

# Global leader in sustainable mining



# Vedanta

Vedanta Limited, a subsidiary of Vedanta Resources Limited, is one of the world's leading Oil & Gas and Metals company with significant operations in Oil & Gas, Zinc, Lead, Silver, Copper, Iron Ore, Steel, and Aluminium & Power across India, South Africa, Namibia, and Australia. For two decades, Vedanta has been contributing significantly to nation building. Governance and sustainable development are at the core of Vedanta's strategy, with a strong focus on health, safety, and environment.

Vedanta has taken the lead in building India's self-reliance in natural resources. The company has spent over ₹600 crore in Rajasthan during the past five years through its various CSR interventions across ten districts. The company is the largest contributor to the state exchequer, having spent over ₹56,100 crore in the past five years by way of royalty & taxes, and has provided direct and indirect livelihood to lakhs of people.

Giving back is in the DNA of Vedanta, which is focused on enhancing the lives of local communities. Under the aegis of Vedanta Cares, the flagship social impact program, Nand Ghars have been set up as model anganwadis focused on eradicating child malnutrition, providing education, healthcare, and empowering women with skill development.

Vedanta has been featured in Dow Jones Sustainability Index, and was conferred CII-ITC Sustainability Award, the FICCI CSR Award, Dun & Bradstreet Awards in Metals & Mining, and certified as a Great Place to Work. Vedanta Limited is listed on the Bombay Stock Exchange and the National Stock Exchange in India and has ADRs listed on the New York Stock Exchange.



We at Hindustan Zinc are transforming the pace & face of mining in India to set global benchmarks through innovation and analytics driven decision making towards smart and sustainable operations. Our core pillars that guide all our actions remain safety, sustainability, integrity and our commitment to our people, communities, environment and the nation. While we move towards our vision to become the world's largest and most admired zinc, lead and silver company, we are also constantly working to build a high-performing culture that has a sharp focus on excellence and inclusive growth. As responsible pioneers, we are hugely invested in developing and bringing global best technology, digitalization, automation and best practices to build mines of the future.

**ARUN MISRA**  
CEO-HINDUSTAN ZINC



# Hindustan Zinc

As a socially and environmentally committed corporate, with focused responsibility towards value creation for all stakeholders, Hindustan Zinc stands out as an organization rooted in business excellence.

India's only and the world's leading zinc-lead-silver producer, Hindustan Zinc is an industry leader with over five decades of experience and expertise in mining and smelting. The Company is a fully integrated player with strong focus on holistic value delivery across its stakeholder fabric. With its sharp strategic thrust on continuous evolution in an ever-transforming business environment, Hindustan Zinc has a powerful edge that drives its growth and expansion.

Headquartered in the mineral-rich belt of Udaipur in Rajasthan, Hindustan Zinc has a workforce spread across the sites of its mining and smelter operations, strategically located in the state. An installed base of 485.5 MW of our coal-based captive power plant coupled with our green power capacity including 40.42 MW of solar power and 35.27 MW of WHRB ensures our power sufficiency. Moreover, our plans to revamp turbines in the future will further aid to our self-sufficiency in power.

Technology and innovation are the key propellers of our unprecedented growth, while people safety and natural resource conservation are the mantras of our holistic value proposition.

## HINDUSTAN ZINC IN INDIA

# In a nutshell

We produce zinc, lead and silver through our fully integrated operations spanning mines, smelters, captive power plants and refineries. Our steadfast focus on our tier-1 assets, automation, innovation and productivity helps us deliver a solid performance year on year.

### PRODUCTION CAPACITY

(in TPA)



# 913,000

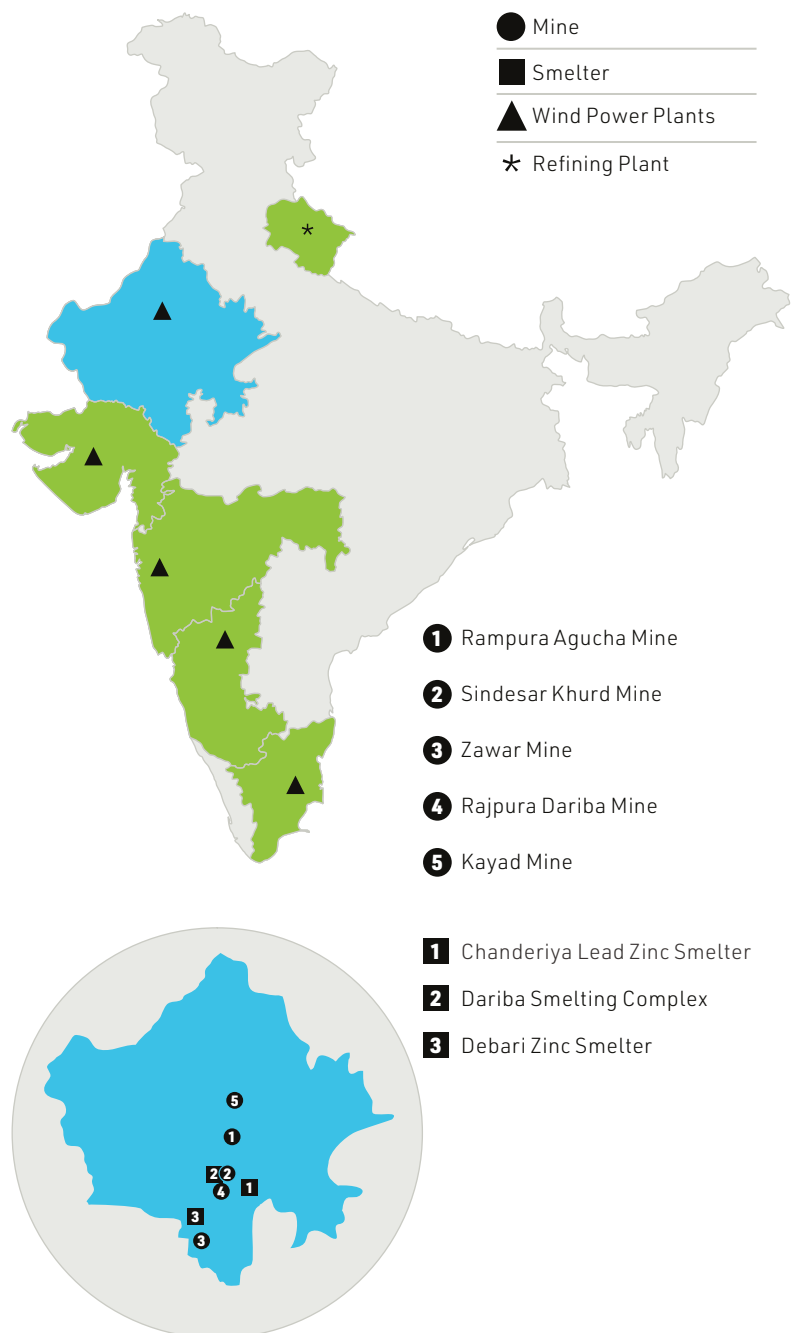
Zinc (Zn)

# 210,000

Lead (Pb)

# 800

Silver (Ag)





## KEY SOCIOECONOMIC IMPACT, FY21

₹ **22,629** Crore

Revenue from operations

₹ **15,000+** Crore

Contribution to the exchequer  
(through royalties and taxes)

**972** kilo tonnes

Mined metal  
(from underground mines)

**15%**

Gender diversity  
(in executive roles)

**0.97**

Lost-time injury frequency rate

**42%**

Green energy capacity in  
total power portfolio

**30%**

Total waste recycled/reused

**40%**

Share of recycled/reused water in  
the total water used

**2.41** times

Water positive company

**500,000**

CSR beneficiaries

₹ **214** Crore

Community investments



## CORPORATE PROFILE

# Who we are



Hindustan Zinc is the second largest zinc-lead miner and the fourth largest zinc-lead smelter globally. We are part of the world's top 10 (and fastest-growing) silver producers. We rank among the lowest-cost producers of zinc, with a cost of production (from ore to refined metal) in the first quartile of the global cost curve.

Hindustan Zinc governs about 77% of India's zinc market and 62% of its lead market (FY20). Our responsible approach to metal and mineral development defends our licence to operate. With a 19,000-plus workforce, we are a people company, supporting one another in the fulfilment of the organisation's Vision, Mission and Values.

### VISION



To be the world's largest and most admired zinc, lead and silver company

### MISSION



Enhance stakeholder value through exploration, innovation, operational excellence, safety and sustainability

Be the lowest cost producer

Maintain market leadership and enhance customer delight

### VALUES



#### ENTREPRENEURSHIP

Our people are our most important assets. We actively encourage their development and support them in pursuing their goals.

#### EXCELLENCE

Our primary focus is delivering value of the highest standard to our stakeholders. We are constantly motivated on improving our costs and improving our quality of production in each of our businesses through a culture of best practice benchmarking.

#### TRUST

We actively foster a culture of mutual trust in our interactions with our stakeholders and encourage an open dialogue which ensures mutual respect.

#### INNOVATION

We embrace a conducive environment for encouraging innovation that leads to a Zero harm environment and exemplifying optimal utilisation of natural resources, improved efficiencies and recoveries of by-products.

#### INTEGRITY

We place utmost importance to engaging ethically and transparently with all our stakeholders, taking accountability of our actions to maintain the highest standards of professionalism and complying with international policies and procedures.

#### RESPECT

We lay consistent emphasis on Human Rights, respect the principle of free, prior, informed consent, while our engagements with stakeholders give local communities the opportunity to voice their opinions and concerns.

#### CARE

As we continue to grow, we are committed to the triple bottom line of People, Planet and Prosperity to create a sustainable future in a zero-harm environment for our communities.

## A LOOK BACK



# 1966

A new era begins, with the incorporation of Hindustan Zinc from Metal Corporation of India. Foundation of the Debari smelter is laid

# 1978

Balaria mine at Zawar is commissioned

# 1979

Rampura Agucha deposit, currently having one of the world's top zinc mines, is discovered

# 1984

Rajpura Dariba mine is commissioned

# 1989

Chanderiya smelter is inaugurated and Rampura Agucha open-cast mine begins production

# 2002

Sterlite Group, now known as Vedanta Limited, acquires 26% equity stake in Hindustan Zinc

# 2007

Sindesar Khurd mine is commissioned.  
We enter green power by commissioning 38.4 MW of wind energy farms in Gujarat

# 2009

We become the world's second largest zinc producer

# 2012

Rajpura Dariba lead smelter is commissioned. Pantnagar metal plant is commissioned

# 2013

Underground mines at Rampura Agucha and Kayad are commissioned. We start growth journey towards 1.2 MTPA metal production (from underground mines)

# 2018

Hindustan Zinc becomes a fully underground mining company, maintaining its market leading position

# 2021

We are #1 in Asia-Pacific and globally #5 in Dow Jones Sustainability Index in 2021 amongst Mining & Metal companies. 2.41 times Certified Water Positive Company, Scored 'A' rating by CDP for climate change.





# Enriching life as we know it

The zinc, lead and silver we produce are integral to modern life. From the homes we live in, the buildings we work in, the cars we drive, the bridges we cross, the transmission towers we need and countless other facets in between – our products give form and function to so much that we use in our daily lives.



# Zinc (Zn)

We produce refined zinc metal in a variety of grades. Our London Metal Exchange (LME) registered Special High-Grade Zinc products include: HZL SHG, HZL Zn SHG, Vedanta SHG and Vedanta Zn SHG.

A natural part of our environment and required by all living beings for survival, zinc is the fourth most common metal in use today. It prevents damage to steel and iron from inclement weather and pollution, reinforcing crucial structures through galvanisation (the process of applying a layer of zinc to help prevent corrosion) – thus, making it one of the most preferred solutions for long-term maintenance and corrosion-free life.



## ROADWAYS AND BRIDGES

Zinc is used to protect guardrails, traffic lights, overhead signboards, pedestrian overbridges, steel crash barriers and so on. Galvanised rebars are used to strengthen bridges, highways and flyovers.



## CONSTRUCTION

Galvanised rebars find use in industrial and urban construction, including skyscrapers, small houses and special bridges; as well as refinery plants, walkways and gratings on offshore platforms in the petrochemical sector.



## POWER GENERATION AND TELECOM

Galvanisation lowers the maintenance downtime and extends the life of transmission towers, substations, switchyards and transformer casings, particularly in remote locations and difficult terrains (such as hill slopes and mountain tops). Most smart cities use galvanised monopoles in electricity and Wi-Fi transmission towers.



## RAILWAY INFRASTRUCTURE

Railway platforms and other roofing sheets, railway sheds, sleepers, electrical line, poles, and even some rail tracks are galvanised with zinc.



## AUTOMOTIVE

Zinc enhances durability of automobiles. Galvanised sheets are used in making fuel tanks, car body and other auto parts. The rubber used in the tyres, an integral part of the auto sector, is made from zinc oxide.



## RENEWABLE ENERGY

Zinc protects steel frames and mounts used in solar panels, wind turbines and tubular towers.



## OTHERS

Zinc alloys are used in the die-casting components industry (carburettors, LPG regulators, locks, handles, sanitary fittings and hardware, zippers, etc.). Ceramics too consume a significant amount of zinc in the form of zinc oxide, particularly ceramic glaze and frit compositions.



## FERTILISERS

Zinc is used to fertilise zinc-deficient Indian soil, in turn, catering to the daily nutritional requirement of the country's citizens.

## DID YOU KNOW?

Zn



- The petals of the Lotus Temple were reinforced with 300 tonnes of galvanised bars.
- 3,300 tonnes of galvanised structural steel were used in The Statue of Unity.
- Special corrosion resistant grade of galvanised steel rebars were used in the Vrindavan Chandrodaya Mandir.
- The superstructure of Assam's Bogibeel Bridge uses different types of zinc sprays and coatings to reduce corrosion.

# Lead (Pb)

We produce lead ingots with a minimum of 99.99% purity.  
We have two LME-registered lead brands, Vedanta 99.99  
and Vedanta Pb 99.99.

Lead is a non-corrosive metal with one of the highest recycling rates of all materials widely used today. Because of its density and ability to absorb vibration, lead is useful to hold highly acidic substances and shield against different types of harmful radiation, such as those found in X-ray machines and nuclear reactors.



## STORAGE BATTERIES

Seen as the safest and most affordable source of instant energy, lead acid batteries power many parts of our daily life. They are the mainstay of renewable energy sources (storage technology for solar cells and wind turbines); vehicles (cars, trucks, buses, motorbikes, electric vehicles and hybrid vehicles); and emergency power supply (hospitals, telephone exchanges, mobile phone towers, public buildings and other critical services).



## CONSTRUCTION

Lead sheets are used in construction (weathering, roofing and cladding), to prevent water penetration.



## AMMUNITION

Lead is used in almost all kinds of ammunitions like bullets, cannonballs and others.



## POWER TRANSMISSION

Lead alloys are used as sheathing materials for high voltage power cables.

## DID YOU KNOW?

# Pb



- More than 85% of the world's lead production is used in making batteries.
- ~1 billion vehicles worldwide use lead-based batteries to start engines and power the on-board electronics.
- White lead is the most extensively used lead pigment for paints.



# Silver (Ag)

We produce refined silver; recovered as a by-product of zinc-lead facility. Our high-quality London Bullion Market Association (LBMA) certified silver bullion has a minimum purity 99.9% of silver.

Silver is known for its brilliant white metallic lustre, high ductility and malleability properties. It is most often produced as a result of refining metals such as lead, copper, gold, nickel or zinc. Primarily a precious metal, silver is widely used in the making of jewellery, cutlery, alloys and electrical contacts, as well as currency, trading and investment.



**JEWELLERY**



**CUTLERY**



**ELECTRICAL  
CONTACTS**



**CURRENCY**

## DID YOU KNOW?

# Ag



- Silver has the highest thermal conductivity and the lowest level of contact resistance of all the metals.
- Silver is antimicrobial in nature, making it useful for air conditioning and filtration, and even dentistry.
- Indelible ink, widely used in elections in India, typically contains a compound called silver nitrate.
- Silver paste is used in solar panels, which is the backbone of futuristic electricity generation plan.
- Polished silver reflects 95% of the visible light spectrum, which makes it useful in mirrors, telescopes, microscopes and solar cells.

## VALUE CHAIN

# Spearheading responsible mining and metal production



Hindustan Zinc is one of the few fully integrated zinc-lead-silver producers in the world, involved across exploration, mining, beneficiation, smelting, refining, marketing and downstream applications.



### EXPLORATION

Our objective is to continue and maintain metal production for over 25 years. To achieve this, we have an aggressive exploration programme focusing on delineating and upgrading Reserve and Resource (R&R) in and around our existing deposits. With a strong commitment to exploration, innovation and technology, the exploration team underpins our rise to be the second largest zinc miner globally.



### MINING

We have a sustainable underground mining business and we carried out a seamless transition from predominantly open-cast operations to fully underground mining. We are benchmarking our operations with the world's best mining practices to enhance safety and productivity at our mines.



### BENEFICIATION

We are continuously engaging the world's best ore dressing consultants to optimise our mining operations and improve recovery in ore beneficiation plants with better quality concentrate.



### SMELTING AND REFINING

We are debottlenecking our smelters to maintain our fully integrated operations as our mines ramp up production. We also produce Electro-Plating Galvanising (EPG) and Hindustan Zinc Die-casting Alloy (HZDA) and Continuous Galvanising Grade (CGG) alloy. Our strategic priority is to augment the supply of value-added products.



### MARKETING

We are leveraging online marketing portals, managing customer supply chains and deepening our market leadership. We are also conducting technical workshops to raise awareness around our customised alloys for different customer segments.



### DOWNSTREAM APPLICATIONS

Our endeavour is to enhance usage of galvanised products in end-sectors of construction, automotive and white goods.



# Building effective R&D capabilities

As early as 1976, we established a first-of-its-kind, state-of-the-art Central Research & Development Laboratory (CRDL). The principal focus areas of the CRDL include process improvements, development work for sustained growth, new technology development and adaptation, and waste-to-wealth initiatives.



The facility is well-equipped to conduct research in the fields of mineral processing, geo-metallurgy and ore characterisation, pyrometallurgy and hydrometallurgy. A technical group works closely with business units to help advance growth opportunities, support specialised upgrades and improve environmental performance.

The CRDL is recognised by the Department of Scientific and Industrial Research, Government of India. The research unit has been commended with 5-S Workplace Management System.

A centralised Quality Assurance and Quality Control division, which is accredited at NABL with ISO 17025 system, supports our quality function by acting as a

referral laboratory for export and import consignments, commodity materials and exploration. Our Intellectual Property Right management is also handled by the CRDL technical team.

This year, we received our first European patent for an in-house developed technology, which helps treat the antimony-bearing by-product of zinc-lead smelters and converts it into a value-added product. The patented process has been commercialised and is running successfully at an ancillary in Dariba Smelter Complex since 2016. CRDL is being upgraded to Zinc Technology Centre (Zn Tech Centre).

## BUSINESS DIVISIONS

# Mining



We are developing intelligent mines that are smart, connected, wired and analytical. Our new digitalisation initiatives help us monitor equipment data and health, manage traffic, automate dewatering pumps and vent fans, operate loaders and drill machines in smoke hours – all in real time.

We will soon be implementing an automated core scanning technology, which can project rock and terrain properties, as well as the content of the ore. We also plan to adopt augmented reality and virtual reality wearables, and ore body intelligence, along with 3D laser scanning, high-speed Wi-Fi networks in the underground mines, high-bandwidth optical fibre, Voice over Internet Protocol (VoIP) and other IP-based devices.

Total metal reserve base

**150.3** million MT

with an average zinc-lead grade of 7.8%

Total mineral resources

**297.6** million MT

Total ore production

**15.4** million MT (FY21)

Total mined metal production (underground)

**972** kilo tonnes (FY21)



# Mine exploration

## Key activities involved



- Overseen by a team of geologists, geophysicists and analysts as well as outsourced service providers
- Sophisticated database analysis
- Remote sensing
- Geological mapping
- Geochemical sampling
- Geophysical surveying



### 1. RAMPURA AGUCHA

- Reserve: **42.7 million MT**
- Resource: **34.5 million MT**
- Zinc reserve grade: **11.9%**
- Lead reserve grade: **1.4%**

### 2. SINDESAR KHURD

- Reserve: **45.3 million MT**
- Resource: **66.2 million MT**
- Zinc reserve grade: **3.3%**
- Lead reserve grade: **2.1%**

### 3. ZAWAR

- Reserve: **31.5 million MT**
- Resource: **111.1 million MT**
- Zinc reserve grade: **3.1%**
- Lead reserve grade: **1.6%**
- Captive power: **80 MW**

### 4. RAJPURA DARIBA

- Reserve: **28.2 million MT**
- Resource: **41.1 million MT**
- Zinc reserve grade: **5%**
- Lead reserve grade: **1.7%**

### 5. KAYAD

- Reserve: **2.6 million MT**
- Resource: **1.9 million MT**
- Zinc reserve grade: **6.8%**
- Lead reserve grade: **0.8%**

# Smelters and refineries

Our smelting complexes are certified for Integrated Management System (comprising ISO 9001:2008, ISO 9001:2015 and OHSAS 18001:2007).

Our metal production capacity which was 204,000 TPA in 2002 has grown five-fold to 1.123 MTPA; and is being debottlenecked to achieve a smelting capacity of 1.3 MTPA.



## SMELTERS CAPACITY EXPANSION AND BENCHMARKING

Smelters are being debottlenecked to achieve a capacity of 1.3 MTPA over three phases. CLZS received Gold Metal in National Award for Manufacturing Competitiveness for being the first in the world to reach current efficiency of 93% in cell house.

### 1. CHANDERIYA LEAD-ZINC SMELTER

- Zinc production: **585,000 MTPA**
- Lead production: **90,000 MTPA**
- Captive power plant: **234 MW**

### 2. DARIBA SMELTING COMPLEX

- Zinc production: **240,000 MTPA**
- Lead production: **120,000 MTPA**
- Captive power plant: **160 MW**

### 3. ZINC SMELTER AT DEBARI

- Zinc production: **88,000 MTPA**  
(also supplies surplus zinc oxide, an intermediate product, to our other zinc smelters)

### 4. PANTNAGAR METAL PLANT

- Silver production: **800 MTPA**
- LBMA certified

We have a facility at Pantnagar for processing and refining zinc and lead cathodes manufactured at our Rajasthan smelters, as well as for nationwide distribution of finished goods, making it a centralised finished good centre for our customers.



# Power



While we have coal-based thermal power plants with a total power generation capacity of 485.5 MW, we are making significant investments in green energy aggregating to 349.4 MW, to reduce our greenhouse gas emission and carbon footprint.

## RENEWABLE ENERGY

Our investment in renewable power is set to increase to 363.19 MW by FY22. At the same time, we are enhancing energy efficiency at our thermal power plants at Chanderiya, Dariba and Zawar.

- **Solar:** We have 40.6 MW of installed capacity of solar power.
- **Waste heat recovery:** We have waste heat recovery power plants installed at each roaster, with a combined capacity of 35.3 MW that are registered under the Rajasthan Renewable Energy Corporation as a source of renewable energy. Further, a 14 MW steam turbine generator is expected to get commissioned which will enhance the waste heat recovery capacity to 49.4 MW.
- **Wind:** We have wind energy farms, aggregating to 273.5 MW, registered under Clean Development Mechanism of United Nations Framework Convention on Climate Change as well as under Gold Standard.

## AWARDS AND RECOGNITION

- Rampura Agucha Solar Project received Project Development Innovation of the Year award by RE Assets India 2019 conference
- Debari Solar Project received Gold Award in the Rising Category as Best Performing Project of the Year on Utility Scale Solar Energy at the RE Assets Excellence Awards summit
- All three captive power plants received Gold Award at the Fame International Award 2020 in different categories
- Chanderiya, Dariba and Zawar received recognition at the GMF (Annual) Awards 2019, under Diamond, Gold and Platinum categories, respectively



- Chanderiya and Dariba received Gold Award in 5S from CII and QCFI, respectively
- Dariba and Zawar CPP received the award for Best Innovation at the IPPAI Awards 2019

## HUMAN CAPITAL

# A people company that inspires...

For businesses to successfully grow, we need employees who are highly engaged and driven towards delivering results. Our vision is to be the most admired employer brand where every employee feels engaged, is developed in a high-performance environment and is our best brand ambassador.

With a workforce of over 4,000 employees and over 17,000 business associates and partners, our focus lies in hiring the best talent, building an engaging work culture, upgrading skills and ensuring diversity.

## ...a culture of empowerment

We undertake several initiatives to up skill our employees and the local youth. Employees get an opportunity to participate in short and long term learning programs such as 'Work Integrated Learning Program (WILP)', the Graduate Engineer Trainee (GET) induction program etc. and the Underground mining academy has an objective to upgrade the skills of the local youth.

GET Induction at Hindustan Zinc is a robust programme designed for 12 months. GETs from premier institutes, after joining Hindustan Zinc, undergo a residential programme for the first 8 weeks where they are trained extensively on safety, management, technical and behavioural subjects. They are also trained in First Aid Certification, introduced to life management through Art of Living and provided a glimpse of our CSR work. GETs are then exposed to live projects in Six Sigma Methodology and On the Job Training for the remaining period where their performance is monitored and reviewed periodically.

Through 'Work Integrated Learning Program (WILP)', executives, get a chance to take up professional degree courses from institutes of repute like BITS Pilani, IIM-Udaipur, ISM Dhanbad. Tailor made learnings on Percipio Skill Soft are made available for to the employees for the self-development.

Hindustan Zinc strives to develop internal talent through 'Being Impactful Leaders', through which the Subject Matter Experts (SMEs) are given a platform to handhold other executives and share their knowledge and experiences.





## ...an environment for training and development



**0.13**

**Million Manhours  
in FY 2020-21**

Our learning and development programmes are aimed at nurturing future leaders, emphasising communication skills, functional knowledge, safety and regulations, technical training and contact with senior managers. Programmes like Accelerated Competency Tracking and Up Gradation (ACT UP) and internal growth workshops help identify and groom potential leaders to take up greater responsibility.

## ...a young and diverse workforce

We strive to be a vibrant place of work, encouraging entrepreneurship at all levels. We benefit from the different perspectives that people from different genders, ages and backgrounds bring to the team. With more women entering the workforce, we are making working conditions easier for them and providing facilities to help balance their personal and professional lives. We are striving to deploy gender-neutral hygiene and environment inside mine premises, to support women in mining.



**31.47**  
years  
**Average age**

**136**  
**Women in contract  
workforce (FY19)**



## ...a safe and secure place of work



### Key elements of Aarohan

1. **HSE Policy and Principles**
2. **Corporate Safety Council (chaired by the CEO)**
3. **Critical Control Management through sub-committees**
4. **Workplace Safety Standards**

'Zero harm' is more than a mandate, it underpins our promise to ensure each of us return home safely every day. We implement a comprehensive health and safety policy, along with related guidelines and standards to maintain the highest degree of safety at work. At the same time, we respond responsibly to incidents and undertake appropriate provision to mitigate risks and eliminate occupation-related illnesses.

Our safety excellence journey, Aarohan, consists of six pillars: Contractor Safety Management, Fatality & Serious Incident Prevention Program, Process Safety Management, Incident Management, Standard Rules & Procedure, Safety Interaction – all serving the overarching objective of improving the safety of our operations.

## RESOURCE CONSERVATION

# A responsible business that cares...

Environmental management at Hindustan Zinc is guided by the fundamental principles of conserving resources, negating the impacts of our ecological footprint and adopting policies that ensure zero harm to the environment.

Efficient management of natural resources begins with a thorough risk and impact analysis of our projects and operations. We focus on five core elements water, air, waste, energy and biodiversity management, setting targets for each and directing our efforts towards improving processes and technologies. All our sustainability initiatives and strategies are aligned with the applicable National and International Principles and guidelines including SDGs, UNGC, ICMM and Paris Agreement, among others.

## ...about water



Water, being one of the key natural resource, is of the utmost importance for our operations since our operating units are in Rajasthan, which is a water-scarce state. We understand its importance and adopt best practices for making judicious use of water and conserving it. We constantly look to enhance our performance, by improving our water use efficiency, using less water-intensive technologies and maximising water recycling opportunities to help minimise the use of freshwater and maintain zero discharge.

We engage with the government of Rajasthan, through various Public-Private Partnership projects, to reduce our water footprint. For example, we installed a Municipal Sewage Treatment Plant in Udaipur to lower the pollution load of the city's lakes. The treated water feeds into one of our operation units.

### **DRY TAILING PLANT AT ZAWAR**

The tailings slurry at Zawar mines contains about 50-65% water. The installation and commissioning of a dry tailing plant has resulted in higher water recovery by minimising the evaporation and significant safety improvement vis-à-vis the risk of catastrophic dam failure.





Reduce Scopes 1 and  
2 GHG emissions by

**14%\***

by 2026

(2016-17 as base year)



Reduce Scope 3  
GHG emissions by

**20%\***

by 2026

(2016-17 as base year)

The metals and mining industry is energy-intensive. As a leading player in the sector, we are investing in latest technologies and processes to enhance energy efficiency that are recognised as industry benchmarks.

With a commitment to efficient usage of energy and diversifying our energy portfolio to the extent possible, we are reducing overall energy consumption, improving energy efficiency and using green energy to help mitigate climate change.

### GREEN ENERGY PORTFOLIO

- One of India's largest wind power producers with a generation capacity of 273.5 MW
- Registered under Clean Development Mechanism of United Nations Framework Convention on Climate Change as well as under Gold Standard
- 35.27 MW produced from waste heat recovery boiler
- 40.42 MW solar power produced for captive use

\* Science-based targets.

...about waste



## TAILING MANAGEMENT

Hindustan Zinc is committed to manage tailings and waste storage facilities in a manner that protects the health of our employees, the community and the natural environment. Tailings generated from the ore beneficiation process is reused for backfilling of mine through the Paste-fill or Hydro-fill technology, while the rest is disposed safely in the tailing dam. We have installed piezometers, an inclinometer and security cameras for enhanced monitoring of the tailing dams.



Our operations generate significant amounts of waste, most of which is mineral waste from our mining and metals processing activities. We follow the principle of reducing waste generation at source, recovering and recycling where possible and then disposal in an environment friendly manner. Switching from open-cast to underground mine has reduced waste generation significantly. We are moving steadily towards 'zero waste to landfill' through various initiatives.

At mines, waste rocks from mine development are used in construction of tailing dams.

**The major waste generated from our smelters and power plants is segmented into two categories.**

- High-volume low-effect waste, which includes fly ash, slag and jarosite, is utilised in cement manufacturing and other construction activities to reduce the lime consumption and related GHG emission in their process.
- Most of our hazardous waste which includes process residues are being recycled and metals are being recovered and rest is disposed in an environment-friendly manner in our captive, secure landfill or at common hazardous waste disposal facilities.



## ...about air

We monitor, control and reduce air emissions at each of our sites, while implementing systems and procedures to comply with the stipulated environmental conditions. For regular air quality and meteorological monitoring, Continuous Ambient Air Quality Monitoring System (CAAQMS) and online emission monitoring systems are installed.



## ...about biodiversity



We recognise the magnitude and scale of impact that mining operations may have on biodiversity. Protecting and enhancing biodiversity is fundamental to our promise of sustainable development. We have developed a unique and exclusive Biodiversity Management Plan (BMP) for all our operations. Our dedicated Biodiversity Management Policy and Standard advise on how disruption to flora and fauna should be avoided, minimised or compensated for, across project scoping to site closure and beyond. Our aim is to achieve a minimum of No Net Loss (NNL) of biodiversity and Net Positive Gain (NPG) of biodiversity (in case any critical habitat is present) at all our operations.

**Our key projects under biodiversity management are:**



**PEACOCK  
CONSERVATION PARK**



**ENDANGERED  
PLANT NURSERY**



**BUTTERFLY  
GARDEN**



**MEDICINAL  
PARK**



**TREE  
INVENTORISATION**



**PLANTATION**



**We are delivering  
societal wellbeing  
through...**

As a responsible corporate entity, we uphold the dignity of all citizens and abide by the principles of harmony and inclusive growth. Our initiatives reflect our core belief in enhancing quality of life & sustainable development in our communities.



## ...about education



### **KHUSHI & NAND GHARS**

Having signed a Memorandum of Understanding (MoU) with the Ministry of Women and Child Development, Government of India, Vedanta will construct 4,000 new-age Anganwadi Centres (AWCs) across India. Each AWC, known as Nand Ghar, will provide children with a safe and friendly learning environment & amenities like drinking water, supply of solar power & more.

Khushi shall be integrated into Nand Ghars in a phased manner to bring holistic development of 58000 children from 3145 Anganwadis. Currently, we have 314 Nand Ghars spanning five districts of Rajasthan.

# 314

Nand Ghars across 5 districts of Rajasthan



### **SHIKSHA SAMBAL**

The project aims at providing education in Science, English and Maths (SEM) to students and places additional teachers in schools and helps build a strong conceptual foundation among students using innovative learning techniques.

# 7,500

Students taught SEM



### **UNCHI UDAAN**

Unchi Udaan as a project builds on the foundation of Shiksha Sambal and creates an opportunity for high-performing students from the project areas/villages to enter engineering institutions of national repute.

# 123

students received coaching



### **SKILL DEVELOPMENT**

We upskill our youth with a key focus on girls at our Skill and Entrepreneurship Development Institutes at Dariba and Agucha. Market linked programs are being offered ensuring employability.

# 1,760

young people trained

# 1,357

youth placed

## ...about sports



### ZINC FOOTBALL

We have initiated a programme, to encourage local talent to excel in football in Rajasthan.

- **Zinc Football Academy (Football for Excellence):**  
Nurturing talent to develop future football stars for the state and country. ZFA is currently training its first batch of 40 under-17 footballers.
- **Zinc Football Youth Tournament:**  
A formal scouting platform for players under the age of 15 in Rajasthan. More than 5,000 players from over 500 schools got an opportunity to be selected in ZFA.

## 2,270

players got an opportunity to showcase their talent and the vision is to provide opportunity to 5000+ players.

## ...about women empowerment



### SAKHI

This flagship project helps mobilise rural women into self-help groups. The objective is to provide them with sustainable livelihood opportunities. We have set up micro-enterprise units to develop their capacities in leadership, skill development, finance management and entrepreneurship. The project involves 194 functional village organisations (VOs) and 5 federations with 27,245 women across seven locations.

## 2,232

Self-help groups (SHGs) active

## 27,245

Women as members

## ...about sustainable livelihoods



### SAMADHAN

Our flagship project, focuses on sustainable agricultural and livestock interventions through community participation and making agriculture aspirational. Our key efforts include promoting women in agriculture; improving soil health; adopting best agricultural practices; Promoting Hi-tech vegetable cultivation; improving livestock breed; bolster farming practices with innovative technology including promotion of micro-irrigation.

## 13,838

families reached through Agriculture interventions

## 15,103

families reached through Livestock interventions



## AWARDS AND RECOGNITION




- Ranked 1<sup>st</sup> in Asia-Pacific region and 5<sup>th</sup> Globally in Metal and Mining sector by Dow Jones Sustainability Index
- Certified as 2.41x Water Positive Company
- Hindustan Zinc included in the coveted CDP 'A List' for efforts to tackle climate change
- Featured in The Sustainability Yearbook 2020 by S&P Global and RobecoSAM as Sustainability Leaders
- Hindustan Zinc selected as a member of FTSE4Good Emerging Index across – Environment, Social and Governance
- Hindustan Zinc becomes #COP26 Business Leader
- Champions in terms of Voluntary Disclosure Index by scoring 10/10 and securing a position in Top 5 Indian Companies
- Hindustan Zinc has been conferred with the "CII Environmental Best Practices Award 2020" for the use of mine tailing waste in backfilling through paste-fill technology
- Hindustan Zinc received the CSR Health Impact Award for fighting Covid-19 at all levels and minimizing the risk of this pandemic within the communities in their operational areas.
- Hindustan Zinc recognised as Responsible Business of the Year 2020 by GT Sabera
- Hindustan Zinc awarded as 'Company with Great Managers 2020' by People Business in association with the Economic Times
- 'EVOLVE' and 'CONFLUENCE' platforms awarded SAP Ace Award 2020 - 'EVOLVE' eCommerce platform wins the "Most Innovative Practice" at CII Tata Communication – Centre for Digital Transformation and "Best eCommerce Technology Innovation" at the 21<sup>st</sup> Inflection Conference & Awards 2020
- 'Most Sustainable Company in the Mining Industry – 2021' by World Finance at their Sustainability Awards 2021
- Awarded as 'Most Innovative Company of the Year' by Business Leader of the Year 2020.
- Certified as a Great Place to Work organization in India by Great Place to Work® Institute
- Hindustan Zinc's First Integrated Annual Report – themed "Smart Mining for a Sustainable Future" received inspiring recognitions in the prestigious LACP (League of American Communications Professionals) Awards.


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