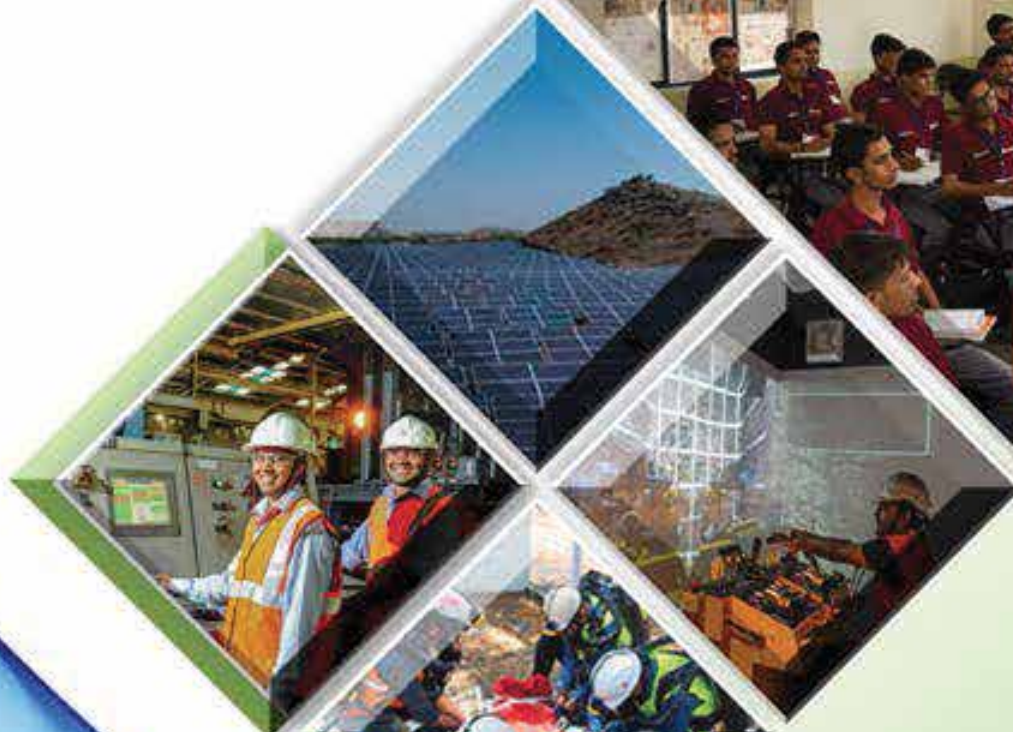


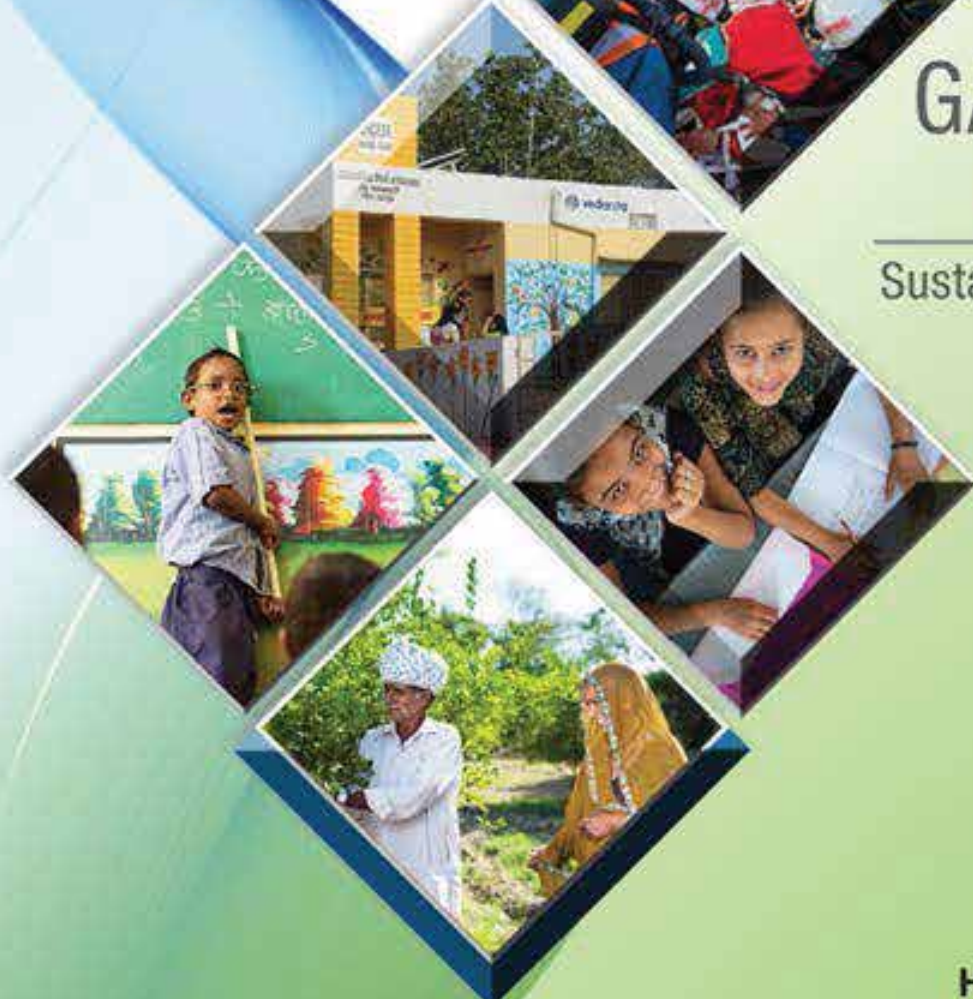


HINDUSTAN ZINC  
MINING ACADEMY  
JUMBO DRILL OPERATOR  
SKILL TRAINING & CERTIFICATION



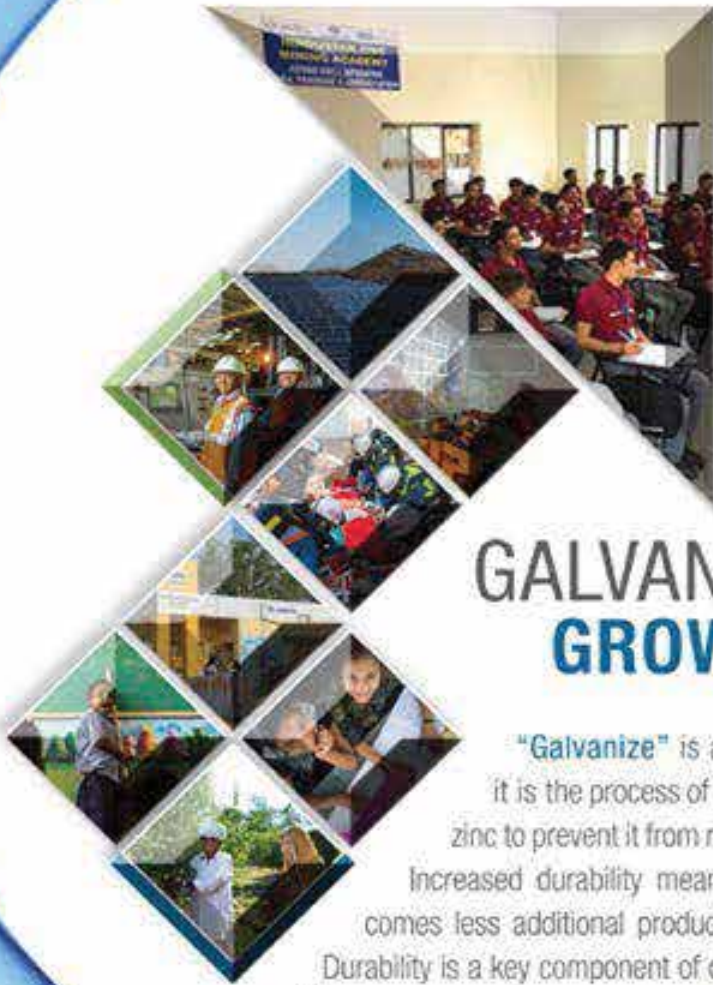
# GALVANIZING GROWTH

Sustainability Report 2016-17



Hindustan Zinc Limited





## GALVANIZING GROWTH

"Galvanize" is a familiar word in the zinc industry; it is the process of coating metal with a protective layer of zinc to prevent it from rusting, thus guaranteeing its durability. Increased durability means a longer lifespan; with longer life comes less additional production and less resource consumption. Durability is a key component of our growth and business sustainability strategy.

At Hindustan Zinc, we are focused on taking action by adopting the principles of the triple bottom line and implementing strategies that protect the people and conserve resources for the future. This contributes to protecting the planet and enhancing profits through volume and growth, thus protecting wealth; in essence, galvanizing.

With increasing depth of zinc deposits from the Rampura Agucha open pit, mining is becoming tougher, so we have explored additional deposits much further down, but accessing them will need a transformation from open cast mining to underground mining. Making this transition will allow us to continue operations for several decades, thus safeguarding our peoples' jobs and allowing us to continue contributing to the economy and giving returns to our stakeholders.

While underground mining undoubtedly has lower environmental impacts, it comes with additional challenges in technology, required manpower skills, and safety measures. But change is the road to growth. Remembering our commitment to society and the economy, we are ready to make this transition and give new life to our operations.

For ourselves and the world around us, we are committed to **GALVANIZING GROWTH**.

## Vision

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

## Mission

- ▶ Enhance stakeholders' value through Exploration, Innovation, Operational Excellence and Sustainability
- ▶ Be a globally lowest cost producer
- ▶ Maintain market leadership and customer delight

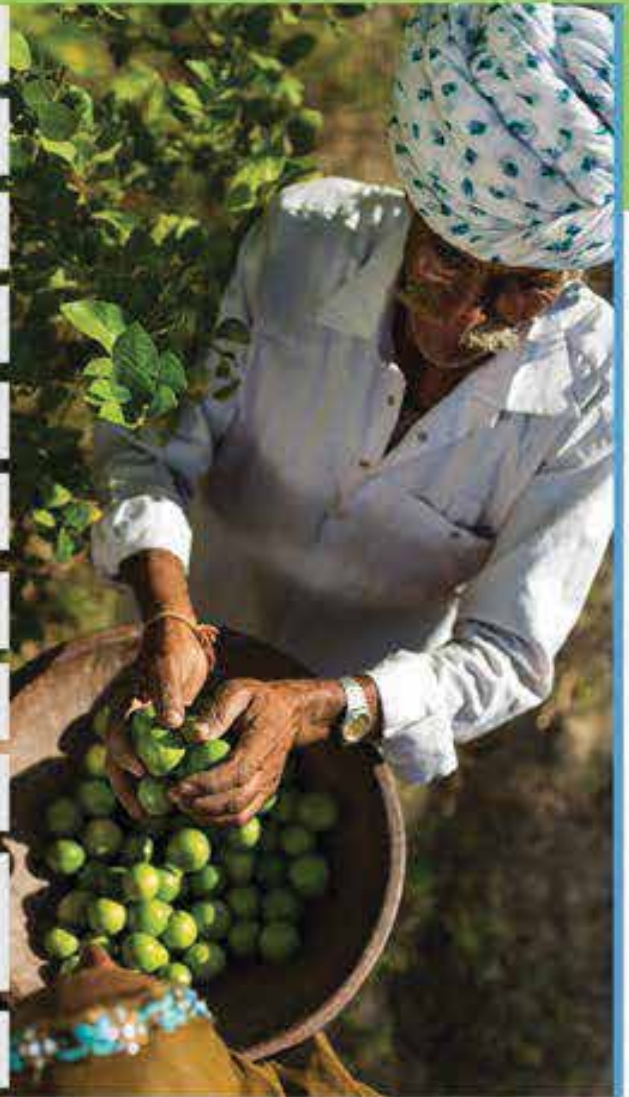
## Values





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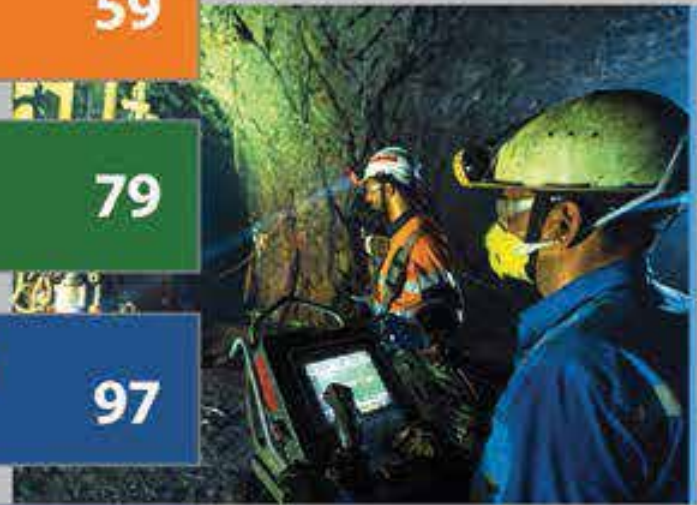
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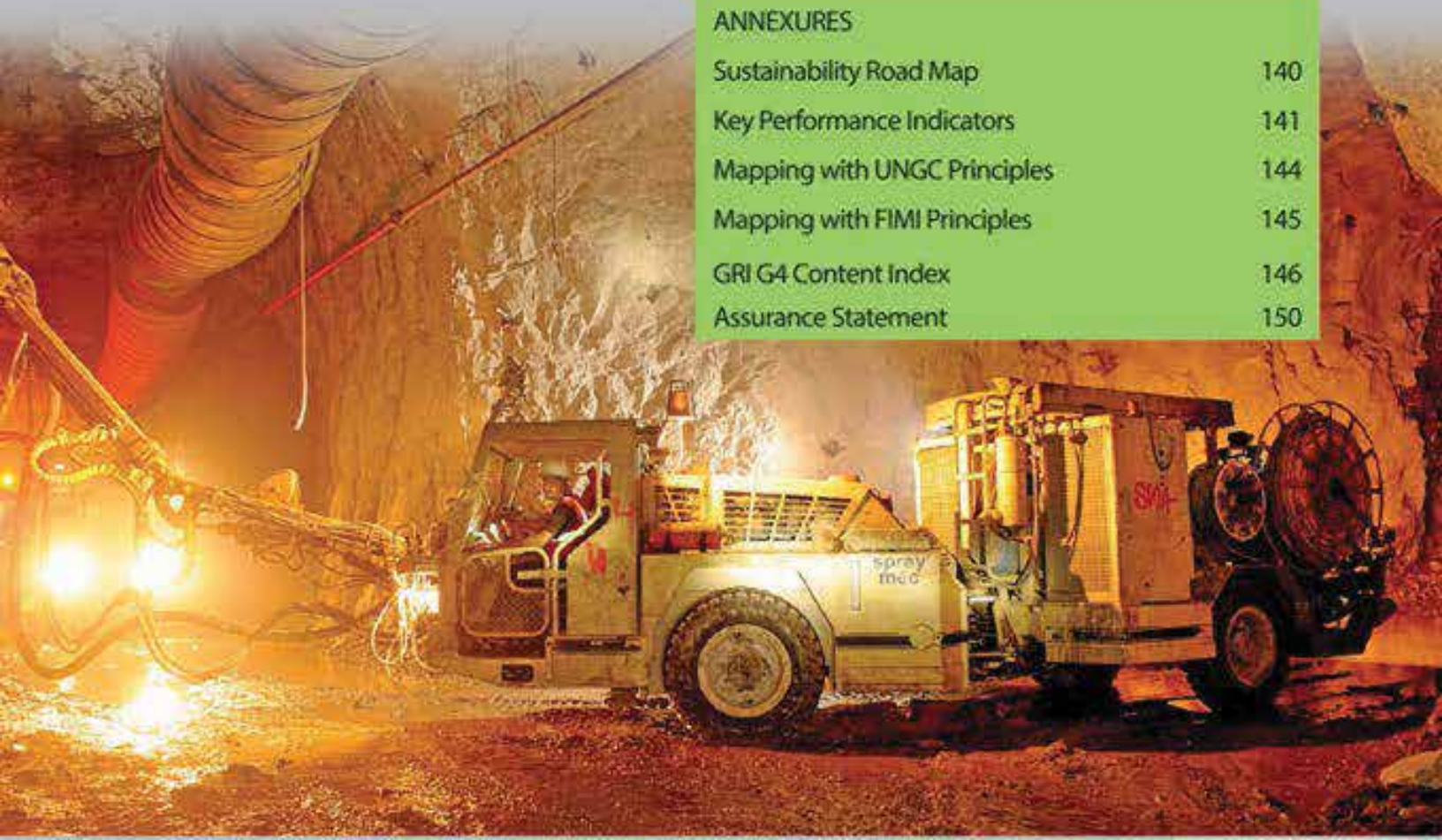


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# REPORTING ON GROWTH



The report is a compilation of our approach for a sustainable future demonstrating our performance in meeting our growth targets, and creating long-term value for all our stakeholders.



This report 'Galvanizing Growth' represents our progress in the sustainability space during the phase of transition from opencast mining method to underground mining. Coping with the significant challenges posed due to this transition, we are determined to progress by protecting and strengthening our operations and processes. Much similar to the role of zinc in galvanization, where zinc protects iron from rusting by adding strength to the metal surface by its protective layer. At this juncture of transition, we strategize to focus on strengthening our governance systems; develop world-class operational facilities; and adopt an all-inclusive growth model. The report is a compilation of our approach for a sustainable future demonstrating our performance in meeting our growth targets, and creating long-term value for all our stakeholders.

This is our second annual sustainability report. Our first sustainability report was for the reporting year 2015-16 and was titled "Zinc: Enhancing value". Since then, there have been no major changes with respect to the organisation's size, structure, ownership and the supply chain. The financial data reported in FY 2015-16 are restated and aligned according to IND-AS reporting requirements.

## Report Scope and Boundary

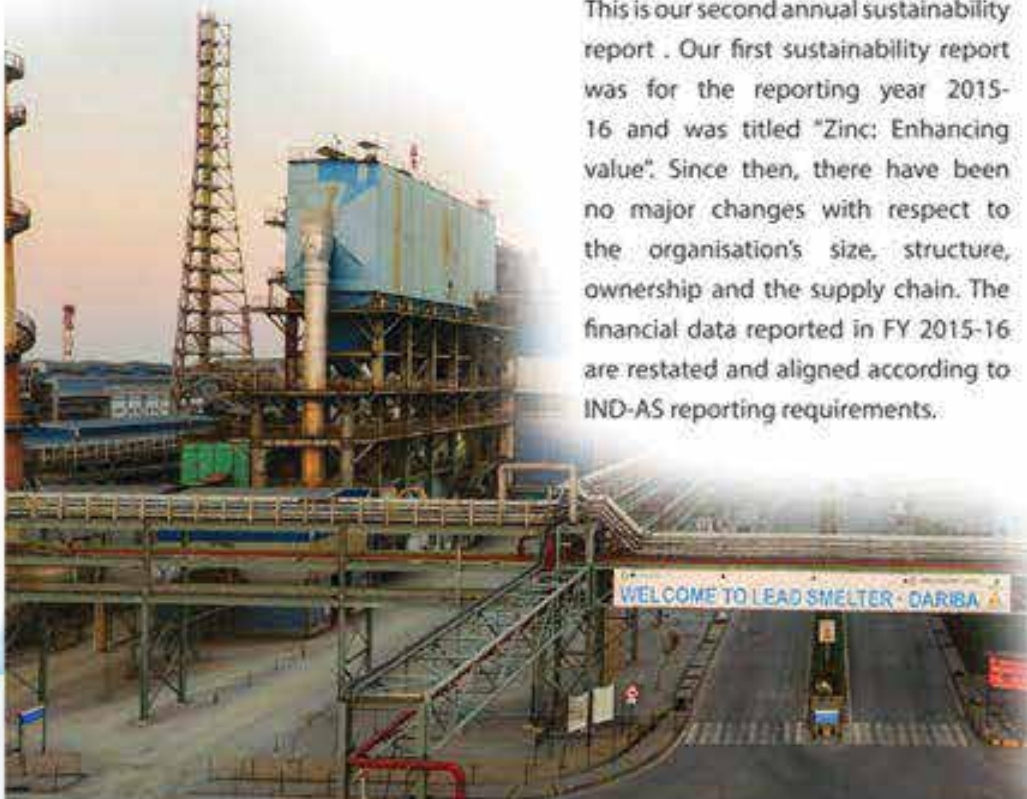
The scope of the report extends to all operations of Hindustan Zinc Limited. These include five mining locations, three smelters, and one refinery. During the reporting period, the Maton Mine and Haridwar Zinc Plant were not in operation and hence data of these operations has not been covered in this report.

The boundary for the identified material aspects are primarily limited to the operations of the company. It extends to encompass the entire value chain for certain material aspects based upon its relevance to the sustainability strategy of Hindustan Zinc and the relevance to stakeholder interests.

## Report Content

This report discloses sustainability information from 1<sup>st</sup> April 2016 - 31<sup>st</sup> March 2017. This year's report has been prepared as per GRI G4 guidelines "in accordance"- Core criteria, including the technical protocols of the Mining and Metals Sector Supplement.

The data has been reviewed for completeness and accuracy at the operations level. Unless otherwise stated, we have reported the data using the metric system and the currency has been reported as Indian rupees. The GRI Index at the end of this report provides a list of GRI Indicators and Disclosures (as per GRI G4 guidelines) and their locations within this report. Assurance of this report was carried out in accordance with the International Standard on Assurance Engagements 3000 (revised) by M/s KPMG.





## Growth Boundaries

### Mines

- ▶ Rampura Agucha Mine
- ▶ Kayad Mine
- ▶ Zawar Mining Complex
- ▶ Sindesar Khurd Mine
- ▶ Rajpura Dariba Mine



### Smelters & Refineries

- ▶ Chanderya Smelting Complex
- ▶ Dariba Smelting Complex
- ▶ Debari Zinc Smelter
- ▶ Pantnagar Metal Plant



For further details Please visit <http://www.hzlindia.com>



Or email us at [v.jayaraman@vedanta.co.in](mailto:v.jayaraman@vedanta.co.in)



# REDEFINING THE FUTURE

6



“

We at Hindustan Zinc take advantage of this firm footing to strengthen our operational processes and enhance the growth of our business performance, thus redefining our future.

”

## Galvanizing Growth through Sustainability

‘In our past lies our future’ – this holds true for Hindustan Zinc as well. With a rich heritage of zinc mining, we have the benefit of owning a vast resource base of the nonferrous base metals – zinc, lead, and silver. This marks our journey into the new markets, which acknowledge the use of these metals for several industrial and domestic purposes. We at Hindustan Zinc take advantage of this firm footing to strengthen our operational processes and enhance the growth of our business performance, thus redefining our future.

The growth of the zinc-lead industry dates back to the 9th century, with the Zawar mines being the first evidence of zinc deposits in Rajasthan, India; these mines are currently under the operational premise of Hindustan Zinc. Zinc as a metal was recognised under the designation of ‘Yasada’ or ‘Jasada’ in the medical lexicon, way back in 1374. And while the rest of the world was unaware of this novel metal, the

smelting and extraction of zinc was already underway in India by the 13th century.

The elements of growth in our history of success encompasses the entire metal lifecycle, from the metal hidden within the earth’s crust to the metal available in the markets. Across all these lifecycle stages, with a positive vision for future growth, we have created innovative and profitable solutions to drive regional and global sustainability. Accordingly, we have identified four distinct growth factors that resonate with the various stages of the metal lifecycle – growth in R&R base, growth in metal production, growth in businesses, and growth in new markets – which determine our sustainable growth as a corporate entity.

## Growth in R&R Base

Our vast resource and reserve (R&R) base forms the foundation of our business existence. With 404.4 million MT of zinc-lead reserves, we have an assured ore reserve that will last for the next 25 years. By strengthening our exploration efforts, we are continuously expanding this resource base. This follows with redefining the extraction and production targets for the future, by considering the newly identified resources. Thus, in all these years of our mining experience, we have recognised ‘growth in resource and reserve’ as the stepping stone for sustainable growth. And details on how we are progressively meeting our enhanced production targets is shared in the chapter - ‘Transitioning for Growth’.





## Growth in Metal Production

Progressing into the next stage of the metal lifecycle, another key determinant of growth, is the extraction of the metal ores from the deep layers of the earth and making the pure metal available to the industrial sector. Built on the heritage of smelting and refining processes, today we aim at developing world-class facilities for mining and refining operations. Our focus to enhance production from underground mines is aligned with the objective of maximizing production to meet the demands of the market. Attaining the highest mined metal production of 907 kt is enabled by the growth of our talent pool and deployment of advanced technologies, coupled with innovation, research & development, and greater concern for the environment. Thus, 'growth in metal production' has started the chain reaction of an all-inclusive growth involving the people, processes, and environment. Further details on the ramp-up production plan are shared in the chapter 'The Transition Blueprint'.

## Growth in Businesses

This takes us to the next operational cycle, where we are ready with our finished product and are making it available in the market to earn profits. Zinc, being the fourth most used metal, possesses an indispensable status in the industrial world. With the physical properties of high specific energy, high power density, rechargability, zero emission, and recyclability, it is one of the most sustainable metals. It finds applications in the automobile industry (galvanized car bodies), infrastructure (galvanized steel structures), pharmaceutical industry (multi-vitamin supplements,

antidepressants), cosmetics and personal care (dental creams, shampoos), agriculture (zinc fertilisers), and paints and emulsions (zinc paints), to name a few. Our other products, silver and lead, also have similar industrial applications in telecommunications, solar panels, electrical contacts, medical supplies, etc. Evidently, the growth of Hindustan Zinc drives the growth of the downstream supply chain, with its influence in such a wide range of industry sectors. Thus, the growth in our business reflects in the contribution made to the country's GDP, reaffirming our commitment to regional and global sustainability.



Today we aim at developing world-class facilities for mining and refining operations







“Growth is a continuous process, and will continue in helping us redefine our future.”

”

### Growth in New Markets

This is the ultimate stage which keeps the growth cycle continuing. With new applications of these metals being regularly identified, and new regulations coming up in contemporary markets, we stand a fair chance of achieving growth in the emerging markets. In the Indian scenario, where galvanization of car bodies is still not a regulatory mandate, the automobile industry is gradually moving towards adopting galvanization as a best practice for business sustainability. This has a direct and positive influence on our business and scope for growth in this new market in India.

Thus, our story of growth is a continuous process, and will continue



in helping us redefine our future as we work to overcome fundamental environmental and social challenges, and reshape business landscapes to become an inspirational model for our new-market peers and companies worldwide. Our approach on how we are growing the new markets is further detailed in the chapter 'Galvanizing the Market Trend'.

This is our story of galvanizing growth through SUSTAINABILITY!

## Growth Elements in Hindustan Zinc's Business





# BUSINESS PERFORMANCE



## Operational Highlights - FY 2016-17

- ▶ Record mined metal production of 907 kt against 889 kt from previous year
- ▶ Record integrated silver production of 453 MT, up 7% from previous year
- ▶ Total R&R of 404.4 million MT, a net addition of 14.5 million from previous year

**Production of Zinc Refined Metal**  
(000' MT)



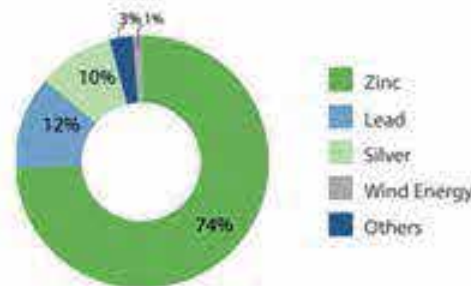
**Production of Lead Refined Metal**  
(000' MT)



**Production of Silver**  
(MT)



**Revenue Share 2016-17**





# CHAIRMAN'S MESSAGE

10

We at Hindustan Zinc believe in partnering India in its new phase of development which intends to benefit the entire populace. We see a new era of sustainable development, as India takes charge to unleash its human and natural resources potential to create growth and employment.

## Dear Stakeholders,

It gives me great pleasure in presenting Hindustan Zinc's second Sustainability report showcasing our efforts towards galvanized future growth by being consistent and growing intrinsically for supplying world-class products to meet the ever increasing infrastructure requirements of the country and the globe. During the year the global zinc prices strengthened; enhanced demand has enabled us to deliver higher outputs and return higher values to our investors in form of a special dividend.

We at Hindustan Zinc believe in partnering India in its new phase of development which intends to benefit the entire populace. We see a new era of sustainable development, as India takes charge to unleash its human and natural resources potential to create growth and employment. As the country surges ahead with its thrust on 'Make in India' as well as concerted effort on investing in the best and clean technology such as renewable energy, we are also aligned to this by investing in sustainable opportunities and contributing to the development of our host communities.

Sustainability is vital to steer operational excellence and ensure sustainable business growth. Hence, we have embedded sustainability as a strategic tool in our business to ensure our continuity in the ever-changing world of business. We agree, as resource industry, we have the opportunity to advance the Sustainable Development Goals (SDGs) which represents the World's agenda for equitable, socially inclusive and environmentally sustainable economic development. Our report demonstrates efforts to the important objectives embodied in the SDGs.

We believe that for setting a growth trend empowered workforce is vital for the business, in this endeavor, the recent restructuring of our governance structure and leveraging the female potential in our workforce has enabled us to work towards more empowered teams and supporting our mission of faster growth.

It is our firm belief that sustained efforts in the domain of social, economic and environmental fronts beyond compliance results in higher returns and this is our long term strategy for galvanizing our growth. With this we are focusing on delivering the production by expediting ramp up of the capacities at our underground mining operations whilst maintaining a disciplined sustainable approach on optimization of resources across our operations. Leveraging technology

“

We are deploying the best in class technology available in sync with a meticulously detailed transition blueprint.

”





“

Hindustan Zinc is the only Company in the country with three mines given Five Star ratings by Indian Bureau of Mines.

”

and innovation to excel in operations and deliver outcome with robust safety, health and environmental performance has been our endeavour. Currently all our efforts are concentrated towards the underground mine transition and as we do so, we are deploying the best in class technology available in sync with a meticulously detailed transition blueprint which focuses on all stakeholders impacted through the same. I am proud to share that Hindustan Zinc is the only Company in the country with three mines given Five Star ratings by Indian Bureau of Mines (Ministry of Mines, Government of India). Rampura Agucha, Sindesar Khurd and Kayad mines were rated as 'Five Star' for their efforts and initiatives taken for implementation of the Sustainable Development Framework.

At Hindustan Zinc Safety is always our prime responsibility. We firmly believe that successful & sustainable processes have always been safely executed and this lays the foundation for sustainable business. It's pleasing to report that in the year 2017 our lost time frequency rate reduced by 40% over 2016. However it is extremely painful that we had an incident at one of our project site resulting in four fatalities of contract employees' inspite of all our efforts towards minimizing the risks at workplace. With our unwavering commitment to safety we have further strengthened our 'Aarohan' program to work towards the ultimate aim of achieving 'zero harm' across all our operations and stakeholders.



As a responsible corporate, we acknowledge environment as one of the most significant stakeholder and we strategized and delivered our plan to mitigate climate change using the reduction in usage of natural resources through innovative technologies, investments in green energy and reducing & recycling waste effectively.

Growth of the host communities through social and economic development is a key component of our sustainable growth strategy. This encourages us to engage with the community and to invest in the various developmental programs. This reporting year is marked with the inclusion of a new CSR target stakeholder group – people with disabilities; we have initiated an exclusive program to meet their needs.

We commit ourselves to ensuring that Hindustan Zinc continues to be the leading corporate in Rajasthan state partnering for a better tomorrow and to be India's foremost company committed for development with responsibility. The success of our Company is only made possible by the dedication of our people, partners and host communities. I thank everyone who has contributed for making our journey successful. We will work with our empowered team in FY 2018 to build upon our performance across every element of sustainability.

Agnivesh Agarwal  
Chairman





# CEO'S MESSAGE

Hindustan Zinc is a company which has surmounted changing macro-economic environment to galvanize growth for all its stakeholders.

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## Dear Stakeholders,

It is my pleasure to present our second Sustainability report to you with the theme Galvanizing Growth. This report gives you an insight to our sustainability journey and the constructive ways we took to create success stories.

Despite global consumption challenges during the year and the reduced liquidity in India, Company delivered highest ever production of ore, mined metal & silver, EBITDA & net income. With a relentless discipline on efficiency and productivity across all our operations, the strong earnings buoyed by strong metal prices enabled us to create shareholder value and declare record dividends. This year has witnessed launching of a new product – HZDA 3 (Hindustan Zinc Die-Casting Alloy), which is created to cater to the needs of Auto and Steel Industry in India. We are proud to have three Five Star ratings mines by Indian Bureau of Mines for their efforts and initiatives taken to implement the Sustainable Development Framework.

We aim to be self-sufficient in fulfilling our energy requirement. Our portfolio of 325 MW of renewable energy generation through Waste heat recovery, Solar and Wind power is a testimony to our philosophy of responsible growth. After the recent commissioning of 16 MW captive solar power, we are looking at further opportunities to enhance our green power portfolio.

## Zero Harm

Safety remains our top priority at every level of operations. We are pleased to inform that we have achieved 40% reduction in LTIFR compared to the previous year. Our TRIFR has reduced significantly with consistent focus on enhanced reporting of leading indicators like HIPOs. We also enhanced our focus towards our high risk activity and launched the FSIPP program, helping us in improving the controls and build the proactive culture. In our operations, we registered a fatality free year after 7 years which is a positive step towards our vision of zero harm. Unfortunately, despite all the efforts, one of the project sites had an incident resulting in four fatalities of our contractor's employees. No fatality is acceptable, we are committed to our goal of zero fatalities and we have strengthened our efforts to ensure that we build a culture which is resilient and sustainable with an ultimate aim of achieving the interdependent mode by 2020. We are also focused on off the job safety programs which can enable us to build a sustainable culture.

“

Company delivered highest ever production of ore, mined metal & silver, EBITDA & net income.

”





“

We at Hindustan Zinc strive to conserve natural resources, reduce our emissions and adopt greener technologies.

”

## Towards Greener Zinc

It is our constant effort to go beyond compliance in enhancing our environment performance through innovation and technological interventions. We have set up 16MW solar power in our waste lands which would help us to reduce our carbon footprint. We are investing in green projects like metal recovery through tailings, utilization of tailings and overburden for paste fill, FUMER project for metal recovery etc. We are pleased to communicate that our head office has been certified as a Platinum rated CII – IGBC Green Existing Building – the first in Rajasthan and one of the only 14 buildings in India. We are in the process of setting up more such green buildings to support the global climate change endeavor. We continue to strengthen our environmental performance and management practices resulting in significant reduction in specific water consumption and specific energy consumption.

## Employee Well-being

We are driving various programs to develop a more focused and engaged workforce. One such unique initiative is the CEO Townhall through which the employees have an opportunity to directly interact with leadership team. Hindustan Zinc has been certified as “Great Place to Work”. We are constantly focusing on enhancing the diversity and equal employment opportunity among workforces.

## Communities- Partnering to Prosper

Developing and maintaining a positive relationship with the communities and other key stakeholders has enabled us to

address key sustainability issues and set ourselves bold targets towards growth. We spearhead a number of initiatives and long-term programs with special emphasis on education, vocational training, sustainable livelihood, women empowerment, health and medical camps, water and sanitation facilities, sports and culture, environment preservation and holistic community development. We have partnered with a national organization to set up a mining academy to train the youth on various skills to make them self-reliant. During the year, we invested nearly Rs. 50 Crores in our extensive CSR programs across our business locations.

## Supply Chain - Partnering for Progress

We have a collaborative approach towards our supply chain and have focused on long term sustainable partnerships. We are working on various innovative programs like the transport management system, vendor managed inventory, development of ancillary unit to enhance networking and improve partnership on real-time basis.

## Regulatory and Policy Developments

We abide by the necessary legal compliances for our operations. It is a critical foundation for creating shared value. Our aim is to go beyond compliance by contributing to the Sustainable Development Goals (SDGs) in partnership with stakeholders who shared our vision of transformed mining sector. As a part of commitment to development and transparent communications, we have joined the UN Global Compact initiative and annually disclose our progress through COP.

One of the most significant stakeholders are our employees. We leave no stone unturned to ensure that their training and development help us create a sustainable pipeline of resources who will take Hindustan Zinc to even greater heights. These are the assets who truly Galvanize Growth for our company.

I would like to take this opportunity to thank all our valued stakeholders, for their undeterred support in this journey of excellence and look forward to scaling new heights and Galvanizing Growth.



Sunil Duggal  
CEO



# COMPANY OVERVIEW

14



“  
With the ownership of major zinc ore mines of India, we have a market share of 70% in zinc and 53% in lead as of FY 2016. We are on the track to become one of the world's top Silver producers at 500 tonnes.  
”

## Hindustan Zinc at a Glance

Hindustan Zinc is the world's second largest integrated producer of Zinc-Lead as well as leading producer of Silver in the world. With the ownership of major zinc ore mines of India, we have a market share of 70% in zinc and 53% in lead as of FY 2016. We are on the track to become one of the world's top Silver producers at 500 tonnes.

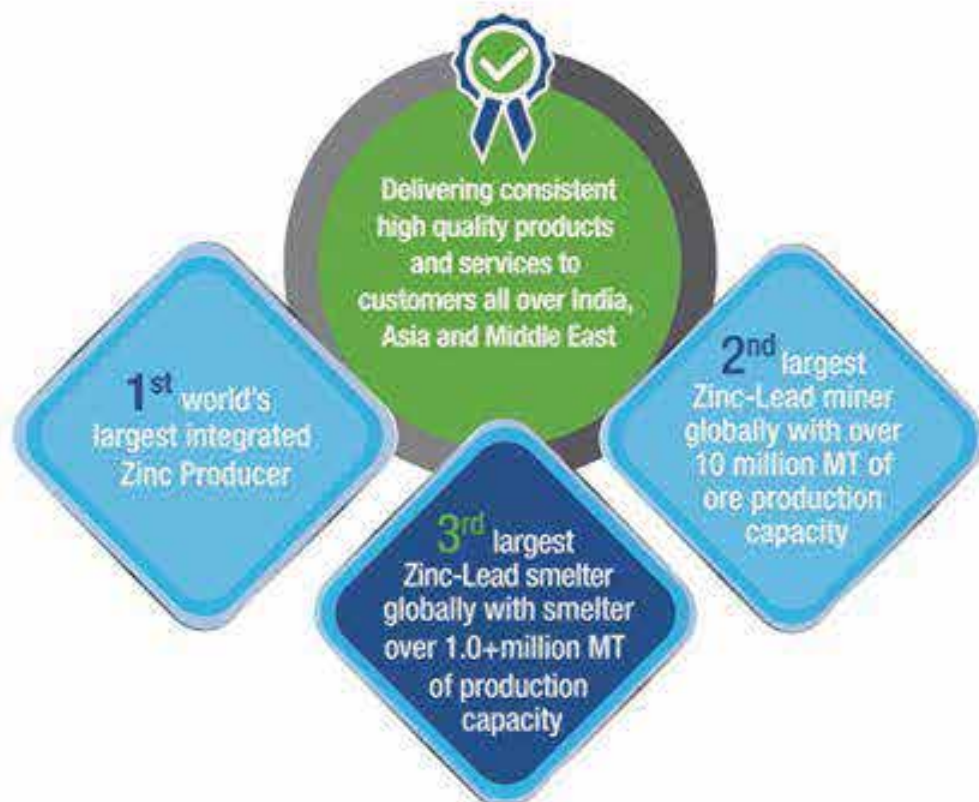
We have a world-class resource base with total reserve & resource of 404.4 million MT and average zinc-lead reserve grade of 15.8%. Our Company has a track record of consistently growing its reserve & resource base since 2003 and currently has a mine life of over 25 years.

Headquartered at Udaipur, we are an integrated mining and resources producer of zinc, lead, and silver,

operating with a workforce of 17,576. We are renowned globally for the high purity refined metals that we supply. Marketed under various brand names, our product line also includes LME registered Special High Grade (SHG) zinc and lead. Our business entails mines, smelters and refineries.

Our Company is self-sufficient in power with an installed base of 474 MW coal-based captive power plants. Additionally, we have green power capacity of 325 MW including 274 MW of wind power, 35 MW of waste heat power and 16MW of solar power commissioned this year for captive consumption.

Our long mine life of over 25 years ensures that the long term sustainability of our business is combined with our strong financials, executional excellence and strategic business management capabilities.









# Management



Ranking among the top 10 most sustainable companies in India, Vedanta Limited is listed on the Bombay Stock Exchange and the National Stock Exchange in India.

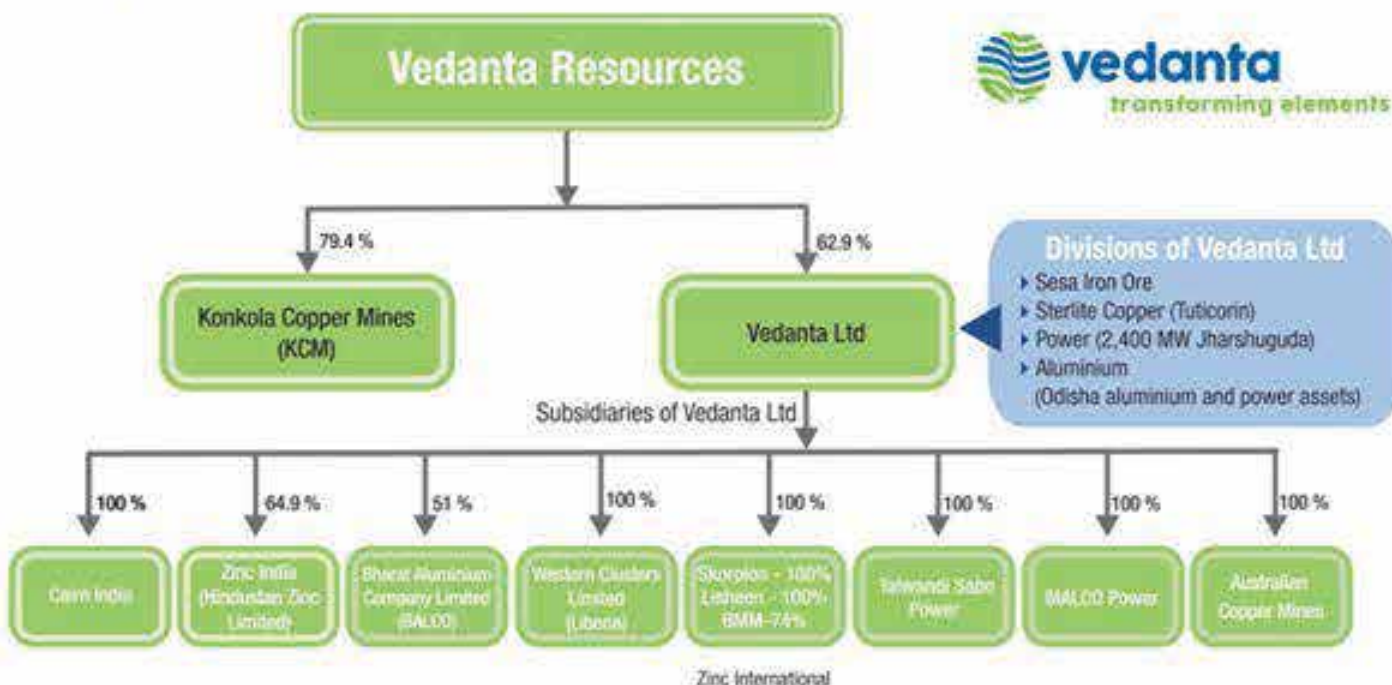


## Vedanta Group Holding

We are a public limited company and a subsidiary of Vedanta Limited - a diversified natural resources company whose business primarily involves producing oil & gas, zinc, lead, silver, copper, iron ore, aluminum, and commercial power. The company has a presence across India, South Africa, Namibia, Australia, Ireland, and Liberia.

Vedanta Limited is the Indian subsidiary of Vedanta Resources Pl.,

a London-listed company. Governance and Sustainable Development are at the core of Vedanta's strategy. They focus strongly on health, safety, and environment and on enhancing the lives of local communities. Ranking among the top 10 most sustainable companies in India, 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. More details can be found on [www.vedantalimited.com](http://www.vedantalimited.com)





## Board of Directors



**Mr. Agnivesh Agarwal**  
*Chairman*



**Mr. Sunil Duggal**  
*CEO & Wholetime Director*



**Mr. Navin Agarwal**  
*Director*



**Mr. A. R. Narayanswamy**  
*Director*



**Ms. Reena Sinha Puri**  
*Director*



**Ms. Farida M. Naik**  
*Director*



**Mr. Arun L. Todarwal**  
*Director*



**Mr. Sudhir Kumar**  
*Director*





# OUR MANAGEMENT STRUCTURE

18



## ExCO Members of Hindustan Zinc







**Hindustan Zinc  
Creating a  
Sustainable Future**



Most of our units are accredited with ISO 9001 (Quality Management System), ISO 14001 (Environment Management System) and OHSAS 18001 (Occupational Health and Safety System), SA 8000 (Social Accountability). We are complying with these standards and certificates are getting renewed on regular basis. This year SK Mine was also certified to ISO 50001 (Energy Management System).



# SUSTAINABILITY HIGHLIGHTS

## FINANCIAL

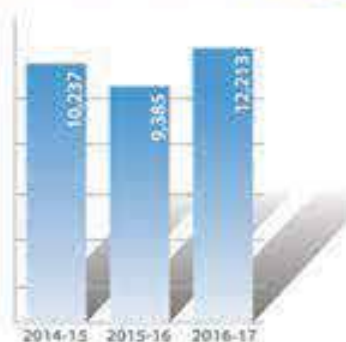
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- ▶ Record EBITDA at Rs. 9,736 Crores for FY 2017; up 46% year on year
- ▶ Record Net Profit Rs. 8,316 Crores for FY 2017; up 2% year on year

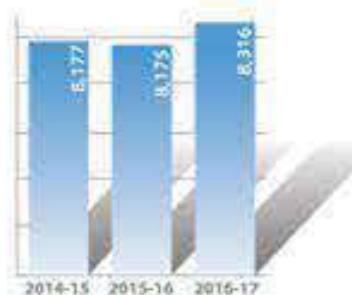
Net Revenue  
(INR Crores)



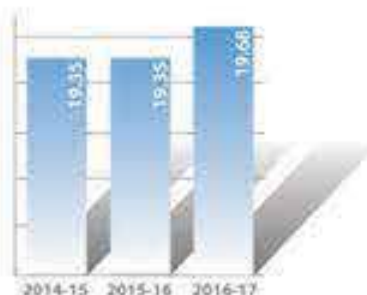
Profit before  
Depreciation,  
Interest & Tax  
(INR Crores)



Profit after Tax  
(INR Crores)



Earning per Share  
(INR)





CASE STUDY  
**Special one-time interim dividend  
announced by Hindustan Zinc!**



21

**A**t Hindustan Zinc, we are taking the necessary steps to enhance the productivity. This has resulted in contributing a special dividend and has proven to be our latest success story.

**O**ur Board of Directors declared a special one-time interim dividend of **1375% i.e. Rs 27.50** on every equity share of Rs 2, entailing an outflow of Rs 13,985 Crores, including Dividend Distribution Tax (DDT). The record date for the dividend was March 30, 2017.

Together with dividend paid in April 2016 and interim dividend in October 2016, the dividends paid in FY 2017, **totalling Rs 27,157 Crores**, have broken the record for one of the highest dividend payouts by any private company in India in any fiscal year.


**One of the highest dividend payouts by any  
private company in India in any fiscal year.**






**SUSTAINABILITY HIGHLIGHTS**  
**NON-FINANCIAL**

22



**Environment  
Management investment  
of Rs. 126 Crores**



**LTIFR  
Reduced from  
0.50 to 0.30**




**16 MW Solar  
Power Plant  
Commissioned**

**Zero  
Occupational  
Diseases**



**Zero  
Category  
4 or 5  
Environment  
Incidents**



**Green Building  
Certification for  
Yashad Bhawan  
Head Office, Udaipur**







**0.64 million  
man hours of  
Safety Trainings  
Provided**

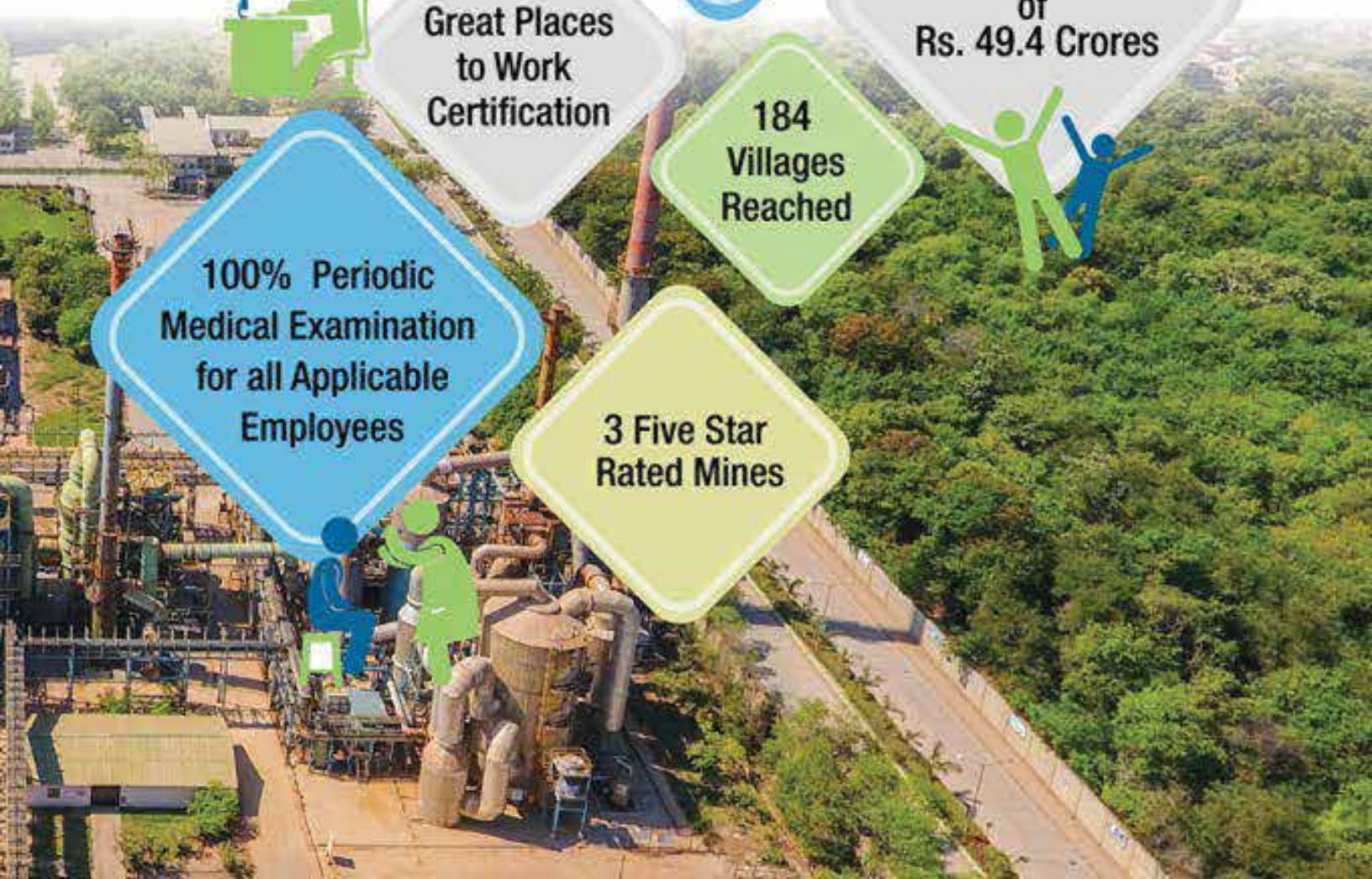
**Community  
Welfare Investment  
of  
Rs. 49.4 Crores**

**Great Places  
to Work  
Certification**

**184  
Villages  
Reached**

**100% Periodic  
Medical Examination  
for all Applicable  
Employees**

**3 Five Star  
Rated Mines**





# SUSTAINABILITY SCORECARD

 Goals and Targets FY 2016-17	 Performance FY 2016-17	 Status
 <b>Health and Safety</b>		
Achieve zero fatal incidents	Four fatalities (All 4 contract employees) in project	✘
Achieve zero occupational illness cases	No occupational illness cases recorded	✔
Reduce Lost Time Injury Frequency Rate (LTIFR) to 0.45 or less	LTIFR reduced to 0.30	✔
Reduce Total Recordable Injury Frequency Rate (TRIFR) to be 1.02 or less	 TRIFR reduced to 0.98	✔
Mock drills for emergency responses to be charted and executed	Emergency response plan review completed for all units	✔
Safety Standards- Implementation	10 high risk safety standards rolled out for implementation across units	➡
 <b>Human Resource Management</b>		
Business ACT UP to be rolled out in Q1 and Technical ACT UP to be rolled out in Q2	16 stars were identified in Business ACT UP and 33 in Technical ACT UP	✔
Achieve 20% women employee strength	 20.1% women employee hired during the reporting year	✔
Employee engagement to be enhanced through periodic interaction schedule with stars/young leaders/women executives	The engagement scores of Hindustan Zinc have shown 5% improvement and have got > 70% on most of the counts. There has been a progressive move in the engagement scores as compared to previous year.	✔

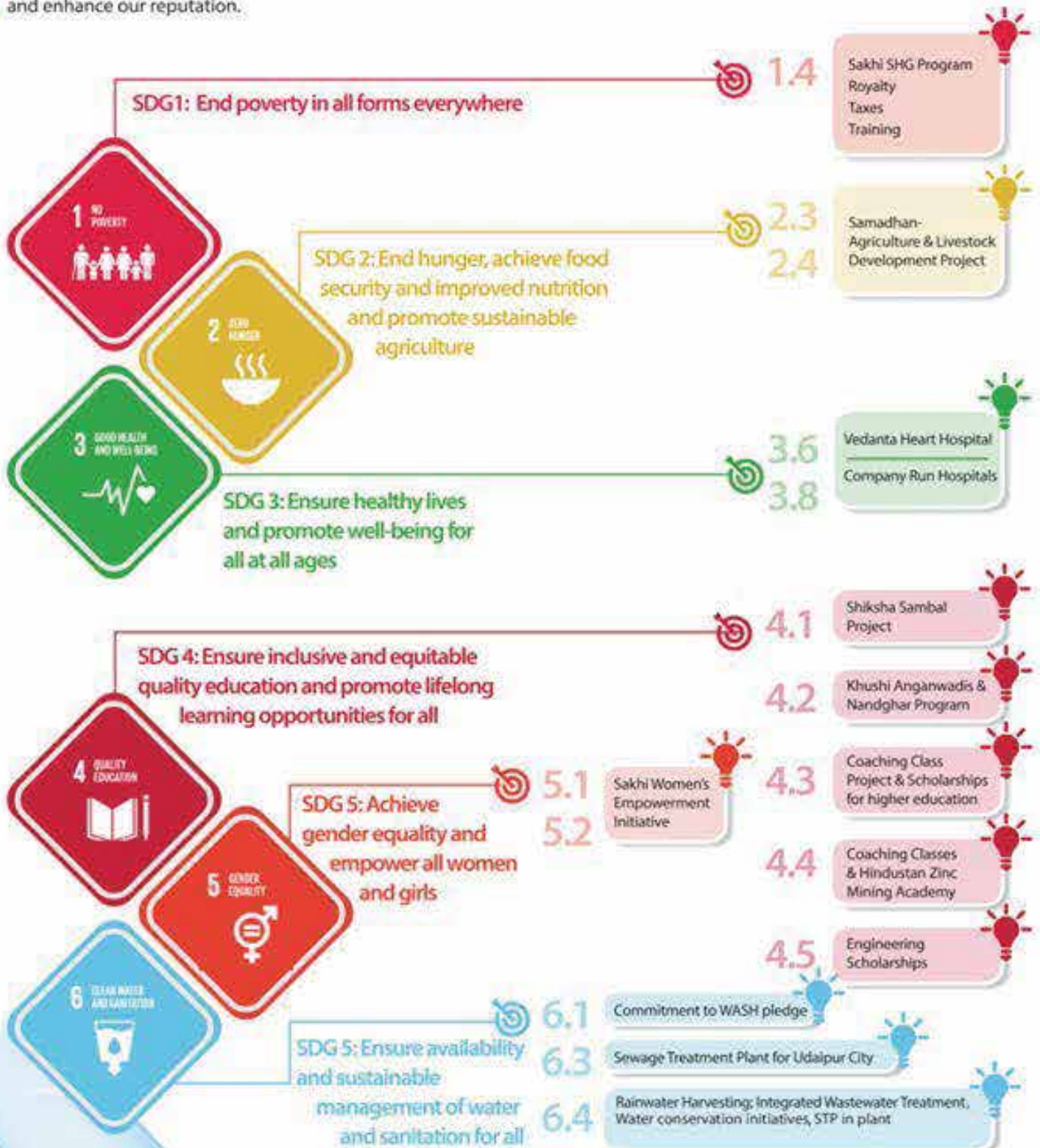


 Goals and Targets FY 2016-17	 Performance FY 2016-17	Status
 <b>Environment</b>		
Achieve Water Savings - 0.13MCM	The water saving targets achieved( Actual- 0.18MCM)	✓
Achieve energy Savings - 0.042 Million GJ	Due to delay in the commencement of few scheduled initiatives, the energy savings targets could not be achieved.	✗
Achieve GHG emission reduction by 5% in next five years	We are in the process of achieving the target in the next five years	⇒
Implementation of BMP recommendations 	Annual phase wise implementation of BMP recommendation projects have been started across all Hindustan Zinc sites. E.g awareness drive in villages for plantation and biodiversity at Rampura Agucha Mine (around 20 villages are covered)	⇒
 <b>Community</b>		
Develop impactful, flagship community programs with effective outcome based metrics	Started and strengthened flagship programs like Khushi Anganwadis, Sakhi - Women's empowerment, Samadhan - Agriculture & Livestock Development, Shiksha Sambal and Hindustan Zinc Mining Academy for neighbourhood communities	✓
Strengthened governance systems and review protocols	Revised CSR Policy, CSR SOPs, DOA in place. Rigorous governance and monitoring systems in place. CSR internal auditor in place with clear and comprehensive scope.	✓
Generate ideas and plans for new and innovative CSR projects for coming years	Vision drawn up for new programs on disability, higher technical education, sports, etc.	✓
Start and increase employee participation in CSR activities	Some special employee engagement drives undertaken this year; others are in the pipeline	 ⇒



# COMMITMENT TO GROWTH BY ALIGNMENT WITH SUSTAINABLE DEVELOPMENT GOALS

As a responsible organization, we align our sustainability interventions with the UN Sustainable Development Goals (SDGs) universal framework to achieve meaningful impacts and results. We prioritize the UN SDGs on the basis of our material issues and devise action plan in collaboration with our business partners to mitigate future risks, meet stakeholder expectations and enhance our reputation.



SDG - Sustainable Development Goals

Sub - Goals

Initiative



SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all

7 AFFORDABLE AND CLEAN ENERGY

7.2

Solar Power; Wind Power; Waste Heat Recovery Boiler

7.3

Energy saving Initiatives throughout operational processes  
ISO 50001  
Carbon Pricing

SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

8 DECENT WORK AND ECONOMIC GROWTH

8.5

Workplace diversity & Local employment

8.6

Hindustan Zinc Mining Academy

8.7

Commitment to UK Modern Slavery Act, 2015

8.8

Collective Bargaining  
Arohan journey for safe work place  
OHSAS 14001

SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

9.4 & 9.6b

Waste Utilization in Cement Industry  
Green Building Certification

9.5

Innovations in waste by CRDL

SDG 12: Ensure sustainable consumption and production patterns

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

12.4 & 12.5

Fumer Technology  
Pastefill Plant  
Captive Solar Power Plant  
Digitisation of Mines

12.6

Annual Sustainable Development Report  
basis GRI / UNGC-COP

SDG 13: Take urgent action to combat climate change and its impacts

13 CLIMATE ACTION

13.1

Alternative Energy  
Energy Efficiency  
Awareness Drive on Biodiversity Conservation

SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

15 LIFE ON LAND

15.1

Tree Inventorization  
Butterfly Park  
Medicinal Plants Garden  
Nursery for Endangered species

15.10a

Signatory to the Indian Biodiversity Business Initiative (IBBI)  
Biodiversity management Plan

SDG 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development

17 PARTNERSHIPS FOR THE GOALS

17.16

Stakeholder Engagement

17.17

Partnership with Government of Rajasthan for developing STP for Udaipur City





## ETHICS AND CORPORATE GOVERNANCE

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We strive to have a high level of corporate governance through a three tier structure driven by the Board of Directors and supported by five committees that help to implement strategic decisions.



At Hindustan Zinc, we have a robust corporate governance framework by which our Board of Directors seek to ensure accountability, fairness, and transparency in the company's relationship with all stakeholders. As a responsible corporate, we strive to have a high level of corporate governance through a three tier governance structure driven by the Board of Directors of Hindustan Zinc. The board is supported by five committees that help to implement the strategic decisions across our units and demonstrate good corporate citizenship through environmental awareness, ethical behavior and sound corporate governance practices.



### Corporate Governance Framework

#### Strategic Supervision

Board of Directors

Lay down strategic goals, major expansion projects, capital expenditure and business plan approvals

#### Operation Management and Control

Functional heads,  
Plant heads,  
steered by the CEO,  
CFO and COOs

Handles management and coordination of the business to seek continuous improvements in the working of the company

#### Plant/ Unit Executive Management

Comprises of several strategic SBU's

Responsible for overall execution and empowerment through decentralized decision making



## 'The Code'

Our business ethics & code of conduct addresses ethical conduct in our work environment, business practices and relationships with external stakeholders.

Our values and principles are enshrined in our Business Ethics and Code of Conduct. This applies to all executives of the company. All Board members and all executives annually affirm compliance with the Code along with the new joinees.



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## Anti-Bribery and Anti-Corruption

We aim to reduce the bribery and the potential for corruption in our entire value chain from initial stage to the final sale and delivery of our commodities to the customers. Employees shall not offer or provide undue monetary or facilitation payments, other advantage to any person or persons, including public officials, customers or employees, any associated persons, in violation of laws and the officials' legal duties in order to obtain or retain business.

We are a signatory to the United Nation Global Compact, and abide by the UNGC principle 10 which states that business should work against corruption in all its forms including extortion and bribery. To address the specific issue of bribery and corruption, our code covers topics such as the Securities dealing code (Insider Trading Regulations), Gift Policy, the

UK Bribery Act and the Foreign Corrupt Practices Act (USA). All employees are communicated on the same as a part of our code of conduct training. The same is also dealt with in our supplier code of conduct and communicated with them prior to contract approval. All our operations are regularly assessed for risk of corruption. During FY 2016-17, there have been no reported legal cases on anti-competitive behaviour, anti-trust and monopoly practices. Also there were no significant fines levied on us for non-compliance with laws and regulations.

## Slavery and Human Trafficking

At Hindustan Zinc Limited, we are committed in our approach to tackling modern slavery in our business and supply chain, consistent with the disclosure obligations under the UK Modern Slavery Act 2015. We expect

the same high standards from all our contractors, suppliers and other business partners. We are committed to ensuring that there is no use of forced, compulsory or trafficked labor or anyone held in slavery or servitude in any part of our business and we expect that our suppliers will apply the same high standards to their own organization and supply chain.







We have a whistle Blower policy to record the complaints against breach of code of conduct anonymously.



## Encouraging Fair Practices

A whistle-blower mechanism is in place at Hindustan Zinc so as to provide an opportunity for employees and other business partners to report any unethical practice within the company. We have a Whistle-blower policy that ensures that the identity of whistle-blower is kept confidential. Complaints can be reported pertaining to the following areas such as:

- ▶ Fraud against investors, securities fraud, mail or wire fraud, bank fraud, or fraudulent statements.
- ▶ Violations of any rules and regulations applicable to the company and related to accounting and auditing matters.
- ▶ Intentional error or fraud in the preparation, review or audit of any financial statement of the company.
- ▶ Any violations to the Company's ethical business practices as specified in the Company's Code of Conduct policy.

Any complaints under this policy, is reported to the Group Head-Management Assurance who is independent of operating management and business. The Head-Management Assurance ensures investigation of complaints and submits regular reports on any complaints received to the Company's Audit Committee for review. During the reporting year, whistle blower complaints were monitored and all have been satisfactorily resolved. We received 29 investor complaints and all of them were also resolved. Other complaints including customer complaints that were received have also been suitably addressed.

Complaints can also be sent to:



Email: [hzlwhistle.blower@vedanta.co.in](mailto:hzlwhistle.blower@vedanta.co.in)



Hotline number: (000-800-100-1681)



Web based reporting platform: <http://www.vedanta.ethicspoint.com>



## GALVANIZING THE MARKET TREND

With huge investments being made for the development of smart cities and furthering of existing infrastructure, 'galvanization' is quickly becoming the trend in India. The demand for zinc is likely to grow as a consequence of massive capital outlays in the infrastructure, power & telecom, and building & construction sectors, among others. Being the single largest zinc and lead producing company in India, we are well-equipped to capture these emerging markets. The reporting year evidenced an escalation in the sales of several of our products, the launch of new products, expansion into new markets, export trials, etc, all of which favour continued growth for the company.

Even as we are confident of an assured market, we recognise that there is immense scope to promote the uses of zinc and lead in Indian industry. We therefore take this opportunity to

spread knowledge of zinc and lead to other industry sectors; especially those that could possibly be a part of our downstream supply chain.

Besides a focus on new markets, we believe in driving the growth of our sales volume by improving business relationships and retaining our existing customers. To accomplish this, we provide different channels as touch points – website, telephone, live chat, direct mails, marketing media, and personal visits. To create a long-term association with our customers, we have designed several customer-specific programs. Apart from this, our regular timely engagement with our customers has been the key to a strengthened relationship with them; we intend to make use of this relationship to galvanize growth for the company as well as the country.



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“The reporting year evidenced an escalation in the sales of several of our products, the launch of new products, expansion into new markets, export trials, etc, all of which favour continued growth for the company.”

”

### 2017 Market Successes

- ▶ Highest ever zinc sales of 87,158 MT in the month of March, with Q4 market share at ~84%
- ▶ Highest domestic lead sales ever for FY 2017: 1,17,313 MT
- ▶ CGG sales growth enhanced by 125% YoY
- ▶ SHG sales growth enhanced by 52% YoY
- ▶ Launch of New Product - HZDA 3 die-cast alloy
- ▶ First ever Export trial lot of three CGG Jumbos shipped to Nippon Steel Thailand
- ▶ Re-entry into Bangladesh market with good starting volume of 1,000 MT per month
- ▶ Deal with Adani Mundra saving USD 3 per MT in internal logistics cost for exports



# PRODUCT PROFILE

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 <p><b>Special High Grade Zinc (SHG)</b></p> <p>Chemical Composition 99.995% Zinc</p> <p>Conforms to the following standards: ASTM06— SHG Z1J001 Grade BS EN 1179:2003— Z1 Grade</p> <p>LME Registered Brands</p> <table border="0"> <tr> <td>HZL SHG</td> <td>99.995%</td> </tr> <tr> <td>HZL Zn SHG</td> <td>99.995%</td> </tr> <tr> <td>VEDANTA SHG</td> <td>99.995%</td> </tr> <tr> <td>VEDANTA Zn SHG</td> <td>99.995%</td> </tr> </table>	HZL SHG	99.995%	HZL Zn SHG	99.995%	VEDANTA SHG	99.995%	VEDANTA Zn SHG	99.995%	 <p><b>High Grade Zinc</b></p> <p>Chemical Composition 99.95% Zinc</p> <p>Conforms to the following standards: IS 13229:1991</p>	 <p><b>Prime Western (PW)</b></p> <p>Chemical Composition 98.65% Zinc</p> <p>Conforms to the following standards: IS 13229:1991</p>	 <p><b>Continuous Galvanizing Grade (CGG)</b></p> <p>Chemical Composition -&gt;Aluminium 0.25 to 0.80% Remaining Zinc</p>  <p><b>Hindustan Zinc Die Casting Alloy (HZDA 3)</b></p> <p>Chemical Composition -&gt;Aluminium 3.9 to 4.2% Magnesium 0.035 to 0.060% Remaining Zinc</p>
HZL SHG	99.995%										
HZL Zn SHG	99.995%										
VEDANTA SHG	99.995%										
VEDANTA Zn SHG	99.995%										




Purity  
98.5% to 99.9%

LME Registered Brand  
Vedanta 99.99%

We are honoured to be a part of the galvanizing process for the tallest national flag mast manufactured to celebrate two years of growth and development by Telengana state.







## Endorsing Make in India: Hindustan Zinc Launches its New Product, HZDA 3



*"Hindustan Zinc is ready to meet 100% of the die-casting requirement in India. For meeting 1% of GDP through mining, the Indian mining industry needs to grow 27%, and Hindustan Zinc by atleast 50%."*

*Sunil Duggal, CEO*

Hindustan Zinc added a new product to its portfolio with the launch of Hindustan Zinc Die Casting Alloy (HZDA 3) - a unique product developed using primary zinc and pure aluminum. HZDA 3 will cater to the needs of the die casting sector, with applications in automobile components, household appliances, sanitary ware and defense. The launch of HZDA 3 is in sync with the Prime Minister's flagship program "Make in India", and is expected to replace imported zinc alloys. The product launched at the second International Galvanizing Conference, organised by the International Zinc Association (IZA) under the auspices of Hindustan Zinc Limited, is also known to be cost-effective, as it lowers maintenance costs of the under-body and structural components, saving the cost of after-market anti-corrosion treatments and annual inspection. Armed with several advantages, the product is a boon to the Indian automotive industry.

### Fostering Zinc for Nutrition

Meerut-based M/s Dayal Fertilizers bagged the **HZL-FAI Award 2016** for its pioneering role in the state of U.P. in producing zinc fertiliser. The award was instituted along with Fertiliser Association of India (FAI) in 2013 to promote the use of zinc fertilisers to address the severe zinc deficiency in Indian soil and ensure the nutritional security of the country. The award, which includes a cash prize of INR 1,00,000/-, a certificate and a plaque, was conferred during the Annual FAI Seminar (November 30 to December 2, 2016).

### Continuing with our Lead Patronage

We were proud co-sponsors of the **International Conference & Exhibition on Lead Batteries**, held in Delhi in November 2016. The conference focused on upgrading the technology in lead battery manufacturing, as well as the promotion of environment-friendly lead battery recycling in the country. Rajesh Kundu, Head- Location, Chanderiya Lead Zinc Smelter received the award for 'Excellence in Technology'.

As part of our market development initiatives to grow the lead acid battery market in India, we supported the bi-annual event organised under the auspices of the ILZDA, in association with the ILA and ILZSG.



# OUR STRATEGY FOR MARKET PROGRESS



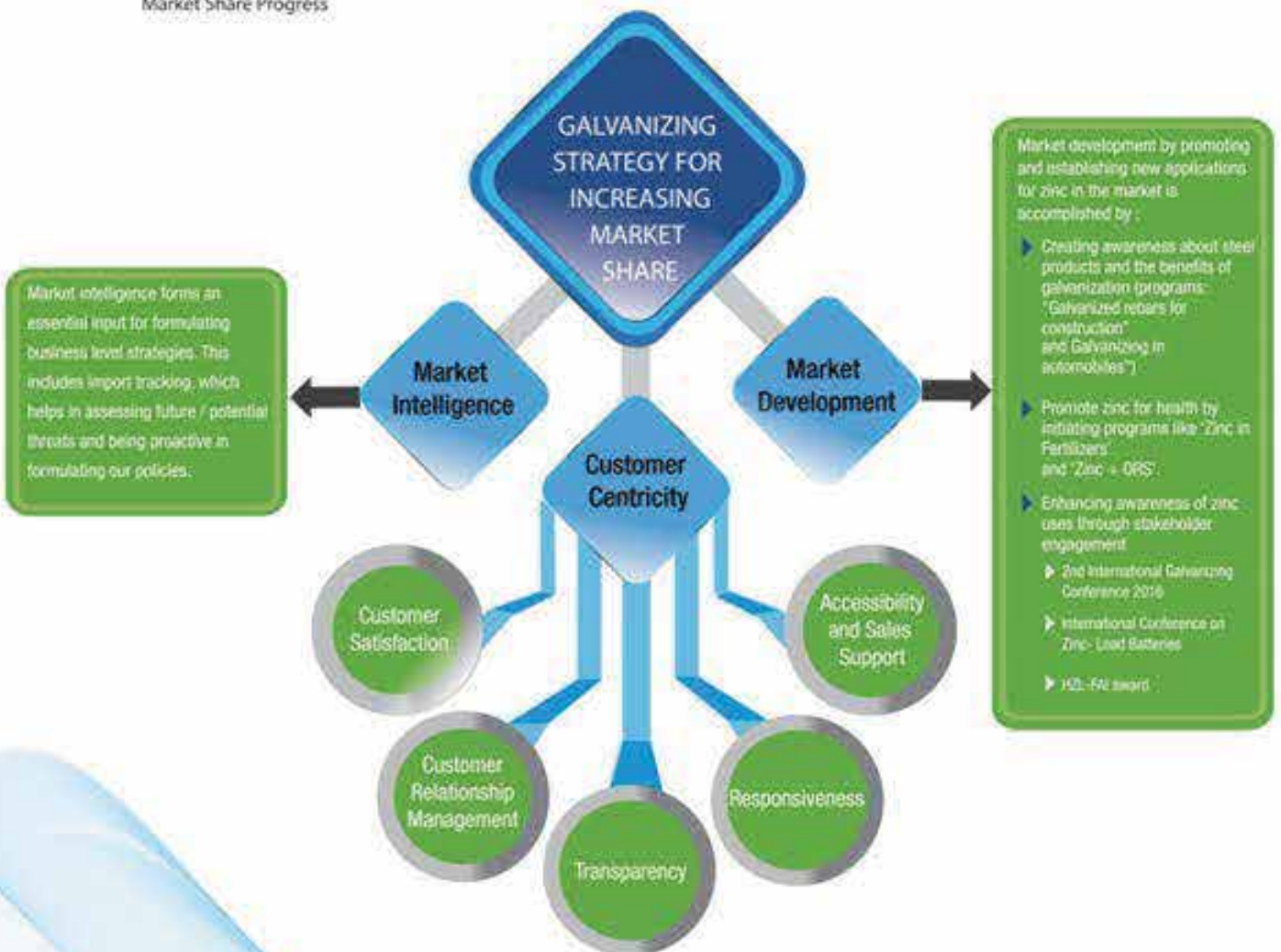
## Market Share Progress (INR Crores)



We at Hindustan Zinc take pride in being one of the world's largest integrated zinc producer, and the third largest zinc-lead miner; maintaining this status has not been an easy journey. In spite of the inherent advantages of having possession of captive mines and thermal power plants, we have always strived to deliver quality by continually increasing our market share and maintaining a stable supply chain.

Our success in the market is driven by our three-pronged strategy, which emphasises:

- ▶ Customer Centricity
- ▶ Market Intelligence
- ▶ Market Development





## CUSTOMER SPEAK



We always thank Hindustan Zinc for their kind cooperation. Whenever we faced any difficulty in our business, we have always received help from them. Acknowledging this, we have always tried to meet their requirements to the extent possible. We would like to continue this special relationship we share with Hindustan Zinc for a long time.

**Jeongwoo Choi,**  
Assistant Manager, STX Corporation

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Taiwan Zinc and Hindustan Zinc share a long-term partnership. They are trying to meet customers' demand, if any. Overall, we have had good experiences with them. The major challenges we face are of unstable sailing schedules and container claim charges. If Hindustan Zinc could dedicate more to these issues, we see an enhanced performance with Taiwan Zinc in the long run.

**Judy Chang,**  
Ambrian, Sales Manager



### Goals and Targets

- ▶ Increase in Customer Satisfaction Index by 7 points
- ▶ Optimization of out-bound logistics to reduce our carbon footprint
- ▶ Depot consolidation to prevent double handling
- ▶ Increase of value added products in product portfolio



	Growth Interventions of Hindustan Zinc	Sustainability Impact on Customer Relations
Customer Satisfaction	<ul style="list-style-type: none"> <li>▶ Biennial customer satisfaction survey</li> <li>▶ Personalised services for key customers</li> </ul>	<ul style="list-style-type: none"> <li>▶ Customer satisfaction leads to a secure downstream supply chain</li> </ul>
Customer Relationship Management	<ul style="list-style-type: none"> <li>▶ Customer relationship management portal - ConnekHub</li> </ul>	<ul style="list-style-type: none"> <li>▶ ConnekHub expedites procurement, billing, and grievance redressal, thus strengthening the relationship with customers</li> </ul>
Transparency	<ul style="list-style-type: none"> <li>▶ LME price-based pricing policy</li> </ul>	<ul style="list-style-type: none"> <li>▶ Product quality retains market</li> </ul>
Responsiveness	<ul style="list-style-type: none"> <li>▶ Tenax strap replaced steel strap for packaging of lead bundles</li> <li>▶ New product / value added product development</li> </ul>	<ul style="list-style-type: none"> <li>▶ New product – zinc die casting alloy, HZDA – launched for applications in automobile components, household appliances, sanitary ware and defense sectors. This will develop precise control over aluminum in the galvanizing bath.</li> </ul>
Accessibility and Sales Support	<ul style="list-style-type: none"> <li>▶ Voice of Customer (CGG Alloy/1 MT Zinc Jumbos/Prime Western zinc)</li> <li>▶ Network of depots, vaults, and regional marketing offices</li> </ul>	<ul style="list-style-type: none"> <li>▶ Continuous Galvanizing Grade (CGG) zinc alloy eliminates the need for manufacturing Zn-Al tanning alloy in-plant</li> <li>▶ Prime Western (PW) zinc eliminates the need to add lead separately at the customer end, thus voiding lead-related occupational health hazards</li> </ul>



## RESEARCH & INNOVATIONS

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“ CRDL has developed various processes that includes process to recover lead and silver from low grade lead concentrate and hot gas precipitator dust.

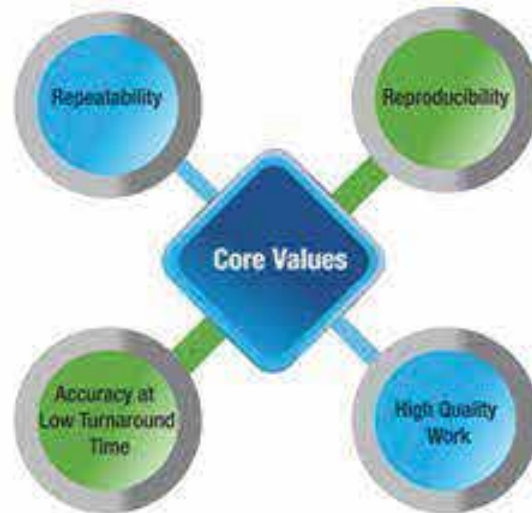
”

We established the modern Central Research & Development Laboratory (CRDL) back in 1976, with an objective to enhance metal recoveries, to recover values from the waste and optimise waste management. CRDL has developed various processes that includes process to recover lead and silver from low grade lead concentrate and hot gas precipitator dust.

With an aim of enhancement of our business, CRDL drives quality assurance and control. CRDL is certified with ISO 9001:2008,

14001:2004, OHSAS 18001:2007 and 5-S work place management systems. The laboratory has been recognised by the Department of Scientific and Industrial Research and it is listed in American Society for Testing and Materials online directory for testing laboratories.

With core values of Repeatability; Reproducibility; High Quality Work; and Accuracy at Low Turnaround Time, the center works on several projects in partnership with other reputed education institutes of the country.





# Innovation in Integrating Processes Leading to Growth

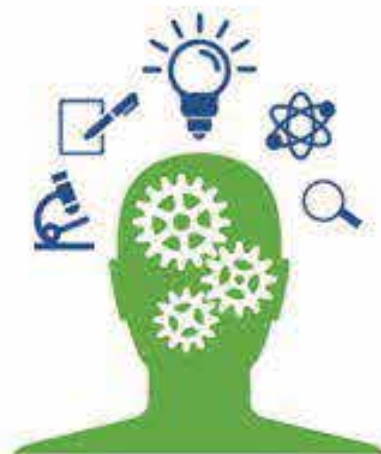
**Pyro** unit of the Chanderiya Lead Zinc Smelter (CLZS) produced about **150 – 200 MT of Cd-Zn alloy**.

Distillation of this material was discontinued due to cost economics and about 1700 MT inventory was locked up. However, the material contained about **85% of Zn** and **15% of Cd** and was not being utilised. Due to high Cd values, selling of the material was also not possible. For this, the consumption of Cd-Zn alloy in hydro-plants as partial replacement of HG/SHG Zn dust was considered.

Starting as an experiment, CRDL proposed to convert this material into dust in the Zn dust plant and partially replace HG/SHG Zn dust with the Cd-Zn alloy dust with a vision to use it in the purification section at Hydro-plants for  $ZnSO_4$  solution purification. The experiments were conducted and 5-10% replacement of HG/SHG Zn dust with Cd-Zn alloy dust was found suitable. Plant implementation was done successfully.

As a result, currently Hydro unit, **CLZS is consuming more than 100 MT/month of Cd-Zn alloy as dust** (about 8% of Zn dust consumption), thereby having improved realization of Cd-Zn alloy which was lying as an unsold inventory. The inventory and balanced alloy has been treated in distillation furnace, and more importantly there has been a reduction in HG/SHG Zn ingot based Zn dust consumption, leading to more finished goods production of equivalent amount.

**Waste Inventory Cd - Zn Alloy replaces HG/SHG Zinc in the purification plants of CLZS.**







## CASE STUDY

# Unused Inventory Discovered as Repository of Essential Metals

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At the Pantnagar Silver Plant, in the process of recovering 99.99+% Silver from different sources, about **180 – 240 MT of OPS – B is also produced** which is bled out of impurities. OPS – B slag is rich in Cu, Bi, Pb and Ag was earlier being sold at a lower realization of these metal values. CRDL's objective was to recover these metal values.

CRDL developed a process flow sheet where, this material grounded, to separate out high (>15% Ag) and low Silver bearing material. The high Silver bearing slag is directly fed to Pantnagar plant while low Silver material rich in other impurities is treated for Copper recovery as  $\text{CuSO}_4$  solution. This **resulted in more than 85% of Copper recovery** and the solution was transferred to Hindustan Zinc mines for internal consumption. The Copper leached residue was then treated for Bismuth recovery as Bismuth concentrate and this material can now be sold in the market. The left out residue rich in Lead and Silver contents was fed to pyro metallurgical furnace for metal recovery. A 10 MT/month treatment pilot plant was established at CRDL and is successfully running since December 2016. The pilot plant is continuing to validate the flow sheet and generate engineering data.

### Collaborations

- ▶ Indian Institute of Technology, Roorkee
- ▶ National Council for Cement & Building Material Research (NCCBM), Ballabgarh
- ▶ Central Mining Research Institute (CMRI), Dhanbad

### Patents Applied & Paper Publications

- ▶ 01 US Patent
- ▶ 01 European Patent
- ▶ 01 National Patent
- ▶ 01 paper in Hydrometallurgy Journal
- ▶ 01 paper in MPT conference

**Production of  $\text{CuSO}_4$  solution for internal consumption and generation of new product - Bismuth concentrate**





# MEMBERSHIPS AND INDUSTRY ASSOCIATIONS





# SUSTAINABILITY ACCOLADES

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## Operational Excellence

- ▶ IPPAI Power Award under "best innovation in power sector" to DSC CPP, Hindustan Zinc
- ▶ IEI Industry Excellence Award in Category A of Engineering Manufacturing & Processing industry presented to Hindustan Zinc
- ▶ 5 Star Rating Mine Award under aegis of Indian Bureau of Mine, Ministry of Mine, awarded to Hindustan Zinc's Kayad Mine, SK Mine and Rampura Agucha Mine
- ▶ First prize for 'Best Fly Ash Utilization' by Mission Energy Foundation, presented to Hindustan Zinc's Chanderiya Lead Zinc Smelter – CPP
- ▶ Dun & Bradstreet Corporate Award to Hindustan Zinc in 'Non-Ferrous & Precious Metals' Category
- ▶ Zinc Smelter Debari rescue team honoured by Hon'ble Home Minister for arresting ammonia leakage at ice factory
- ▶ SAP ACE Award given to Hindustan Zinc IT department; Head IT was conferred with 'IT Person of the Year' in individual category
- ▶ 'Par Excellence Award' to Hindustan Zinc at 4<sup>th</sup> National Conclave on SS

## Corporate Communication



- ▶ 'India Today - Visionary of Rajasthan' Award to Hindustan Zinc's Corporate Communication
- ▶ Udaipur Ratan Award awarded to Hindustan Zinc by Press Club of Udaipur
- ▶ Excellence in Corporate Communication given to Hindustan Zinc by Public Relations Society, Jaipur
- ▶ Shan-e-Rajasthan Award given to Hindustan Zinc by Zee News Rajasthan
- ▶ Udaipur Chamber of Commerce and Industries (UCCI) honoured corporate communication team for excellence in communication of social projects of Sakhi and Khushi





## Environment

- ▶ CII - National Award for Excellence in Water Management to Dariba Smelter Complex; recognized as "Noteworthy Water Efficient Unit", "within the fence" category
- ▶ Asia Corporate Excellence and Sustainability Awards, presented to Hindustan Zinc in category comprised of projects related to Environment Concern for Wastewater Treatment Plant, Udaipur
- ▶ National Energy Conservation Award at State and Central levels for implementation of various power saving projects for reducing the specific energy consumption by 4.81 KWH MT of ore treatment, presented to RAM Mill Stream-3, Hindustan Zinc
- ▶ "Platinum certification for green building by IGBC CII" presented to Yashad Bhawan – Head Office, Hindustan Zinc
- ▶ Corporate Governance & Sustainability Vision Award, by Indian Chamber of Commerce (ICC), DSC bagged the second prize in the 'Water Stewardship' category
- ▶ "Excellence Award for the Best Sustainable Water Management" by Advance Water Digest, awarded to Dariba smelter

## Sustainability

- ▶ Sustainable Plus Platinum Label awarded to Hindustan Zinc by CII
- ▶ Finalist in the category of Asia's Best First Time Sustainability Report in the Asia Sustainability Reporting Awards
- ▶ Commendation certificate for strong commitment - "CII-ITC Sustainability Award" presented to Hindustan Zinc
- ▶ "India Sustainability Leadership and Award" by World CSR Day Organization to Hindustan Zinc for First Sustainability Reporting"

## CSR

- ▶ State Level Bhamashah Award for significant contribution to education - received by four units of Hindustan Zinc, i.e. RAM, RDC, CSC, and KM
- ▶ FIMI NMDC Social Awareness Award for significant contribution to socio-economic development of the community near Sindesar Khurd mines
- ▶ Appreciation Plaque by FICCI for commendable work in education
- ▶ CSR Excellence Award conferred by Govt. of Rajasthan for commendable CSR interventions









## TRANSITIONING FOR GROWTH

Extraction of ore is possible from the surface and underground by employing various mining methods. Surface mining is known to have several advantages over underground mining in the context of recovery, production capacity, operational flexibility, economics, and safety. However, from an environmental perspective, underground mining is preferable due to its smaller footprint. Mining method is usually decided by the depth of ore body. Shallow depth ore body is often reached by open pit and deep-seated ore body are approached by underground mines.

At Hindustan Zinc, we predicted a scenario in our Rampura Agucha mine a few years back, where mining had reached the transition depth. The Rampura Agucha mine houses the largest and richest lead-zinc deposit in the world, having ore reserves and resources (R&R) of 100.58 million MT, with an in situ average grade of 12.76% zinc and 2% lead. In 2006, we realised that we were approaching the base of the open pit, and drilling further might not be in the company's economic favour. This prompted us to transform our mode of operations to underground mining.

Even as we decided this, we were aware that underground mining at RAM would not meet the ore requirements of our smelters and sustain the expected metal production of 1.2 million MT by 2020. Further, it would also be required to extract and refine greater quantities of the ore to achieve the desired metal. Hence, we decided to expand our existing underground mines –



Rampura Agucha underground mine, Sindesar Khurd mine, the Zawar group of mines, and Rajpura Dariba mine –whilst progressively increasing our production targets.

### Enabling a Transition

The transition from open pit to underground mining involves several drastic changes in our production method; our equipment, logistics, and transportation all needed to be changed to suit the new operations. All this called for large investments in underground infrastructure and equipment. Being well aware of the consequences, we progressed with a meticulously planned approach, attempting to create a balance between project expansion and production.

For an expeditious augmentation of the capacity of our underground mines, we have advanced with upgrading the existing infrastructure facilities like ventilation, de-watering, paste fill, new beneficiation plants, etc. We envisaged an eventually entirely 'digital mine', with completely automated operations in the future. For sustainable operations,

we have chosen a novel paste fill technology for backfilling. Mine backfill is a procedure adopted in underground mines to fill the voids created due to extraction of ore. It enables improved safety through stability of the mined out areas, avoids subsidences and also helps in increased ore extraction from the pillars. Waste rock & hydraulic fill are some of the techniques practised earlier. It helps in utilising the waste generated from the underground mining.


Besides technological interventions, we have taken the necessary steps to ensure the safety of our personnel. We have also initiated skill enhancement programs for employees which will enable them to work confidently in the underground mining areas, whilst also securing us with a skilled talent pool. A few of our success stories have been captured as case studies in the sections that follow. As we progress with our expansion ventures, these successes reaffirm our commitment to galvanizing growth by establishing zero-harm underground environments with world-class facilities, enabling smooth operations and increasing productivity.



## Transition Blueprint

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Hindustan Zinc is one of the largest integrated lead-zinc producers and a leading producer of silver, and we take pride in operating with the largest open pit mine in the world – Rampura Agucha. As the open pit mine at Rampura Agucha is approaching the base of the pit, we have decided to ramp up production at our underground mines. For a smooth transition from open pit to underground mining, the current production level is required to be enhanced from 8.7 million MTPA to ~15 million MTPA. The enhanced ore production will be contributed by our Sindesar Khurd mine (6 million MTPA), Rampura Agucha underground mine (4.5 million MTPA), the Zawar Mining Complex (4 million MTPA), and Rajpura Dariba mine (1.2 million MTPA). With a clear vision, planned approach, and set targets for the year 2020, we are currently engaged in expanding these underground mines to establish a zero-harm work environment with world-class facilities.

	VISION 2020	Achievements 2016-17	Future Targets
<b>Sindesar Khurd Mine</b> 	Target Production: <b>6 million MTPA</b>	<ul style="list-style-type: none"> <li>Increasing trend observed for all KPIs with 3.66 million MT ore production and 2.88 million MT ore treatment</li> <li>6.3% improvement in asset optimisation score</li> <li>Successful commissioning of new plant</li> <li>Successful operation of paste fill plant</li> </ul>	<ul style="list-style-type: none"> <li>Achieve 4.5 million MT production by 2017-18</li> <li>Transform the existing mine to 'digital mine'</li> <li>Introduce next generation mining machinery for fully automated operations</li> <li>S.K. Mill expansion to 6.5 million MTPA</li> </ul>
<b>Rampura Agucha Underground Mine</b>	Target Production: <b>4.5 million MTPA</b>	<ul style="list-style-type: none"> <li>Increasing trend observed for all KPIs with 1.38 million MT ore production</li> <li>Highest ever asset optimisation score of 81.5%</li> <li>Mine development of 15.1kms</li> </ul>	<ul style="list-style-type: none"> <li>Achieve 2.5 million MT production by 2017-18</li> <li>Commission all major infrastructure such as shaft hoisting system, primary and secondary ventilation circuit, and UG de-watering system by 2018</li> </ul>
<b>Zawar Mines</b>	Target Production: <b>4 million MTPA</b>	<ul style="list-style-type: none"> <li>Increasing trend observed for all KPIs with 1.77 million MT ore production and 1.457 million MT ore treatment</li> <li>13% improvement in asset optimisation score</li> <li>Approval of mining plan and environmental clearances obtained for 4 million MTPA ore production and ore beneficiation</li> </ul>	<ul style="list-style-type: none"> <li>Achieve 2.5 million MT production by 2017-18</li> <li>Transform the existing mine to 'digital mine'</li> <li>Introduce backfilling for efficient waste disposal</li> <li>Change of mining methods for enhanced recovery</li> <li>Zawar mills expansion to 8 Million MTPA</li> </ul>
<b>Rajpura Dariba Mine</b>	Target Production: <b>1.2 million MTPA</b>	<ul style="list-style-type: none"> <li>Increasing trend observed for all KPIs with 0.745 million MT ore production</li> <li>Enhancement from basic to moderate in asset optimisation score</li> </ul>	<ul style="list-style-type: none"> <li>Achieve 0.9 million MT production by 2017-18</li> <li>Enhancement in all major infrastructure such as shaft hoisting system, ventilation, and advanced de-watering system</li> </ul>



Operational for the last 2,500 years, the Zawar mines have been contributing to the ore production capacity of Hindustan Zinc by 1.2 million MTPA until 2015. Constant exploration efforts since 2007 discovered depth continuity of ore lenses and a possibility of hidden lenses, whilst also focussing on the lateral untapped areas of the mines. This led to the thought of expanding the Zawar mines to extract from the 98 million MTPA resource base by renovating the mine infrastructure and improving operating conditions therein.

The project has progressed with conducting a **public hearing with participation of more than 250 people**. Following this the necessary environmental clearance from MoEF for expansion of the Zawar mines ore production and beneficiation from 1.5million MTPA to 4 million MTPA has been obtained.

**Key Points Discussed at the Public Hearing:**

- ▶ Appreciation for education; especially girls' education
- ▶ Demand for set up of more industries in the area for employment generation
- ▶ Appreciation for maintaining the environment and tree planting in the area
- ▶ Chances of dust generation from the tailing dam
- ▶ General problem of tree felling by villagers in the area
- ▶ Improvement of the road network in the area
- ▶ Water conservation and harvesting measures
- ▶ Drinking water problem in Kanpur village



**Zawar Mines: Expansion Plans**

**Major Developments**

- ▶ Augmenting rock-handling facilities
- ▶ Planned surface and underground best-in-class infrastructure facilities
- ▶ Raise boring planned from the surface to establish adequate ventilation
- ▶ De-bottlenecking of existing mill to 2.7 million MTPA capacity and an addition of a 2 million MTPA mill to match the 4 million MTPA capacity
- ▶ Power augmentation for mill, mine, and equipment procurement
- ▶ Engaging with expert agencies for mine development



**Environmental clearance from MoEF for expansion of the Zawar mines has been obtained**





## CASE STUDY

# GCMP: Our Mantra for Combatting Underground Risks

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A zero-harm work environment being our foremost priority, we have resolved to adopt all possible management and technological interventions to facilitate safe working in our underground mines. In the same context, we have developed a Ground Control Management Plan (GCMP) – a document that elaborates on the existing support systems to ensure the safety of our employees and avoid all possible hazards. The document, approved by our Rock Mechanic Cell, considers various safety aspects in sync with the challenges associated with depth, stress, and ground parameters.

Inadequate information and improper reporting make ground monitoring a challenging task; hence, through **monthly GCMP and Trigger Action Response Plan (TARP) awareness** and training sessions, we continuously enhance the reporting culture in our underground mines. In tandem with these are our other safety management processes, which help record any changes observed in the ground behaviour. Periodic safety interaction sessions also help to arrive at the required solutions for ensuring safety.

Thus, the GCMP has proved to be our mantra for combatting underground risks and escalating the productivity metrics.

### Salient Features of the Ground Control Management Plan:

- ▶ Definition of authority and responsibility for ground support
- ▶ Systematic support rules defining the appropriate types of ground support
- ▶ Trigger Action Response Plan (TARP) providing indicators and responses to changes in the ground condition
- ▶ Describing the process for reporting and communication of geotechnical hazards
- ▶ Ensuring no employee or contractor shall work under unsupported ground
- ▶ Design review and feedback

### Training Focus for Ground Control Management Plan



**GCMP ensures safety and avoids possible hazards**



# CASE STUDY

## Hindustan Zinc: A Trendsetter in Trackless Mining

We are rapidly adopting mechanization to meet the production targets in line with our Vision 2020. A major challenge in underground mines is the transportation of ore to the surface from varied depths, after extraction. In our mines at RajpuraDariba and Zawar, which have been operating since olden times, we have reworked the ore transportation system to eliminate tracks and increase productivity by involving automation.

At **RajpuraDariba**, we eliminated the main haulage from the transportation track by creating an additional raise which directly connected the 11 mRL to the ore pass. At **Zawar mines**, we eliminated the 105 mRL haulage system by developing a raise from 130 mRL to 105 mRL, which allowed direct unloading into the COB. We also have plans to eliminate the 45 mRL track haulage by developing a ramp to the COB of the Mochia mine.



### Trackless Mining Successes:

- 01 Increased Production
- 02 Reduced Manpower Requirement
- 03 Less Breakdown Hours
- 04 Improved Safety
- 05 Reduced Consumption of Explosives









# GROWING SUSTAINABLY

“Our vision and mission echo the ideals and objectives of sustainable growth, which galvanises value for all our stakeholders.”

## Strategy and Approach

Creating long term value arising from natural resources is our core business strategy. In our case, this is aided by zinc having intrinsic galvanization properties. In a way, as we strengthen our growth, we in turn fuel the progress of the nation and the world at large. At the same time, we also advocate growth in a sustainable manner, which brings our processes full circle. Whether it is our policies, processes, or the overall management and practices that we adhere to, the ethos of sustainability and growth are built into each and every aspect of what we do and the way we do it.

Our vision and mission echo the ideals and objectives of sustainable growth, which galvanises value for all our stakeholders. We operate through a sustainability framework, strengthened by the four guiding pillars of responsible stewardship, building strong relationships, adding and sharing value, and strategic communications.



## Sustainability Vision

To excel in operations by upholding world-class standards of governance to achieve zero harm and zero discharge, while being socially responsible

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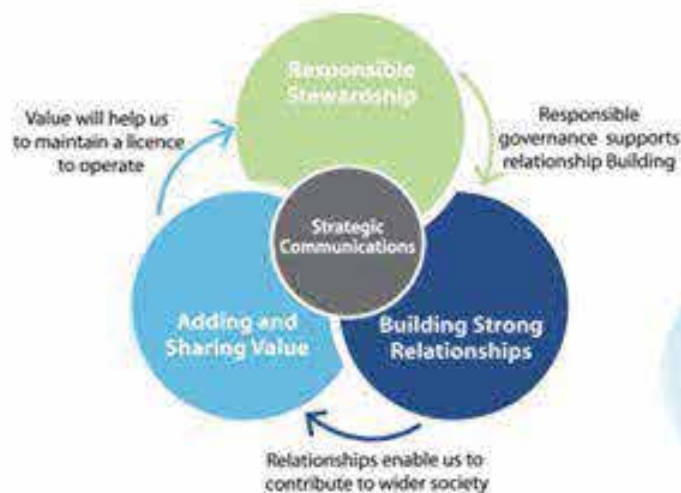
## Sustainability Mission



Our mission is to become a global leader and create value by conducting our business in a responsible and ethical manner by:

- ▶ Improving health, safety, and wellbeing at the workplace
- ▶ Eliminating the potential damage of our activities on the environment, and reducing our environmental footprint with the adoption of sustainable practices and preservation of natural resources
- ▶ Benefitting the communities in which we operate and enhancing their livelihood
- ▶ Communicating our sustainability efforts and performance to our stakeholders with transparency, authenticity, and integrity

## Vedanta Sustainability Framework





## SUSTAINABILITY GOVERNANCE

“

Using Vedanta Sustainability Assurance Programme (VSAP), we continue our business by setting sustainability targets and reviewing our progress through compliance assessments and audits.

”

Our sustainability governance structure consists of a three-tier governance mechanism, which is directed by the Vedanta Board to the units of operations at the site level. These committees – at the group, company, and unit levels – keep a close eye on our sustainability performance throughout the year. Using our internal sustainability risk management tool, the Vedanta Sustainability Assurance Programme (VSAP), we continue our business by setting key sustainability targets, even as we regularly review our progress through compliance

assessments and audits. The VSAP aids us in identifying shortfalls and helps us take the necessary corrective and preventive actions.

We have eight sustainability policies which influence every decision we make and give us the confidence to perform in a safe, ethical, and transparent manner. Through a dedicated sustainability taskforce, which includes officials from the safety, environment, and occupational health division, we are able to drive sustainability throughout our company.

### Sustainability Policies

- 1 HSE Principles & Policy
- 2 Human Rights Policy
- 3 Energy and Climate Change Management Policy
- 4 CSR Policy
- 5 Supplier & Contractor Sustainability Management Policy
- 6 Water Management Policy
- 7 Biodiversity Management Policy
- 8 HIV - AIDS Policy

### Sustainability Governance Framework





## EMBEDDING SUSTAINABILITY IN OUR BEST PRACTICES

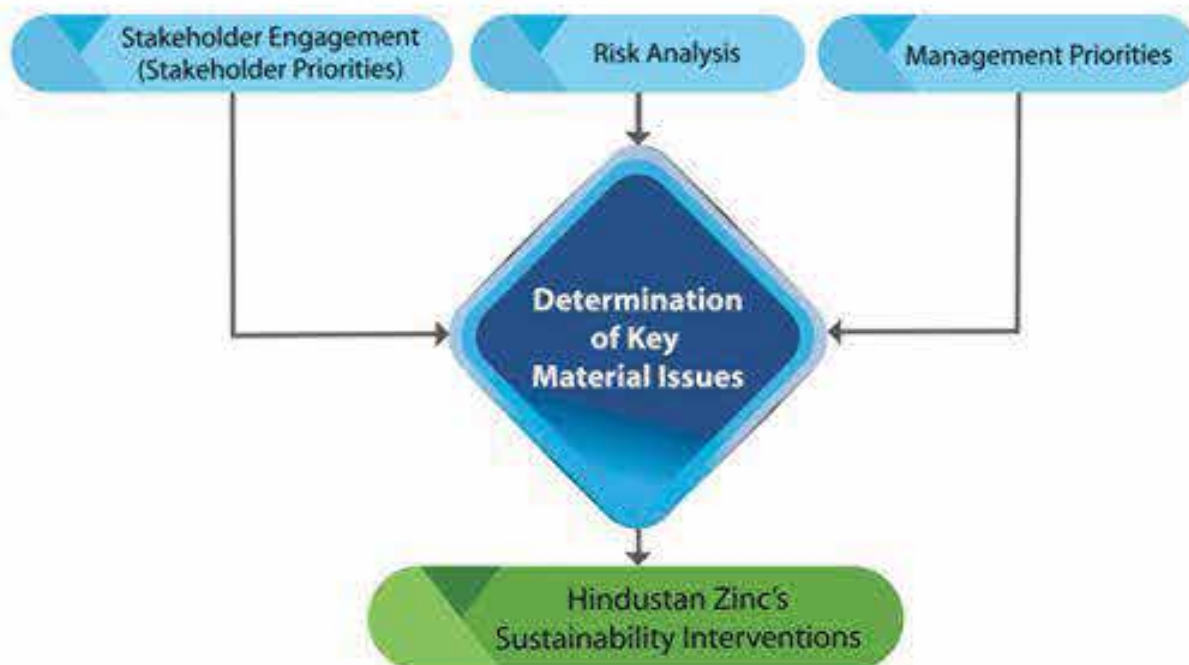
At Hindustan Zinc, we are aware of the changing paradigms of sustainable business. As much as we value our production, we place similar emphasis on the sustainability of our business. As a large business enterprise, our focus has been to work with our stakeholders and include them in our business decisions; this is essential to maintain the social licence to operate. Hence, we prioritise planned engagements with our stakeholders at regular intervals,

so that we are continuously aware of their concerns. Simultaneously, we keep a close eye on the business risks that can potentially impact the growth of the company. The analysis of these risks, in congruence with stakeholder and management priorities, forms the basis for identifying the key material issues that the company must focus onto achieve the desired growth in our performance.

“The analysis of business risks, in congruence with stakeholder and management priorities.”

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### Strategy for Sustainable Growth







We are committed to an active process of engagement with our stakeholders. We also have a Grievance Committee, chaired by the respective unit heads, to review the grievances on a periodic basis.



## Stakeholder Engagement Plan

Our business operations have several stakeholder groups, wherein each has diverse interests and distinct priorities. Therefore, we have in place a stakeholder engagement plan which is a structured method of understanding the concerns of our stakeholders and incorporating their views in our sustainability strategy. Our stakeholder engagement plan is revised every two years or earlier, if there is a significant change in operations or an increase in community grievances or incidents.

We are committed to an active process of engagement with our stakeholders.

This involves:

- Making public disclosures of appropriate information so as to enable a meaningful consultation with our stakeholders
- Meaningful consultation with potentially affected parties
- Establishing procedures through which people can make comments or complaints

Our stakeholder engagement plan is in line with Vedanta's Technical Standard on Stakeholder Engagement, and includes stakeholder identification and analysis, information disclosure, communication, problem or conflict anticipation and prevention, ongoing consultation, formation of partnerships, construction of grievance resolution mechanisms, negotiated problem solving, employee involvement in project monitoring, regular reporting forums and procedures, and other related management activities.

Grievance redressal is an important aspect of our stakeholder engagement process. We have a Grievance Committee, chaired by the respective unit heads, to review the grievances on a periodic basis. An apex committee, chaired by the location head, meets every quarter and the unit level committee meets every month and are apprised on the grievance received and action taken by the respective committees.





## Stakeholder Identification

Stakeholder identification is an important exercise under our engagement plan. This helps us classify the stakeholders who have concerns or interests in our operations and the need for their involvement; it includes assessing the influence and importance of the identified stakeholders. Influence refers to the power (political, social,

and economic) that the stakeholders have over an operation. Engagement with stakeholders is part of an ongoing process, wherein concerns and feedback from different stakeholder groups are sought at regular intervals throughout the year through various modes of engagement. The description of the same is highlighted in the table 'Stakeholder Engagement: Methods and Frequencies'.



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“ Stakeholder identification is an important exercise under our engagement plan. This helps us classify the stakeholders who have concerns or interests in our operations and the need for their involvement.

”

### Stakeholder Identification Process

1

Identify and record the individuals or groups who are affected or are likely to be affected by our operations, either directly or indirectly, or who may have an interest in the operation.

2

Identify potential stakeholder representatives, especially in the form of community leaders, who could act as conduits for both dissemination of information to a large numbers of stakeholders and for the operations to receive information from them.

3

Identify individuals and groups who may be differentially or disproportionately affected by operations due to their disadvantaged, isolated, or vulnerable status, and consider specific and proactive communication routes for these groups.

4

Identify individuals or a group of people who have been benefited or marginalised due to the overall development of an area after the enactment of Hindustan Zinc's business plan.



## STAKEHOLDER ENGAGEMENT: METHODS AND FREQUENCIES

Stakeholder & their Key Concerns	Objective of Consultation	Engagement Mechanism	Frequency of Engagement
<b>Stakeholder Group – Employees</b>			
<b>Employees</b> Safe workplace Employee engagement Career development Senior Management interaction	Employee retention and their satisfaction; Suggestions for improvements; Productivity; Welfare amenities	Mentor-Mentee, Senior Management Meet, Open Forum, Suggestion Scheme, Employee Engagement, Training Program, Town hall Meeting, V Connect	<ul style="list-style-type: none"> <li>Senior management interact with employee by rotation on a monthly basis</li> <li>Act Up Processes - Yearly Performance linked appraisal system- Twice a year</li> <li>Safety Committee - Monthly/ Quarterly</li> <li>Suraksha Chaupal – Regular</li> <li>Quarterly meetings with Contractors</li> </ul>
<b>Stakeholder Group – Trade Unions</b>			
<b>Trade Unions</b> Workforce welfare	Collective Bargaining	<ul style="list-style-type: none"> <li>Group Meeting</li> <li>One-on-One Meeting</li> </ul>	As and when required
<b>Stakeholder Group – Community</b>			
<b>Community</b> Socio-economic development	Smooth operation of Plants; Resolving conflicts; Participation in CSR initiatives; Branding	<ul style="list-style-type: none"> <li>Baseline survey</li> <li>Regular interaction by CSR field teams</li> <li>Public hearing</li> </ul>	Weekly, monthly and annually as per the requirement
<b>Stakeholder Group – Contractors and Suppliers</b>			
<b>Contractors</b> Safe workplace On going engagement	Enhanced understanding of work culture; Impart knowledge on safety requirements during operation; Imparting knowledge of sustainability practices throughout association	<ul style="list-style-type: none"> <li>Vendor Meet</li> <li>Pre-qualification Meeting</li> <li>Meeting with Senior Management</li> </ul>	Regular interaction
<b>Stakeholder Group – NGOs</b>			
<b>NGOs</b> Community development	Partnering in the Community development initiatives	One-on-One /Group Meeting	Regular interaction
<b>Stakeholder Group – Customers</b>			
<b>Customers</b> Product quality & delivery	Enhanced customer satisfaction and loyalty; Better product packaging; Improved delivery experience	<ul style="list-style-type: none"> <li>Online customer complain tracking system</li> <li>Customer satisfaction survey every two year</li> <li>Site audit</li> </ul>	<ul style="list-style-type: none"> <li>Regular interaction</li> <li>Customer Satisfaction survey- once in 2 year</li> </ul>
<b>Stakeholder Group – Government</b>			
<b>Government</b> Regulatory compliance Regional economic development	Compliance to all the regulations Securing approvals and Understanding about new development.	<ul style="list-style-type: none"> <li>Engagement for requisite approvals</li> <li>Compliance of all the regulations</li> <li>Liaison with all the regulatory bodies</li> <li>Sponsoring events • Periodic submission of the compliance status</li> </ul>	<ul style="list-style-type: none"> <li>On need basis</li> <li>For regular meetings on progress of work</li> </ul>



## Risk Identification and Management

Mitigating the identified operational risks with established policies and procedures is what drives our risk management and analysis process. The asset lifecycle has been taken into account when we created our risk management policy. Our code of business conduct and ethics, the sustainable development framework, management systems, and other internal control systems drive the necessary controls in the process.

### Framework for Managing Risks

With a robust risk management framework in place, we have managed to identify and mitigate risks that come from both internal and external factors. This has given rise to a risk management routine which has been embedded in our core and critical business activities, systems, and functions, thus shaping our business conduct while reaching for our sustainable growth ideals. Our key business decisions are taken in tandem with the impact and likelihood of various risks. Thereafter, these key considerations are linked with a formal monitoring process so that they may be classified in terms of impact and likelihood, before being handed over to the relevant managers with respect to their areas of responsibility.

This is met with a proper mitigation plan, with formal discussions and review meetings that happen on a quarterly basis.

At these meetings, the risks are reviewed and assessed vis-à-vis the control measures that have been adopted, so that further action plans

may be chalked out. Critical assessment and transparency are put into place with the help of a risk management framework that is carried out by a Group Management Assurance System, which annually reviews the reports of the Audit Committee on behalf of the Board. This is supported by the Board Level Management Committee which is made up of the CEO, CFO, and Chairman of the Audit Committee.

Additionally, we have a comprehensive risk management policy, which is also reviewed by the Audit Committee at regular intervals, with relevant suggestions put forth by the Committee for immediate implementation. Risk registers are also maintained at all our sites, which are then sent for review by the Committee. The major risks that are recorded in these registers are also reviewed by the CEO, so that the mitigation measures are appropriately implemented.

### Risk Governance Structure



“Our key business decisions are taken in tandem with the impact and likelihood of various risks.”

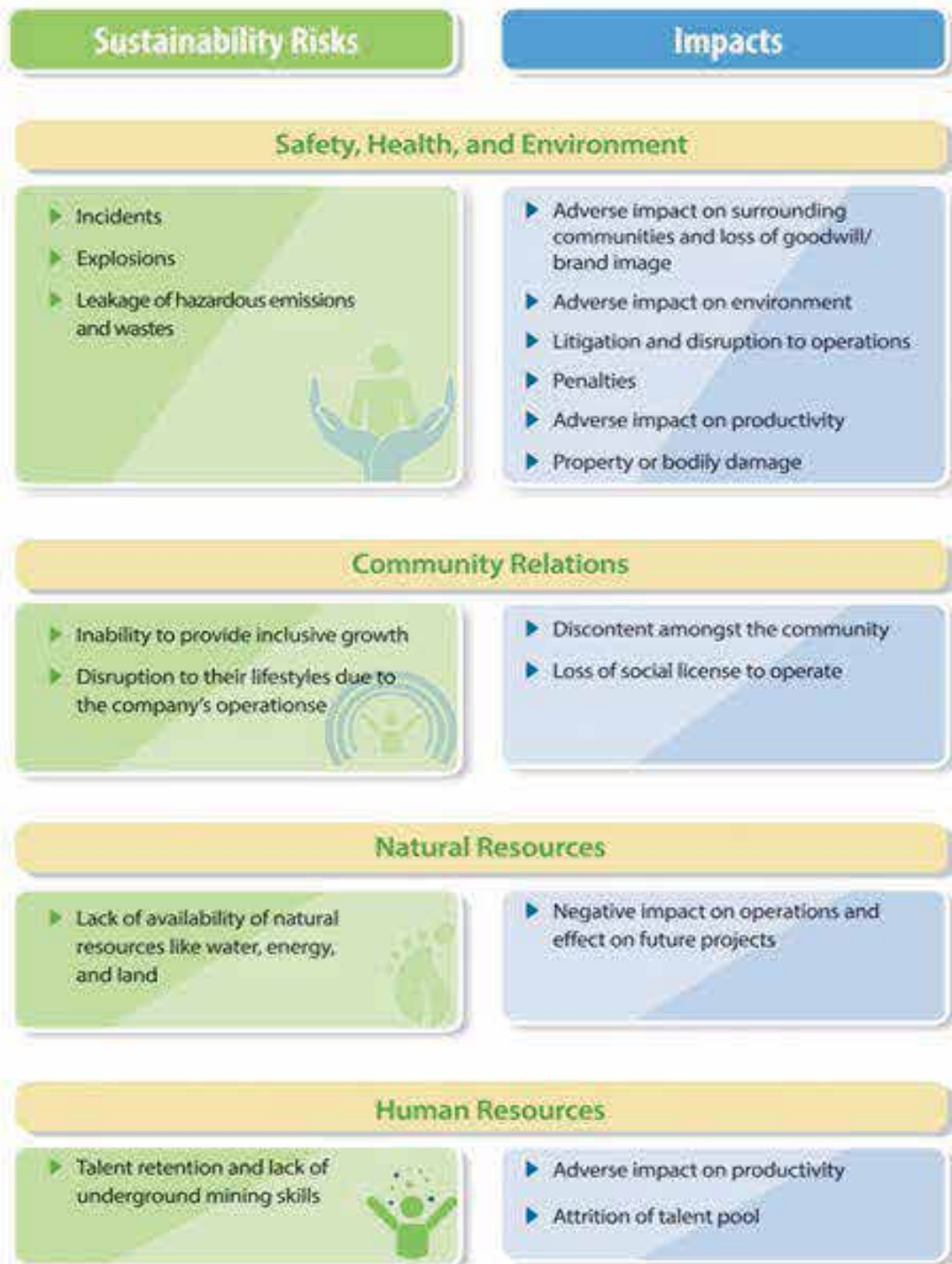




## Risk Impact and Analysis

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We regularly predict associated business risks, which allows us to prepare for the future and any consequences that we may face. At this phase of the transition, when we are rapidly progressing towards a complete underground mining process, we have analysed all our processes and spheres of influence for potential risks. This has enabled us to plan the appropriate mitigation measures and adopt specific initiatives in sync with the material priorities of the company.





## Determination of Key Material Issues

We have a firm belief that the growth of our company is greatly dependent on how well we address and manage our material issues. An extensive 7 step Materiality Assessment Process was undertaken in FY 2015-16 which helped us identify and prioritise key material issues using inputs from extensive stakeholder engagement. In 2016-17 too, we continued the ongoing engagement with our stakeholders through the year, and realised that the stakeholder and management priorities remained unchanged. Therefore, we continue to report on all the same material issues in this report too. However, the presentation of most of the key materiality topics has been re-structured in a way that is easy to comprehend in context of our business across 5 strategic sections in this report as shown below.

### Stakeholder Priorities

Health and Safety

Environment Management

Employee Engagement and Well-being

Community Development

### Management Priorities

Health and Safety

Environment Management

Energy and Climate Change

Economic Value

Regulatory Compliance

Ethics and Governance

Human Rights

Community Development

Supply Chain Management

Training and Skill Development

### Key Priority Material Issues for FY 2016-17

Health and Safety

Environment Management

Employee Engagement and Well-being

Community Development

Supply Chain Management



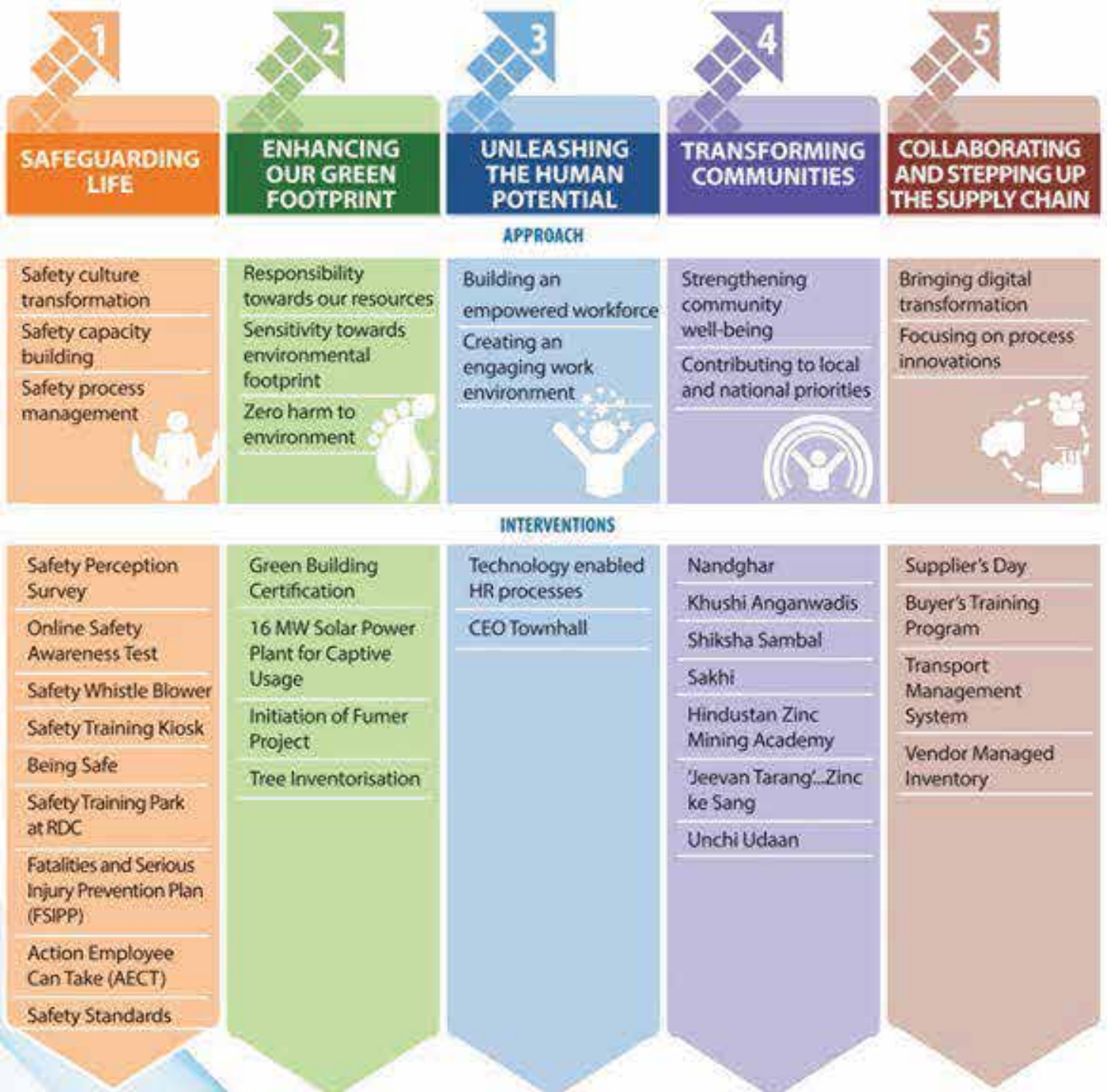
# GALVANIZING GROWTH

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The material issues of our company have presented a positive impact by galvanizing our strategy for business growth in the reporting period of 2016-17. The strategy involves a well chalked out plan for implementing several interventions, based on the foundation of a sound approach resonating with both stakeholder and management priorities.

The report henceforth discloses to all its stakeholders the approach adopted by the company to address the identified material issues. It also entails exclusive case studies narrating the noteworthy initiatives we have implemented in our attempt to satisfy all our stakeholders and meet their expectations.

## Galvanizing Business Growth Strategy - 2016-17





## SAFEGUARDING LIFE

Human life is more important than anything. Following from this truth, we prioritise providing our people with an environment where they can work without fear of hazards and accidents. This is why health and safety is one of our core values, and occupies the highest place when it comes to achieving operational excellence.

At Hindustan Zinc, we believe that every incident is preventable at work. Hence, we seek to identify and mitigate health and safety risks, and continue with our plans to safeguard the lives of our people as we progress on the path to growth.





# SAFETY DASHBOARD



## VISION 2020

Establishing a zero harm culture at work and enhancing safety by eliminating fatalities; incidents and illnesses

Material Aspect  
**Health & Safety**





## Aspect Boundaries

Health and safety has relevance both inside and outside organization. Health and Safety standards adopted by our business partners are important for us and hence our supplier screening and supplier code of conduct tries to ensure that we engage only with partners who are willing to work with us by adopting safe business practices

## Performance 2016-17



- ▶ **0.30** Lost Time Injury Frequency Rate
- ▶ **38.49%** increase in Leading Indicator
- ▶ **4** Fatalities of Contractor Employees
- ▶ **100%** Periodic Medical Examinations for all Applicable Employees
- ▶ **0.64** million hours of Safety Trainings







## Strategy and Approach

Safety continues to be our top priority, and a critical component of any business decision that we make. It is our strategic goal to ensure zero harm for all our employees, contractors, and communities. We intend to imbibe the safety concept in our organisation through a strategically planned approach, based on the three pillars of safety culture transformation, safety capacity building, and safety process management.

Our endeavours help us work towards enhancing our safety standards and processes, so as to minimise the health and safety risks across all our operations. We consider health and safety to be a tool for growth, hence, we foster a culture wherein health and safety

are core values. We have a dedicated HSE Principles and Policy, which is our primary commitment towards employee health and workplace safety; also all our major units are OHSAS 18001:2007-certified. Our Safety performance is reviewed against set targets during management review meetings. Safety is not compromised under any circumstance and, even as we pass through this transition phase, we ensure that all essential safety features are included in the underground mines to convert them into world-class facilities. For all potential emergencies, we also have an emergency response preparedness plan in place. Our safety strategy runs throughout our business lifecycle, thus perpetuating the ideal of galvanizing growth at every stage, from start to finish.

“We ensure that all essential safety features are included in the underground mines to convert them into world-class facilities.”





## Safety Governance

Our integrated safety organisation structure is driven by the Corporate Safety Council, which is chaired by the CEO and Corporate Head – EOHS, is the Member Secretary of this council. The council operates through the five corporate sub-committees and six zone apex committees, which are primarily responsible for establishing the safety culture at the unit level through various prioritised work streams, namely the Safety Interaction Committee, Incident Management Committee, Contractor Safety Management Committee, Standard Rules and Procedures Committee, and Process Safety Management Committee.

We also have a formal joint management – worker health and safety committee,

which is responsible for monitoring our occupational health & safety programs at sites. Both management and workers, including contract workers, are equally represented in these safety committees. 100% of our employees are represented

in these safety committees. Committee meetings are held regularly to check the progress of these programs, so that the best standards are constantly put into practice.



### Safety Committees: Roles & Responsibilities

#### 1. Safety Interaction Sub-committee

- ▶ To ensure that all unit employees have adequate standard and procedures to define and implement a process to improve behavioural safety using safety interaction system
- ▶ To implement and deploy and continually review safety interaction processes at zone for achieving world class safety performance

#### 2. Incident Management Sub-committee

- ▶ To develop, deploy and continually improve incident reporting and investigation process uniformly across all businesses of Hindustan Zinc

#### 3. Contractor Safety Management Sub-Committee

- ▶ To implement and continually improve Contractor Safety Management (CSM) system in units
- ▶ To standardise contractor management cycle to foster contractor awareness, involvement and improvement

#### 4. Process Safety Management Sub-committee

- ▶ To implement and maintain risk management systems and processes in order to eliminate process safety incidents and injuries

#### 5. Standards, Rules and Procedures Sub-committee

- ▶ To implement a process to identify, develop, train and implement the high risk standard and procedure





“For enhancing safety performance, we keep track of the high-potential (HIPO) incidents.”

## Galvanizing Growth through Safety

When we take on the objective of galvanizing growth, we recognise the fact that this cannot happen in isolation. Our vision of zero harm is based on the belief that safety is every individual's right and responsibility. We believe that this can only be achieved when our employees take responsibility for their own safety as well as the safety of those working with or around them. With the ideals of zero harm, we are trying to involve everyone in upholding the best standards to create a safe environment that will fuel growth in a wholesome manner.

The reporting period of 2016-17 saw a mix as far as our safety performance is concerned: while the LTIFRs continued their decreasing trend, we also had the misfortune of four fatalities at the S.K. Mill project site. Four of our contract employees lost their lives due to crane boom failure. This unfortunate incident tells us that we still have a long way to go in our safety journey.



For enhancing safety performance, we keep track of the high-potential (HIPO) incidents as well. A HIPO is an incident or near-miss that, realistically, could have under other circumstances caused one or more major injuries. Awareness of HIPO incidents is a key factor in preventing them and we share the learnings of HIPO to prevent their reoccurring at other sites. During the year, we recorded a total of 56 HIPO incidents, with each fully investigated and the lessons learned promoted across all businesses.

With our strengthened resolution to achieve zero harm; we intend to continue our 'Aarohan' journey with more conviction and new processes to drive enhanced safety.





## CASE STUDY Misfortune of Facing 4 Fatalities



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In a saddening incident which took place on 31<sup>st</sup> January 2017 at the S.K. Mill Project site, we lost four of our contract employees. The accident involved a fabricated roof structure which was being lifted for erection on top of the fine ore bin. At the verge of completion of this project, when there was just one last structure left to be erected, the crane boom failed and fell on ground along with structure. Three of our contract employees got fatal injuries and another three got injured. One of them later succumbed during treatment in the hospital.

The learnings of the incident has been shared across all our units along with the following recommendations:

- ▶ All high risk activities to be undertaken post pre-assessment, with supervision.
- ▶ Safety inspection, monitoring and audit plan mandatory for all projects.
- ▶ New standard for operation of mobile cranes to be followed.
- ▶ Strict access control mechanisms in place and mobiles allowed at site only under special circumstances.
- ▶ All high risk activities must have specific work permit system for lifting and supporting loads.
- ▶ Loading beyond 75% crane capacity is to be avoided. In exceptional circumstances when load is more than 75% such lift would be accompanied by well deliberated and mutually signed off written critical lift plan.
- ▶ Mock drills to be conducted on regular basis for emergency response and crisis management planning. Creation of 'lifting plan' for any critical and heavy lift.



Training on Crane Safety







## Aarohan – Going the Safety Way

Hindustan Zinc's flagship program for achieving safety excellence, Aarohan, has been running since 2013. We have partnered with DuPont to enhance our safety culture and inculcate a behaviour and habit of safety amongst our workforce. This initiative has helped us to reorganise our safety architecture. Our

safety management design is based on a safety management evaluation and safety perception survey. Aarohan's success in inculcating a positive behavioural change and improvement in many areas has been witnessed over time. With these positive trends, we continue with our journey towards zero harm, implementing the three pillars of our strategy for enhanced safety—safety culture transformation, safety capacity building and safety process management.

“Hindustan Zinc's flagship program for achieving safety excellence, Aarohan, has been running since 2013.”

### Progressing towards Zero Harm



### Celebrating the Association with DuPont!



On completion of the third year of our 'Aarohan' journey, a safety exhibition was organised at Yashad Bhawan, Udaipur. The exhibition which was also open to family members, included stalls focusing on specific safety topics; photo booth and gaming zones as special attractions.

#### Aarohan Achievements

- ▶ Reporting of leading indicators
- ▶ Reduction in incident rate
- ▶ Improvement in quality of incident investigation
- ▶ Increased employee engagement
- ▶ Increased structured processes
- ▶ Enhanced hazard awareness
- ▶ Increased employee participation in safety-related activities and campaigns
- ▶ Enhancement in standardisation of systems and skill development, etc.





## Safety Culture Transformation

Understanding the behaviour of a human being is key when it comes to creating new habits and breaking old ones. In a bid to transform the safety culture, we have chosen to delve deeper into the behavioural culture of our people, so as to prompt them to start inculcating safety as a culture in our work environment. From growing awareness to changing behaviours, we have designed and implemented measures that will cater to all these purposes. Specific initiatives undertaken during the year are highlighted in this section.

### Safety Whistle Blower

We have launched the safety whistle blower program to foster safety across our operations. This is a portal designed for employees to reach out to senior management when they observe any serious safety violation during operations. The portal allows employees to report on serious concerns at the site; it also has an escalation mechanism to higher authorities for immediate action regarding the serious nature of violation observed. This portal is accessible to all employees, including contractual employees, and from any network. The reported cases can be analysed and communicated to other operational sites, and proactive steps can be taken to avoid such incidents. It is not compulsory for the employees to

reveal their identity; however, disclosing their identity will help the organisation in identifying employees who have imbibed safety as an ideal, and can be rewarded for the same.

### Being Safe

Being safe is an initiative which targets spreading the message of safety to a much larger audience; which includes our employees and their families. This initiative helps position safety as an individual's responsibility. Undesirable incidents due to lack of safety can affect their lives and that of their families, thus establishing the fact that safety begins at home.

Under this program, our corporate communications team has made 11 visits to all our locations (except Pantnagar) and the Zinc School during the reporting year; they interacted with about 1,500 employees and their families. Four safety feature films focusing on safety and involving the families of our own employees have been made. Meditation sessions are organised post the screening of these films, to introspect on what goes on in the mind after such incidents. On-the-spot feedback is also taken from the participants. Participants can also share their personal experiences and incorporate safety measures when it comes to their day-to-day practices.



“We have launched the safety whistle blower program to foster safety across our operations.”

### Stakeholder Feedback on Being Safe

- ▶ Safety Workshop 87%
- ▶ Safety Films 86%
- ▶ Safety Rules 83%







## CASE STUDY Measuring Safety Perception

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The second Safety Perception Survey (SPS) was conducted to assess the effectiveness of the Aarohan journey. This survey helped us map the safety culture changes over time across all levels of the organization.

**The survey was conducted in a dual mode – online and offline;** the trained employees helped other employees fill the form. The survey was successful, with huge employee participation. Number of respondents increased by 46% from the last survey in February 2013 with participation of 15,914 employees. **'Perception towards safety' score increased from 62% to 88% in this survey.**

*"Excellent focus on Safety in our Company. It is world class & we are trying to excel in this field."*

*"Freedom of expression through evaluating our own views on safety culture and feel very good to be a part of this journey."*

### Advantages of the Safety Perception Survey

- ▶ Increase employee engagement and morale
- ▶ Capture the overall effectiveness of the safety program
- ▶ Identify areas that are in need of corrective action
- ▶ Provide management with sensitive leading indicators for safety metrics
- ▶ Effectively incorporate safety into the improvement process
- ▶ Motivate the organisation to find gaps, devise an action plan and make changes





## Safety Town Hall

Safety is a common thread which runs through our company, binding the top management and the workers. In order to reinforce our safety culture and help everyone understand why safety is paramount, senior management engages with the workforce and their families at the safety town hall, which has been instituted to strengthen our safety culture. Along with town hall at HO wherein all units are connected, during the reporting year, town hall meetings were organised at all operational units every quarter, and the senior management addressed the employees. Employees from all our locations, including contractual employees, attend this interactive session. The emphasis is both on-site and off-site safety conditions, and the employees are made to realise how critical safety is for each individual, and the company as a whole. These sessions give employees a platform to ask questions, have their queries addressed, and provide suggestions for improving the safety of our operations. Such town halls are also being conducted regularly at the operational sites, under the leadership of the site leader.

## Safety Stand Down

We have introduced the safety stand down platform to extend the learnings of an incident at any site to other units. Ensuring horizontal deployment and cross-learnings from these safety incidents, the program is conducted by the site leaders of all the units on a quarterly basis. In this interactive session, the site leaders and the employees discuss and share their experiences and learnings about LTIs and HIPOs. This focused group interaction saw participation from employees, including non-executives, contract employees, vehicle drivers, security guards, and others who shared their experience and provided feedback as well.

### Action Employees Can Take (AECT)

This is a unique platform that empowers the workforce to willingly interact with their co-workers and discuss the impact of unsafe acts that have the potential to result in a serious incident that could impact them and their family members. It also proactively encourages the workforce to take action to prevent unsafe acts. This program also enhances the risk perception of the workforce.

Several sessions on AECT have been successfully conducted, benefiting employees at various locations. The program has also been well-received by employees on the shop floor. Another program in the same space, 'Train the Trainer', is being conducted with an intention to develop more trainers who can correct the behaviour of their peers while also changing their own.

### Safety Stand Down Protocol

- ▶ Reporting of leading indicators
- ▶ Description of the incident
- ▶ What went wrong/why safety systems were bypassed
- ▶ HZL Life saving rules
- ▶ What is expected from employees
- ▶ Suggestions for improvement







Safety trainings play a pivotal role in establishing the safety culture at Hindustan Zinc and we continue to train employees to achieve and maintain zero-harm work environment.

## Safety Capacity Building

Growing our capacities in the spectrum of safety is what we target when we attempt to spread the message of safety throughout the organisation. Through focused trainings, we try to improve awareness on safety and infuse in our employees the importance of a safe working environment and its positive impact in meeting production targets.

### Safety Trainings

Safety trainings play a pivotal role in establishing the safety culture at Hindustan Zinc. Acknowledging this fact, we continue to train employees to achieve and maintain a zero-harm work environment. Apart from safety trainings, we also had following initiatives during the reporting year to improve the awareness on safety.

**Safety themes:** We rolled out monthly themes for our high-risk activities and conducted various program (training and awareness sessions, competitions, etc.) around these themes. Some of these themes included permit to work; vehicle and traffic safety; lockout tag out; confined space entry; chemical storage and handling safety, etc. to spread awareness across our operations.

**Safety videos:** We have developed seven in-house safety videos to create awareness on various aspects of safety; these videos are now part of our induction and refresher trainings.

**Safety Training Kiosk:** This is an initiative focused on training the transport drivers in the dos and don'ts in the plant premises, to ensure that they work in a safe manner inside the company premises. Started at the Chanderiya Lead-Zinc Smelter, the safety training kiosks are installed in driver's rest room; this training is part of their safety induction. The program has been helpful in expediting the rapid safety induction of the transport drivers, and is aiding in the smooth running of the plant.

With all these key initiatives, during the reporting year, our contractors and employees received a total of 0.64 million man hours of training.

### Safety Park

To create a lasting impression on the importance of safety, we attempted to provide our new inductees with a real operation site safety experience, thus enhancing the quality of our safety induction training. The safety training park has displays of standard scaffolding, model conveyor, confined space – vertical entry, confined space – horizontal entry, reactor with agitator system, crusher, job-specific PPE models, double earthing, LOTO, bonding (providing continuity), and test before touch. In addition, the park also has learning boards which highlight the HSE Principles & Policy, life-saving rules, pillars of Aarohan, and safety high risks standards.

### Online Safety Awareness Test

In order to increase the awareness among employees relating to high risks during operations, and moving towards risk-free growth, we have started conducting monthly safety online tests. This IT-driven initiative is mandatory for all executives across our operations and is conducted on various high risk activities, including work at height, confined space, vehicle and driving, electrical, permit to work, lockout and tag out, and scaffolding and rigging safety. These tests are an attempt to educate employees on the high risk of operational activities.





## Process Safety Management

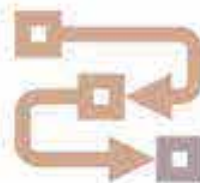
With our belief that a structured process drives success, we progressed with modifying our processes by inculcating different aspects of safety management. We have developed, established, and implemented the process safety management standards and procedures for process technology, Process Hazard Analysis (PHA), Management of Change, and Pre - Start up Safety Review (PSSR).

### Hazard Analysis

Hazard analysis is the first step to assess risks at workplace. Therefore, we regularly conduct a number of Process Hazard Analysis (PHAs) to identify and evaluate the hazards, so that we are in a good position to analyse the effectiveness of the existing control mechanisms to eliminate risks. All the changes in technology and facilities are reviewed by the senior management and authorised prior to implementation through the MOC procedure. Pre-Start up Safety Reviews were conducted, and the senior management authorised the plant startups, as required. There is also a continuous review and update of our emergency crisis and response plans. Regular mock drills are conducted to build better understanding and confidence among the workers; these drills and measures place due emphasis on preventing mishaps, and ensure that the required policies are put into place on an everyday basis, thus ensuring a high standard of functioning.

## Safety Standards

Continuing with our tradition of strengthening our safety processes by introducing safety standards, we rolled out two new safety standards this reporting year—chemical handling and storage and lifting and shifting of material.



### Strengthening Processes with Safety Standards

- ▶ Scaffolding
- ▶ Work at Height
- ▶ Personal Protective Equipment
- ▶ Confined Space Entry
- ▶ LOTO (Lock out Tag out)
- ▶ Permit to Work
- ▶ Electrical Safety
- ▶ Vehicles and Traffic Safety
- ▶ Chemical Handling and Storage
- ▶ Lifting and Shifting of material

“Safety standards are employed at all our locations, and we have dedicated champions who ensure their uniform implementation.”







“The use of safer technology, bringing innovations, and reducing manual intervention/dependency has been major focus for safety in operations.”

These safety standards are employed at all our locations, and we have dedicated champions who ensure their uniform implementation.

### Fatalities and Serious Injury Prevention Plan (FSIPP)

Planning and laying the foundation for a better safety perspective involves putting numerous targeted programs into place. The FSIPP is a recent initiative taken at Hindustan Zinc to deal with the high risk activities performed at our operations. The program has been initiated in order to deal with these risks, and to measure and mitigate the same using effective methods. The FSIPP helps in prioritising risks and identifying barriers. Further, accountability for managing risks through the barriers is defined, even as the health quotient and adequacy of barriers are checked through periodic audits. All our mine and smelter operations identify and prioritise these risks, besides trying to identify corresponding barriers which

can be periodically checked using the bow tie diagram. These diagrams are also displayed at each site for the employees, so that all their checkpoints are clearly highlighted as they go through the process.

### Safety in Operations

Apart from focusing on management initiatives, we at Hindustan Zinc also give importance to the strengthening of the safety of the machines we use. The use of safer technology, bringing innovations, and reducing manual intervention/dependency has been major focus areas during 2016-17. We have reviewed our existing systems and explored the possibility of automation to make operations safer. We have also emphasised the introduction of safety features at the designing and procurement stages.

Several initiatives undertaken at the Rampura Agucha mine can be read about in the case study, titled 'Vehicle Safety Innovation'.







**S**afety in a mine is constantly at-risk due to its vulnerability to natural disasters, faulty equipment, and human error; consequently, productivity is threatened by potential accidents and breakdowns. In open pit mines, collision among heavy-duty and light vehicles driven can easily be fatal.

To avoid such accidents we have tweaked the kind of vehicles and equipment that we are using to mitigate the risk of fatalities. At the Rampura Agucha mine, we are using various sizes of dumpers, like 240 T class and 100 T class dumpers for hauling material, and LMVs for manpower transportation. To avoid any mishap or incident, **we are using various unique safety devices for the dumpers, such as proximity sensors, fatigue monitoring system, tyre management etc.**

The year 2016-17 saw a drastic shift to automation in machine-handling and other operations:

- ▶ Operator's Fatigue Alarm System
- ▶ Rear-view Camera with Inside Cabin Monitor
- ▶ Proximity Sensors on Dumpers
- ▶ Interlocking of Seatbelt with Audio Visual Alarm
- ▶ Auto Dipper of Headlight System
- ▶ Auto Fire Suppression System

## Proximity Sensor System

A proximity sensor systems is designed to detect people and objects in blind spots. With the ability to detect both stationary and moving objects, these systems provide the driver with an in-cab audible and visual warning. The sensor works effectively in harsh environments and in poor visibility (darkness, smoke, fog).

## Fatigue Monitoring System

Another unique device is the fatigue monitoring system which captures the Infrared Images of people's eyes and alerts the driver in time without blocking the vision. It also detects operator face in same time and gives alarm for same. This advanced, smart and Intelligent System works around the clock, helping protect our work environment and reducing production downtime.



Proximity Sensor



Fatigue Monitoring





“ We have an exclusive program of contractor safety management, which is a six-step process that emphasises continual monitoring of the safe execution of the contractual work carried out by our business partners. ”

## Contractor Safety Management

To strengthen our safety excellence, we have also taken steps to extend this safety message to our partners – our contractors. We have an exclusive program of contractor safety management, which is a six-step process that emphasises continual monitoring of the safe execution of the contractual work carried out by our business partners. It involves monitoring work that includes providing them with initial safety training, daily tool box talks, a work permit system, and an independent assessment of their tools and tackles, along with regular audits. In addition, routine Contractor Field Safety Audits (CFSA) are also conducted by trained executives in existing contractor's field to improve their safety standards at par with our standards.

We encourage our contractors to report near misses. Empowering them further, we give them the liberty to say “no” to any unsafe act/condition. A periodic evaluation of business partners through the monthly tracking of their prequalification score and safety improvement plan is done using a transparent and structured process. We also reward and incentivise our contractors based on their safety performance during the contract execution period. While the corporate CSM sub-committee provides strategic guidelines/ directions on improving contractor safety and new initiatives (viz. safety passport for all employees, drivers passport, etc.); the zonal sub-committee (line managers) drives the ongoing process through unit implementation committees. Overall, this CSM process helps in strengthening our partnership with our business partners for working towards “target zero harm”.

### Contractor Safety Management





## Safety Beyond Boundaries

We have also extended our responsibility to our communities, and engage with them regularly to impart knowledge on safety. Throughout the year, we took every opportunity to engage with our external stakeholders and provide them with the necessary information for leading a safe life. Through various programs we reached to 7,900 people that include:

- ▶ **Road Safety and Defensive Driving training:** Organised in collaboration with Rajasthan Sadak Suraksha Society, Udaipur, this program benefitted around 400 to 500 cadets from Udaipur who were informed about the basics of road safety and defensive driving
- ▶ **CPR & First Aid Training:** Organised for 37 Anganwadis coordinators at Sevamandir, these sessions were created awareness on dealing with the common emergencies
- ▶ **Road Safety Rally:** Conducted along with 50 Yashad Sumedha Scholarship students, the rally from Chetak circle to Yashad Bhawan, Head Office, created awareness on road safety
- ▶ **Training on Safe Use of LPG:** Provided to approximately 40 ladies of SHG of nearby villages
- ▶ **Road Safety Awareness Training:** Imparted to the students of Zinc School & teachers
- ▶ **Fire Prevention Training:** Conducted training for the school students of villages around our operations to prevent fire
- ▶ **Safety Orientation Program:** Conducted the program for partner's representatives including all members & field workers of BISLD NGO (Agriculture & Livestock Development Program); field staff of Manjari Foundation (Women empowerment project) working at RDC location and CSR field coordinator of RDC location which was majorly focusing on Vehicle & Driving Safety. Visit to the Safety Park was also in the agenda of this program.



## CASE STUDY Community Safety: Our Priority

Quick response is our forte when it comes to matters pertaining to the communities in which we operate. One such example is an event that took place on **January 23, 2017, when a major fire occurred in a chemical factory, M/s. Deepa Chemicals & Scientific House**, located in Sukher industrial area, Udaipur. This major offsite emergency was reported to the Hindustan Zinc Debari plant. The firefighting team promptly acquired the details of stored material and its MSDS to decide the kind of fire extinguishing material to be used. There was a huge stock of inflammable substances stored in the factory. Explosions at regular intervals inside the factory were resulting into spread of fire from one storage area to another. The team used foam extinguishers and with persistent efforts it doused the fire completely.

**The prompt steps taken by our Hindustan Zinc team successfully arrested the fire.**

It was yet another occasion in which we were successful in demonstrating our responsibility to our community.





“  
At Rampura Agucha,  
we have recently  
conducted a quality  
risk assessment study  
by Industrial Hygiene  
Services, Vadodara.  
”

## Safety as well as Health

We at Hindustan Zinc believe in providing a vibrant and supportive work environment for our employees. The health of our employees is a concern which receives high priority in our company. Health-related risks being kept to a minimum is very important for the growth of the company; accordingly, we have various processes in place to manage and monitor the health of our employees.

### Health Management

Keeping a healthy mind and fit body is one the best ways to enhance the growth of human capital, which in turn triggers the growth of the organisation as a whole. Hindustan Zinc emphasises a holistic approach towards health management, including health centers and health check-ups, workplace hygiene, protective equipment, and training and awareness on health. Our health services begin with a pre-employment medical check-up, followed by periodic

medical check-ups and other on-site tests to keep track of employees' occupational exposure limits. Other specific examinations, including the routine health parameters, are also conducted. During the reporting period, 17,678 employees, including contract employees, underwent the initial and periodic medical examinations. None of our permanent and contract employees were identified to be at the risk of incidence of occupational diseases during the reporting year.

In our attempt to maintain workplace hygiene at all our locations, we have undertaken several awareness programs and are abiding by our WASH pledge for safe access to water, sanitation, and hygiene. All our employees, both permanent and contract, are provided with personal protective equipment, and are expected to use them at all times. We also have dedicated occupational health centers established at all major mine and smelter locations. These centers are well-equipped with the latest technology and are supported by occupational health experts who offer guidance and support to prevent and treat health problems.

At Rampura Agucha, we have recently conducted a quality risk assessment study by Industrial Hygiene Services, Vadodara, for setting occupation exposure limits and tracing high occupational health risk areas on location. As a result, the frequency of special tests like audiometry and spirometry has been made annual, from the erstwhile once every three years, and from five years for monitoring of hearing and lung functions of workers in high noise and high dust areas. This year we have initiated monthly tracking of community health management as well.

### Health Management at Hindustan Zinc





# Driving 'Rajasthan Road Safety Awareness Mission Program'



Being well aware of the increased death toll statistics in road accidents, we realise the need to improve safety on the roads. As a responsible corporate and for a social cause, we have entered into an MoU with Rajasthan Parivahan Nirikshak Sangh (RPNS) – a body affiliated with the All India Federation of Motor Vehicles Department Technical Executive Officers Association, Bangalore. Accordingly, we have provided a well-equipped safety mobile van to the All India Federation of Motor Vehicles for a year under the 'Rajasthan Road Safety Awareness Mission Program'. **This mission is the first in Rajasthan to spread road safety education and awareness among the general public.**

The road safety van used to spread road safety awareness in schools, colleges, corporates, and rural areas has succeeded in **reducing road accidents by 40%** in Rajasthan **within** a period of **three years**. The mission, which has received appreciation from all corners, is a novel endeavour to ensure that every individual drives back home safely.







## CASE STUDY

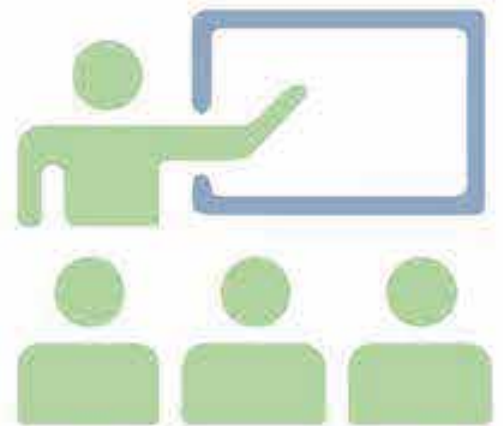
# Being trained to be the First to Aid

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**H**Health and safety issues are vital to our operations. Our office employees are trained not only to protect their own health and safety, but also to help others while on assignment; for example, by performing first aid and providing emergency help. Health and safety aspects can vary depending on the assignment, and customer sites are therefore assessed from a health and safety perspective. The employees receive training, instructions, and equipment in line with the assignment.

**A two-day certified training session on first aid was conducted by Red Cross Society for our head office employees.** Practical demonstrations of CPR, first aid for fractures and cuts, different types of bandages and their uses, etc. were also given.





## ENHANCING OUR GREEN FOOTPRINT

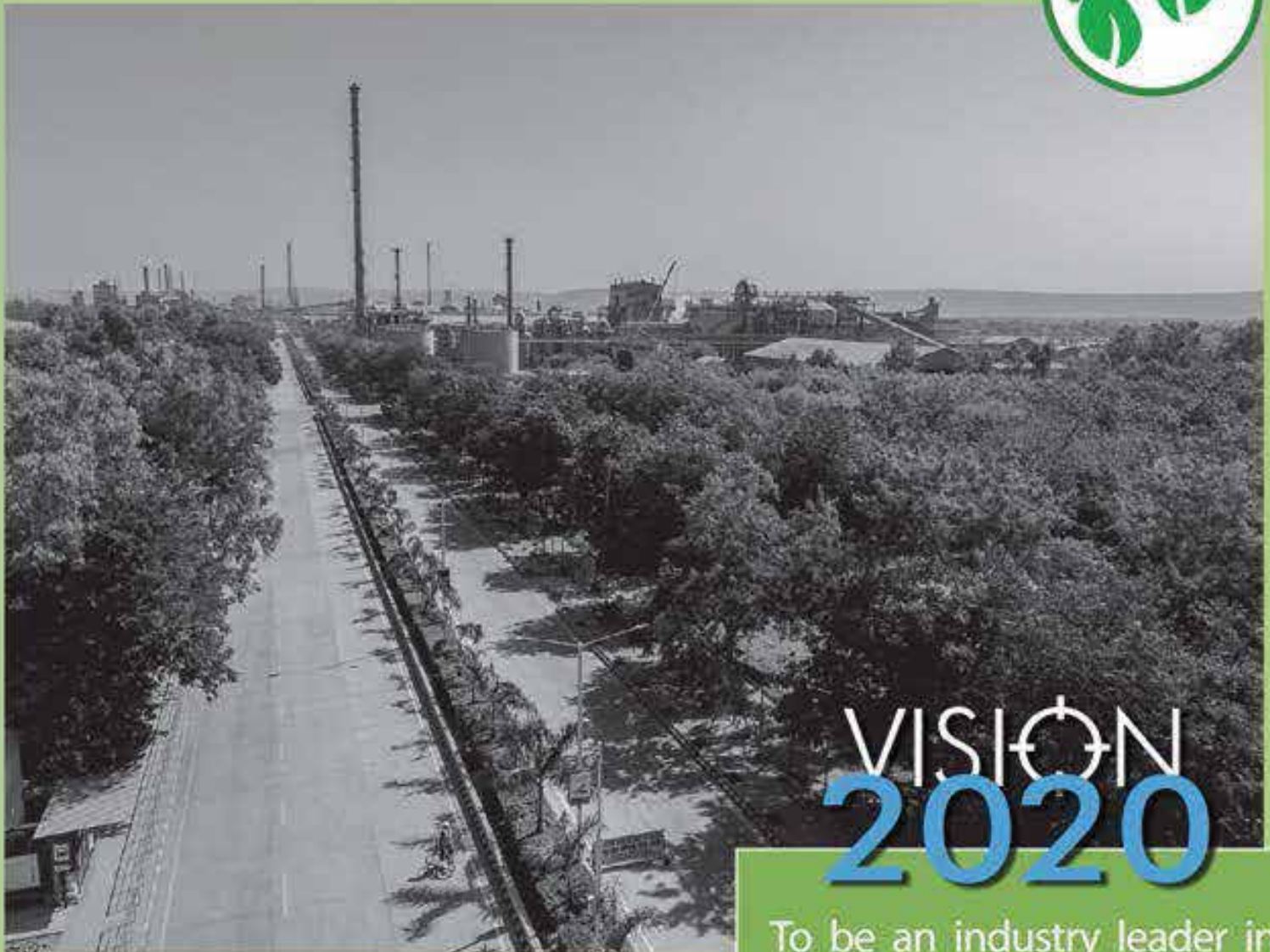
As we grow as a business entity, we realise that the secret to this growth lies in the sustainable path that we have taken. Moving forward, we acknowledge that our evolution as a leader amongst the corporates will entail steering development on the environmental front to enhance our green footprint.

Our trials for this encompass our efforts to care for nature's resources, and reduce our negative impacts while thinking ahead to the likely consequences on the environment, due to our operations. Transforming these novel thoughts into reality will eventually help us grow our green footprint.





# ENVIRONMENT DASHBOARD



## VISION 2020

To be an industry leader in using green technologies for reducing our environmental footprint; this we envisage to achieve by innovating processes for water stewardship; introducing captive usage of energy from renewable sources; and adopting new methods for waste reduction

Material Aspect

### Environment Management





## Aspect Boundaries

Mining and smelting operations are hazardous to the environment by nature. Unless the associated risks are managed properly, it can have a negative impact on the communities surrounding our operations.

## Performance 2016-17

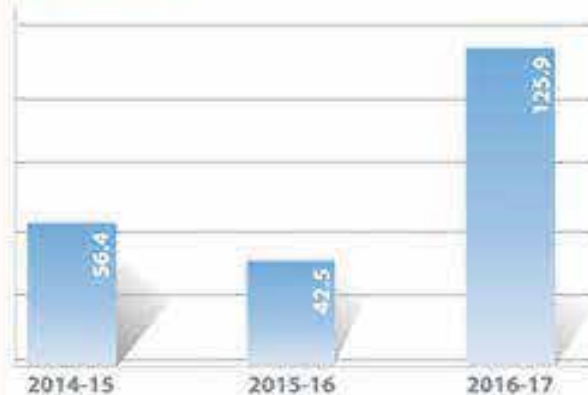


- ▶ Achieved water savings of **0.18 million cubic metres**
- ▶ Total energy consumption recorded at **41.98 million GJ**, equating to a total carbon emission of **4.4 million tCO<sub>2</sub>e**
- ▶ Phase-wise implementation of BMP- recommended projects commenced across all sites
- ▶ Commissioning of **16 MW** captive solar power plant
- ▶ Significant monetary savings incurred due to **waste-to-resource** conversions



### ENVIRONMENTAL PROTECTION EXPENDITURES AND INVESTMENTS

(INR CRORES)







“Our environmental policies help us define our approach towards meeting our commitments.”

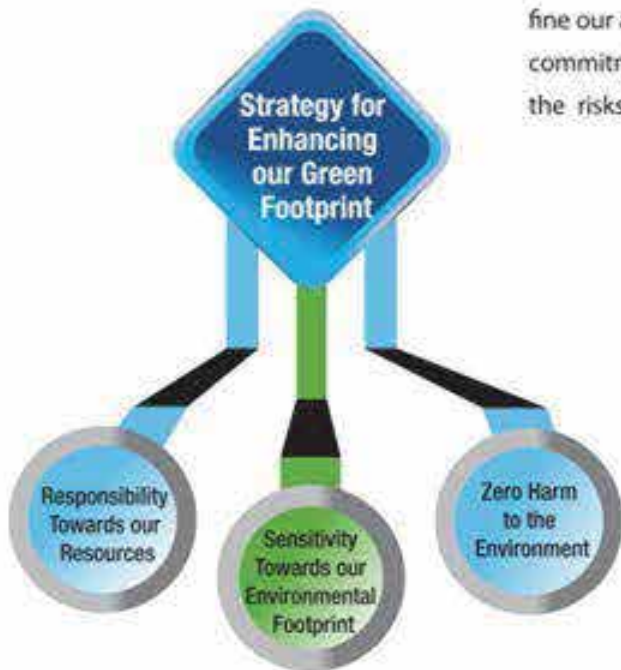
## Strategy and Approach

The growth of an organisation depends on a holistic approach, and environment management plays a vital role in this. In the current scenario, when businesses are increasingly moving towards sustainable growth, we recognise that enhancing our green footprint is the only path to success. As we make this responsible choice, we progress with a well-defined strategy, laid on the foundation of three pillars; responsibility towards our resources, sensitivity towards our environmental footprint, and zero harm to the environment.

Our environmental policies help us define our approach towards meeting our commitments. We begin by evaluating the risks posed towards the environ-

ment due to our activities at every stage of the operational lifecycle. To grow our green footprint, we proceed with mitigation measures by setting measurable targets, developing action plans, and achieving the milestones laid down in our sustainability roadmap.

Our goals for the environment are well defined, with targets set for Vision 2020 that emphasise the judicious use of natural resources like water and energy, exploring alternate uses of various wastes, reducing emissions, and achieving a net positive impact on biodiversity. In this journey of ours, we intend to partner with communities, governments, and other organisations to expedite action and increase knowledge sharing, thus continuously enhancing our green footprint.





## Environmental Governance

We are progressing on the environmental front with a well-planned approach wherein, for all our existing projects, we have established Environmental Management Systems (EMS). Compliance with the EMS is monitored internally and evaluated at regular intervals. To ensure the effectiveness of the EMS and compliance with environmental norms and standards, all our major units are certified for ISO 14001:2004. We advance with our environmental programs by executing the formulated environment management plans (EMP), guided by our environmental policies – the Energy and Climate Change Management Policy, Water Policy, and Biodiversity Policy. We also regularly keep track of all our reported environmental incidents and conduct a stringent investigation into their causes. Further, compliance with the Vedanta Sustainability Framework is ensured through an internal audit process called the Vedanta Sustainability Assurance Programme (VSAP), which also assures compliance with the EMS.

For all our new projects, we begin with Environment and Social Impact Assessments (ESIAs). This brings to the fore our mitigation plan, developed based on the analysis of the potential impacts of our projects on the surrounding environment and associated communities.

We have an exclusive HSE team which is responsible for executing the EMPs. This highly committed team also drives various awareness activities and campaigns, and publishes posters and publications to spread knowledge on the concepts of environmental protection to reduce our green footprint and contribute to our overall growth.

During the reporting year 2016-17, there were no significant monetary or non-monetary fines for non-compliance with environmental laws and regulations. Similarly, there were no environmental incidents of category 3, 4 or 5 and environmental grievances during the reporting period.

## Galvanizing Green Growth

In our attempt to further expand our green footprint, we assess and improve the performance of the following five verticals: water, energy and climate change, waste, biodiversity, and emissions. In this section of the report, we

present a glimpse of all our endeavours undertaken for offsetting our adverse effects on the environment and galvanizing green growth.

“For all our new projects, we begin with Environment and Social Impact Assessments (ESIAs).”

### Dariba Smelting Complex at the Forefront of Water Stewardship



- ▶ The Confederation of Indian Industry (CII) recognised the Dariba smelter complex as a "Noteworthy Water Efficient Unit - Within the Fence" category in "National Award for Excellence in Water Management 2016"
- ▶ The Indian Chamber of Commerce (ICC) awarded the second prize in the 'Water Stewardship' category to the Dariba smelter complex (DSC) in the Corporate Governance & Sustainability Vision Awards 2017







As we continue to maintain zero-discharge operations, we recycle 33.49% of the total volume of water used in our operations.

Specific Water Consumption  
(m<sup>3</sup>/MT of MIC)



Waste Water Recycling  
(%)



## Surviving the Water Scarcity

Operating in the water-scarce zone of Rajasthan highlights how valuable a resource is for us. Considering the significant water requirements at our smelters, we have developed strategies to reduce our water consumption. While managing this precious resource, we also consider that it needs to be saved for future use as well. Hence, guided by our exclusive Water Management Policy, we take steps for water conservation at the source, zero discharge from operations, efficient water usage by the community, rainwater harvesting, and water accounting.

Our attempts on this front begin by keeping a proper accounting of the water that is used at our mines and smelters; efforts are continuously made to decrease this use at source. To further reduce our fresh water requirements, we maximise the possibilities of water recovery and recycle them at our operations. To add to this, we have also intensified efforts to treat the wastewater generated by our operations and reuse the treated water at our units. At present, we are also trying to capture and harness rainwater as an alternative source of water. All our initiatives for water conservation and water resource management have been elaborated on as

exemplary case studies.

During FY 2016-17, the specific water consumption was 13.78 cubicmetre/MT of MIC (Metal in Concentrate), which is has seen a reduction of 5% from the last year. During the reporting year we recorded a withdrawal of 24.86 million m<sup>3</sup> of water from various sources, such as ground water, surface water, municipal water supplies, other water utilities, wastewater from other organisations, etc. Our efforts have resulted in a significant reduction in fresh water consumption and has reduced our dependency on natural resources. As we continue to maintain zero-discharge operations, we recycle 33.49% of the total volume of water used in our operations.

Continuing with our efforts on sourcing sustainable water, our 20 Million litres per day (MLD) Sewage Treatment Plant (STP) at Udaipur catered to 30% of wastewater as source of fresh supply. We are planning for setting up another 40 MLD capacity STP in Udaipur, by partnering with Udaipur Smart City Limited. The construction of 40 MLD capacity STPs will be based on Sequencing Batch Reactor (SBR) process. Thus, the STP ratifies our commitment towards conservation of water, care for environment and ensuring zero discharge to the beautiful lakes of Udaipur and also maintaining these lakes.





## CASE STUDY Water Innovations Paving the Way to Sustainable Growth



Being well aware of the global water scarcity scenario, we understand the need for preserving this valuable resource. Our focused approach to preventing a single drop of water from going to waste has taken us a long way when it comes to creating alternatives for existing processes. Here, we try to showcase several water innovations that we have developed in our operations, leading to huge savings in money and water.

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### Innovations Resulting in Water Saving

► **Dariba Smelting Complex (Leaching & Purification Plant)**

**About 360 m<sup>3</sup> / day of water was saved** by introducing a new purification condensate for the water flowing from the purification plant after cooling below 50 degrees Centigrade for use in the plant. The project created savings of **INR 5,40,000 per month**.

► **Rampura Agucha Mill**

Approximately **3.10 lakh m<sup>3</sup> of fresh water was saved** by blending tailings dam water with fresh water in a suitable ratio, without comprising the process / capital equipment requirements.

► **Captive Power Plant at Chanderiya Lead-Zinc Smelter**

The condensate from the boiler circuit of Hydro I at Chanderiya Smelter was recovered utilising in-house resources. The condensing system connected before final vent to convert the excess steam in to condensate water and recycled the same in to the boiler circuit. This leads to **water recovery of more than 200 m<sup>3</sup>/day** from vent steam.



## CASE STUDY Progressing Towards Water Positivity

Operating in Rajasthan, a state that faces acute water shortage throughout the year, we value water as the most precious resource. Being a responsible corporate, one of our major goals is to make this essential resource available to our local community also. In our pursuit to reduce our dependency on fresh water sources, and to have a positive water footprint, we invested in creating water harvesting structures to tap more rainwater. Our special initiatives, conducted at the township hospital of Chanderiya Lead Zinc smelter and the nearby villages of Sindesar Khurd mines, have **captured a total of 2.8 lakh CUM of rainwater**, and marks our achievement for the reporting year.

Major Interventions during 2016-17	Location	Potential Impact	Investment (INR)
Ground water recharge structure of 1,200 m <sup>2</sup> built-up area	Township Hospital of Chanderiya Lead Zinc Smelter	Harvesting 900 CUM of rainwater	0.11 crores
Deepening of nine water ponds	Nearby villages of Sindesar Khurd Mine	Increased total capacity of 2,77,575 CUM	2.27 crores







We periodically monitor our progress in energy and climate change management, and adopt best practices to reduce our energy intensity.

## Combatting Climate Change

Preserving our energy resources is the need of the hour. The global revolution to tackle the pertinent issue of climate change calls for accountability for the energy we consume. This further implies a targeted and planned approach to reduce resource consumption. Being a responsible corporate in the mining sector, energy use is a major source of GHG emissions at our operations, incurring energy costs which are a significant portion of our operational expenditure. Thus, we have volunteered to take action on climate change by reducing our GHG emissions through improved energy efficiency and investments in

alternative energy generation.

We have an exclusive Energy and Climate Change Management Policy that helps us achieve a balanced energy-carbon cycle at Hindustan Zinc. We periodically monitor our progress in energy and climate change management, and adopt best practices to reduce our energy intensity. In sync with our Vision 2020, we aim to improve our energy efficiency, reduce our GHG emissions, and intensify our efforts for the captive use of energy from renewable resources (wind power, power from waste heat, and solar power). During the reporting period, our approach for a lean energy and carbon footprint included the use of energy-efficient equipment and usage of captive solar power generated at our operations.



- ▶ RAM Mill Stream-3 wins **National Energy Conservation Award – 2016** for the successful implementation of various power saving projects, thus reducing the specific energy consumption by 4.81KWH/MT of ore treatment.
- ▶ DSCCPP unit honoured with the **"IPPAI POWER Awards 2016"** under the category "Best innovation in the Power Sector".





## Energy Efficiency

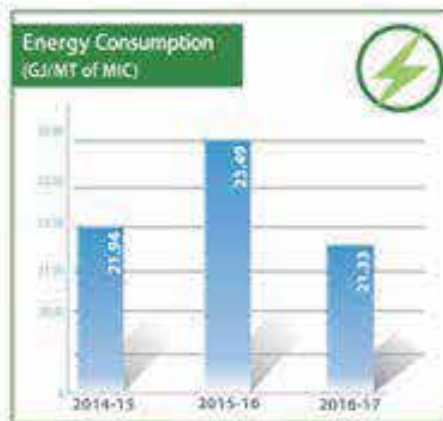
The primary energy resources at our operations include coke, diesel, petrol, LPG, coal, propane, and grid power, among others. We focus on reducing the usage of these resources through various in-process innovations and the adoption of best practices like machine productivity and improving throughput to reduce specific energy consumption. A cautious approach for energy usage can lead to a significant reduction in our GHG emissions. We assess our performance by achieving the set targets through new energy saving projects and improving our disclosure standards.

We continuously monitor our GHG emission intensity in order to reduce our carbon footprint. We have been voluntarily participating in the Carbon Disclosure Project program since 2011. We are currently computing our GHG inventory in line with the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, evaluated by a third party as per the ISAE 3410 standard.

During the reporting period, our direct and indirect energy consumption was 41.98 million GJ. This equated to a total carbon emission of 4.4 million tCO<sub>2</sub>e, covering

both direct and indirect emissions. We have set a target to reduce our carbon footprint by 5%, assuming 2016 as a baseline. Our 16 MW solar power projects are likely to reduce our carbon footprint by 30,000 tCO<sub>2</sub>e emission per annum.

The Green Building Certification of Yashad Bhawan further confirms our commitment to this global cause. The building has several features that make it efficient for energy usage; please see the details in the case study: 'Yashad Bhawan Goes Green'.



“ We continuously monitor our GHG emission intensity to reduce our carbon footprint. ”

### Champions of Energy Savings

- ▶ ~300 GJ/Month saved @ Sindesar Khurd mine (by increase in throughput of grinding circuit from 160 to 172 TPH)
- ▶ 8 GJ/Month saved @ Sindesar Khurd mine (by replacement of 400 70 W HPSV lighting fixtures with 30 W LED lighting)
- ▶ 39 GJ/Month saved @ Sindesar Khurd mine (by replacement of 90 KW pump/ motor set by 55 KW pump/ motor)
- ▶ 32 GJ/Month saved @ Sindesar Khurd mine (by replacement of 90 KW pump/ motor set by 30 KW pump/ motor set)
- ▶ 83 GJ/Month saved @ Sindesar Khurd mine (by replacement of 90 KW pump/ motor set by 55 KW pump/motor)
- ▶ 100 GJ/Month saved @ Rampura Agucha mine (by reducing dual pumps running of lead cleaner)
- ▶ 14 GJ/Month saved @ Rampura Agucha mine (by installing LED lights in mill, mining, and surface street light fittings)





## CASE STUDY

# Yashad Bhawan Goes Green

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In our unceasing pursuit of sustainable growth, we have ventured into transforming our own **Yashad (Zinc) Bhawan to earn the status of a green building.** With meticulous efforts and the use of state-of-the-art technologies, 'Yashad Bhawan', Hindustan Zinc's Head Office at Udaipur, has achieved the honour of becoming Rajasthan's first platinum-rated green building **in the existing building category**, awarded by the CII-Indian Green Building Council (IGBC). Yashad Bhawan is now one of those 14 CII-IGBC buildings in India that has a platinum rating.

The building was evaluated by a rigorous screening for green features under the categories of site and facility management, water efficiency, energy efficiency, and health and comfort. Some of the key green features include an integrated fresh air ventilation system, active cooling system, and air handling units (AHU) with an integrated indoor environmental quality (IEQ) monitoring system to improve indoor air quality and monitoring, **online energy monitoring system, installation of water meters and creation of lush green belt across the corporate office and residential colony.** Further, rooftop solar panels of 100kWp with a capacity to generate 1,62,000 unit every year were installed, offsetting 15% of the total energy requirement.

**The project has achieved energy savings of 27% and water use reduction of 37%.** With this, Yashad Bhawan opens a novel gateway for building sustainable architecture in Rajasthan, which is known for its heritage of magnificent monuments.



G4-EN6

G4-EC2



## Alternative Energy

Investing in alternative sources of energy has been one of our major measures when it comes to the reduction of GHG emissions. We continue with our green energy efforts by harnessing wind power, energy from waste heat recovery power plants, and solar power.

We have 274 MW wind farms in Gujarat, Karnataka, Rajasthan, Maharashtra, and Tamil Nadu, which are registered under the Clean Development Mechanism (CDM) Program by the United Nations Framework Convention on Climate Change (UNFCCC). We also generate about 34.4 MW of power through waste

heat recovery from roasters and a Steam Turbo Generator (STG). From this, a 9.4 MW WHRB project is registered under the CDM Program, along with 21TPH LCV boilers for steam generation. Our 10 UNFCCC registered projects reduce our carbon footprint by 5,83,685 tonnes of CO<sub>2</sub> emission per annum, while our unregistered projects reduce our carbon footprint by 1,16,992 tonnes of CO<sub>2</sub> emission per annum. We continue investing in solar energy projects and have commissioned two solar power projects – one at the Dariba mine (4 MW) and the other at Debari Zinc smelter (12 MW) for captive use. We have also installed two solar rooftop projects with a capacity of 200 kW and one solar water heater with a capacity of 1,000 LPD. Wherever feasible, we have introduced solar and energy-efficient lights as well.



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We have commissioned two solar power projects – one at the Dariba mine (4 MW) and the other at Debari Zinc smelter (12 MW) for captive use.







## CASE STUDY

# Powering Operations with Nature's Resources

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The captive usage of solar energy is one of our core focus areas at Hindustan Zinc. Solar rooftop projects with a capacity of 200 KW have already been installed at each of our head offices, including the Udaipur and Chanderlyalead zinc smelter. This development took place in January 2016. This is only the beginning for us, as we plan to expand the solar energy interventions with an investment to the tune of INR 630 Crores in different solar energy projects. The total capacity of these projects is pegged at 115 MW. Hindustan Zinc already holds an energy portfolio of 474 MW in thermal power and 274 MW in wind energy.

We have commissioned **16 MW solar power projects during this reporting year comprising of a 12 MW project at Debari Zinc Smelter**. Additionally, a solar project with a capacity of **4 MW** has also been commissioned **at Rajpura Dariba mine** for captive consumption. Whilst the 12 MW project at Debari Zinc Smelters happens to be the largest solar energy project in the Udaipur district, the 4 MW project at Rajpura Dariba mine is the first of its kind in the Rajasmand district of Rajasthan.

In the next phase, we have planned to commission **a 100 MW solar power plant by March 2018**, with a planned investment of INR 500 Crores. These efforts are geared to help Hindustan Zinc establish a firm footing in the field of solar energy generation for energy efficiency.



G4-EN6

G4-EN19



## Responsible Waste Management

The generation of waste is inevitable in any mining process. The only way to deal with this scenario is to have a well-defined waste route to facilitate the efficient handling of wastes. For proper tracking, the process is to be monitored at each step. Waste efficiency at Hindustan Zinc is achieved by two means – minimising the quantum of waste generated and maximising the recycling and reuse of wastes.

Our Resource Use and Waste Management Technical Standard helps in guiding our efforts to mitigate the environmental impacts of our products and processes. We ensure that we store our waste in all the earmarked places, from where they are disposed of in a timely manner with approved and registered recyclers, as per the Hazardous Waste Regulations. The monitoring of this activity is conducted at regular intervals for each of the units; we refer to the company's comprehensive guidelines on waste management, which covers hazardous as well as non-hazardous wastes, to do

this. We take measures to ensure waste minimisation, segregation at source, and recycling across all our business units.

Besides this, we have extended our focus to capitalise on waste and identify them as raw materials for other companies. This has created the potential for expanding our spheres of influence by opening new streams in our value chain.

### Reducing Waste Generation

During FY 2016-17, we have generated 1.04 million MT of waste, covering both hazardous and non-hazardous waste. During the past three years, we have observed a nearly constant trend in our waste generation pattern.

Our major focus has been to manage the industrial wastes (hazardous and non-hazardous) that we generate at our operations. Jarosite is one such hazardous substance, produced during the zinc refining process. This waste material, generated in bulk amounts, poses a severe problem. To mitigate this, we are working towards introducing an advanced technology – Fumer technology–



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“ We have extended our focus to capitalise on waste and identify them as raw materials for other companies. ”

which eliminates the formation of Jarosite altogether. The formal order has been processed by China Non Ferrous Metal Industry's Foreign Engineering & Construction Co. Ltd. (NFC) and the first Fumer is likely to be commissioned by mid-2018 at Chanderiya, with a cost of INR 570 crores. In the future, the company plans to replicate the technology at its other smelting complexes, including the Hydro-I at Chanderiya and Dariba smelting complex. Using this technology would yield a 97.5% recovery of zinc, along with lead and silver, which cannot be obtained through the Jarosite process.

### Advantages of Fumer Technology

- ▶ Conversion of hazardous waste (Jarosite) to a non-hazardous saleable product (slag)
- ▶ Sustainable solution for eliminating recurring land requirement for jarosite storage
- ▶ Recovery of lead and silver from the hydro-circuit against no recovery as on date
- ▶ Enhanced zinc recovery
- ▶ Conservation of mineral resources like metals, lime, and cement

Chanderiya smelting complex proves to be an industry leader in gainful waste utilisation by receiving the 'Fly Ash Utilisation award- 2016', conferred by the Mission Energy Foundation.







“We are constantly enhancing our technical capabilities for better recoveries of metal products and by-products from the wastes, such as tailings, ISF slag, Jarosite”

## Transforming Waste into a Resource

In a bid to continue with our goal of adding significant economic value to all our environmental verticals, we are constantly analysing our processes and implementing the necessary changes. Two major wastes generated at our smelting and power units, fly ash and ISF slag, are sourced to the cement industry, where they are used as a replacement for virgin material. Thus, while reducing our waste inventory, these materials are also facilitating the conservation of resources in the cement industry.

We are constantly enhancing our technical capabilities for better recoveries of metal products and by-products from the wastes, such as tailings, ISF slag, Jarosite, etc. Trials have been conducted with tailings and the study suggests that 100 MT of tailings is likely to generate 35% concentrate of the zinc-lead grade; a large scale trial is being planned to validate the process. Trials with ISF slag showed encouraging results, but the project is not economically viable. We are also exploring the possibilities of metal recovery from

residues like PF cake, antimony dust, and copper cement. Hence, we have progressed with installing an ancillary plant at our Dariba smelting complex.

Alternative uses of jarosite are also being studied; advanced studies are being conducted by IIT Roorkee to establish replacement of cement with Jarosite in mortar and concrete. We are also looking at introducing jarosite in the cement industries. We are in discussion with the cement industries regarding trials, after seeking approvals from the RPCB. Simultaneously, we have also initiated trials for vermi-remediation of jarosite and ETP sludge to convert it into a suitable substitute for fertiliser. The NABL report has confirmed that the outcome of the process can be used as manure.

Another innovation is the replacement of cement with Jarosite/ flyash/ ISF slag in the paste fill plant at Sindesar Khurd mine. Trials with fly ash have been successful; trials with the other two wastes are being continued. M/s CIMFR has been awarded the work to conduct these trials and establish facts.



Waste Generation Trend  
(Million MT)







“ Our adoption of the '4R' waste strategy - Reduce, Recycle, Reuse and Reclaim and 'eco-friendly' disposal of process residues has been fairly effective. ”



## CASE STUDY

### Tapping Wealth from Waste



In the wake of the green revolution, we have ventured into value creation from waste. Since we don't want potentially valuable materials to end up going to the landfill or into an incinerator, we have ventured into extracting metals from the process residues of the zinc hydro smelters and lead pyro smelters.

We have begun the initial steps for setting up a processing unit (ancillary unit) for the recovery of valuable metals from waste at the Rajpura Dariba complex, along with one major recycler of lead and zinc residue. The unit has the capacity to **treat 9,000 MT of zinc process residue to recover zinc (1,900 MT) and copper (500 MT). By-products like Sb concentrate, having precious metals, are treated to recover 6 MT of silver.**

Apart from metal recovery, there are other **by-products** that are recovered, including **CuSO<sub>4</sub> solution used at mines as a substitute for imported CuSO<sub>4</sub> crystal to reduce spent base and potassium antimony tartrate (PAT) from antimony used at all zinc hydro smelters.**

Recovery trials for metals and other valuable by-products are in progress and soon, we will see our production targets aided with the positive outcome of these units.





“Maintaining the ambient air quality around our operations is a very important aspect of our EMS, which emphasises the reduction of emissions (from point sources, mobile sources, and other fugitive emissions).”

## Maintaining Air Quality

Maintaining the air quality is something that we need to take care of, because air is a primary life-giving requirement for human beings and all the other species that populate the planet. In order to ensure that we are breathing high quality air, we need to take care of the emissions around us so that the air is not overly contaminated. This is especially relevant for the mining industry because the various processes in the mining lifecycle have the potential to damage many natural resources, including the air. Hence, we strive to maintain the ambient air quality around our operations. This is also a very important aspect of our EMS, which emphasises the reduction of emissions (from point sources, mobile sources, and other fugitive emissions).

Regular environmental monitoring is a part of our best practices; we record the stack emission parameters,

including particulate matter (PM), SO<sub>x</sub>, and NO<sub>x</sub>. During the reporting year, the emissions from all these sources was recorded as 0.027 million MT. To control these emissions, we are working towards improving and modifying our operational processes and enhancing efforts through awareness drives. As a best practice management, we have installed an online effluent and emission monitoring system that is connected directly to the servers of the pollution control board.

Dust mitigation is the other focus area where we attempt maintaining the ambient air quality. To avoid emissions during transportation, we ensure that the transporting trucks are covered with tarpaulin. Dust settled on the roads inside the plant is removed by daily sweeping using mechanical sweepers. If the problem still persists, we try to suppress the dust by sprinkling water. Additionally, we make use of mechanised sprinklers installed at ore loading points and throughout the ore transportation channel, from the mines to the mills, for suppressing dust. We are also using chemical dust suppressants along with the water spray on haul roads to reduce the dust generation and water consumption.



Dust Suppression



## Rejuvenating Biodiversity

We cannot ignore biodiversity protection in our bid to enhance our green footprint. Hence, we emphasise the rejuvenation of biodiversity to mark the growth of our surrounding environments. Our endeavours in achieving these objectives are backed by our tree-planting efforts, biodiversity conservation projects, and programs to create awareness on the need for biodiversity protection.

Further with an exclusive policy on biodiversity, we concentrate on conserving species of high biodiversity value and mitigating risks in high priority conservation areas in the vicinity of our operations. We have reviewed all our operations to identify their proximity to International Union for Conservation of Nature (IUCN) areas, important bird areas, and key biodiversity hotspots. Using the Integrated Biodiversity Assessment Tool (IBAT) mapping tool, we categorised our operations as high/ medium/ low risk. The study confirmed that most of our operations did not pose any threat to their associated biodiversity and hence, was classified in the low risk category. Based on this initial risk screening, we have developed exclusive BMPs for all

our sites.

Further, we plan to streamline sustainable businesses with components of biodiversity and so, we are also a signatory of the IBBI (Indian Biodiversity Business Initiative), which is supported by the CII and German Cooperation (GIZ). We have finalised with IBBI to move ahead on the Natural Capital Action Plan; this will be implemented as a pilot project over the next three years at one of our major operating sites (Rampura Agucha mine).

### Growing the Green Peripheries

Greenery is an important aspect of where and how we operate; in our attempt to create natural reserves, we have implemented extensive green belt development projects. Apart from benefits like carbon sequestration, preservation of soil fertility, and air purification, the green coverage is aesthetically pleasing, lending a positive and stimulating vibe to the surroundings. We have planted more than 1.5 million plants around our operations. Mass planting was carried out in a forest area of 75 Ha (23,500 plants) through Van Suraksha Evam Prabandh Samiti. 800 saplings, with tree guards, were planted along the roadside of the Tidi Zawar mines, and 10,000 saplings were distributed for



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“ We have planted more than 1.5 million plants around our operations ”

planting in nearby villages.

Attempts have also been made to revive the endangered and threatened floral species of Rajasthan. Nurseries housing various endemic and medicinal (Ayurvedic) plants have been set up at our head office, and the Rampura Agucha and Kayad mines. The plants that we grow in our nurseries are given to communities in the local areas for further planting. Till date, 10,000 saplings of various endemic and medicinal species have been distributed.







Trees play a vital role in urban communities, providing shade, blocking the wind, absorbing pollutants, reducing erosion, screening noise, retaining storm water, and sequestering carbon dioxide. They also provide economic benefits by reducing cooling and heating costs, and raising property values. The ability to locate and properly manage tree resources is a complex process that can be made easier by using an urban tree inventory.

### **A tree inventory is the gathering of accurate information on the health and diversity of the species of trees.**

There are several types of tree inventories that can be utilised for managing and maintaining the trees within a municipal boundary. One of the methods to conduct a tree inventory is a tree census; this is the method we used at Hindustan Zinc. Various details such as species name, girth, height (approx.), health condition, etc. were collected in order to assess the quality of the existing arboreal cover.

The boundary of the tree inventory project included three locations of Hindustan Zinc Limited, i.e., Head Office at Udaipur, Rampura Agucha Mines and Chanderiya Lead Zinc Smelter. All relevant information as per the tree census was collected and the location of the trees was established through advanced GPS techniques. The data obtained from the tree inventory was then analysed using various statistical methods to understand the distribution pattern, diversity of trees, and carbon dioxide sequestered by the existing trees.

This GPS-based tree inventory is useful to monitor the arboreal cover and, in future, information from this inventory can be used in managing the green infrastructure of HZL. Further, the study also suggested that the enumerated 2,94,528 trees could contribute to 32,83,356 Kg of carbon sequestration.



## CASE STUDY



## “Plant a Tree for Life!” – Our Slogan for a Progressive Community

In our conviction to build an environmentally-friendly community, our environment team at Rampura Agucha mine organised a two-three day awareness drive on biodiversity conservation in four nearby villages, i.e. Kotri, Baranthia, Rampura, and Jaisinghpura, from August 21-30, 2016.

### **The program, titled ‘Awareness on Plantation, Water Conservation, and Biodiversity’**

and organised with the help of a local agency, had unique events that had a significant impact on all the participants. The program began with an introductory note on tree planting, water conservation, and biodiversity, followed by a distribution of pamphlets which were read by school children. The salient features of the program included:

**Gram Sangosthi:** A discussion with villagers and children on the uses and importance of a variety of saplings.

**Vriksh Mitras:** A unique event wherein each child was gifted with a sapling to be planted and was given the responsibility of taking care of it by being their ‘Vriksh Mitra’.

**Plant Distribution:** Approximately 1,000 saplings of fruit and shade-giving trees were distributed.

**Apana Gaon Samiti:** The formation of a body that would be responsible for tree planting and protecting the biodiversity in that village.

The program was highly appreciated by the local people and it was definitely successful in creating a bond between the villagers and their surrounding environment. With such a positive response, we plan to replicate this model in other villages and continue the thread of creating awareness on the need for biodiversity and environmental protection.





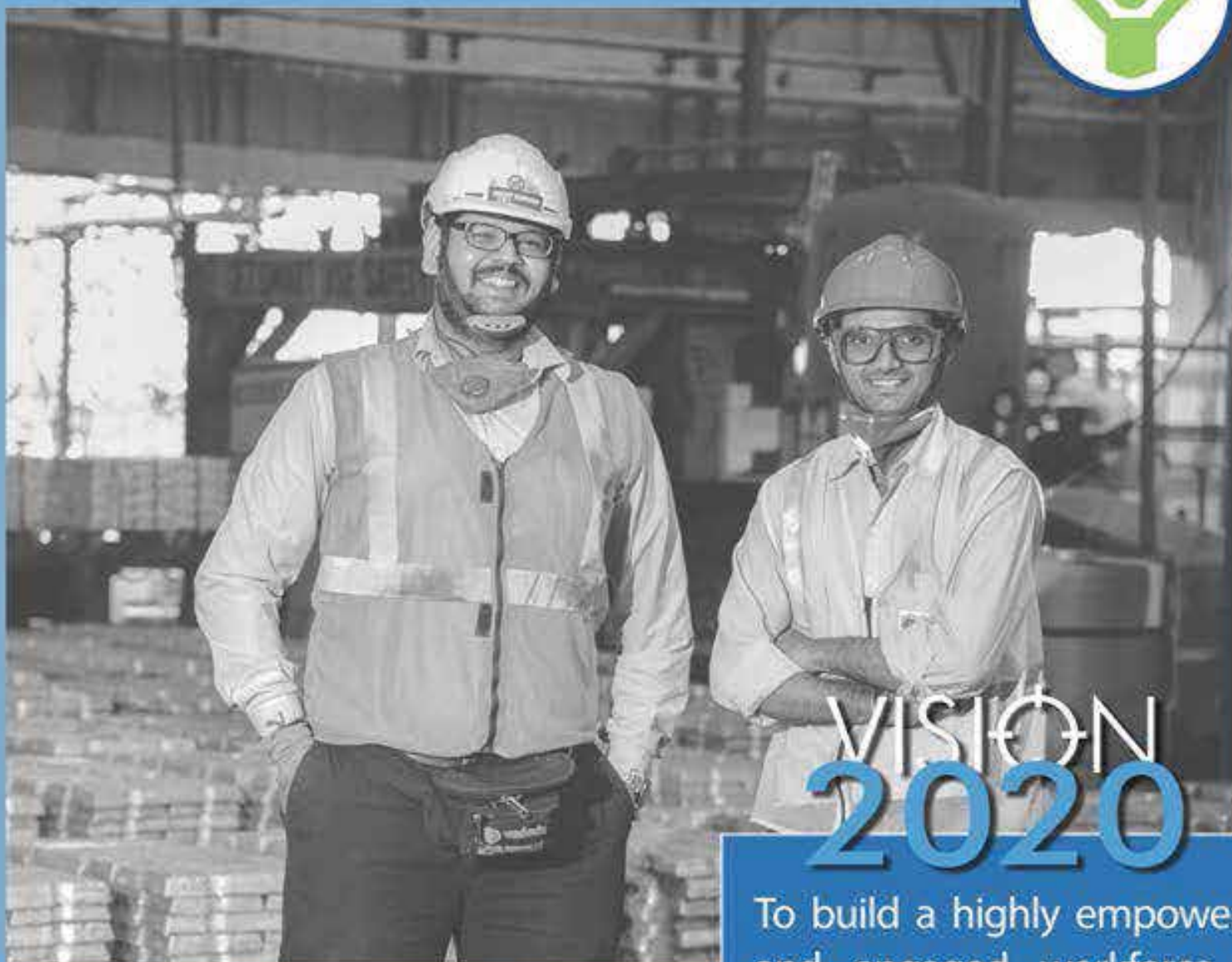
## UNLEASHING THE HUMAN POTENTIAL

Our growth process is one that galvanizes our workforce into action. With the help of engagement, motivation, and training and development-based activities, as well as an eye on their general welfare and wellbeing, we endeavour to unleash the potential within our employees – our main stakeholders. We recognise the fact that unless we give them the opportunities to nurture their own talent, we will not be able to optimise our processes to make a difference within our organisation or in the market. We therefore, see our growth arising from theirs.





# HR DASHBOARD



## VISION 2020

To build a highly empowered and engaged workforce by delivering innovative HR programs and practices that foster a high performance, talent-based environment aligned with strategic business goals

Material Aspect  
**Employee Engagement  
And Well being**





## Aspect Boundaries

This aspect poses relevance within the boundaries of the company

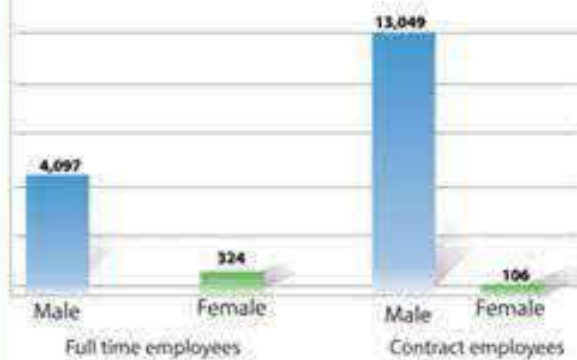
## Performance 2016-17



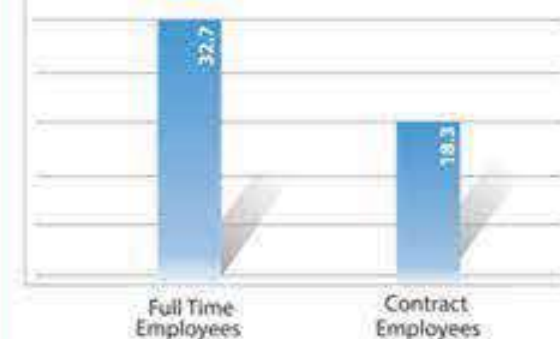
- ▶ 33 Technical STARS and 16 STARS of Business identified
- ▶ Females comprised 21.5% of total new hires in reporting year
- ▶ Received Great Place to Work certification



### TOTAL WORKFORCE



### AVERAGE TRAINING HOURS







## STRATEGY and Approach

At Hindustan Zinc, we believe that human resource management plays a crucial role in achieving our strategic and transitional vision. Tuned to our HR Vision 2020, we aim bring out the talent within our workforce as we strive for productivity; this is where growth meets our goals and becomes the underlying value of our organisation. Accordingly, we look for the highest calibre of talent in each and every employee. The employment lifecycle is one that is driven by this process, even as we take each deserving employee up the ladder with succession planning and appropriate training to nurture leadership.



### HR Vision

To create and communicate the most admired employer brand, where every employee sees development and engagement in a high performance and talent-based environment, thus becoming our best brand ambassador.

“ We aim bring out the talent within our workforce as we strive for productivity; this is where growth meets our goals and becomes the underlying value of our organisation. ”

We emphasise two important HR strategies that drive growth and productivity at Hindustan Zinc; we focus on employee engagement for:

- ▶ Building an empowered workforce
- ▶ Creating an engaging work environment for our employees



### Growth Inducing HR Strategy

Building an Empowered workforce

Creating an engaging work environment



## Building an Empowered Workforce

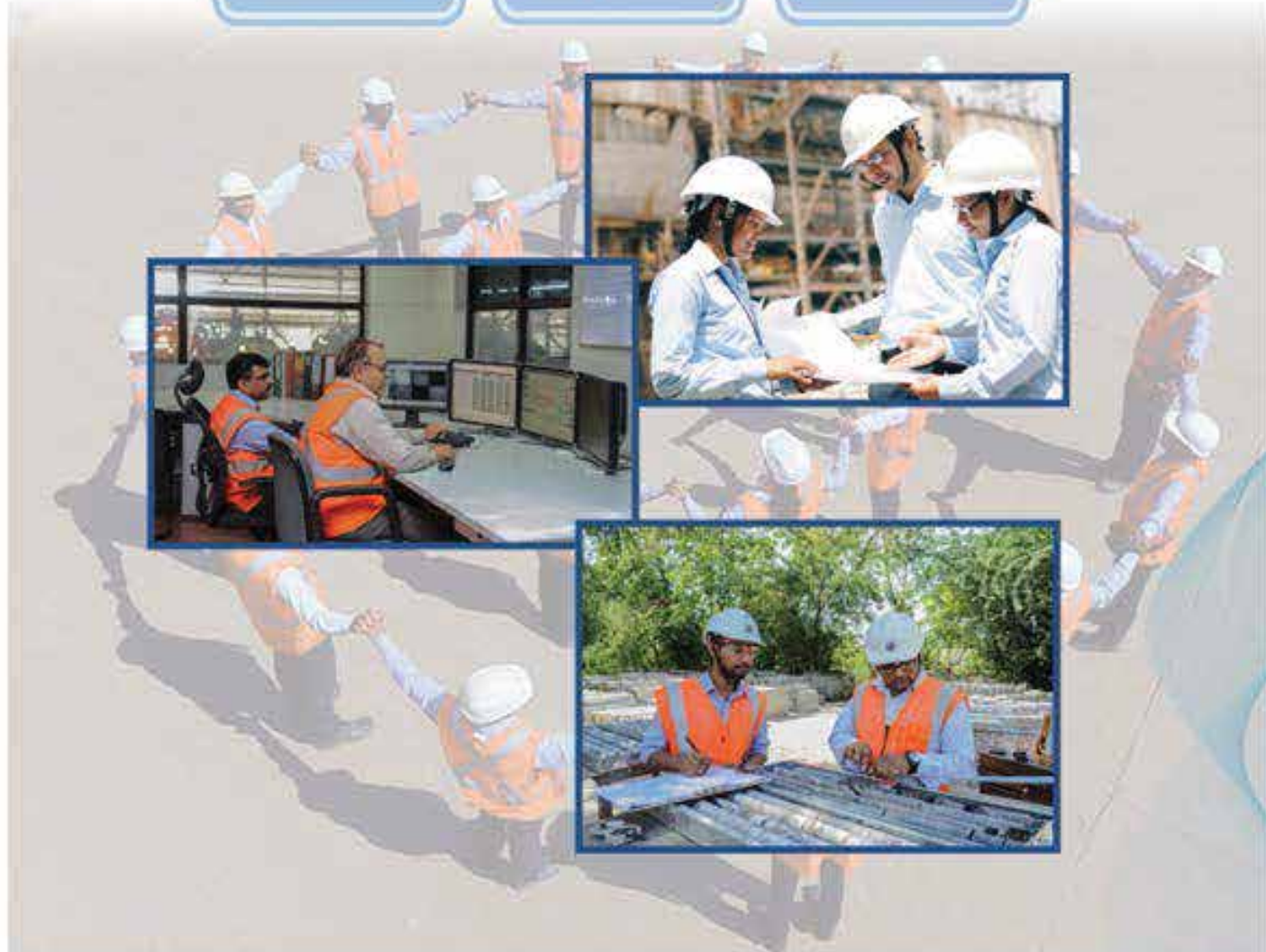
Our ideal for building an empowered workforce begins by creating a pool of diverse talent. We aim to build organisational capabilities at all levels, so that our employees are able to do justice to their respective roles. Focused on unleashing employee potential for growth and excellence, we have taken up several initiatives that span capacity-building and leadership development to encouraging diversity.



Hindustan Zinc bags the award for "Best Use of Technology in HR" In our digital HR journey, HZL has been conferred with the "HR Tech: Best Use of Technology in HR-2016" award by the World HRD Congress. Hindustan Zinc was recognised for the best utilisation of various technology platforms to simplify HR activities and strategically align HR with business.

“ We aim to build organisational capabilities at all levels. ”

### Approach to Building Empowered Workforce







“Internal training sessions in areas such as behavioural training, general management, technical programs, safety trainings, and leadership programs are the regular competence-building programs.”

## Capacity Building

Our employees are exposed to various types of training and capacity-building modules and sessions on an ongoing basis. During the reporting year, training worth 1,03,204 man-hours was imparted to our permanent workforce; our contract workforce benefited from 3,92,238 man-hours of training. Internal training sessions in areas such as behavioural training, general management, technical programs, safety trainings, and leadership programs are the regular competence-building programs that we encourage our employees to utilise. Besides these, they have the chance to attend external trainings (including site visits to international mines and smelters); to encourage them to do so, we provide them with the necessary financial support. Employees also have the opportunity to take a six-month sabbatical for a postgraduate diploma (PGD) certification course on safety. All our security personnel were trained on human rights aspects and code of conduct during the reporting year.

During the reporting year, we organised an exclusive program for the freshers, to engage with them and familiarise them with our work culture. The program was a great success and was much appreciated

by the new inductees, who were able to put aside their apprehensions about the company right in the beginning. Details of the program can be found in the case study – ‘Freshers’ Engagement and Development Program: The Welcome Note’.

In the context of the current transition phase and the company’s ambitious growth plan, we have set up a Hindustan Zinc Mining Academy, in collaboration with the ‘Indian Institute of Skill Development’ for developing underground mining skills. Through this initiative, we will be able to meet the future talent requirements of the company, while also improving the employability of the local youth through skill upgradation.

Our employees also acknowledge the ample scope to develop new skills and explore new opportunities through rigorous training sessions. Many of our employees prefer to nurture their talents by transitioning from their existing work domains; moving from non-HR to HR positions and vice-versa is encouraged to create a high calibre talent pool.







## CASE STUDY The Welcome Note



With an objective of engaging with young engineers and providing them with a learning opportunity, a **robust 90-day induction program** was organised in the reporting year for the diverse batch of 79

**graduate engineer trainees (GET) from across 31 premier engineering institutes.** The broad framework of the program was to engage the millennials through paperless on-boarding, online weekly assessments, merit-based posting allocations, and live projects.

The classroom training included sessions on safety and cross-functional and domain-specific modules, appropriately designed and facilitated by our in-house functional experts. The progress of all the GETs was monitored through online weekly assessments. The top performers were given preferential postings and were recognised at the valedictory ceremony, chaired by the CEO and leadership team.

In addition, the induction program also had experience-sharing sessions by senior and young leaders, and behavioural sessions with external faculty members. This ensured that the freshers were provided with a plethora of learning opportunities facilitating business know-how, thereby making them the "Best Brand Ambassadors of Hindustan Zinc".

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## CASE STUDY Non-HR to HR: Leading the way



One of our employees, Roohi Khan Sherwani, Head HR - RDM, joined Hindustan Zinc in June 2009 as a GET Instrumentation, and was initially posted at Debari. She was later transferred to Dariba for the commissioning of a roaster plant. After the successful commissioning, she was given an opportunity to be part of the team responsible for commissioning another roaster. She gained knowledge and experience on building and sustaining systems, improvement projects, quality circles tools, etc. Her zeal for her work was really inspiring, and she was given another opportunity to be rotated to asset optimisation. **Roohi was recognised as a 'Business Star' in 2011.** She was selected for Non-HR to HR movement through an internal job posting selection process in June 2016.



*"I would like to thank the senior management for considering me for this challenging yet joyful opportunity for a Non-HR to HR role. Presently, the HR Business Partner role has broadened my vision and taught me the right way to analyse the business and its intricacies, especially from peoples' points of view. I feel empowered when I introspect at the end of each day on the challenging tasks of bringing various stakeholders together, aligning them, engaging as well as encouraging them, and in the end, marking success to achieve the target which ultimately enhances HZL's brand value. The quantum of exposure given at HZL - be it a selection for the Management Development Program (MDP) from one of the prestigious and celebrated management institutes like XLRI, being a member of an ExCO observer team, or being part of the vendor rationalisation project team for the Vedanta Group - is immense and has no boundaries. I strongly believe that my technical experience, complemented by my HR assignment, will definitely help me achieve the best results for my organisation."*

**Roohi Khan Sherwani,**  
Head HR - RDM



The ACT-UP program involves an assessment of our employees to identify the 'Stars of Business' and 'Technical Stars'.

### Leadership Potential

Leadership is a hidden trait in most individuals; we facilitate our employees with opportunities to develop this hidden talent. Leadership development being one of our key HR strategies, we invest in programs to promote a competitive spirit among our employees, so that they are always motivated to put in their very best effort.

One such innovative initiative is our Accelerated Competency Tracking &

Upgradation Program (ACT-UP). Based on the Vedanta Competency Framework, the program involves an assessment of our employees to identify the 'Stars of Business' and 'Technical Stars'; this lets us develop a talent pool of people with managerial and technical abilities. For every 'Star' identified, an Individual Development Plan (IDP) is prepared and they are given enhanced roles and responsibilities. During the reporting period, 90 employees participated in the Business ACT-UP and 16 stars were identified. For the Technical ACT-UP, we saw participation from 117 employees; 33 Technical Stars were identified through the process.

Another intervention along similar lines is the Chairman's internal growth workshop, wherein high potential employees are identified and provided with an opportunity to explore their individual leadership abilities. More

details on this can be found in the case study, 'Unlocking Leadership Potential'.

During the reporting period, we started yet another unique program to offer specialised coaching to our executive leadership team. In partnership with YSC, the coaching program was conducted to inspire our leaders and enable them to successfully achieve the goals of the company. The program was successful in:

- ▶ Generating greater self-awareness in our ExCO, as individuals and as a team.
- ▶ Creating a meaningful vision and alignment on collective goals and processes for the team.
- ▶ Facilitating conversations that build trust and enable greater effectiveness.
- ▶ Creating development plans for the leaders and supporting their development through executive coaching.



*"I thank HZL for giving me such a wonderful opportunity to showcase my abilities in the ACT-UP. It was **great competition amongst peers in different aspects**. Career anchor sessions helped me identify my career anchors and I felt extremely valued when the organisation awarded me with the Business Star badge. It was a remarkable achievement in my professional life. I look forward to contributing my best and living up to the expectations of HZL."*

**Prasanth Vankalaya**  
Executive Finance, CRDL





The Chairman's internal growth workshop is a unique and rich platform which allows direct interaction between top management and the employees. High potential employees are identified based upon an objective assessment conducted by top management. Workshops are held function-wise and serve as a distinct arena for employees to express their ideas on business and lead the way. This helps unlock their confidence and allows them to journey towards becoming the most successful "Business Leaders of Tomorrow".

High potential employees are given enhanced roles, job rotation, and varied opportunities to excel. This intervention widely contributes in our leadership development by:

- ▶ Building a pipeline and providing identified employees with opportunities to excel
- ▶ Creating a succession of internal talent for key leadership roles
- ▶ Robust build vs buy capability



*"This is a wonderful opportunity and an excellent platform to grow and excel in the organisation. I would like to thank the senior management for showing such trust in me and investing valuable time in guiding me and sharing their thoughts. **I feel really proud and excited to be part of this elite group of IT leaders**, who are chosen after a rigorous process. In this new and challenging role, I will assure to put my best foot forward and exceed management's expectations of the digital journey of Vedanta."*

**Atul Patni,**  
Lead - IT Innovation / Digital Transformation.



*"It was a highly motivating growth exercise to interact with the Chairman and our leaders. I sincerely commit that, as a team, **we are highly enthusiastic to take our company to new heights, as per the expectations of our leaders**. During the workshop, clear expectations, as put forth by our respected chairman, were deliberated and accordingly, we have started ground implementation. Thanks to our HR team for carrying out such a structured evaluation process, which is something unique industry wide."*

**Pradeep Singh**  
Unit Head Environment, RDC.



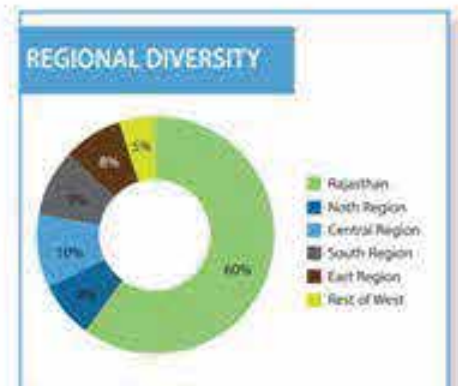
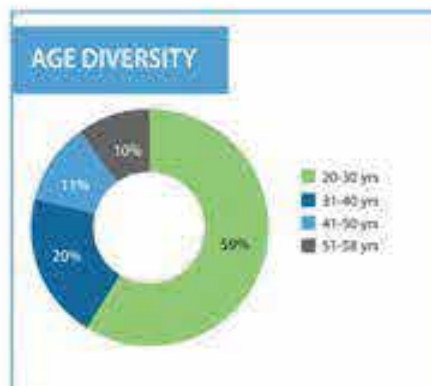


We encourage employees to take frontline roles and contribute to the growth of our company irrespective of gender, race, religion, disability, or any other indicators of diversity.

## Workforce Diversity

Diversity is the current corporate mantra for creating a balanced business ecosystem. We acknowledge the same in our HR pursuits and encourage employees to take frontline roles and contribute to the growth of our company irrespective of gender, race, religion, disability, or any other indicators of diversity. Our remuneration policy also does not discriminate on the basis of these diversity indicators, establishing us as an equal opportunity employer. We recruit both men and women on equal salary ratio at all levels and attract the best talents. We do not differentiate in terms of pay by gender.

We have a young, dynamic workforce at HZL, 59% of which is in the age group of 21-30 years. Locals from Rajasthan comprise 60% of our total workforce. Further encouraging our women employees is our secure work environment, where they can perform with dignity. To maintain these women-friendly conditions, we have a sexual harassment prohibition policy and sexual harassment committee in place. To our credit, there have been no reported incidents of discrimination on the basis of race, colour, sex, religion, political opinion, or social origin, involving internal or external stakeholders during the reporting year.



***“Meritocracy is supreme and diversity is built on this bedrock at Vedanta. The organisation adds new dimensions and thoughts to business through this. I have never seen any organisation encouraging diversity at such a level. I am quite excited to work at HZL and feel responsive towards the faith put in me.”***

**Sonal Shrivastava**  
Dy. CFO, Hindustan Zinc



## Creating an Engaging Work Environment

Our continuous endeavour is to create a work environment that motivates our employees to perform their best and experience Hindustan Zinc as one of the "Great Places to Work". The recent recognition from the Great Place to Work Survey further cements our commitment to this ideal. In our pursuit of creating an engaging work environment for our employees, we undertake various initiatives throughout the year. In this context, the focus of this reporting year included progressive policy changes, technology interventions for enabling HR processes, and enhanced safety engagements. Our initiatives are described as case studies that follow.

We also have a comprehensive performance management system in place, which contributes to the effective management of individuals and teams in order to achieve the highest levels of organisational performance. The system has been developed on the OKR (Objective and Key Results) basis, which enables an outcome-based approach through clear goal setting and objective



performance assessment. Further, 100% of our employees received performance and career development reviews during the reporting year.

Our encouraging incentive policies, which are among the best in the country, also add to employees' satisfaction. Provident fund, gratuity, canteen facilities, and maternity leave are the statutory benefits we provide to our employees. They can also avail of additional benefits such as life insurance, healthcare, disability/invalidity coverage, parental leave, and retirement provisions. Identified high potential employees are also rewarded with Employee Stock Ownership Plan (ESOP). Apart from this, we also provide a range of non-statutory benefits like mediclaim, housing, leave travel allowance, and paternity leave. During 2016-17, 180 male and 15 female employees were granted parental leave and all the employees

“The recent recognition from the Great Place to Work Survey further cements our commitment to this ideal.”



returned to work after availing their leave. We also ensure that the ratios of entry level wages meet or exceed the legal requirements. The ratio of the wages provided to our unskilled workers for above the ground and under ground activities are 2.318 & 1.857 respectively.

### Hindustan Zinc Joins the Family of Great Place to Work!

We participated in the Great Place to Work Survey in the year 2016-17 and, as a result of the response from all our employees and the audit of our HR practices, and culture in the organisation, we have been certified as a **“Great Place to Work”**.







Location-level town halls are held on a quarterly basis, wherein the Unit / Location Heads share the quarterly performance updates with their teams.

In our tryst to create an engaging work environment, we encourage employee associations. Our non-executives are covered under collective bargaining agreements and they are a part of unions affiliated to the Indian National Trade Union Congress (INTUC), which is recognized by the management across various locations. At the corporate level, Hindustan Zinc Workers' Federation (HZWF) represents all the unions working in various units. They deal with matters pertaining to service conditions, wages and benefits, and strategic policies with respect to workmen. On issues pertaining to production/productivity, health, safety, we engage with the union in a bi-partite forum like Joint Consultative Committee with and seek their suggestions for effective implementation. Health and safety topics are also included in formal agreements with trade unions. Moving

forward, we want to continue fostering harmonious industrial relations, and work towards achieving win-win outcomes in all our dealings with the union. For all significant changes, the minimum notice periods are decided mutually in agreement with our employee associations. During the reporting period, there were no strikes or lockouts. To create an engaging work environment, we also emphasise enhancing employee engagements with management. The CEO town hall is one such communication platform which is conducted with themes varying from safety to business priorities. Location-level town halls are held on a quarterly basis, wherein the Unit / Location Heads share the quarterly performance updates with their teams. The platform enables the employees to voice their feedback and have a one-on-one interaction with management.

### 'Change Leadership' – Inspiring Talents

The CEO town hall in November 2016 was a motivational event for the young talent in the company. CEO Sunil Duggal emphasised taking on new challenges, and motivated the youngsters to be driven by their passion and to utilise their potential to the fullest to bring a positive change to the organisation.





## Technology-enabled HR Processes

In an endeavour to realise our vision of end-to-end digitisation of HR processes to encompass a highly empowered and engaged workforce, we are transforming the HR function into a strategic business partner. We have put in place a robust HR-IT architecture which lays a foundation of digitisation tools that are leveraged to enable an effective, efficient, and transparent delivery of HR processes. Through My HR Canvas (a Success Factors platform for developmental HR) and the SAP-HCM revamp, we are moving towards paperless HR, with improved process efficiency and a greater focus on data-driven decisions and analytics. Some of the focus areas being targeted in driving this vision are:

- ▶ HR process automation, standardisation, and harmonisation
- ▶ Leveraging technology to gain efficiencies within the HR function and transforming legacy HR management practices.
- ▶ Aligning HR processes to become a strategic partner in achieving organisational goals.
- ▶ Adequate, comprehensive, and real-time metrics on human capital to facilitate HR planning and managerial decision-making.

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## CASE STUDY

# Progressive Policy Changes

To continuously benchmark our people policies and practices with the best in the industry, we revisited our existing rules regarding time off and successfully implemented a simplified leave policy. The highlights of this in addition to adequate work-life balance are:

- ▶ Maternity Leave- applicable to all permanent female executives, enhanced from 12 weeks to 26 weeks.
- ▶ Paternity Leave- Paternity leave of 1 week is applicable to all permanent male executives
- ▶ Adoption Leave- Female employees who legally adopt a child under one year are eligible for 12 weeks of adoption leave.
- ▶ All intervening Weekly Off/Public Holidays falling within different leaves would not be counted as leave days.
- ▶ PL would be credited to employees on 1st July (12 days) and on 1st Jan (13 days) for the quota earned in preceding year. No encashment of CLs would be allowed.
- ▶ All existing leave combination restrictions have been withdrawn and henceforth, all leave types can be combined.



*"I feel privileged to avail 26 weeks of enhanced maternity leave. As it is rightly said that **becoming mother is like a new birth in the life** of a lady and, in this perspective, every day spent with the newborn is very precious, so the extension of the maternity leave is no less than a boon for me. I thank my organization Hindustan Zinc for bringing such a humble policy change. It has been really motivating."*

**Shama Jain**  
Associate Manager, Environment

*"It's a great pleasure to welcome a new angel into the family and **availing paternity** leave has given me an opportunity to spend more valuable time with my family in need."*

**Rama Subba Thota**  
Associate Manager, Electrical







## CASE STUDY

# V-Connect: An Amalgamation of Growth and Technology



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This landmark Vedanta initiative, launched in July 2016, is a flagship **Talent Development & Engagement Program** which ensures that each employee has an anchor/ mentor in the organisation. It is a platform for the anchors/ mentors and anchorees/ mentees to connect, engage, ideate, and learn from each other in their personal as well as professional journeys. The overall objective has been to “create an engaged workforce which delivers a sustainable business performance across Vedanta”.

V-Connect is built on three broad pillars, as shown in the figure. As part of the program, timely connects are held between the anchor/mentor and anchoree/mentee.

The program is designed to cover each stakeholder's role, as listed below:

**V-Connect Anchoring:** Close to 1,000 ‘talent’ were identified across the group companies to be a part of V-Connect and to guide them. About 70 ExCO leaders from across the group companies were identified as ‘anchors’, with each ‘talent’ being mapped to an anchor.

**V-Connect Mentoring:** Similar to the anchoring program, mentors were identified and assigned to cover the remainder of our 10k population.

The heart of the anchoring program is the V-Connect mobile app with the following features:

- ▶ Scheduling meets /connects between the anchor and anchoree
- ▶ Submission of feedback for the anchor and anchoree
- ▶ Tracking connects across the Vedanta Group
- ▶ Elimination of manual intervention by HR in organising connects
- ▶ Keeping employees updated with Vedanta news and articles





## Anchor Speak



*"The interaction with my anchorees gives me immense satisfaction as it results in igniting the spark of possibilities in both my anchorees and me. **While you guide, you are also guided - that is the beauty of this program.**"*

**Ramakrishnan Kasinath,**  
Chief Commercial Officer

*"V-Connect is a unique learning partnership. It helps us to rewind, support people with our experience, and inspire young leaders, while improving our own learning in the process."*

**V Jayaraman,**  
Head EOHS



## Talent Speak



*"Interaction with my mentor is always evolving and enriching. Drawing on his global experience, he shares what the essentials are to excel in an organisation and as an individual. He always stresses on the need to keep developing skills, think global, and solve problems for the long-term."*

**Neelesh Chawda,**  
Manager, PMO

*"I think we have built a strong relationship based on trust and openness. The programme and my anchor have given me an opportunity to really **gain an independent perspective on my leadership style and brought incredible insight, balanced perspectives** and, at the same time, has challenged me at all the right times to push myself that much harder to achieve my ambitions far beyond what I thought was possible. I believe that my experiences as a key talent and the guidance of my anchor are the contributory factors in attaining significant achievements, both professionally and personally."*

**Madan Singh Bhadoria,**  
Head, Coal-Logistics







## CASE STUDY HR as a Safety Tool

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**A** safe working environment is the responsibility of every employee. At Hindustan Zinc, the aim of the HR department is to provide a safe workplace that is injury-free for all our employees, permanent and contractor. Hence, HR plays a pivotal role in building a safe atmosphere, and we do it through our various interventions such as introducing policies, prominent displays of life saving rules, counselling offenders, and advising line managers on handling matters of non-compliance. During the year, we have undertaken several initiatives to inculcate safety in our work environment.

**CEO Safety Town Halls:** This includes safety-centric conversations between senior management and employees across Hindustan Zinc. It engages and drives employees towards safe working habits and behaviour at the workplace. In the same vein, townhalls are being conducted at regular intervals at unit-levels, which are chaired by the Unit / Location Heads; there is good participation from all the permanent and contract employees at these sites.

**New Joinees Safety Induction:** For every new joinee, HR is the first guide who shares and imparts training on basic Hindustan Zinc safety norms and lifesaving rules.

**Safety Course:** In line with our philosophy of safety being the line manager's responsibility, we provide a platform for young and experienced line managers to pursue a PG diploma in safety from an authorised Regional Labour Institute (RLI). The selected executives are sponsored to complete the course, wherein official release is given with full pay.

**Suraksha Chaupals:** The HR team has taken lead in organising safety chaupals. Here, direct interaction and learning is imparted by senior leadership and line managers. Both our direct and indirect employees are encouraged to speak up about any safety pitfalls in their work area, followed by on the spot appreciations.

**Performance Scorecard:** For executives, our performance-driven appraisal program has safety as one of the key parameters, along with operational performance. For contractual workforce, safety forms a vital part of our contractor scorecard, through which their safety performance is monitored; the monthly contractor payment is linked with this score. Also, to ensure a safe workplace with zero harm, they follow Contractor Safety Management initiatives.

These initiatives, taken at the management level, help in providing the employees with a safe work environment.



## TRANSFORMING COMMUNITIES

Hindustan Zinc is committed to the principles of harmonious and sustainable development; protecting human life, health and environment, ensuring social well-being and adding value to the communities. We respect human dignity and believe in inclusive and equitable growth and improvement in quality of life and that lies at the core of our business philosophy and business operations.





# CSR DASHBOARD



VISION  
2020

Material Aspect  
**Community Development**

Transforming the quality of life and economic well-being of the communities around our operations





## Aspect Boundaries

Our community comprises of neighbourhood villages surrounding our operations. We believe that CSR is about building long term relations with communities and stakeholders. Our efforts are directed towards improving well-being of people, in close collaboration with communities.

### Our Goals



- ▶ To positively and holistically impact the quality of life of communities living around our areas of operation
- ▶ To work in partnership through a multi-stakeholder approach for innovatively, effectively and sustainably addressing development challenges
- ▶ To emerge as a thought leader, creating benchmarks of good practice in CSR across Rajasthan & the country
- ▶ To contribute to national priorities as also to the United Nation's Sustainable Development Goals (SDGs)

### Performance 2016-17



- ▶ Reached out to **5 lakh** beneficiaries in **184** villages.
- ▶ Strengthened flagship programs like **Khushi Anganwadis, Sakhi- Women's empowerment, Samadhan, Shiksha Sambal, and Hindustan Zinc Mining Academy.**
- ▶ **Initiated program** to bring people with **disabilities** into the mainstream, higher technical education, sports, etc.
- ▶ **Employee volunteering** introduced for CSR interventions.

### CSR INVESTMENT (INR CRORES)





## STRATEGY and Approach



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At Hindustan Zinc, we believe that our license to operate comes not only from the government but also from the communities surrounding our operations and particularly the people of Rajasthan. We are successful because we contribute to society and build collaborative relationships. Our growth has true meaning when it creates betterment opportunities for the people around us.

We are guided in achieving our goals by Vedanta's Sustainability Framework – 'Building Strong Relationships' and 'Adding and Sharing Value' – and also Hindustan Zinc's CSR Policy, as approved by its Board. At the beginning of this reporting year, the Board reviewed the CSR policy, further strengthening and streamlining our CSR governance processes.

## FOCUS and Reach

At Hindustan Zinc, our first priority for our CSR initiatives is our neighbourhood communities (in Udaipur, Rajsamand, Chittorgarh, Bhilwara, and Ajmer districts of Rajasthan). We have identified a total of 184 villages surrounding our operations, who constitute the core of our engagement. However, we also have a mandate to work beyond these villages, on programs of national importance. Once every three years we carry out a detailed needs assessment exercise, which then becomes the basis of our future plans.

In terms of thematic emphasis, our CSR Policy lays down 7 focus areas. These focus areas have been selected on the basis of needs assessments and past experience, and they touch the lives of children, women, youth and farmers in our communities.

## The Governance Framework

At Hindustan Zinc, we have a multi-tiered governance system, driven by the company's CSR Board Sub-committee. The forward-looking and well-experienced committee ensures that the execution of the company's CSR activities is in accordance with its CSR Policy.

There is then the Executive Committee,

consisting of the top Hindustan Zinc management, which reviews the CSR plans and progress once every quarter. At the third level, there is the Implementation Monitoring Committee, which approves all projects, partners and budgets. The IMC meets once every month and takes close interest in on-ground implementation as well. We also have a dedicated external auditor for undertaking partner due diligence, concurrent financial audits and on-site implementation verification.

### CSR Board Sub-Committee

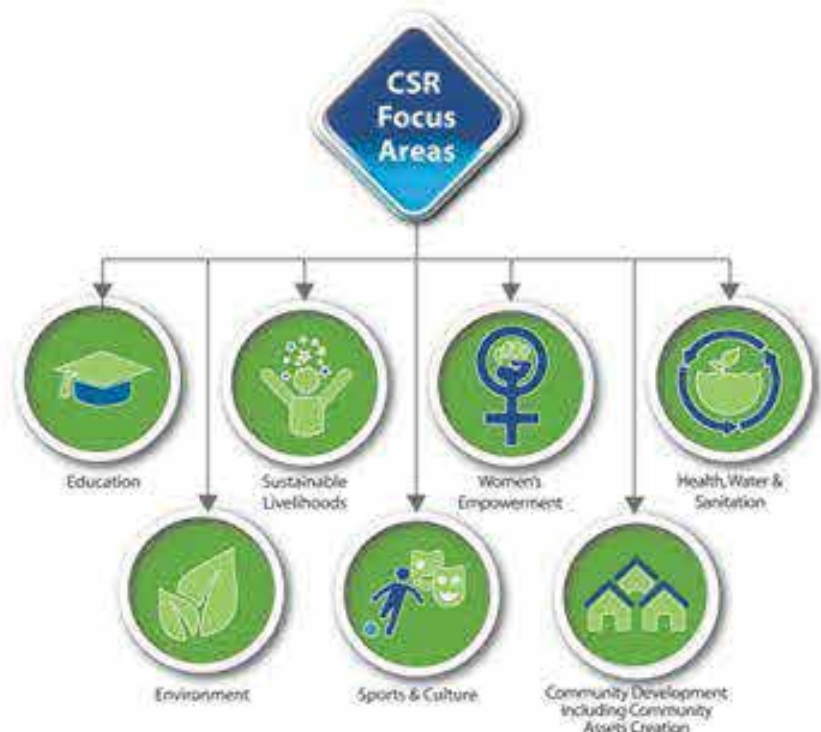
- ▶ Meet twice a year
- ▶ Approve the annual CSR plan / budget
- ▶ Ensure CSR activities being undertaken are as per the Board policy
- ▶ Review the progress of the projects

### Executive Committee (ExCO)

- ▶ Approve annual CSR plans and budget
- ▶ Review the progress of the programs once every quarter

### Implementation Monitoring Committee

- ▶ Monthly Meeting
- ▶ Approve specific projects, partners and budgets
- ▶ Monitor audit reports and their compliances
- ▶ Review CSR program process and outcomes





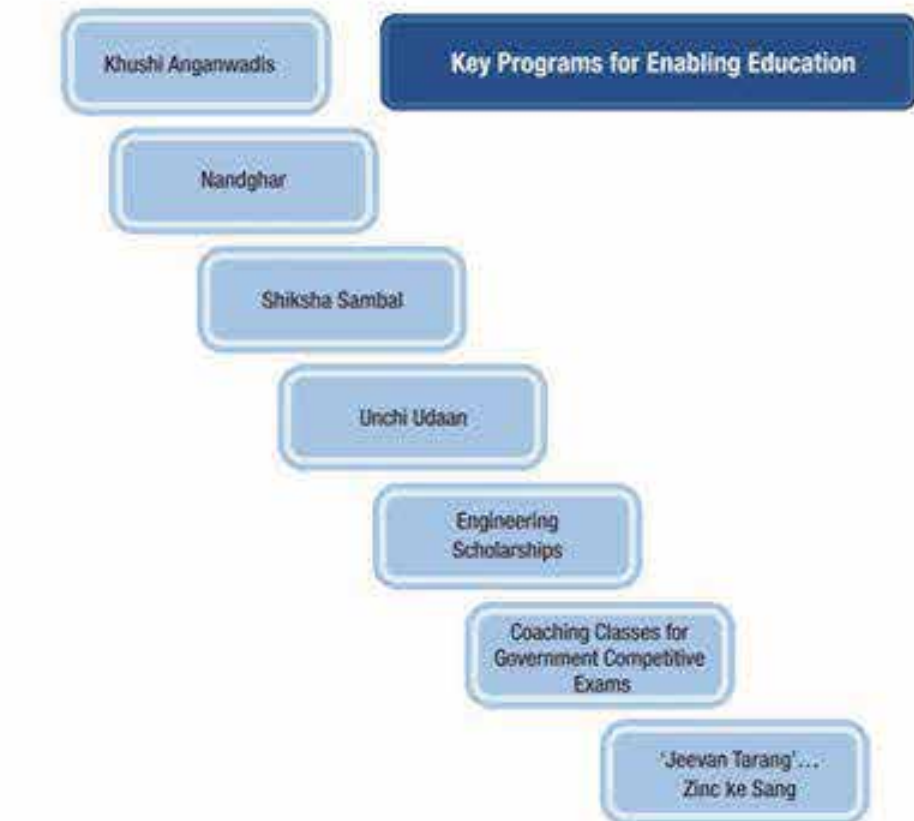
## Education



Education is the foundation to individual and community well-being, and has been a key component of our community programs for a very long time. During the reporting period, we initiated 'Nandghar' (the Vedanta Flagship Community Programs), at Hindustan Zinc. Nandghar seeks to convert the existing Anganwadis into state-of-art facilities, which will bring the best possible early childhood care and development to India's rural areas. We also took up two other new programs under education this year – 'Unchi Udaan' and 'Jeevan Tarang'... Zinc ke Sang'. The first program is aimed at identifying talented students and grooming them for the IITs and other institutions of national repute; the latter is our entry into a new stream of CSR intervention, where we focus on mainstreaming people with disabilities.

### Khushi Anganwadi Program

Khushi is a unique tri-partite public-private-people initiative aiming to reach 3,055 Anganwadi Centres (AWCs) in selected blocks of the Ajmer, Bhilwara, Chittorgarh, Rajsamand, and Udaipur districts. The program began with a 5-year MoU signed in 2015, between Hindustan Zinc and the Integrated Child Development Services (ICDS) Department of the Government of Rajasthan. The objective of the partnership is to strengthen the functioning of these Anganwadi Centres, thereby improving the health and wellbeing of children below six years of age. This year, the program was re-launched in 2,295 (out of 3,055) AWCs, with reputed NGO partners



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like Care India, Gramin Avam Samajik Vikas Sanstha, Seva Mandir, and Jatan Sansthan. Through this program, we are reaching about 36,000 children in the age group of three to six years, and another 63,000 children below

the age of three years. The first year of interventions has already yielded positive results, with a significant increase in the attendance of children at the centers, higher community engagement, and an enhanced level of pre-school education at the centers.





## The Joy of Giving!

Through our new initiative 'Khushi Batiye' we celebrated the "Joy of giving week". The event targeted spreading happiness to children who are part of Hindustan Zinc's Anganwadi Program, and saw success when 16 of our employees donated indoor and outdoor toys, uniforms, shoes, sweaters, and assisted in the refurbishing and painting of the centers. These donations reached a total of 25 AWCs and 500 children.



### CASE STUDY

## Spreading 'KHUSHI'

(CSR Program – Khushi Anganwadi)



Vijay

Hindustan Zinc is working with Jatan Sansthan in Rajsamand district to improve the health, nutrition, hygiene and preschool education of children in **504 Anganwadis** of the Government's Integrated Child Development Services (ICDS) program.

Enrolled in one of these centres was Vijay, who, at 18 months weighed only 3.25 kg. But Vijay's mother was reluctant to take him to the hospital. When the Khushi team came to know about this, they visited Vijay's home and after much persuasion, were able to bring Vijay to the hospital. Diagnosis revealed that Vijay's haemoglobin level was just 3.5 g/dL instead of 10.3-12 g/dL which is the level of a normal 18-month-old child. The doctors initiated treatment immediately and the child stayed in the hospital for about 12 days. During this time, the Khushi team frequently met Vijay and provided counselling to his family. They also did crowd-funding on social media, to raise in-kind food contributions for Vijay's family. **Timely medical care and food led to a remarkable improvement in the health of the child** and the family. In just two months, Vijay's haemoglobin level rose to be 10.2 g/dL, and his weight increased from 3.25 kg to 8.5 kg.

The Khushi team has since then **referred another 300 such severely malnourished children to the hospital** for care.



## Nandghar

Nandghar is Vedanta's flagship CSR initiative, aimed at improving the health & well-being outcomes for young children, and empowering women. A remodelled Anganwadi-Nandghar is equipped with state-of-the-art child-friendly infrastructure, including access to nutritious food, e-learning, clean water, sanitation and an uninterrupted supply of solar power. The centre also becomes the hub for entrepreneurship trainings for women. Towards this

end, Vedanta has signed an MoU with the Ministry of Women and Child Development to construct 4,000 Nandghars, across India.

At Hindustan Zinc, we have begun with integrating the Nandghar idea with our ongoing Khushi initiative, so that both the software and hardware are brought together to provide a unique model for women and children's development. This year, we piloted with 2 Nandghars and encouraged by the results, are now on way to doing 200 more.



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“Nandghar is equipped with state-of-the-art child-friendly infrastructure.”



## Nandghar – A Haven of Warmth and Care

(CSR Program – Nandghar)

CASE STUDY



The walls are freshly painted with images attractive to children. The whole place is spick and span inside and out. What shines through above all is the enthusiasm and warmth of the Anganwadi Worker (AWW) and her assistant. While the AWW leads activities, the assistant goes to help any children who are not participating. There are **25 girls and 12 boys enrolled and they are now coming regularly.**

The AWW tells us that, whereas, before, she used to have to go and collect the children to come to the Anganwadi, now parents are delighted to send their little ones. She can feel the difference in both children and parents now that they have this beautiful new centre and such exciting activities to take part in every day. This enthusiasm is reflected in the fact that the children are now coming to the centre neat and clean – a big change from before. They also have smart new uniforms, given as part of the project. The kitchen is a well-organized and clean area, with clean new utensils, a water purifier (which runs on the solar system installed recently) and the walls show pictures of everyday foods/vegetables and the chart of daily activities at the centre.

The attractive Nandghar and the resounding voices of children engaged in fun learning and play activities seem to be lifting the whole area to a new level of hope and aspiration.





Shiksha Sambal project was implemented in 57 schools across five districts, impacting the lives of 6,194 children from grades nine to twelve.

## Shiksha Sambal Program

In the last few years, the country has seen a lot of work on primary and middle school education, particularly in the context of underprivileged rural children. While this is important, but the personal and social aspirations of children and parents, requires further focus on education beyond the middle school. A vast majority of our young people in government schools fail in class X, and that often becomes the end of their educational journey; it also dashes the hopes of the family for

an improvement in their standard of living. Often, children struggle most with subjects like Science, English, and Mathematics (SEM).

Given this backdrop Hindustan Zinc began the Shiksha Sambal program, which aims to strengthen the teaching of SEM subjects in government senior schools. This year, the project has been implemented in 57 schools across the five districts, impacting the lives of 6,194 children from grades nine to twelve. The project is being implemented in partnership with Vidya Bhawan Society, Udaipur.



## CASE STUDY

### An Inspiring Champion

(CSR Program – Shiksha Sambal)



Viram

#### Viram studies in Class 10 in Putholi Village in

Chittaurgarh. His blue eyes reflect a desire to do well in school,

follow a good career and help his poor family. His father makes 'jhadoo' from palm fronds, which is hardly enough to raise his two sons and three daughters. Viram was frustrated because there were no teachers in his school to teach Mathematics, Science and English.

**Things have looked up since his school became a part of Shiksha Sambal.** Three Field Instructors from Vidya Bhawan are there to help him now. There are many activities, such as solving worksheets, doing science experiments and using library books to deepen conceptual understanding. **Encouraged by the CSR team of Hindustan Zinc, Viram was selected for his district cricket team** and went to take part in the state level tournament. Things are beginning to look up for Viram and his family.



## Unchi Udaan

Building on the Shiksha Sambal Program's base, we have initiated another unique program which identifies and prepares young talent from these schools for entry into IITs and other institutions of national repute. The program is called "Unchi Udaan" giving wings to children's dreams. This two year residential program is being run in partnership with 'Resonance' (Rajasthan's leading coaching institute) as the technical partner, and Vidya Bhawan as the school & hostel partner. The first batch of 27 children was selected through a rigorous two-stage selection process, with 2,327 students appearing for level one and 575 for level two.

## Engineering Scholarships

Beyond the school years, Hindustan Zinc also provides several merit-cum-means scholarships. One of these is done in partnership with Sumedha (called the 'Yashad-Sumedha Scholarship'). This support is meant for students from families with annual

income of Rs. 1 lakh or less, aggregate marks of 75% or more and who wish to pursue engineering programs. This year, 50 students (including 12 girls) from our operational districts received this scholarship. We are also partnering with the College of Technology & Agricultural Engineering (CTAE) in Udaipur, where we recognize the toppers of the batch through a Yashad Scholarship which includes a handsome cash prize as well.

## Coaching Classes for Government Competitive Exams

Another of our CSR initiatives under the education theme is holding preparatory classes for youth in neighbouring communities, to train them for entrance examinations for government jobs like LDC, Gram Sevak, police constable, REET, II grade teachers, and staff selection commission. 342 young people received coaching this year, provided on our behalf by Anushka Academy, Udaipur. While selecting students for the project, youth from BPL families were prioritised.



“Youth of BPL families are prioritised for coaching classes for competitive exams.”







## 'Jeevan Tarang'... Zinc Ke Sang

This is a very special and new initiative at Hindustan Zinc. Launched on 10th January, 2017 (our 51<sup>st</sup> Foundation Day), the program aims to bring people with disabilities into the mainstream and support them in their journey from disability to independent ability. We have identified schools for the deaf-mute, visually-impaired, and children with brain damage near Kayad Mine, Rampura Agucha Mine, Chanderiya Zinc Smelter, and Udaipur. We have also brought on-board experts to hand-hold these organisations in making a qualitative jump in terms of skill building

and sensitisation.

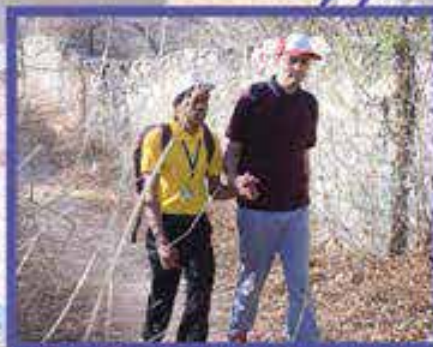
In the same vein, we have also begun efforts on raising awareness on disabilities – with our employees, our partners and also with other industry players. It began with a 'Disability Awareness Workshop for Corporates', which was attended by leading industry representatives of Udaipur and the senior ExCO members of Hindustan Zinc, followed by a trek for the blind – TrekkAbility, with a one-on-one pairing as buddies, by our own employees. Both these events elicited a lot of excitement and engagement – which we hope to build on in the coming months.

The program aims to bring people with disabilities into the mainstream and support them in their journey from disability to independent ability.

We have begun efforts on raising awareness on disabilities – with our employees, our partners and also with other industry players.



Mujhe aaj hiking or trekking bahut achi lagi, prakarti ko aaj mehsoos kiya  
- Lokesh, Visually Impaired Student



Sabse achi cheej thi logon ko nature ke close lana, in bacchon nature feel karwa kar mujhe bahut sukoon mila

- Smurti Shikha, Exploration



## Sustainable Livelihoods

For most of our neighbourhood communities, agriculture and animal husbandry is still the mainstay of their livelihoods. Hence, both agriculture and animal husbandry have since long been strong pillars of our community engagement. But alongside, we are also investing in equipping the youth with modern day skills which will not only help them find new age jobs, but also convert India's demographic dividend into a real asset for nation building.

### Samadhan – an Integrated Agriculture and Livestock Development Program

Samadhan project, running in partnership with the BAIF Institute of Sustainable Livelihood Development, works to ensure sustainable community livelihoods through integrated farmingsystems and livestock development. During the reporting year, the agriculture interventions reached 1,100 families – focusing on improved

agricultural practices, providing quality inputs, technical knowhow, and the formation of farmers' interest groups. Additionally, the Livestock Development Program reached 2,600 families with doorstep services of artificial insemination, consultations with subject matter experts, and timely veterinary and vaccination camps.



### Farmer's Prowess in increased yield

This year, the Rabi crop production (for participating farmers) increased by almost 28% due to improved crop varieties, package of practices, etc.

WHEAT PRODUCTION (2016 v/s 2017)







## CASE STUDY

# From Subsistence To Substance

(CSR Program – Samadhan)

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*Naru Lal Gurjar*

Naru Lal Gurjar hails from a small hamlet called Gurjar Kheda at Nagari Panchayat, in Chittorgarh district in Rajasthan. After a tragic accident where he lost one of his legs, Naru Lal Gurjar had lost all hope in life. He shut down his business of selling ice cream in Gujarat and came back to Chittorgarh, where he started a tea shop; unfortunately, that also did not do well. A dejected Naru Lal was left with only one bigha of land and a monthly government disability pension of INR 500, barely making ends meet.

But then, **Samadhan Project came to Naru's village, and he opted for the goatery program.**

As part of the project, Naru Lal Gurjar received five goats and a buck one year ago. He devoted himself to this little herd, and today he has seven goats which yield around two litres of milk a day, thus providing him with an additional income of about INR 1,800 per month. This journey of Naru Gurjar from 'Subsistence to Substance' is an inspiration for all who have lost hope.



## Hindustan Zinc Mining Academy – Skilling for the Mining Sector

In the recent past, there has been a country wide emphasis on skill building, and we at Hindustan Zinc are also committed to this national agenda. Being a mining company, we decided to focus our efforts into bridging the skill gaps in the mining sector, and have set up a Mining Academy.

Under its aegis, and in partnership with the Skill Council of Mining Sector (SCMS) and Indian Institute of Skill Development

(IISD), we are currently running two training programs – one is an intense 18-month residential training program for heavy earth moving machinery (with each batch consisting of 100-120 rural youth), and the other is an eight-month residential program for winding engine drivers (each batch comprising 40-50 rural youth).

Both programs have been well received, and despite a demanding curriculum, the trainee enthusiasm is extremely high. All the graduates from our first pilot batches are currently employed, some even by international mining companies, on the strength of this training.

“ We are currently running two training programs – one is an intense 18-month residential training program for heavy earth moving machinery and the other is an eight-month residential programme for winding engine drivers. ”





## Women's Empowerment

The empowerment of women is key to societal growth and transformation. By empowering women, we empower more than just one individual, as this poses a positive impact on their families and eventually, on society. Convinced of this fact, we have advanced a unique program – Sakhi – for equipping the rural women with skills and opportunities to evolve as independent individuals and drive growth in their communities. We also continuously organise events throughout the year to spread awareness of women empowerment.



### Sakhi – A Women's Empowerment Initiative

Under this flagship initiative, we are working to promote programs for the sustainable livelihood for women. This program is run along with grassroots institutions like Self Help Groups (SHGs) and their federations, along with the support of the Manjari Foundation. We have set a target to establish 2,000 SHGs across 174 villages over the next five years. This year alone, 505 SHGs have been formed, with the association of more than 6,600 women. With this kind of support, a few production centers have also been set up that are making garments, papad, spices, and other such products that can help women achieve sustainable growth, by helping them find a means of livelihood and work.



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“ Under this flagship initiative Sakhi, we are working to promote programs for the sustainable livelihood for women. This year alone, 505 SHGs have been formed, with the association of more than 6,600 women. ”

## Women's Day at Hindustan Zinc: Making Memories with the Zinc Family

This year, we celebrated International Women's Day across all locations of Hindustan Zinc. The event saw participation from over 6,500 village women; it was a great success, bringing together the women employees of Hindustan Zinc; the spouses of employees; government and police officials, and elected women representatives.







## CASE STUDY

# Moving Towards An Empowered Society

(CSR Program – Sakhi)



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## Kani Bai – Setting Trends beyond Imagination

Kani Bai, is from Bhallon ka Guda, a small village near Debari. Hailing from a poor economic background, she had to drop out of school after class X. The condition remained the same when she had to struggle to make ends meet even after marriage. This adverse situation motivated her to find a way to contribute to the family income. Looking for opportunities, she joined the Amliya Ji Bawaji Mahila Samuh SHG. Soon, she found her financial status improving and, with her innate leadership potential, she was chosen as the Samuh Sakhi by the group members. Today, she is not only a member of the SHG but also facilitates and strengthens other groups in the village, setting trends that were beyond imagination a few years ago.



*"The dark days of constantly worrying about food and money are gone, and all of it is because of good institutional support and the will to empower others."*

**Kani Bai,**  
Samuh Sakhi, Bhallon ka Guda

## Leela Meghwal – finds her 'Sakhi' at Hindustan Zinc

Leela Meghwal, from Khempura, Rajasthan, grew up in a financially challenged family environment. Being the eldest of the siblings, and to support her mother, she took on the domestic responsibilities and missed out on her formal education. Things did not change much even after she got married. With the hope of improving their standard of living, she moved to Udaisagar with her husband who managed to get a job at Hindustan Zinc. With passage of time their family grew and there was a need to move to a bigger accommodation. So they decided to make their own house by taking a loan and agreed to repay the loans by contributing mutually.

Although illiterate, Leela possessed the skills of stitching. When she heard of the 'Sakhi Kendra' from a friend, she could see a faint ray of hope for completing her dreams. Within a span of 6 months, she got trained and was proficient in making finished hand stitched products. Soon she began to bring money into the house, is now independent and able to pay her children's fees, pay for household items and pay off their house debts.



*"All these changes came when I joined Sakhi Kendra and it made me fearless and self-reliant. Employment is at our doorstep; it should go on and on as our livelihood depends on this."*

**Leela Meghwal,**  
Khempura, Rajasthan



## Health, Water & Sanitation

Hindustan Zinc recognizes that the vital need for people is to access safe drinking water, utilize toilets and practice good hygiene. There are various initiatives taken round the year to create awareness and accessibility to quality healthcare and sanitation.

### Health Camps

We regularly hold health and awareness camps in our neighborhood communities, both as taking curative services to the doorsteps of people as also conveying preventive care messages. This year, we conducted 140 such camps, covering approximately 22,400 people.

### Company Run Hospitals

We have 6 company run hospitals based at our locations including Udaipur which serve our employees and the local population. During the year, the hospitals reached out to around 1,03,000 external patients apart from the in-house ones.

### Vedanta Heart Hospital

About 16 years ago, Hindustan Zinc had helped the Udaipur District Hospital set up a specialized Heart Hospital, which brought state-of-art heart care services to the reach of the needy. During the year, about 3,000 patients were treated every month.

### Sanitation

As part of an ongoing MoU with the District Administration, Hindustan Zinc constructed 1,116 individual household toilets in Chittorgarh District this year. Additionally, 3 community toilet complexes were constructed in villages in the vicinity of Zavar, Rampura Agucha and Kayad mines.

## Environment

At Hindustan Zinc, we are committed to environmental concerns, not just within our operations, but also within our communities. We regularly support plantation and biodiversity conservation programs. During the year, among other programs, we were proud to partner with the Udaipur Urban Improvement Trust in undertaking the regeneration of two hills in the city – Ratnagiri and Kali Magri. We also supported the Forest Department in the development of the Biodiversity Park in Udaipur. As per regular environmental activities at the unit levels, we distributed 500 plants to the Bhallon ka Guda panchayat, Debari, for road side plantation and planted 1000 saplings for plantation on wasteland at Kayad village in Ajmer.



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“Hindustan Zinc recognizes that the vital need for people is to access safe drinking water, utilize toilets and practice good hygiene.”







“Hindustan Zinc has been a big support to keeping alive traditional music and dance, as also bringing contemporary music to the general public.”



## Sports & Culture

Sports and culture have long been a theme under our community programs. Almost all our locations work with local schools and communities in providing support for building sporting opportunities and tradition. And within culture too, Hindustan Zinc has been a big support to keeping alive traditional music and dance, as also bringing contemporary music to the general public.

### Sports

Sports are a field where excellence is a matter of training, performance, and an alignment of the mind and body. We at Hindustan Zinc have always believed in encouraging people to take up various sports, and promote our sports persons. During the reporting year, we have supported sportsmen and sports tournaments which have benefitted over 10,000 people across our locations.

### Culture

Under the culture theme, some of the main activities during the year included:

- ▶ Udaipur World Music Festival, Udaipur – a 3 day program which brought together nearly 150 musicians from 15 different countries, representing diverse music genres. The concerts were attended by more than 40,000 people.



- ▶ Celebration of Rajasthan Diwas, Jaipur – this event showcased the culture of Rajasthan, and was enjoyed by over 10,000 people.
- ▶ Maharana Kumbha Sangeet Sammelan, Pandit Chatur Lal Memorial Concert, etc were some other concerts that we continued to support this year as well.



## Community Development including Community Assets Creation

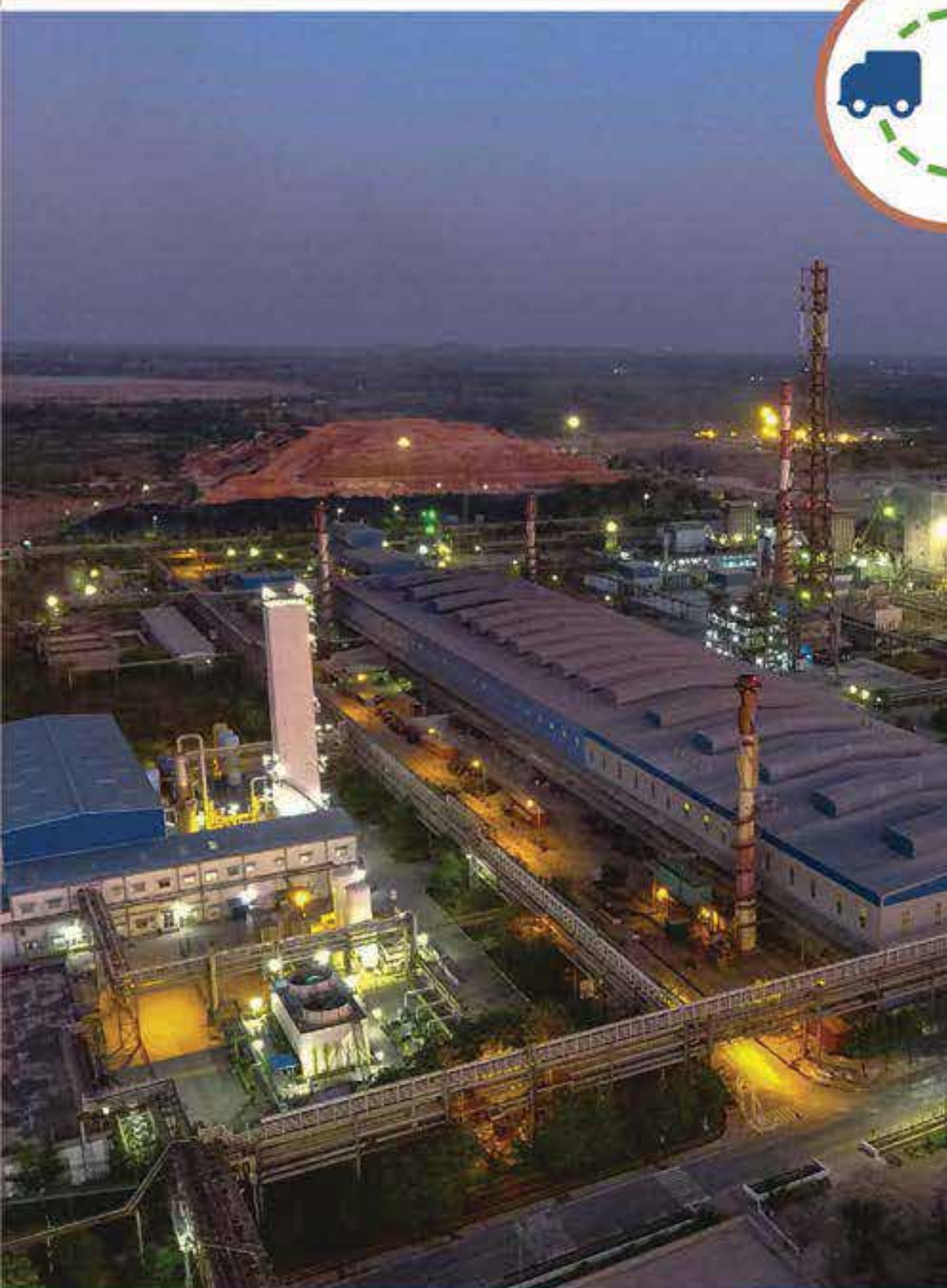
We contribute to society by creating infrastructure and facilities for the communities and for the state. In this regard, we were proud partners of the Chief Minister's special campaign this year – “Mukhyamantri Jal Swavlamban Yojana”. Under this program, which emphasised water conservation, we have undertaken several infrastructure development initiatives, including 34 Sankirn Gali Percolation Tank (SGPTs); 8 building anicuts, deepening of 4 ponds and 3 wells; water harvesting structures, contour trenches, overhead tanks, installation of borewells and pipelines etc. Another major work included construction of retaining wall on both sides of TIDI-Amarapura Saddle dam construction of an approach road upto the bund to prevent flooding of the nearby villages. Additionally, our community asset creation also involved infrastructure development for nearby government schools and rural infrastructure including repair and renovation of schools; construction of boundary walls, community centres and roads.



## COLLABORATING & STEPPING UP THE SUPPLY CHAIN

With our holistic approach to 360 degree growth, we value the relationship we share with our partners in business – our suppliers, vendors, and contractors. We are convinced that strengthening the collaboration will help us continue towards creating a sustainable future.

This section of the report describes some of our strategic interventions to improve collaboration throughout the supply chain, and our attempts to impart the key message in sustainability. Vividly captured here are some of our innovations that highlight our commitment to galvanizing growth.





# SUPPLY CHAIN DASHBOARD



VISION  
2020

Digital transformation with  
a focus on innovation

Material Aspect  
**Supply Chain Management**





## Aspect Boundaries

The supply chain being an integral component of our business, we strive for a strong and resilient relationship with our partners. Accordingly, we focus on strategies and processes to develop the capacities of our employees as well as our suppliers / vendors / contractors and deliver business excellence.

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## Performance 2016-17



- ▶ **SAP-ARIBA** implementation in progress
  - ▶ **Transport Management System** implemented
  - ▶ Supplier screening for sustainability practices
  - ▶ Skill building of our contract workforce and stepping up local recruitments
- 

## Action Plan



- ▶ Establish procurement process that promotes speed transparency
  - ▶ Promote green procurement
  - ▶ Introduce digitization that makes procure-to-pay process seamless
  - ▶ Optimize our procurement strategy, to work more collaboratively with our suppliers to deliver innovatively
  - ▶ Supplier and contractor performance management, monitoring and recognizing the best in class
  - ▶ Lower transaction and productivity improvement
- 





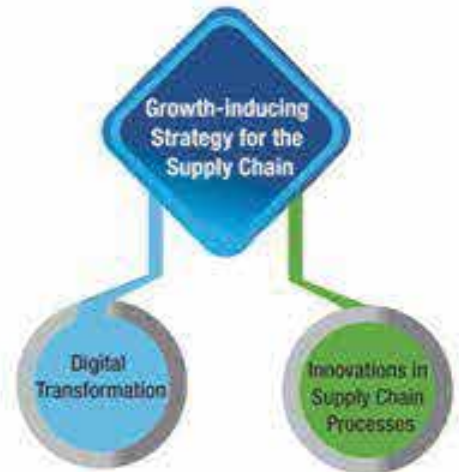


“The association with our partners begins with an introduction to the Supplier Code of Conduct.”

## STRATEGY and Approach- The Road to Growth

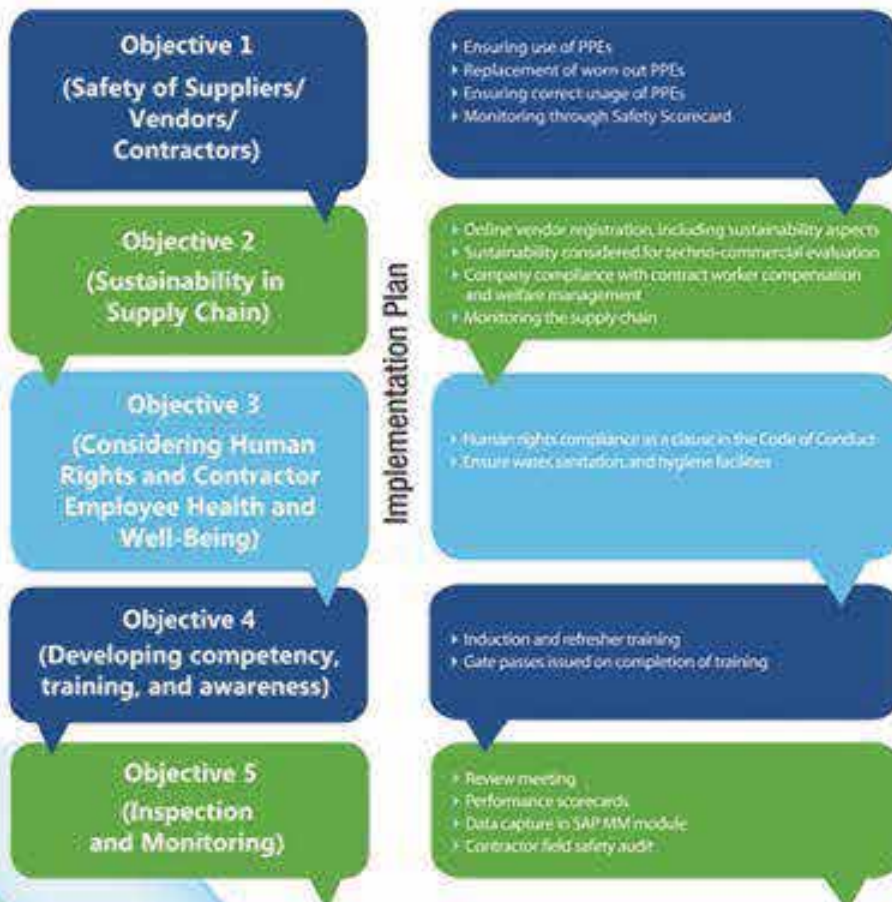
We recognize our supply chain as one of the key factors contributing to our business performance, as well as being an area in which there is considerable potential to innovate and step up. Hence, we focus on identifying and making strategic improvements to our procurement practices and instill sustainable practices throughout the supply chain. We create value for all our stakeholders and propelling us to the next stage of development.

At Hindustan Zinc, our highly efficient supply chain comprises a vendor-supplier base of world class partners



who provide us with services, equipment and materials to run our smelting and mining operations. Besides, we strategically source commodities & equipment from national and international suppliers with highly efficient supply chain as per the business requirements. Our selection of these partners is done after a stringent evaluation, which is a part of our techno-commercial bidding process. The selection process is guided through two robust policies, namely the Procurement Policy and Supplier & Contractor Management Policy. All our new suppliers are screened basis their practices in the areas of human rights, labour practices, environment and impact on society; thus, establishing the ideals of sustainability from the very beginning. The association with our partners begins with an introduction to the Supplier Code of Conduct – our internal guidance document for suppliers' conduct at Hindustan Zinc. Compliance with the same is regularly monitored to maintain the highest standards of sustainability throughout our supply chain. During the reporting period none of our suppliers were identified as being at risk for labour practices including child labour, forced or compulsory labour

### Strategic Supply Chain Objectives and Implementation





“ We have realised that the transition phase that we are presently in calls for breakthrough innovations in the supply chain. ”

Our management approach for the procurement function rests on the principles of productivity, quality, reliability, and sustainability. To transform these ideals into action, we have chalked out a set of five sustainability objectives for the supply chain, which we aim to achieve through targeted action plans.

In addition, we have realised that the transition phase that we are presently in calls for breakthrough innovations in the supply chain. Treating these needed changes as a growth opportunity will enable a smooth transition from open pit to underground mining, whilst also making significant improvements in the way we function. Thus, aligned with our Vision 2020, we are making efforts to bring about a digital transformation and focus on innovations in the supply chain processes.

Convinced that digitisation will simplify the rather complex procurement processes, we have begun by adopting the best practice in the industry; i.e. strengthening our relationship with our business partners. More confidence was gained when we realised that there is immense scope for innovations in our supply chain processes. Whilst working towards these strategic goals, during the reporting period we also placed emphasis on the enhancement of supplier performance.

## Enhancing our Supply Chain Performance

As we embark on the challenge of a complete transition from open cast to underground mining, we have partnered with global suppliers for our underground mines. We are focusing on digitisation to improve the mechanisation of our operations and enhance productivity. Simultaneously, we are tuned to reinvent the supply chain processes to create a more eco-friendly, cohesive environment that is conducive for sustainable performance. We are also aware of the plight of the local community and contractors, linked with the loss of livelihood during this transition phase. Hence, we are trying to transition most of our workforce from the open cast to the underground mines by providing them with the requisite training.

Even as we attempt to create a world class mining infrastructure, we have ensured that we retain our local suppliers.

## Digital Transformation

In our endeavour for digital transformation, we have implemented the following to streamline the procurement process. Simultaneously, we have also worked towards introducing mechanisation in our logistics and transportation, leading to improved productivity in the supply chain.







“ We are also implementing a Transport Management System across all our locations; this will automate the entire transportation process. ”

### Future Plan- Implementation of ARIBA

We are progressing towards implementation of SAP ARIBA Supply Chain Collaboration. This is a network-based collaboration platform that makes it safe and easy to connect and share information across our partners and vendor networks in real-time. It also provides crucial intelligence that can help detect early warning and implement quick and informed decisions to help mitigate risks. It will add significant value across the supply chain lifecycle as it enables efficient onboarding and easy integration, will provide actionable intelligence, help in improving transparency & compliance, and allows scope for broader collaboration.

### Vendor Managed Inventory

To reduce inventories while also eliminating stock-out situations, we have introduced the Vendor Managed Inventory (VMI) process for the supply of C class items. The VMI process enables the vendors to create orders based on demand information. The VMI stores are maintained at CSC and shall be operated on a milk-run basis (to deliver materials across Hindustan Zinc locations). Presently, approximately 8% of the total items procured have been covered through the VMI, and this will reach 35% in the next six months.

### Transport Management System

We are also implementing a Transport Management System across all our locations; this will automate the entire transportation process and eliminate all manual interventions. This technology will ensure a reduction in the turnaround time of the vehicles, reduction in fuel consumption, and better utilization of the assets. It will bring about increased visibility, better control of vehicle movement, and enhanced safety and security of the cargo, which will subsequently result in increased productivity and cost savings.

Our ITMS (Integrated Transport Management System) interfaces between SAP, Web Portal and GPS to optimise efficiency across the supply chain. For drivers and vehicle registration it uses Biometric registration, RFID and GPS to authenticate and helps beef the safety by sending SMS and email alerts for violations. It also helps regulate transportation demand and vehicle allocation using Auto allow slip and schedule the inbound and outbound

movement allowing for seamless traffic monitoring. Last but not the least feature of the ITMS, is enabling of Automatic GRN and invoicing. With this best in class practice in transportation using technology we are trying to embed sustainable growth throughout our supply chain process.

### Innovations in our Supply Chain Processes

We acknowledge that there is immense scope for bringing innovations in our supply chain, to trigger an eventual growth that will reflect in our overall business performance. Hence, we are steadily analysing all aspects of our supply chain to identify processes suitable for such reinvention. For the reporting year, we have implemented the following innovations:

#### Innovations in Supply Chain Processes

Sustainability innovations in transportation

Stepping up our suppliers' capabilities

Infusing buyer competency

### Sustainability Innovations in Transportation

Significant changes have been made in our methods of zinc and lead concentrate transportation, wherein we have increased the carrying capacity of the vehicles to be more energy-efficient. In conjunction with transporters and third



parties, we have developed mechanised shutter vehicles for the movement of these concentrates. This will be proliferated in the coming years and will reduce spillage, pilferage, and dust pollution on the roads.

We have implemented system for real time tracking of all the vehicles deployed for inbound and outbound movement of material. All the vehicles are equipped with GPS devices which are being tracked through Logistics Control Centre on 24X7 basis to have better visibility & control over the movement. We are also developing world class logistics infrastructure at all locations which includes parking plaza with rest room and other basic amenities for drivers.

We have also implemented No-Go Criteria across all the locations to ensure compliance to vehicle & driving safety standards. Regular training programs are being organized to train the drivers in defensive driving and create safety awareness among them.

### Stepping up our Suppliers' Capabilities

To build a sustainable supply chain, it is essential to transform the traditional approach of our suppliers and educate them about current global practices. We therefore engage with our partners and motivate them to adopt sustainability practices for a secure future. As a new initiative, we have started visiting our suppliers' facilities, to understand their processes and the sustainability measures they undertake to maintain quality at the workplace. In the same context, we organised our first ever 'Supplier's Day' meet, bringing all strategic suppliers together under a single roof and sharing thoughts on the ideal supply chain that we envisage developing with them as our partners in our journey. More details on this can be found in the

case study: 'Supplier's Day – A Step Towards Sustainable Value'.

Through formal and informal senior management engagements, we ensure that our suppliers adopt sustainability practices. Through audits, satisfaction surveys, and risk assessments, which are an integral part of our operational management, we have been able to achieve their compliance with our sustainability standards. Additionally, through knowledge sharing of new technologies and process innovation techniques applied on-ground, we have prepared them to respond to and mitigate the associated risks. In our mantra of 'Green Zinc', we have made it mandatory for our suppliers to be ISO-certified. If they are not, we maintain strict vigilance of their status and issue a timeframe within which they must get themselves certified. As one of our future endeavours, we plan to audit our suppliers' green practices and introduce a sustainability award to encourage them to continue their efforts in this area.

We also invest in skill development for our contractual workers; one of our key programs is the 'Driver Education Program'. Here, we organise regular in-house camps, at individual plant levels, to create safety awareness among the drivers. We are also in the process of hiring a reputed agency for imparting the requisite training to the drivers and enhancing their understanding of road safety.

Besides the above interventions, we have critically reviewed our supply chain to identify the potential risks arising on the part of our suppliers. In the identified cases, we have worked towards enlarging our supplier base



“Through formal and informal senior management engagements, we ensure that our suppliers adopt sustainability practices”

for mitigating the sustainability risk of a single vendor scenario. This has indirectly provided opportunities for new suppliers to be a part our supply chain and, in some cases, we have determined to proceed with technological process changes as well. Exemplar cases are detailed in the case study, 'Transforming our Risks into Opportunities through our Partners'.

### Infusing Buyer Competency

While we were analysing all our processes, we realised that a competent employee base is essential to maintain and enhance our supply chain practices. To build capacity for the procurement function, we continuously train our employees. During the reporting year, we conducted an exclusive workshop for building buyer competency. The details are provided in the case study, 'Building Competence Step by Step – A Buyer Training Program'.





## CASE STUDY

# Transforming our Risks into Opportunities through our Partners

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A single supplier for a product poses a significant risk for any buyer company; enlarging the supplier base is the only solution for this. At Hindustan Zinc, when we have encountered such scenarios, we have tried to turn the situation around and create opportunities for new suppliers. A glimpse into some of these cases follows:

### **A Million Dollar Saving by Identifying Alternatives for High Chromium Cast Grinding Media**

High Chromium Cast Grinding Media was single supplier source. To mitigate the significant risk it posed, we attempted developing M/s Bluestar to expand our supplier base. Simultaneously, we initiated trials for alternatives to the grinding media with forged media. These trials are in progress at our S.K. Mines, and are showing encouraging results.

### **Low COD Sodium Sulphate can do Wonders too!**

Sodium sulphate with a 400 ppm COD has been used as a flux with the concentrate. We had a single supplier source for this product that posed a significant risk. In search of alternatives, trials were executed with a mix of high-low COD sodium sulphate obtained from another supplier, M/s Atul Limited. Eventually, 40% of the sodium sulphate requirement was sourced from this company and this has reduced the cost by 50%.







## CASE STUDY

# Building Competence Step by Step – A Buyer Training Program



We organised the "Procurement Functional Training and Competency Building Workshop" with the intention of providing our commercial executives with first-hand knowledge on the procurement function. With **56 executives** and **six commercial leads** as participants, motivated by **five energisers** (functional experts), the workshop was a success.

The two-day workshop began with knowledge sessions on the key aspects of the supply chain, including sources of waste, spend analytics and category management, sourcing strategies and supply market analysis, clean sheet costing, and transactional purchase to value buying with process simplification through outsourcing and automation. Subsequently, the participants were exposed to the best practices of the industry to give them a feel for the realm of procurement.

The enormous scope for improvements through the supply chain was highlighted through interesting case studies from the industry, role plays, and real examples from Hindustan Zinc as well. The speakers emphasized **green sourcing & collaborative working, vendor management**, the importance of continuous learning to learn, and respecting the vendors as well as long term associates.

The workshop was a great platform for Hindustan Zinc purchasing team to network with domain experts and work towards building a sustainable supply chain.







## CASE STUDY

# Supplier's Day – A Step Towards Sustainable Value

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Innovation is crucial in order to sustain progress and discover new opportunities for growth; however, it is not possible to come up with in-house innovations every time. In order to drive sustainable improvements throughout our value chain, we collaborate closely with our suppliers; Supplier's Day is one such step forward.

We organised our first Supplier Annual Meet on February 1, 2017 at Udaipur, with approximately **50 of the strategic suppliers** across India as participants. The emphasis lay on our commitment towards creating a sustainable supply chain and zero non-compliance.

The program began by sharing our growth plans as well as our expectations regarding productivity, quality, reliability, and sustainability. The management delivered the key message of global excellence through innovation. The suppliers were shown of our journey so far in the digital transformation of our supply chain, by showcasing future projects including ITMS and automated shipping through the vendor portal. To further encourage our suppliers towards business excellence, they were recognised under the categories of Operational Excellence, Supply Chain Alignment, Innovation Project, and best Debut Vendor.

The program also served as a platform for sharing the various best practices our suppliers are following, with **special focus on health and safety, the environment, and other technology-based innovations**. Some valuable ideas for collaborative growth were received, which included creating an innovation charter, leveraging the vendor portal creating a green channel for zero defect suppliers. Suppliers were also keen to work together with Hindustan Zinc on our sustainability initiatives including CSR to create positive impact on the society we belong to.







# **Annexures**



# Sustainability ROAD MAP

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## Growth in Future

As we progress to achieve our future goals, we will ensure that we meet the expectations of all our stakeholders and continue with our commitment to 'Galvanizing Growth'.

### Safeguarding Life

#### Goals & Targets (2017-18)

- ▶ Achieve zero fatal incidents
- ▶ Achieve zero occupational illness cases
- ▶ Reduce Lost Time Injury Frequency Rate (LTIFR) to 0.27 or less
- ▶ Reduce Total Recordable Injury Frequency Rate (TRIFR) to be 0.70 or less
- ▶ Critical Review & audit of Safety Standard implementation
- ▶ Improvement in Risk analysis and evaluation methodology

### Enhancing our Green Footprint

#### Goals & Targets (2017-18)

- ▶ Saving of 0.32 Million cum meter
- ▶ Saving of 0.030 Million GJ
- ▶ Achieve GHG Emission reduction by 5% in next five years
- ▶ Implementation of BMP recommendations
- ▶ Zero 4 or 5 environment incident

### Unleashing the Human Potential

#### Goals & Targets (2017-18)

- ▶ Create and develop leadership pipeline and succession planning for key positions
- ▶ Develop operational skills in Underground mining for enhanced performance and productivity
- ▶ Leverage technology for data driven people decisions
- ▶ Foster environment of high engagement and admired employer in industry

### Transforming Communities

#### Goals & Targets (2017-18)

- ▶ Expanding the Group's Flagship CSR programme Nandghar
- ▶ Social audit & needs assessment to be conducted
- ▶ Embed and encourage employee volunteerism in social initiatives
- ▶ Encourage safety practices and initiatives among partners and communities

### Collaborating and Stepping Up the Supply Chain

#### Goals & Targets (2017-18)

- ▶ Driving supplier co-innovations to improve TCO and Green sourcing, Technological investments (ARIBA, TMS) for enhanced supply chain collaboration
- ▶ Zero defect culture with our suppliers and Zero waste in supply chain
- ▶ Supplier scorecards for star rating of supplier performance and recognising best in class performance
- ▶ Investment in Skill enhancement of our contract workforce and driving Zero non compliance of our suppliers



## KEY PERFORMANCE INDICATORS

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FINANCIAL INDICATORS			
	UNITS OF MEASURE	FY 2015-16	FY 2016-17
<b>Economic value generated (A)</b>			
Revenue from Operation	INR Crores	15,463*	18,798
Other Income	INR Crores	2,763*	2,474
Total (A)	INR Crores	18,226*	21,272
<b>Economic Value Distributed - Expenses (B)</b>			
Employee Wages and Benefits	INR Crores	774	722
Operating Costs	INR Crores	6,691	6,763
Payment to Providers of Capital	INR Crores	11,764	12,624
Payment to Government (Income Tax)	INR Crores	5,478	6,250
Community Investments	INR Crores	63	49
Total (B)	INR Crores	24,770	26,408
<b>Economic Value Retained (A-B)</b>	INR Crores	(6,544)	(5,136)
<b>Profit before depreciation, interest and tax</b>	INR Crores	9,385*	12,213
<b>Profit before tax</b>	INR Crores	8,623*	10,200
<b>Net tax expense/(benefit)</b>	INR Crores	448*	1,884
<b>Profit for the year</b>	INR Crores	8,175*	8,316
<b>Earnings per equity share</b>	INR	19.35*	19.68

\* The financials are restated and aligned according to IND-AS reporting requirements and the same has been reviewed by Statutory Auditors.

PRODUCTION INDICATORS					
	UNITS OF MEASURE	FY 2015-16		FY 2016-17	
		Mined Metal	Refined Metal	Mined Metal	Refined Metal
Zinc	Million MT	0.74	0.76	0.76	0.67
Lead	Million MT	0.14	0.15	0.15	0.14
Silver	MT		459		480



## HUMAN RESOURCE INDICATORS

UNITS OF MEASURE	FY 2015-16			FY 2016-17			
	Male	Female	Total	Male	Female	Total	
<b>WORKFORCE</b>							
Full-time Employees	Number	4,365	325	4,690	4,097	324	4,421
Contract Employees	Number			12,410	13,049	106	13,155
New Hires	Number			157	117	32	149
New Hire Rate	Percentage			3.35	2.6	0.7	3.37
<b>New Hires (Age-wise split)</b>							
Less than 20 years	Number				1	0	1
20-30 years	Number				114	30	144
31-45 years	Number				1	2	3
46-58 years	Number				1	0	1
Employee Turnover Rate	Percentage			8.7			10.28
<b>EMPLOYEE TRAININGS</b>							
Full-time Employees	Man-hours	1,44,908*	6,398*	1,51,306*	89,205*	13,999*	1,03,204*
Contract Employees	Man-hours			2,86,710	3,91,159	1079	3,92,238

\*Including workmen

## HEALTHY AND SAFETY INDICATORS

UNITS OF MEASURE	FY 2015-16			FY 2016-17			
	Male	Female	Total	Male	Female	Total	
<b>FATALITIES</b>							
Full-time Employees	Number	2	0	2	0	0	0
Contract Employees	Number	2	0	2	4	0	4
<b>LOST TIME INJURY FREQUENCY RATE</b>							
Full-time Employees	Number per Million Hours Worked			0.28			0.32
Contract Employees	Number per Million Hours Worked			0.57			0.30
Overall HZL	Number per Million Hours Worked			0.50			0.30
<b>TOTAL RECORDABLE INJURY FREQUENCY RATE</b>							
Full-time Employees	Number			0.75			0.95
Contract Employees	Number			1.25			1.00
<b>OCCUPATIONAL DISEASE RATE</b>							
	Number per Million Hours Worked			0.00			0.00
<b>PROCESS INCIDENTS</b>							
	Number per Million Hours Worked			5.96			7.72



**ENVIRONMENTAL INDICATORS**

	UNITS OF MEASURE	FY 2015-16			FY 2016-17		
		MINES	SMELTERS	TOTAL	MINES	SMELTERS	TOTAL
<b>MATERIALS USED</b>							
Raw Material	Million MT	11.04	0.00	11.04	11.15	0	11.15
Semi-manufactured goods or parts	Million MT	0.00	1.63	1.63	0.00	2.08	2.08
Associated Process Materials	Million MT	0.12	0.45	0.57	0.17	0.49	0.66
Packing Material	MT	0.00	663.93	663.93	0.00	469	469
<b>ENERGY CONSUMPTION</b>							
Direct Energy	Million GJ	9.36	33.97	43.3	9.31	32.17	41.48
Indirect Energy	Million GJ	0.22	0.74	0.96	0.11	0.39	0.5
<b>TOTAL ENERGY CONSUMPTION</b>							
Fossil fuels purchased and consumed	Million MWh			12.03			11.52
Electricity purchased	Million MWh			0.26			0.14
Total renewable energy purchased or generated	Million MWh			0.16			0.14
Total non-renewable energy sold	Million MWh			0.16			0.14
Total non-renewable energy consumption	Million MWh			12.29			11.65
Total costs of energy consumption	INR Crores			1,381.79			1,593.46
<b>WATER WITHDRAWAL</b>							
Ground water	Million m <sup>3</sup>	3.73	0.13	3.86	3.25	0.067	3.32
Surface water	Million m <sup>3</sup>	4.66	12.62	17.27	4.93	11.84	16.77
Rainwater	Million m <sup>3</sup>	0.04	0.00	0.04	0.00	0.005	0.005
Waste water from another organization	Million m <sup>3</sup>	0.00	5.36	5.36	0.55	4.21	4.77
Municipal water supplies or other water utilities	Million m <sup>3</sup>	0.008	0.00	0.008	0.005	0	0.005
Total net fresh water consumption	Million m <sup>3</sup>			19.58			18.09
<b>WATER RECYCLED</b>	Million m <sup>3</sup>	7.16	5.78	12.94	6.38	5.05	11.43
<b>AIR EMISSIONS</b>							
PM Emission from stacks	MT			1,083			887
SOx Emission from stacks	MT			32,328			19,255
NOx Emission from stacks	MT			8,075			7,602



## ENVIRONMENTAL INDICATORS

	UNITS OF MEASURE	FY 2015-16			FY 2016-17		
		MINES	SMELTERS	TOTAL	MINES	SMELTERS	TOTAL
<b>CARBON EMISSIONS*</b>							
Scope I Emission*	Million MT CO <sub>2</sub> e			4.47			4.29
Furnace oil (FO)*	Million MT CO <sub>2</sub> e			0.038			0.042
High Speed Diesel (HSD)*	Million MT CO <sub>2</sub> e			0.23			0.20
Propane*	Million MT CO <sub>2</sub> e			0.016			0.016
Liquified Petroleum Gas (LPG)*	Million MT CO <sub>2</sub> e			0.002			0.001
Coal*	Million MT CO <sub>2</sub> e			3.79			3.64
Coke*	Million MT CO <sub>2</sub> e			0.39			0.38
Pyrolysis Oil*	Million MT CO <sub>2</sub> e			0.00			0.002
LSHS*	Million MT CO <sub>2</sub> e			0.0008			0.00
Scope II Emission (electricity purchased from state grid)*	Million MT CO <sub>2</sub> e			0.22			0.11
Scope III Emission*	Million MT CO <sub>2</sub> e						2.77
<b>WASTE GENERATION</b>							
Hazardous Waste	Million MT	0.001	0.58	0.58	0.001	0.53	0.53
Non-Hazardous Waste	Million MT	0.06	0.42	0.47	0.06	0.45	0.51
Overburden/ Waste Rock	Million MT	64.71	0.00	64.71	37.64	0.00	37.64
Tailings (gross generation)	Million MT	8.92	0.00	8.92	9.09	0.00	9.09
<b>SOLID WASTE DISPOSED</b>							
Total waste disposed <sup>†</sup>	Million MT			72.91			45.35

\* GHG emissions have been computed in line with the Greenhouse Gas Protocol: Corporate Accounting and Reporting Standard, validated by a third party to per the GRI 3110 standard.

† Waste disposal quantity is provided for the Hazardous Waste given which is being disposed in the Secure Landfill (SL) and the common Treatment, Storage and Disposal Facility (TSD), tailing which is being disposed in tailing dam and overburden at dump area. Our Non-hazardous Waste is being land or stored in the above yard.



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For more information please refer UNGC – COP Advance 2016-17

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# ASSURANCE STATEMENT



**KPMG (Registered)**  
Building no. 10, 8th Floor, Tower-C  
DLF Cyber City, Phase - II  
Gurugram - 122 002 (India)

Telephone: + 91 124 307 4000  
Fax: + 91 124 254 9101  
Internet: [www.kpmg.com/In](http://www.kpmg.com/In)

## **Independent Limited Assurance Statement to Hindustan Zinc Limited on their Corporate Sustainability Report 2016-17**

### **To the management of Hindustan Zinc Limited,**

Yashad Bhawan, Udaipur,  
Rajasthan, India - 313 004

### **Introduction**

KPMG in India (KPMG) was engaged by Hindustan Zinc Limited ('the Company' or 'HZL') to provide an independent assurance on its Sustainability Report for FY 2016-17 ('the Report'). The Report is prepared by the Company based on Global Reporting Initiative (GRI) G4 Guidelines 'in accordance - core' disclosure criteria for sustainability reporting.

The development of Report, its content, identification of key material issues, engaging with stakeholders is the sole responsibility of the management of the Company. KPMG's responsibility is to provide limited assurance on the Report content as described in the scope of assurance.

### **Reporting Criteria**

Hindustan Zinc Limited applies its sustainability performance reporting criteria based on Sustainability Reporting Guidelines (G4) of Global Reporting Initiative (GRI) including the Mining and Metals Sector Disclosures, National Voluntary Guidelines on Social, Environmental and Economic Responsibilities of Business (NVG) framed by the Ministry of Corporate Affairs (MCA), Government of India, United Nations Global Compact (UNGC) principles, International Council on Mining and Metals (ICMM) and Sustainable development Goals framework as detailed in the 'Scope, Boundary and Limitations'.

### **Assurance Standards Used**

We conducted limited assurance in accordance with the requirements of International Federation of Accountants (IFAC), International Standard on Assurance Engagement (ISAE) 3000, (Revised) Assurance Engagements Other than Audits or Reviews of Historical Financial Information. Under this standard, we have reviewed the selected information presented in the Report against the criteria of relevance, completeness, reliability, neutrality and understandability.

### **Scope, Boundary and Limitations of Assurance**

The Assurance has been provided for sustainability performance disclosures presented by Hindustan Zinc Limited in its Report for the period 01 April 2016 to 31 March 2017. Our Scope of assurance included verification of the sample data and information on material aspects reported at the following units/locations in Rajasthan:

- Sindesar Khurd Mine
- Chanderiya Smelting Complex
- Rampura Agucha Mine
- Rajpura Dariba Mine
- Dariba Smelting Complex
- Corporate Office- Udaipur

The assurance scope excludes:

- Data and information outside the defined reporting period and boundary;
- The Company's financial performance;
- The Company's statements that describe expression of opinion, belief, aspiration, expectation, aim or future intention and assertions related to Intellectual Property Rights; and
- Aspects of the report other than those mentioned below;



The General and Specific Standard Disclosures subject to assurance were as follows:

General Standard Disclosures	Specific Standard Disclosures
<ul style="list-style-type: none"> <li>• Strategy and Analysis- G4-1</li> <li>• Description of key impacts, risks, and opportunities- G4-2</li> <li>• Organizational Profile – G4-3 to G4-16</li> <li>• Identified Material Aspects and Boundaries- G4-17 to G4-23</li> <li>• Stakeholder Engagement- G4-24 to G4-27</li> <li>• Report Profile- G4-28 to G4-33</li> <li>• Governance- G4-34-38, G4-45 to G4-47</li> <li>• Ethics and Integrity- G4-56 to G4-58</li> </ul>	<ul style="list-style-type: none"> <li>• Environment               <ul style="list-style-type: none"> <li>– Energy (G4 EN3, G4 EN5, G4 EN6), Water (G4 EN8, G4-EN10), Biodiversity (G4 EN11, G4-EN14), Emissions (G4 EN15, G4 EN16, G4 EN18, G4 EN21), Effluents and Waste (G4 EN22 to G4 EN24, Environmental Expenditure G4 EN31, G4 MM3)</li> </ul> </li> <li>• Labor Practices and Decent Work               <ul style="list-style-type: none"> <li>– Employment (G4 LA1 to G4 LA3), Occupational Health and Safety (G4 LA6), Training &amp; Education (G4 LA9 to G4 LA11), Diversity and Equal Opportunity (G4 LA12)</li> </ul> </li> <li>• Human rights               <ul style="list-style-type: none"> <li>– Non-discrimination (G4 HR3), Child Labor (G4 HR5), Forced or Compulsory Labor (G4 HR6)</li> </ul> </li> <li>• Society               <ul style="list-style-type: none"> <li>– Local Communities (G4-SO1, G4-SO2)</li> </ul> </li> </ul>

### Methodology Adopted for Assurance

Our assurance processes involve performing procedures to obtain evidence about the reliability of specified performance information. The nature, timing and extent of procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the selected sustainability disclosures whether due to fraud or error. In making those risk assessments, we have considered internal controls relevant to the preparation of the Report in order to design assurance procedures that are appropriate in the circumstances.

We have obtained sample evidence, information and explanations that were considered necessary in relation to the assurance scope and have arrived at conclusions mentioned below. Our work included a range of evidence-gathering procedures including:

- Assessing that the report is prepared in accordance with the Sustainability Reporting Guidelines of the Global Reporting Initiative (GRI G4 – in accordance “Core” criteria).
- Reviewing the Report to ensure that there is no misrepresentation of disclosures as per scope of assurance and our findings.
- Reviewing the materiality and stakeholder engagement framework deployed at Hindustan Zinc Limited.
- Understanding the appropriateness of various assumptions used for estimation of data by Hindustan Zinc Limited.
- Assessing the systems used for data collection and reporting of the General Standard Disclosures and Specific Standard Disclosures of material aspects as listed in the assurance scope above.
- Verifying systems and procedures used for quantification, collation and analysis of sustainability performance indicators included in the Report.
- Holding discussion with senior executives at the plant locations and at the corporate office to understand the risks and opportunities from a sustainability perspective including the strategy that Hindustan Zinc Limited has adopted to address the same.
- Verifying select key performance data through site visits to operational locations and corporate office for:
  - Testing reliability and accuracy of data on a sample basis.
  - Assessing stakeholder engagement process through interactions with relevant internal stakeholders and review of related documentation.
  - Limited review of the materiality assessment process
  - Reviewing the processes deployed for collection, compilation and reporting of sustainability performance indicators at corporate and plant level.

Appropriate documentary evidence was obtained on a sample basis to support our conclusions on the information and data verified. Where such documentary evidence could not be collected due to sensitive nature of information, our team verified the same at Hindustan Zinc Limited’s premises.



### Conclusions

We have reviewed the Sustainability Report of Hindustan Zinc Limited. Based on our review and procedures performed as described above, nothing has come to our attention that causes us not to believe that the sustainability data and information presented in the Report is fairly represented in line with the identified material issues and is in accordance with the sustainability reporting guidelines (G4) of the Global Reporting Initiative.

We have provided our observation to the company in a separate management letter. These, do not, however, affect our conclusions regarding the Report.

### Independence

The assurance was conducted by a multidisciplinary team including professionals with suitable skills and experience in verifying environmental, social and economic information in line with the requirements of ISAE 3000 (Revised) standard. Our work was performed in compliance with the requirements of the IFAC Code of Ethics for Professional Accountants, which requires, among other requirements, that the members of the assurance team (practitioners) as well as the assurance firm (assurance provider) be independent of the assurance client, in relation to the scope of this assurance engagement, including not being involved in writing the Report. The Code also includes detailed requirements for practitioners regarding integrity, objectivity, professional competence and due care, confidentiality and professional behavior. KPMG has systems and processes in place to monitor compliance with the Code and to prevent conflicts regarding independence. The firm applies ISQC 1 and the practitioner complies with the applicable independence and other ethical requirements of the IESBA code.

### Responsibilities

Hindustan Zinc Limited is responsible for developing the Report contents. The Company is also responsible for identification of material sustainability issues, establishing and maintaining appropriate performance management and internal control systems and derivation of performance data reported. This statement is made solely to the Management of Hindustan Zinc Limited in accordance with the terms of our engagement and as per scope of assurance. Our work has been undertaken so that we might state to Hindustan Zinc Limited those matters for which we have been engaged to state in this statement and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than Hindustan Zinc Limited. For our work, for this Report, or for the conclusions expressed in this independent assurance statement. The assurance engagement is based on the assumption that the data and information provided to us is complete and true. We expressly disclaim any liability or co-responsibility for any decision a person or entity would make based on this assurance statement. By reading this assurance statement, stakeholders acknowledge and agree to the limitations and disclaimers mentioned above.



**Santhosh Jayaram**

Partner

KPMG

06 July 2017



# WE ALL HAVE **ZINC** IN OUR LIVES...



**Helps and Heals**



**Fortifies and Fertilizes**



**Evolves and Ensures Greenery**



**Brilliant and Beautiful**



**Tyre'd and Tested**



**Great and Geared Up**



**Enlivens and Energizes**



**Supports and Steels You Up**



**Hearty and Healthy**





## Hindustan Zinc Limited

Yashad Bhawan, Udaipur - 313 004, Rajasthan, INDIA

Tel: +91 294-6604000-02

