management matters in its agenda on a quarterly basis. The Chief Risk Officer (CRO) acts as the coordinator to collate and present risk management matters to the MANCOM on a quarterly basis and presents key enterprise risks reviewed by the MANCOM to the Audit and Risk Management Committee on a semi-annual basis.

## Risk Ownership

Each HZL unit has a Unit Risk Officer who reports risks to the Central Risk Team and leads quarterly Unit Risk Councils to review risks and responses. They also monitor risks and response plans within their unit functions.

## Double Materiality Assessment

We also conduct double materiality assessment to identify key ESG topics for our stakeholders, shaping our risk management and sustainability strategies. Top priorities include climate change, health and safety, water management, and people development.

## Climate related risk identification

HZL uses a formal process at both corporate and unit levels to monitor physical and transition climate risks, helping us understand their impacts and interconnections with water and energy systems.

- Identify and list plausible uncertainties or risks with the potential to impact our functional, organisational and business objectives, or disrupt business continuity
- Identify emerging risks with a limited current response plan due to their nature, but may become a part of the risk register in future
- Multiple-stakeholder approach for effective risk identification, encouraging employee participation for early detection of emerging risks
- Engage with key stakeholders, such as customers and suppliers, to gain insights into key risks they face, for broader risk identification
- Use our understanding of regulatory and legal requirements to anticipate potential risks and events that typically precede their emergence

A wide range of relevant transition and physical risks were also taken into account in this process, including changes in the price of carbon, laws pertaining to energy efficiency and water management, renewable energy, insurance premium changes, obsolescence of technology, changes in the supply and demand for zinc, lead, and silver, shifts in public and community perceptions, drought, intense rainfall, and lightning etc.

We keep the Board and MANCOM informed of significant risks and assign staff at corporate and site levels to monitor upcoming climate regulations. Alongside ongoing risk assessments, HZL conducts specific studies to understand climate change impacts on the business.

HZL conducted physical risk assessments for 2030 and 2050 using IPCC scenarios, the World Bank's ThinkHazard tool, and NGFS impact analysis. Transitional risk scenario analysis evaluated energy transition risks, considering policy, technology, market changes, carbon pricing, regulations, and public perception using IEA's STEPS, APS, and NZE scenarios.

## Integrating Climate Change into Enterprise Risk Management Systems

HZL adapted the measures for strengthening the risk management system by integrating climate-related issues.

**Short-Term**

- Adapt enterprise and risk management processes to address losses from extreme physical risks.
- Apply the same quality checks to climate data as financial disclosures.
- Use internal carbon pricing in business decisions

**Short-Term**

- Create site-specific climate adaptation plans.
- Engage with external key stakeholders (along the supply chain) to manage risks
- Identify key suppliers vulnerable to climate and transition risks.
- Assess and quantify impact of losing critical suppliers due to climate disasters or low-carbon transitions.

**Short-Term**

- Consider insurance or additional climate fund (enhanced ICP) for emergency purpose
- Install measures to reduce exposure to physical climate risks identified



# Metrics & Targets

## Net Zero By 2050

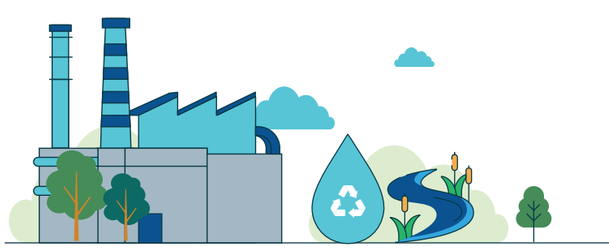
HZL has committed to Business Ambition for 1.5°C campaign of the Science Based Targets initiative (SBTi), a landmark decision taken under the oversight of the Board to align company's climate mitigation targets with the most ambitious Paris Agreement - reaching net-zero emissions by 2050 at the latest to limit global warming to 1.5°C.

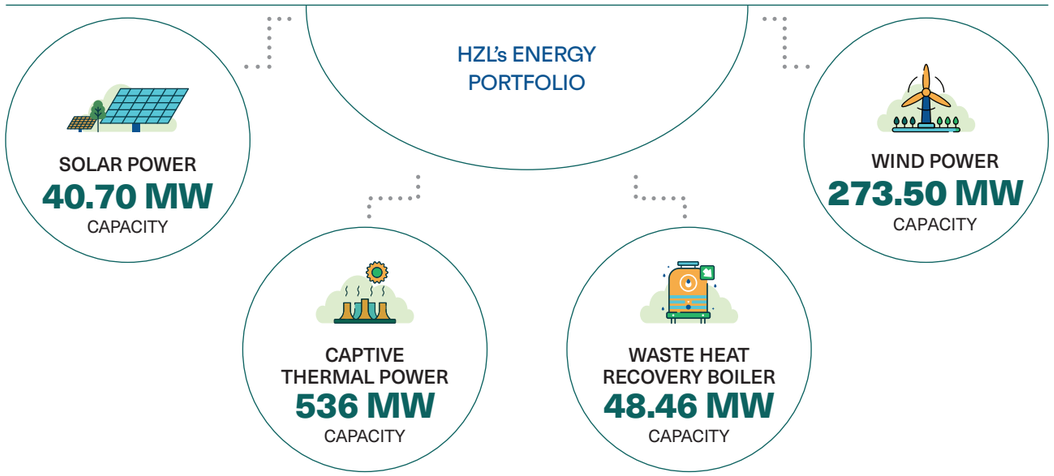
Hindustan Zinc has SBTi approved target of 50% reduction in Scope 1 & Scope 2 GHG emissions, 25% reduction in Scope 3 GHG emissions by 2030* and achieving Net Zero by 2050** from base year 2020.

* The target boundary includes land-related emissions and removals from bioenergy feedstocks

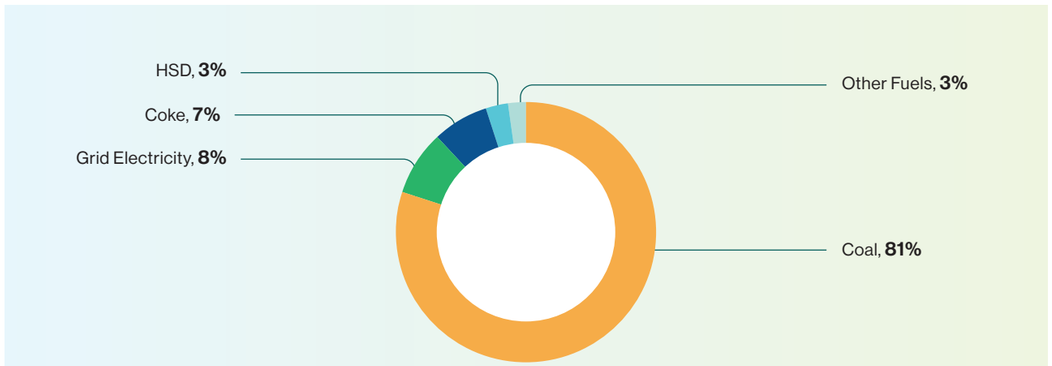
** *Hindustan Zinc Limited is a subsidiary of Vedanta. Vedanta is currently excluded from joining the SBTi due to the temporary policy surrounding fossil fuel companies; however, as Hindustan Zinc Limited meets category 2.4 of the temporary policy, science-based targets have been approved.

Major contributor (~90%) of our GHG emissions is from electricity generated at our captive thermal plants and procured from state grid. Our commitment towards transitioning to renewable energy, evident from Power Delivery Agreement of 530 MW Renewable Energy Round the Clock (RE-RTC) which will help reduce our dependency on electricity from non-renewable sources, catering to 70% of the overall power requirement by FY 2028 and reducing GHG emissions by 3.5 million $TCO_2e$ annually.






## Source-wise emission distribution



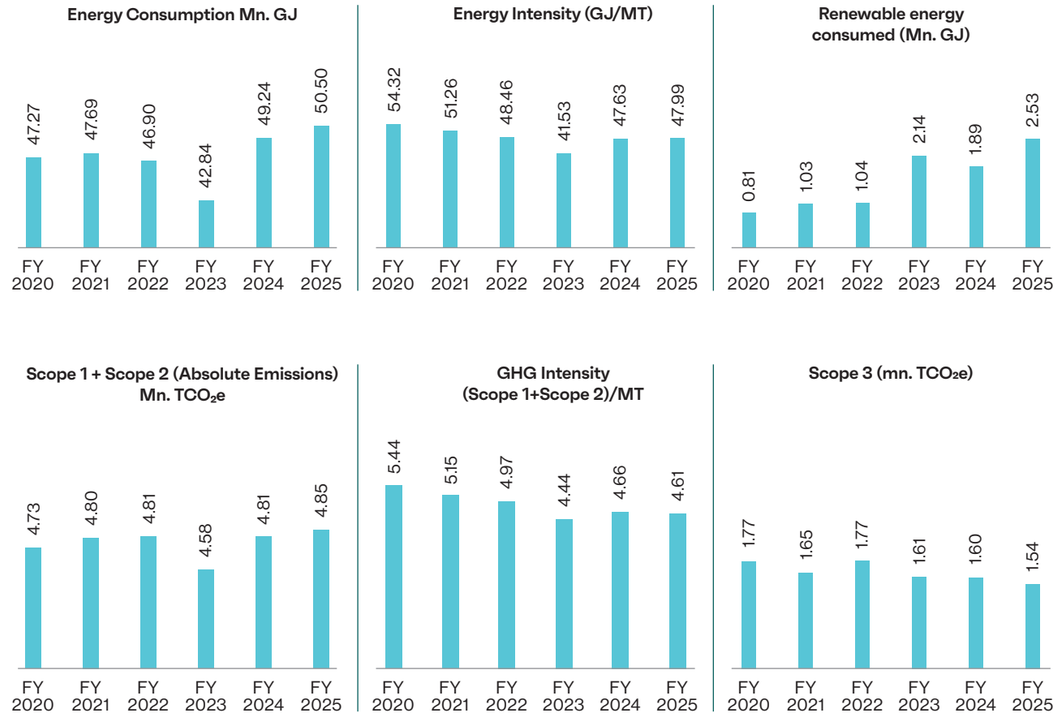

GHG emissions are calculated & reported in accordance with Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition).

During the year, total energy consumption was 50.50 MGJ this is on account of higher reliance on CPPs during FY 2025. However, the energy intensity is 12% lower than FY 2020. Our energy consumption from coal will see a decline basis our increased consumption of renewable energy from our power delivery agreement of 530 MW RE-RTC.

Multiple energy efficiency projects were undertaken in FY 2025 and have contributed to energy savings of 1,04,149 GJ & GHG emission reduction by 20,687 $TCO_2e$ (GRI 302-4 and 305-5).



## METRICS




| Scope 3 ($TCO_2e$) | FY 2023 | FY 2024 | FY 2025 |
|---|---|---|---|
| Category 1: Purchased Goods & Services | 369,654 | 432,386 | 405,165 |
| Category 2: Capital Goods | 22,454 | 2,425 | 52,984 |
| Category 3: Fuel & Energy Related Activities | 916,109 | 844,295 | 732,770 |
| Category 4: Upstream Transportation & Distribution | 9,899 | 14,196 | 27,606 |
| Category 5: Waste Generated in Operations | 8,175 | 9,631 | 16,336 |
| Category 6: Business Travel | 630 | 205 | 889 |
| Category 7: Employee Commuting | 1,252 | 1,237 | 1,385 |
| Category 8: Upstream Leased Assets | 0 | 0 | 0 |
| Category 9: Downstream Transportation & Distribution | 46,553 | 42,679 | 50,455 |
| Category 10: Processing of Sold Products | 222,527 | 236,071 | 233,089 |
| Category 12: End-of-life Treatment of Sold Products | 15,875 | 16,830 | 19,084 |
| **Total** | **1,613,128** | **1,599,955** | **1539,762** |

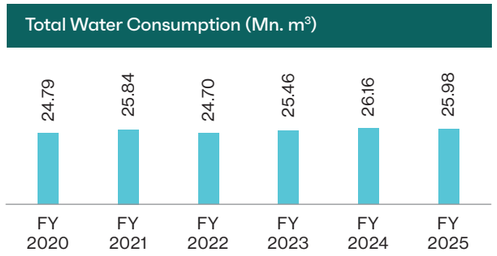
## Water Positivity

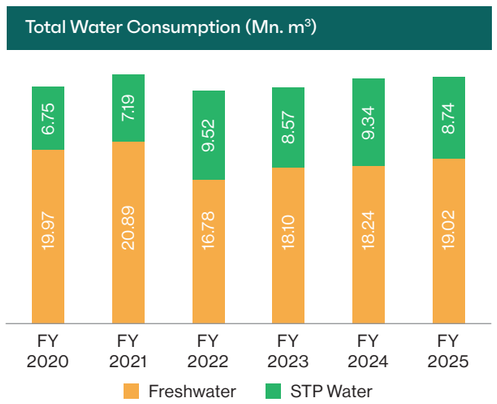
HZL is committed to long-term value creation and sees reducing freshwater use as key to sustainability. Water scarcity directly threatens operations, revenue, and costs. HZL achieved 3.32 times water positivity, as validated by an external agency, along with a 6% reduction in freshwater use from the FY 2020 baseline. Additionally, there was a 29% increase in the use of treated water from sewage treatment plants in operations. With a focus on water conservation, we proudly uphold the principle of zero liquid discharge (ZLD) across all our sites.

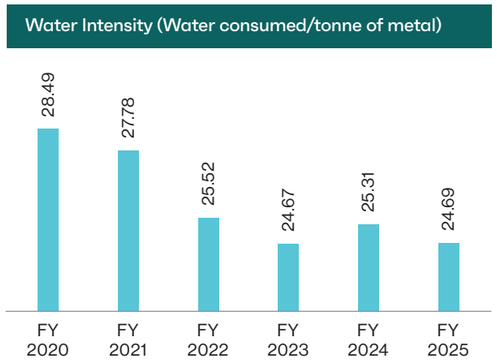
Our approach to water management includes, increasing water efficiency, and exploring new technologies which are less water intensive.

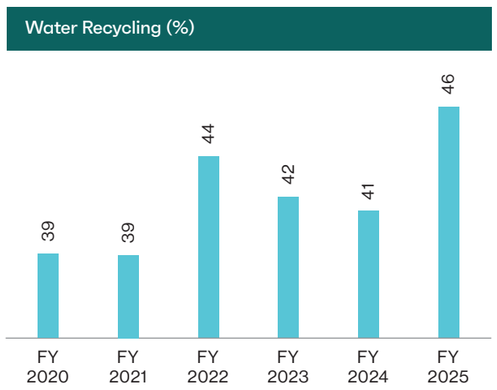
### Key actions

- Augmenting water recycling across the operations
- Exploring alternatives to freshwater
- Rainwater harvesting via localised water shed management, such as Rainwater harvesting Rampura Agucha Mines with 87 lakhs $m^3$ groundwater recharge potential
- Water risk assessment using WRI Aqueduct Water Risk Atlas and data published by CGWB
- 31,300 KLD internal recycling system implemented by integration of ZLD, ETP, RO, MEE, and MVR technologies
- Commissioning of 1.8 Mtpa paste-fill plant at Rajpura Dariba Complex has significantly reduced the water consumption by 62%
- Commissioned a second dry tailing plant (DTP) at the Rajpura Dariba Complex, building on the success of India's first DTP at Zawar Mines, recovering over 80% of water from the tailings, resulting in lower water withdrawal






# Way Forward

Tackling climate change requires the integrated efforts of all stakeholders. HZL's Climate Risk Assessment Report is just one step towards communicating our climate strategy and the climate-related risks and opportunities addressed. We initiated the climate-related risk assessment and disclosed the financial impacts of climate change on our business following TCFD recommendations. Going forward, we will continue to strengthen and broaden the scope and coverage of risk management. The following steps will be taken in this direction.

### Business Growth

Study of Climate-related risks and opportunities will be a key element for the pursuit of new business opportunities, Divestments, Mergers & Acquisitions, and Asset Capture across geographies.

### Financial Planning

As the Company's assessment of the potential impacts of climate change and the transition to a low-carbon economy continues to mature, any future changes in the Company's climate change strategy, changes in environmental laws and regulations and global decarbonisation measures may impact the Company's significant judgments and key estimates and result in changes to financial statements and carrying values of certain assets and liabilities in future reporting periods.

### Supply Chain

Going forward, Climate-related assessment will be an integral element while assessing critical suppliers.

### Market & Product

In years to come, our endeavour is to evaluate the opportunities for the new product lines to combat climate change compatible with the global markets and explore new avenues to be a strong contributor to the climate-related opportunities in consultation and joint efforts with our customers.

### Metrics & Targets

We have committed to short, medium, and long-term targets to achieve carbon, water, and waste stewardship. We are committed to adopting additional climate-related KPIs emphasising on vulnerability and impacts like duration of heat waves, green products, reputational risk score, etc.

### Alignment with IFRS S2

We have already begun aligning our strategy and governance to support the mitigative and adaptive measures and harnessing of future possibilities. We endeavour to support the principles contained in IFRS S2 and are fully committed to climate-related quantification, analysis, and assessment. We believe we are on the right path towards the alignment of the business and climate-related risks and opportunities.

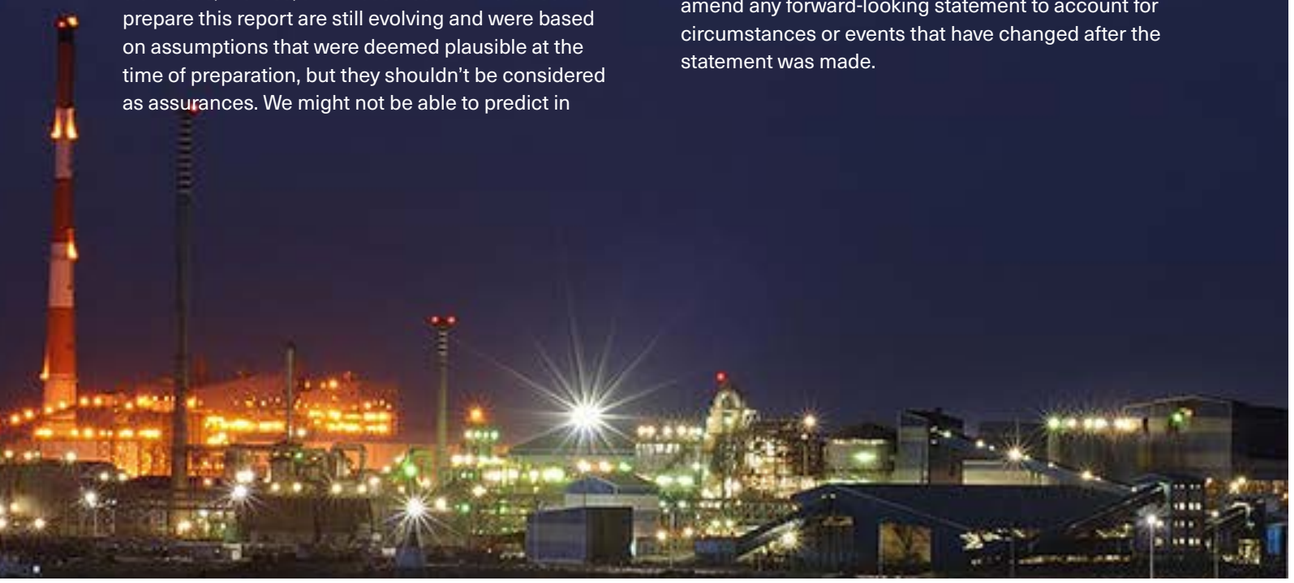
# Forward-Looking Statements

This report's disclosures are being made based on the principles contained within IFRS S2 reporting requirements, to meet investor and other stakeholder requests, and to improve our collective comprehension of how climate risk relates to HZL's major risk categories. As was mentioned above, we take a different approach to the disclosures in this report than we do to those in our mandatory disclosures.

This report contains "forward-looking statements," some of which concern our net zero aims, goals, strategy, and ambitions, among other things. Additionally, we could include forward-looking statements in other publicly accessible publications, and our management might do the same when speaking verbally with analysts, investors, members of the press, and other parties. Our forward-looking statements are not only meant for confirming our historical pattern of success but also our intentions to perform better in future.

Forward-looking statements include risks, uncertainties, assumptions, and changes in circumstance that are hard to foresee and frequently outside of our control. These assertions do not represent assurances of future performance, outcomes, or conditions. Furthermore, a lot of the standards, metrics, and measures that were used to prepare this report are still evolving and were based on assumptions that were deemed plausible at the time of preparation, but they shouldn't be considered as assurances. We might not be able to predict in advance whether or to what extent we will be able to achieve our plans, aims, or goals due to the inherent uncertainty of the estimates, assumptions, and timescales mentioned in this report. Due to a number of factors, including, among others, global socio-demographic and economic trends, energy prices, technological advancements, climate-related conditions and weather events, legislative and regulatory changes, our ability to gather and verify data regarding environmental impacts, and our ability to successfully implement our business strategy, actual results and financial condition or outcomes may differ materially from those expressed in or implied by any of these forward-looking statements. This report and other disclosures are accessible on our corporate website at https://www.hzlindia.com. These risks, along with others, could cause actual results and financial position to substantially differ from those predicted in forward-looking statements. This report includes claims that are based on hypothetical or extremely unlikely situations and assumptions; these comments shouldn't be taken as predictions of expected risk or as being indicative of existing or real danger.

Any forward-looking statement is only accurate as of the date it was made and is based on management's assumptions at the time; we do not undertake to amend any forward-looking statement to account for circumstances or events that have changed after the statement was made.



# IFRS S2 Alignment

| Pillar | Guidance | Page Number |
|---|---|---|
| **Governance** | a. The governance body(s) (which can include a board, committee or equivalent body charged with governance) or individual(s) responsible for oversight of climate-related risks and opportunities. | 16-17 |
| | b. Management's role in the governance processes, controls and procedures used to monitor, manage and oversee climate-related risks and opportunities. | 16-19 |
| **Strategy** | a. The climate-related risks and opportunities that could reasonably be expected to affect the entity's prospects | 27-39<br>46-49 |
| | b. The current and anticipated effects of those climate-related risks and opportunities on the entity's business model and value chain | |
| | c. The effects of those climate-related risks and opportunities on the entity's strategy and decision-making, including information about its climate-related transition plan. | 32-33<br>37-45 |
| | d. The effects of those climate-related risks and opportunities on the entity's financial position, financial performance and cash flows for the reporting period, and their anticipated effects on the entity's financial position, financial performance and cash flows over the short, medium and long-term taking into consideration how those climate-related risks and opportunities have been factored into the entity's financial planning. | 40-45 |
| | e. The climate resilience of the entity's strategy and its business model to climate-related changes, developments and uncertainties – taking into consideration the entity's identified climate-related risks and opportunities. | 32-33<br>37-45 |
| **Risk management** | a. The processes and related policies the entity uses to identify, assess, prioritise and monitor climate-related risks. | 50-52 |
| | b. The processes the entity uses to identify, assess, prioritise and monitor climate-related opportunities, including information about whether and how the entity uses climate-related scenario analysis to inform its identification of climate-related opportunities. | |
| | c. The extent to which, and how, the processes for identifying, assessing, prioritising and monitoring climate-related risks and opportunities are integrated into and inform the entity's overall risk management process. | |

| Pillar | Guidance | Page Number |
|---|---|---|
| **Metrics and targets** | a. Information related to greenhouse gases (GHG) | 54-55 |
| | b. Climate-related transition risks – the amount and percentage of assets or business activities vulnerable to climate-related transition risks. | We are an integrated producer of zinc, lead, and silver. Any effects from transition risks – like regulatory changes, shifts in consumer preferences, or technological advancements that promote low-carbon solutions – will impact the entire company. |
| | c. Climate-related physical risks – the amount and percentage of assets or business activities vulnerable to climate-related physical risks. | We are an integrated producer of zinc, lead, and silver. Any effects such as extreme weather events (floods, wildfires) and long-term climate changes (rising sea levels, temperature increases) – will impact the entire company. |
| | d. Climate-related opportunities – the amount and percentage of assets or business activities aligned with climate-related opportunities. | 43-44 |
| | e. Capital deployment – the amount of capital expenditure, financing or investment deployed towards climate-related risks and opportunities. | 44-45 |
| | f. Internal carbon price – Disclosure w.r.t.<br>▪ explanation of whether and how the entity is applying a carbon price in decision-making<br>▪ price for each metric tonne of greenhouse gas emissions the entity uses to assess the costs of its greenhouse gas emission | 44-45 |
| | g. Climate-related considerations in remunerations. | Pg: 20-22 |



# TCFD Mapping Index

| TCFD Pillar | Description | Disclosure | Section Reference | Page Number |
|---|---|---|---|---|
| **Governance** | Disclose the organisation's governance around climate related risks and opportunities | a. Describe the board's oversight of climaterelated risks and opportunities.<br>b. Describe management's role in assessing and managing climate related risks and opportunities. | **Governance** | 16-19 |
| **Strategy** | Disclose the actual and potential impacts of climate related risks and opportunities on the organisation's businesses, strategy and financial planning where such information is material | a. Describe the climaterelated risks and opportunities the organisation has dentified over the short, medium and long-term<br>b. Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning.<br>c. Describe the resilience of the organisation's strategy, taking into consideration different climaterelated scenarios, including a 2°C or lower scenario. | **Strategy** | 27-45 |
| **Risk Management** | Disclose how the organisation identifies, assesses, and manages climate-related risks. | a. Describe the organisation's processes for identifying and assessing climaterelated risks.<br>b. Describe the organisation's process for managing climate related risks.<br>c. Describe how processes for identifying, assessing, and managing climaterelated risks are integrated into the organisation's overall risk management. | **Risk Management** | 50-52 |
| **Metrics & Targets** | Disclose the metrics and targets used to assess and manage relevant climaterelated risks and opportunities where such information is material | a. Disclose the metrics used by the organisation to assess climate related risks and opportunities in line with its strategy and risk management process.<br>b. Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and the related risks.<br>c. Describe the targets used by the organisation to manage climate related risks, and opportunities and performance against targets | **Metrics and Targets** | 55 |

# List of Abbreviations

| | |
|---|---|
| **APS** | Announced Pledges Scenario |
| **CAGR** | Compound Annual Growth Rate |
| **CAPEX** | Capital Expenditure |
| **CBAM** | Carbon Border Adjusted Mechanism |
| **CCUS** | Carbon Capture, Usage & Storage |
| **CLZS** | Chanderia Lead Zinc Smelter |
| **CPCB** | Central Pollution Control Board |
| **CPP** | Captive Power Plant |
| **DSC** | Dariba Smelting Complex |
| **ZSD** | Zinc Smelter Debari |
| **ERM** | Enterprise Risk Management |
| **ESOS** | Employees' Stock Option Scheme |
| **EV** | Electric Vehicle |
| **GHG** | Greenhouse Gas |
| **HSE & S** | Health Safety Environment & Sustainability |
| **HZL** | Hindustan Zinc Limited |
| **SBU** | Strategic Business Unit |
| **IEA** | International Energy Agency |
| **IFRS** | International Financial Reporting Standards |
| **IPCC** | Intergovernmental Panel on Climate Change |
| **IUT** | Inter Unit Transport |
| **IZA** | International Zinc Association |
| **JNCASR** | Jawaharlal Nehru Centre for Advanced Scientific Research |
| **KM** | Kayad Mines |
| **KPIs** | Key Performance Indicators |
| **MACC** | Marginal Abatement Cost Curve |
| **MANCOM** | Management Committee after MACC |
| **NDCs** | Nationally Determined Contributions |
| **NGFS** | Network for Greening the Financial System |
| **NPV** | Net Present Value |
| **NZE** | Net Zero Emissions |
| **OPEX** | Operating Expense |
| **PDA** | Power Delivery Agreement |
| **RAM** | Rampura Agucha Mines |
| **RCP** | Representative Concentration Pathway |
| **RDM** | Rajpura Dariba Mines |
| **RE** | Renewable Energy |
| **REC** | Renewable Energy Certificate |
| **RPO** | Renewable Purchase Obligations |
| **RTC** | Round the Clock |
| **SBTi** | Science-Based Targets Initiative |
| **SEBI** | Securities and Exchange Board of India |
| **SKM** | Sindesar Khurd Mines |
| **SSP** | Shared Socioeconomic Pathways |
| **STEPS** | Stated Policies Scenario |
| **TCFD** | Task force on Climate-related Financial Disclosures |
| **VSAP** | Vedanta Sustainability Assurance Programme |
| **WRI** | World Resources Institute |
| **WWF** | World Wide Fund |
| **ZLD** | Zero Liquid Discharge |
| **ZM** | Zawar Mines |

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**INDEPENDENT PRACTITIONER'S LIMITED ASSURANCE REPORT ON SELECT NONFINANCIAL INDICATORS CONTAINED IN HINDUSTAN ZINC LIMITED'S CLIMATE ACTION REPORT**

The Management and Board of Directors
Hindustan Zinc Limited
Yashad Bhawan, Udaipur - 313004
Rajasthan, India

## Scope

We have been engaged by Hindustan Zinc Limited (hereafter "Hindustan Zinc" or the "Company") to perform a 'limited assurance engagement,' as defined by International Standards on Assurance Engagements 3000 (Revised), here after referred to as the engagement, to report on select nonfinancial indicators as per Annexure 1 (the "Subject Matter") contained in Hindustan Zinc's Climate Action Report **as of September 16, 2025 for the year ended March 31,2025 and for the period from April 01,2024 to March 31, 2025 (the "Report").**

Other than as described in the preceding paragraph, which sets out the scope of our engagement, we did not perform assurance procedures on the remaining information included in the Report, and accordingly, we do not express a conclusion on this information.

## Criteria applied by Hindustan Zinc

In preparing the **Subject Matter** Hindustan Zinc has applied a basis of preparation as per Annexure 1 of this Assurance Report (the "Criteria"). As a result, the subject matter information may not be suitable for another purpose.

## Hindustan Zinc's responsibilities

**Hindustan Zinc's** management is responsible for selecting the Criteria, and for presenting the **Subject Matter** in accordance with that Criteria, in all material respects. This responsibility includes establishing and maintaining internal controls, maintaining adequate records and making estimates that are relevant to the preparation of the Subject Matter, such that it is free from material misstatement, whether due to fraud or error.

## Our responsibilities

Our responsibility is to express a conclusion on the presentation of the Subject Matter based on the evidence we have obtained.

We conducted our engagement in accordance with the International Standard for Assurance Engagements Other Than Audits or Reviews of Historical Financial Information ('ISAE 3000 (Revised)'), and the terms of reference for this engagement as agreed with Hindustan Zinc on March 04, 2025. Those standards require that we plan and perform our engagement to express a conclusion on whether we are aware of any material modifications that need to be made to the Subject Matter in order for it to be in accordance with the Criteria, and to issue a report. The nature, timing, and extent of the procedures selected depend on our judgment, including an assessment of the risk of material misstatement, whether due to fraud or error.

We believe that the evidence obtained is sufficient and appropriate to provide a basis for our limited assurance conclusions.

## Our independence and quality management

We have maintained our independence and confirm that we have met the requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants and have the required competencies and experience to conduct this assurance engagement.

We also apply International Standard on Quality Management 1, Quality Management for Firms that Perform Audits or Reviews of Financial Statements, or Other Assurance or Related Services engagements, which requires that we design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

## Description of procedures performed

Procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Our procedures were designed to obtain a limited level of assurance on which to base our conclusion and do not provide all the evidence that would be required to provide a reasonable level of assurance.

Although we considered the effectiveness of management's internal controls when determining the nature and extent of our procedures, our assurance engagement was not designed to provide assurance on internal controls. Our procedures did not include testing controls or performing procedures relating to checking aggregation or calculation of data within IT systems.

A limited assurance engagement consists of making enquiries, primarily of persons responsible for preparing the **Subject Matter** and related information and applying analytical and other appropriate procedures.

Our procedures included:

- Assessing the suitability of the criteria used by the entity in preparing the subject matter
- Conducting interview of select representatives of Company's management to understand the reporting process, including management's processes to identify Hindustan Zinc's material climate-related risks and opportunities;
- Obtained an understanding of the control environment, processes and information systems relevant to the preparation of the information subject to limited assurance, but did not evaluate the design of control activities or test their operating effectiveness
- Inspected, at selected sites, a limited number of samples as appropriate to check the accuracy of the data:
  - Chanderia Lead Zinc Smelter
  - Dariba Smelting Complex
  - Zawar Mines

- Rampura Agucha Mine
- Rajpura Dariba Mine
- Sindesar Khurd Mine
- Kayad Mine
- Debari Zinc Smelter
- Pantnagar Metal Plant
- Head Office, Udaipur

- Conducted analytical procedures, as appropriate; and made inquiries of management to obtain explanations for any differences we identified
- Evaluated the overall presentation of the subject matter to determine whether it is consistent with the criteria and in line with our overall knowledge of, and experience with, the entity's operations.

We also performed such other procedures as we considered necessary in the circumstances.

## Other Information

- The Company's management is responsible for the other information. The other information comprises the information included within the Climate Action Report other than Subject Matter and our independent assurance report dated September 16, 2025, thereon.
- Our conclusion on the Subject Matter does not cover the other information and we do not express any form of assurance thereon. In connection with our assurance engagement of the Subject Matter, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the Subject Matter or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

## Exclusions

- Data and information outside the defined reporting period: April 01, 2024 – March 31, 2025;
- Data and information on economic and financial performance of the Company;
- Data, statements and claims already available in the public domain through Annual Report, or other sources;
- The Company's statements that describe the expression of opinion, belief, inference, aspiration, expectation, aim or future intention;
- The Company's compliance with regulations, acts, guidelines with respect to various regulatory agencies and other legal matters.

## Conclusion

Based on our procedures and the evidence obtained, we are not aware of any material modifications that should be made to **the Subject Matter as of September 16, 2025 for the year ended** March 31,2025 **and for the period from** April 01,2024 to March 31,2025, in order for it to be in accordance with the Criteria.

## Restricted use

Our Limited Assurance report has been prepared and addressed to the Management and Board of Directors of Hindustan Zinc Limited at the request of the Company solely, to assist the Company in reporting on its climate related performance and activities. Accordingly, we accept no liability to anyone other than the Company. Our Limited Assurance Report should not be used for any other purpose or by any person other than the addressees of our report. We neither accept nor assume any duty of care or liability for any other purpose or to any other party to whom our report is shown or into whose hands it may come without our prior consent in writing.

For **S.R. Batliboi & CO. LLP**
Chartered Accountants
Firm's Registration No.: 301003E/E300005

Amit Chugh
Digitally signed by Amit Chugh
DN: cn=Amit Chugh, o=Personal, email=amit.chugh@srb.in
Date: 2025.09.16 20:29:43 +05'30'

Amit Chugh
Partner
Membership No.: 505224
UDIN: 25505224BMLAFG9390
Place of Signature: Gurugram
Date: 16 September 2025

# Annexure-1

| Indicator | Basis of preparation |
|---|---|
| Total scope 1 emissions | Total absolute direct greenhouse gas emissions generated within own operations during the reporting period, calculated basis Greenhouse Gas Protocol (A Corporate Accounting and Reporting Standard) |
| Total scope 2 emissions | Indirect greenhouse gas emissions due to purchased energy during the reporting period, calculated basis Greenhouse Gas Protocol (A Corporate Accounting and Reporting Standard) |
| Total scope 3 emissions | Greenhouse gas emissions in the value chain during the reporting period, calculated basis Greenhouse Gas Protocol (Corporate Value Chain Accounting and Reporting Standard). |
| Internal carbon price | The price for each metric tonne of greenhouse gas emissions the entity uses to assess the costs of its greenhouse gas emissions and how the entity is applying carbon price in decision making; |
| Percentage of executive management remuneration recognised that is linked to climate related considerations. | Remuneration for executives and employees tied to sustainability achievements, including emission reductions and resource efficiency improvements. |

HINDUSTAN ZINC
Zinc & Silver of India


**HINDUSTAN ZINC LIMITED**

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**Hindustan Zinc Facebook Page**
https://www.facebook.com/HindustanZinc/

**Hindustan Zinc Twitter Handle**
https://twitter.com/Hindustan_Zinc

**Hindustan Zinc LinkedIn Page**
https://www.linkedin.com/company/hindustanzinc/

**CEO-HZL Twitter Handle**
https://twitter.com/CEO_HZL