

Unwavering Focus



Unprecedented Outcomes

Hindustan Zinc Limited
Investor Presentation FY 2020-21

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A Glimpse into Hindustan Zinc Limited (HZL)

Profile

A fully integrated zinc-lead-silver producer with five decades of experience and expertise in mining and smelting. Headquartered in the mineral-rich belt of Udaipur in Rajasthan and a subsidiary of Vedanta Limited

Vision

Be the world's largest and most admired Zinc, Lead & Silver Company

Mission

- > Enhance stakeholder value through exploration, innovation, operational excellence, safety and sustainability
- > Be the lowest cost producer
- > Maintain market leadership and customer delight

Largest UG Mine
at Rampura Agucha, Globally

4th Largest
Zinc Smelter Globally

6th Largest
Silver Producer Globally

25+ Years
Mine Life*

India's largest & only
integrated producer of
zinc, lead and silver

2nd largest zinc-lead miner
& one of the lowest-cost
producers of
zinc globally

Ranks #1 in Metals
& Mining category
(Asia-Pacific) and 7th
globally in Dow Jones
Sustainability Index 2020

Included in list of A
rated companies for
Climate Change Carbon
Disclosure project

(As on 31st March, 2021, Source: Wood Mackenzie for global mine/smelter rankings for zinc-lead mine and cost, World Silver Institute for silver producer rankings, S&P & RobecoSAM for DJSI ranking, CDP not-for profit global organization for A listing)
* Reserves & Resources (R&R) at current rate of metal production



Integrated Business Operations provide Competitive Edge



Mines

6 Mines with Ore production capacity of

15.5 Mt



Smelters & Refineries

2 Smelters and Zinc-Lead-Silver metal refineries with total Metal Capacity

1.123 Mt



Exploration

Total Reserve & Resource (R&R) capacity of

447.9 Mt



Captive Power Plants (CPP)

3 Gold standard CPPs with total capacity of

561.9 MW

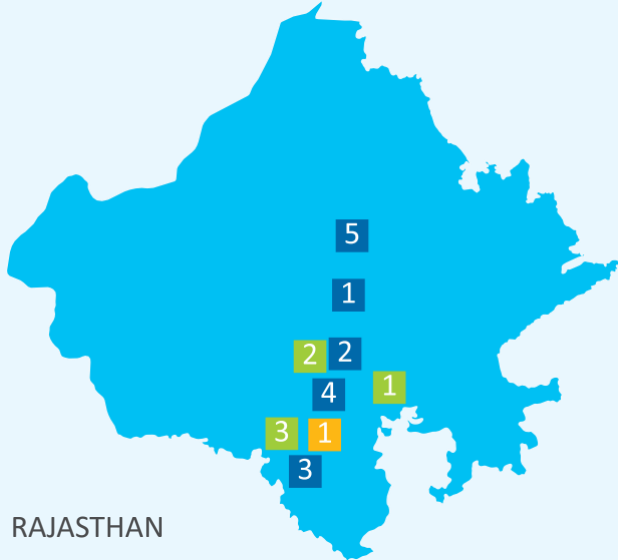
(Thermal - 485.5 MW
Solar - 40.42 MW
WHRB - 35.27 MW)

Performance in FY 2020-21

Mines	Ore Mined		Zinc				Lead			
	2019-20	2020-21	2019-20		2020-21		2019-20		2020-21	
	('000 Tonnes)	('000 Tonnes)	('000 Tonnes)	(%)	('000 Tonnes)	(%)	('000 Tonnes)	(%)	('000 Tonnes)	(%)
Rampura Agucha	3,940	4,273	381	11.13	415	10.89	33	1.62	38	1.61
Kayad	1,139	1,175	70	6.86	56	5.15	7	0.92	7	0.8
Zawar	3,271	3,951	72	2.52	89	2.48	54	1.94	62	1.86
Rajpura Dariba	1,038	1,215	37	4.85	38	4.6	7	1.18	8	1.22
Sindesar Khurd	5,078	4,842	160	3.37	157	3.39	95	2.05	100	2.2
Total	14,465	15,457	720	5.64	756	5.45	197	1.77	216	1.78



Growing Portfolio of Strategic and Value Accretive Assets



RAJASTHAN

Mines

- 1 Rampura Agucha Mine (RAM)
- 2 Sindesar Khurd Mine (SKM)
- 3 Zawar Mining Complex (ZM)
- 4 Rajpura Dariba Mine (RDM)
- 5 Kayad Mine

Smelters

- 1 Chanderiya Lead-Zinc Smelter (CLZS)
- 2 Dariba Smelting Complex (DSC)
- 3 Debari Zinc Smelter (DZS)

Headquarter

- 1 Udaipur

Map not to scale. For illustrative purposes only.

MINES

Mines	Key Stats			
	Reserve (Mt)	Resource (Mt)	Reserve Grade Zn (%)	Reserve Grade Pb (%)
Rampura Agucha Mine	42.7	34.5	11.9	1.4
Sindesar Khurd Mine	45.3	66.2	3.3	2.1
Zawar Mining Complex	31.5	111.1	3.1	1.6
Rajpura Dariba Mine	28.2	41.1	5.0	1.7
Bamnia Kalan	0	41.9	0	0
Kayad Mine	2.6	2.7	6.8	0.8

R&R SUMMARY

Category	Key Stats			
	Tonnage (Mt)	Zn (%)	Pb (%)	Ag (g/t)
Reserve	150.3	6.1	1.7	61
Mineral Resource – Measured and Indicated	122.9	4.9	1.9	63
Mineral Resource – Inferred	174.8	5.1	2.3	66

SMELTERS

Smelters	Key Stats			
	Pyrometallurgical Zinc Smelter (TPA)	Pyrometallurgical Lead Smelter (TPA)	Hydrometallurgical Zinc Smelter (TPA)	Lead Smelter (TPA)
Chanderiya Lead-Zinc Smelter	1,05,000	90,000	4,80,000	-
Dariba Smelting Complex	-	-	2,40,000	1,20,000
Debari Zinc Smelter	-	-	88,000	-

Smelting and Power Summary

Category	Key Stats
Zinc Smelting	9,13,000 TPA
Lead Smelting	2,10,000 TPA
Silver Refining	800 TPA
Thermal Power	485.5 MW
Wind Power	273.5 MW
Solar Power	40.42 MW
WHRB Power	35.27 MW

Solid Portfolio with Strong Growth Fundamentals

Refined Zinc (Zn)



Production volume

7,15,445 tons

Revenue

₹ 13,961 crore

Outlook

Global demand shrunk by 4.6% in CY 2020 due to pandemic. It is expected to grow by 4.7% in CY 2021 and 2.3% in CY 2022 and CY 2023.

Demand drivers

- 5G roll-out to boost demand for transmission towers and Zinc to galvanise bars for corrosion protection
- Shift to renewable energy and Electric Vehicles (EV) to open potential for zinc batteries as an emerging technology over lithium variants
- Zinc metallization of railway tracks
- Galvanized steel in car bodies

Refined Lead (Pb)



Production volume

2,14,399 tons

Revenue

₹ 3,281 crore

Outlook

Demand and production shrunk by 3.6% and 7.4% respectively in CY 2020 and are expected to grow by 4.5% and 3.6% respectively in CY 2021. Price per ton is expected to rise from \$1,824 in CY 2020 to \$2,055 in CY 2021.

Demand drivers

Lead Acid Battery industry, driving 80% of lead demand, is expected to witness sustained demand as next generation EVs deploy them for starting, lighting and ignition SLI battery applications.

Refined Silver (Ag)



Production volume

706 tons

Revenue

₹ 4,378 crore

Outlook

Demand was impacted and production of major producers dropped significantly in CY 2021. Physical investments though increased by 27%. Demand rebound is expected due to low interest rate and silver credentials. Prices expected to average \$27.30 in CY 2021 with a peak to \$32.

Demand drivers

- Rising consumer confidence
- Increased focus and incentive on local manufacture of solar panels in India will drive demand of silver paste
- Low industrial demand in India compared to globally

Commodity Super Cycles to drive demand of metals

Signs of new commodity super cycle – a decade-long period in which commodities trade above their long-term price trend – are evident. Near-zero interest rates across developed nations are fueling pent-up demand and further contributing to super cycle. Prices of base metals, including Zinc and Lead that have risen on back of this are to further rise in CY 2021 and CY 2022.

Scaling Business Opportunities with Digital

Robust digital infrastructure

EVOLVE

An e-commerce platform for live exchange benchmarked prices and delivery for zinc and lead metals for as low as one ton

Dhristi

Real-time connectivity in mines

North Star

Connected workforce: Smart, Quick, Core

Sarathi

Connected logistics

Digital Soft Sensor

For prediction of particle size in real time



Exploring new generation digital technologies across value chain to drive productivity, efficiencies, performance and safety standards

Deployed OSIsoft-PI system to integrate multiple databases and systems

DIGITAL FOCUS

Creation of digital roadmap

Hiring specialized manpower in niche areas of AI, intelligent automation and advanced optimization



Scaling Business Opportunities with Digital

Amplifying online metal buying experience with EVOLVE

Convenience

Low order quantity and live prices

120+

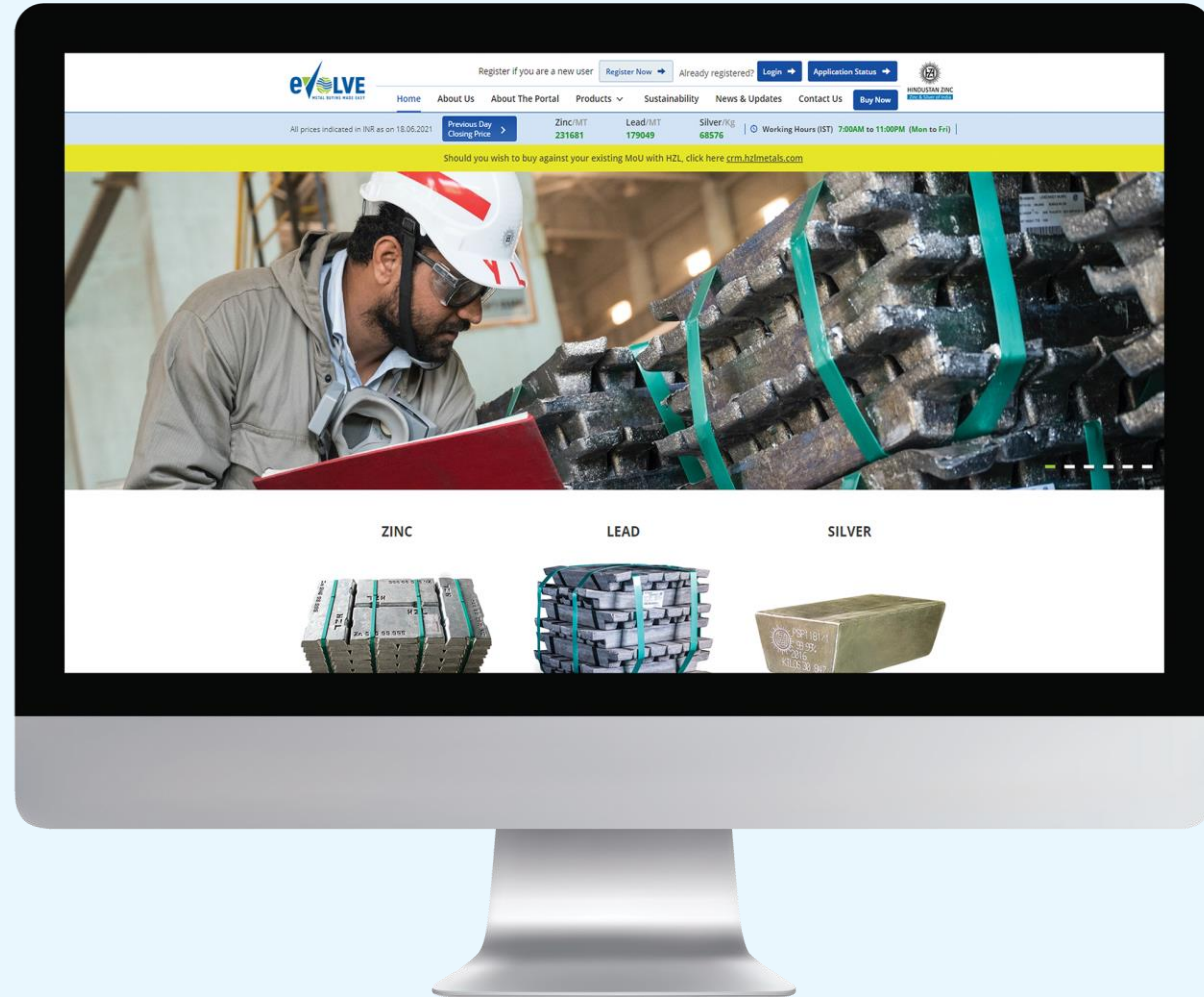
MSME customers

5,500+ tons

sale of metal in just six months

CII and SAP Ace Awards

for best e-commerce portal and technology innovation



High Performance Environment with Engaged People



Culture of Continuous Learning

- **Work Integrated Learning Programs (WILP)** to enhance skills and future-readiness
- **Graduate Engineer Trainee Induction program** to shape new employees as professionals and high performers
- **16,613 training man-days** for Executive's skill upgradation

Building Talent Pool of High Potentials

- **ACT UP program** to identify and fast-track careers of current leaders
- **167 qualified** bright minds assessed for technical and behavioral competencies

Leadership Pipeline

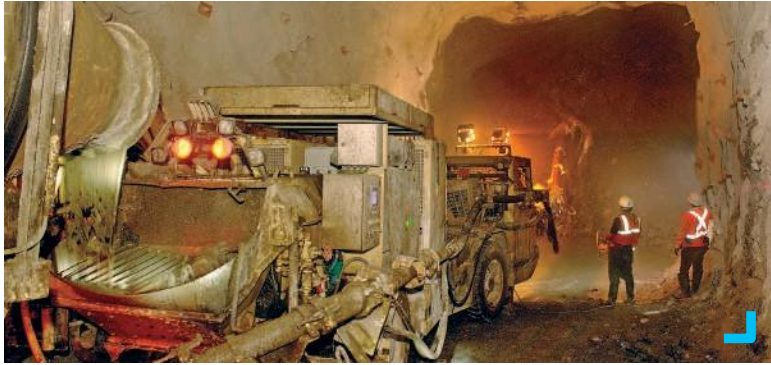
- **V BUILD CEO** theme-based workshop chaired by senior leadership to identify and promote young leaders
- **49 leaders** identified as V-Build Talents in FY 2021
- **73 leaders** covered under Lead program to build leadership skills
- **28 leaders** provided Executive Coaching to improve leadership effectiveness
- **32 leaders** covered under a 6-month Managerial Effectiveness Program
- **4 women leaders** covered under SHE Leads coaching-based leadership program



1,162

Learning and Development
Programs conducted

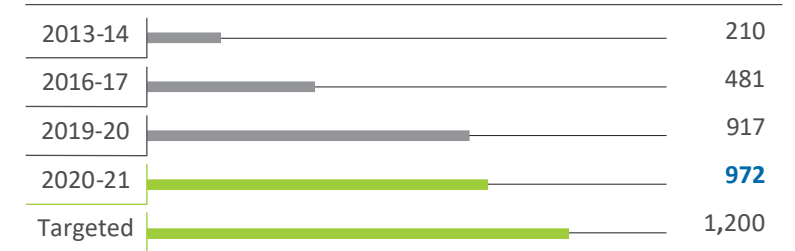
Sharp Focus on Strategic Priorities driving Long-Term Growth



EXPANSION OF CAPACITIES

- Vision to be world's largest lead-zinc-silver company
- Increase ore production to 25 Mtpa and Silver to 1,000 tons (top 3)
- Invest in operational methods and tools to accelerate the mine development rate, improve productivity and optimize cost

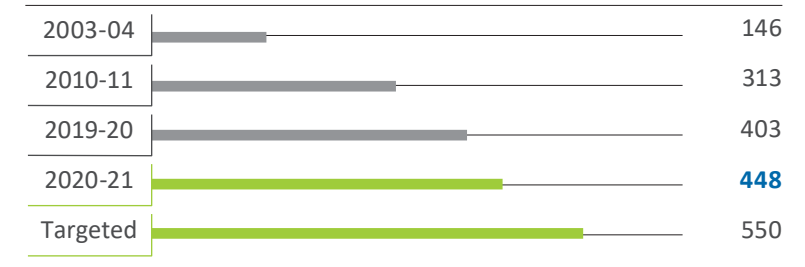
Underground (UG) Production (MIC production, kt)



MAINTAINING A PORTFOLIO OF MINES WITH LONG LIFE

- Grow R&R through exploration
- Increase ore production to 2 Mtpa with combined Paste-fill and Dry Tailing Plant at Rajpura Dariba
- Zawar mine expansion to 4.8 Mtpa along with Backfill plants at ZawarMala and Mochia mines to improve mining ore recovery
- improve productivity and optimize cost

Ramping up R&R (total R&R Mt)

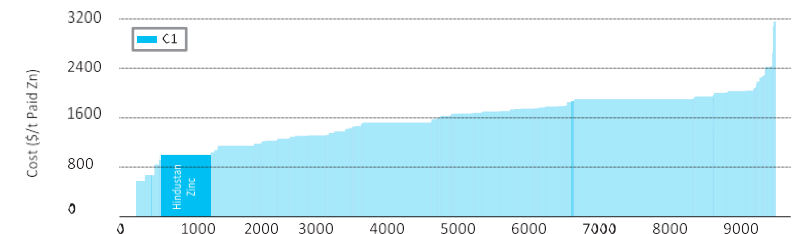


STRENGTHEN COST LEADERSHIP

- Lowest cost producers of zinc-lead globally led by transition to UG mining
- Continually ramp volume and deploy automation technologies to increase ore-to-metal index, boost asset productivity, optimize power and generate value from waste

Keeping Costs Under Check

(zinc cost curve, ranked by C1, composite cost)



Sharp Focus on Strategic Priorities driving Long-Term Growth



EXPANSION OF PRODUCT PORTFOLIO

- Increase value-added metals portfolio
- New product development in downstream applications
- Grow lead alloys and zinc alloys

Share of VAP in Our Sales (%) *



*VAP sales declined as the key construction and auto sectors where our customised products go were highly impacted by the pandemic



TRANSITION TO A CIRCULAR ECONOMY

- Use technology and innovation to reduce-reuse-recycle waste and restore natural resources
- Increasingly adopt low-carbon and less-emission technologies

Two US Patents

Granted for waste-to-wealth technologies

Backfill Plants

Refilling mine waste back in UG for stability

Focused Approach for Maximising Shareholder Value Creation

Excellence in Operations

- Robust portfolio of operational assets, low cost of production and market leadership
- Agility in decision-making and adapting to transformations
- Continuously augmenting digital strength and automation levels

↑22%

Revenue growth

↑33%

EBITDA growth

Execution Edge

- Strengthen core operations and streamline operating processes for disciplined project execution
- Technology and digitalization to enhance efficiencies and ensure timely deliveries
- Collaborate with global technology players to augment minor metal production capacity

7%

Increase in ore production

10+

International technology partnerships

Value Accretive Journey

- Focus on asset resilience to deliver consistent shareholder value with excellent return on investment
- Strong free cash flow from operations, enabling investment in business growth and new projects with higher IRR
- Ensuring sustained growth in operations, optimizing costs, and implementing sustainability strategies

101%

5-year average dividend payout

23%

5-year CAGR in mined metal production at UG mines

11%

5-year CAGR in silver production volume

Expanding to Grow

- Capture new opportunities
- Partner Government to harness external demand opportunities and focus on AtmanirbharBharat drive

1.123 Mtpa

Integrated metal capacity

1.2 Mtpa

Mined metal capacity

800 tons

Silver refining capacity

Managing costs prudently

Efficient capital deployment resulting in robust credit rating, strong balance sheet and high EBITDA margin

50%

3-year average EBITDA margin

₹15,130

crore

Net cash

Sustainability focus

- Optimal use of natural resources, reduction in carbon footprint, safe operations and renewable energy utilization
- Efficient waste management

2.41X

water positive Certified by DNV-GL

1st in India

Dry Tailing Plant

349.19 MW

Renewable Energy Portfolio

Customer Centricity

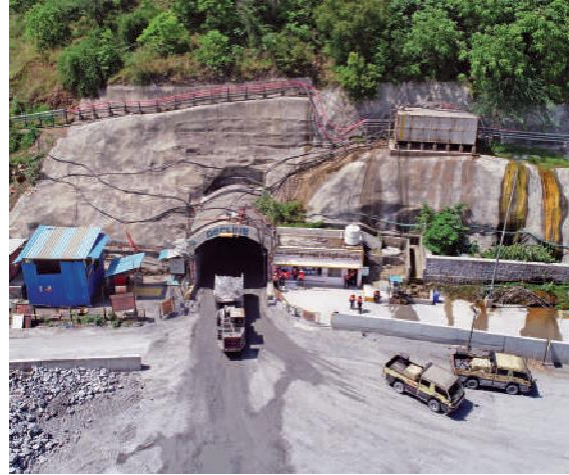
- Close engagement and collaborative product development
- Deploy latest technologies for products and solutions innovation
- Serving efficiently through large distribution network
- Effective grievance redressal and just-in-time support

70%+

5-star feedback on online buying experience

Projects to Strengthen Competitive Edge

Mines



Shaft Driven Haulage

Improved hauling capacity at RA mine

Improved Productivity

RD Mine: Shotcrete, new equipment, and triple tube for UG exploration drilling; combined pastefill and Dry Tailing Plant; Charmec and Bulk emulsion explosive; 1,000 cfm surface compressor; improved Ball Mill Main foundation; table-top XRF metal analyzer; and Fibre-reinforced shotcrete barricade

Zawar Mine: Backfill (Hydro fill & Paste fill) plants at Mochia and Zawarmala mines and installed Feeder Monitoring System (FMS), power saving initiatives and mechanisation

Digital Leap

RA Mine: Mine WiFi, online health monitoring equipment, live tracking of equipment, fill factor monitoring, CCTVs

Kayad Mine: Digitalized Cement Silo

SK Mine: New digital way of working to enhance OEE by 20%; optical fibre network; Integrated Control Room; Wi-Fi tags and LASER scanner-based positioning system to reduce jamming and OPTIMINE analytics to predict failures, reduce breakdown and improve machine availability

Improved Safety

RA Mine: First-of-its-kind UG First Aid Station in India and UG man-pass commissioning for secondary evacuation at RA mine

Kayad Mine: Electro-magnetic retarders and stench gas installation

Projects to Strengthen Competitive Edge

Smelter and Refinery



Expansion

Debottlenecking of smelter expansion to 1.2 Mtpa under plan and CLZS expansion to 5.04 lac tons (environment clearance received)

Improved Safety

Installed Pneumatic wrench machine, adopted line of fire concept and finger saver tools and provided emergency training

Improved Productivity

Installed in-house Proactive Process Control Composite Sampling System at Purification Plant

Exploration



Enhance Exploration

- Development of resource model at Zawar Mines to identify exploration targets and re-configure mineralization
- Partnered with Objectivity, Canada, to optimize exploration drilling using DRX drill hole targeting system
- Motorized directional drilling to drive efficiency at less cost

CPP



Improved Safety

- Established remote control room for smooth plant operation/safe shutdown
- Weighted CO2 Flooding System at Chanderiya CPP
- Automated Pneumatic doors at bottom ash inspection door across CPPs to avoid fire injury

Responding with Grit to the COVID-19 Pandemic

Building Business Resilience

- Adherence to central and state safety directives
- Created COVID war room
- Focused on executing critical priorities
- Investments in process digitalization to supporting operations

Employee Safety and Welfare

- Site Task Force led by location BU Directors and dedicated COVID watchers
- Skill and technical training
- Free hospitalization and insurance cover
- 100% vaccination (incl. families)

4.2 lacs

Lives touched directly during COVID-19 pandemic

CSR Health Impact Award

by Integrated Health and Wellbeing Council for exceptional work with focus on life, livelihood and helping mitigate the impact of COVID-19 pandemic



Responding with Grit to the COVID-19 Pandemic



Community Support

Financial Assistance

- Contribution to PM CARES and Rajasthan State Mitigation Funds

Food Security

- Dry ration to ~1 lac and ready-to-eat meals to 9 lac daily wage earners and community people; cooked food to 7,000 women and migrant workers; dry and take-home ration for 17,000+ malnourished children
- 16,720 kg grain collection
- 62 employees and their relatives provided dry ration for local communities and feed stray animals

Health Security

- 1.3 lacs masks and body suits stitched by Sakhi SHG members
- 1 lac PPEs and 25,000 liters of Sodium Hypochlorite solution to Health Administration
- ~3,080+ PPEs to frontline workers and 9,490+ masks to needy families
- Sodium hypochlorite sprayed in 180+ villages
- 540 awareness camps and sensitization drives benefiting 16,335 villagers
- 3,600+ farmers sensitized through digital medium
- 23 employee spouses stitched ~2,000 cloth masks

Second wave

- Installed Oxygen plant with 500 cylinders daily capacity in Rajsamand
- 570 Oxygen concentrators to Rajasthan and Uttarakhand State Governments
- Established a 350-bedded COVID Hospital and a 100-bed makeshift hospital at Dariba Rajsamand



Progressing on Sustainability Goals 2025



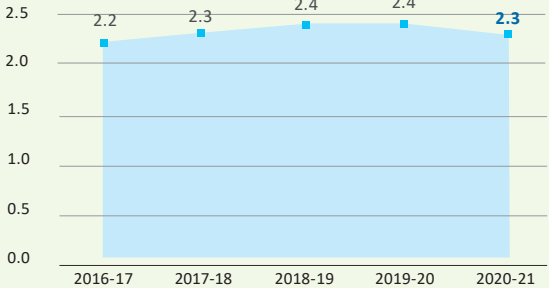
Goal 1

GHG emission savings in our operations from base year 2017
Target: 0.5MN tCO₂e

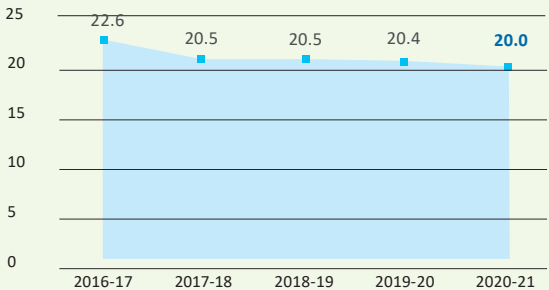
- Turbine revamping across all CPPs
- Focus on renewable energy: Investments in wind and solar energy + MoU with Epiroc for Battery Electric Vehicle (HZL first to use in UG mining)
- Well-designed air pollution control systems and effective dust management
- Continuous monitoring and reporting



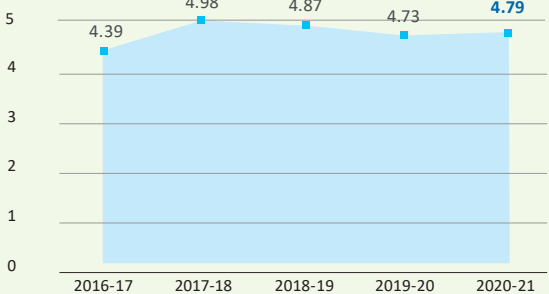
Renewable Power (Wind+WHRB+Solar) (MGJ)



Specific Energy Consumption (GJ/ton of metal)



GHG Emission: Scope1 + Scope2 (MNtCO₂)



Progressing on Sustainability Goals 2025



Goal 2

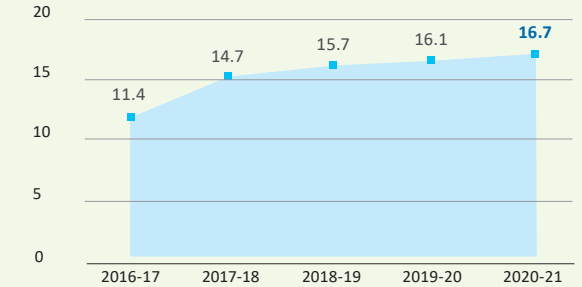
Water-positive Company and achieve 25% reduction in freshwater consumption

Target: 5x

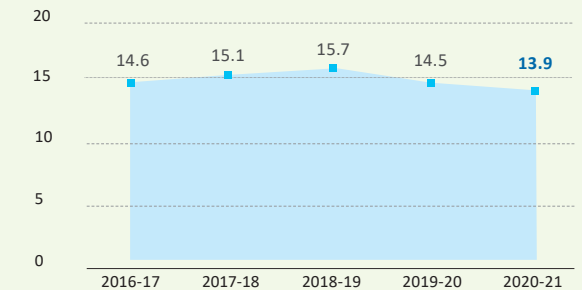
- Initiatives to recycle and replenish water, explore alternative sources and use of water, increasing usage efficiency with technologies, utilize treated sewage from other cities/towns
- Three Tailings Dam Management: Inclinator, paste fill plant and India's first Dry- Tailing Plant (more such planned for all sites)
- Expanded Udaipur STP from 45 to 60 MLD
- Strengthening wastewater recycling system with additional Reverse Osmosis and Multiple Effect Evaporation plants



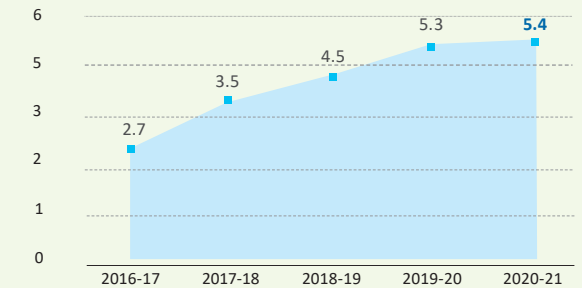
Water Recycled (mn m3)



Specific Water Consumption (m3 per ton of metal)



Waste Recycled (Mt)



Progressing on Sustainability Goals 2025



Goal 3

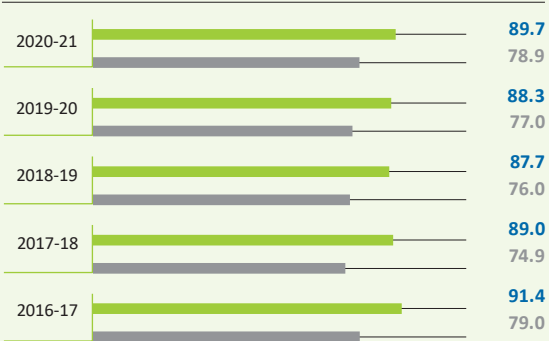
Increase in gainful utilisation of smelting process waste

Target: 3X

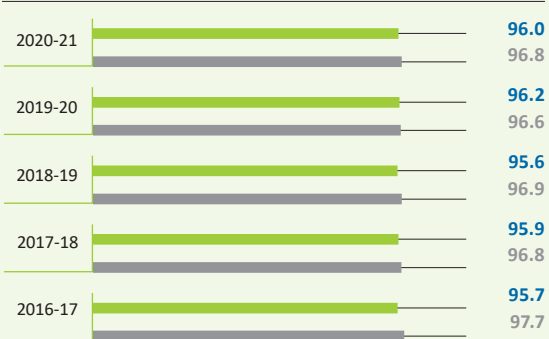
- Focus on transforming waste into value led by a dedicated team
- Sodium Sulphate recovery; using Jarosite in road construction and cement manufacturing
- Hydrofill and Pastefill Plant at Zawar Mines to enhance recoveries
- Ongoing R&D for developing Zinc air battery



Mill Recovery (%)



Smelter Recovery (%)



■ Zinc ■ Lead

Progressing on Sustainability Goals 2025



Goal 4

Throughout the life cycle

Target: Protect and enhance biodiversity

- Location-wide biodiversity assessment, protection and conservation initiatives
- Dedicated Biodiversity Policy and Management Standard
- Effective Tailing Dam Management
- Critical/ endangered species conservation plan
- Biodiversity Park Development at Rajpura Dariba Mine and Jarofix Yard Restoration at Chanderiya Lead Zinc Smelter



Minimum No
Net Loss of
biodiversity

Net Positive
Gain (NPG) of
biodiversity

Creation
of digital
roadmap

Progressing on Sustainability Goals 2025



Goal 5

Work-related fatalities and 50% reduction in TRIFR

Target: ZERO

- Focus on zero-harm safety culture, injury reduction plan, critical risk management, process safety management, visible felt leadership
- Eliminating hazard risks at workplace
- Structured skill improvement/ competency enhancement
- Innovative technologies and digitalising safety standards
- Project RuBaRu to improve execution capabilities of business partners
- Monitoring exposures for better and timely controls
- Underground workshop to manage and reduce vehicular movement



India's First

Underground Ambulance & First Aid Station Rampura Agucha Mine

Zero

Fatality at worksite and occupational illness cases

0.97

Lost Time Injury frequency rate

0.65 mn

man-hours of safety training

Progressing on Sustainability Goals 2025



Goal 6

Positively impacting lives through social, economic and environmental outcomes

Target: 1 Mn

- **Education:** 1,80,000+ children supported through various initiatives
- **Health, water and sanitation:** 5 mobile health vans benefiting 2 lac+ patients; 13 RO Hub plants and 39 standalone water ATMs across 52 villages
- **Women empowerment:** 2,248 SHGs having 27,517 members with total savings of ₹11.62 crore
- **Livelihood:** 31,000+ farmers and youths supported
- **Community infrastructure development** including community halls, school infrastructure, roads, cremation centers and drains across 109 villages
- **Sports:** Football development at grassroot level
- **Environment:** 597 solar-powered street-lights in villages, sapling plantation and promoting safety in community

7 lacs

People benefited from
CSR programmes



Progressing on Sustainability Goals 2025

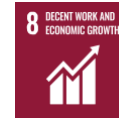


Goal 7

Diversity in an inclusive and diverse workplace

Target: 30%

- Encourage diversity to promote collective experience and skill set
- Gender parity with equal representation and opportunities
- Right work culture to promote inclusion and aligning policies to encourage diversity in workforce



15%

Female diversity within executives

11%

Overall female diversity of workforce

India's First

to have women Mine Managers working in underground mines

31.7 years

Average workforce age

Progressing on Sustainability Goals 2025



Goal 8

Responsible sourcing in the supply chain

Target: 100%

- LME Responsible Sourcing guidelines
- Ensuring supply chain adheres to HZL principles and sustainability practices
- Holistic supplier identification, selection and review processes basis HZL code and Vedanta sustainability framework
- Technology, innovation and digitalization for governance, efficiency, long-term value creation and mutual growth
- Upskilling and empowering for integrating sustainability and human rights



133

New suppliers screened for ESG criteria

318

Local suppliers are part of Tier-1 suppliers

214

Critical Tier-1 suppliers

THANK YOU



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Zinc & Silver of India

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