

## DIVISIONAL REVIEW ZINC INDIA

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FY2017 WAS A YEAR OF ACHIEVEMENT AT ZINC INDIA; ONE IN WHICH WE BROKE OUR PRODUCTION RECORDS FOR MINED METAL AND SILVER.

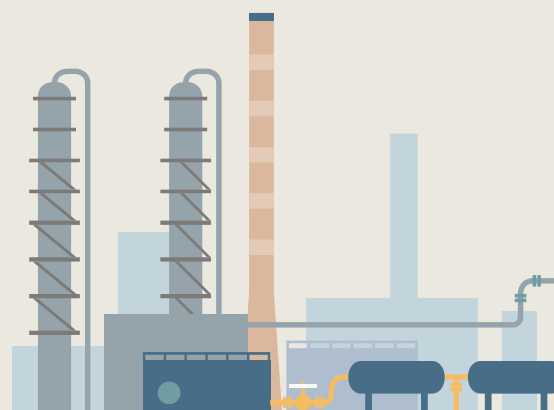


**SUNIL DUGGAL**  
CEO, ZINC INDIA

### The year in summary:

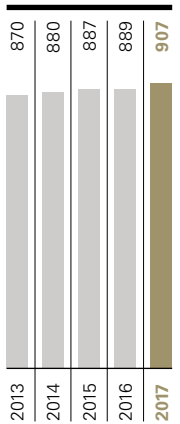
FY2017 was a year of achievement at Zinc India; one in which we broke our production records for mined metal and silver. Significantly, we also delivered these volumes at marginally higher cost compared to FY2016. However, Zinc India's zinc composite cost of production remains in the first decile on the global cost curves position.

During the year, we continued our transition programme away from open cast and into underground mining, from where 52% of our production is now derived. We also made good progress towards our growth objectives: our plans to expand capacity are well underway, and our initiatives to extend existing mines have been successful. We are targeting another record year of production in FY2018, in line with our expectation of delivering 1.2 million tonnes a year in FY2020.

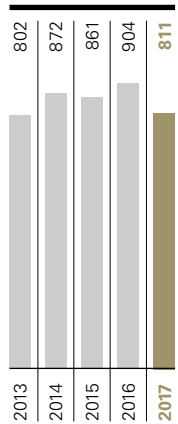


Employees at Sindesar Khurd Mine, HZL

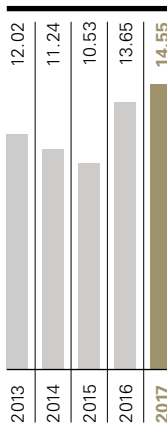
**PRODUCTION – ZINC MINED METAL**  
(KT)



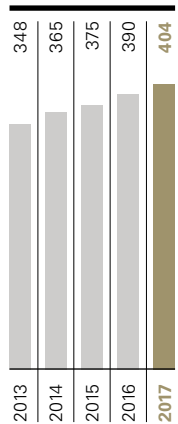
**PRODUCTION – REFINED ZINC/LEAD**  
(KT)



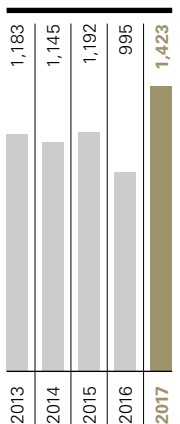
**PRODUCTION – SALEABLE SILVER**  
(M OZ)



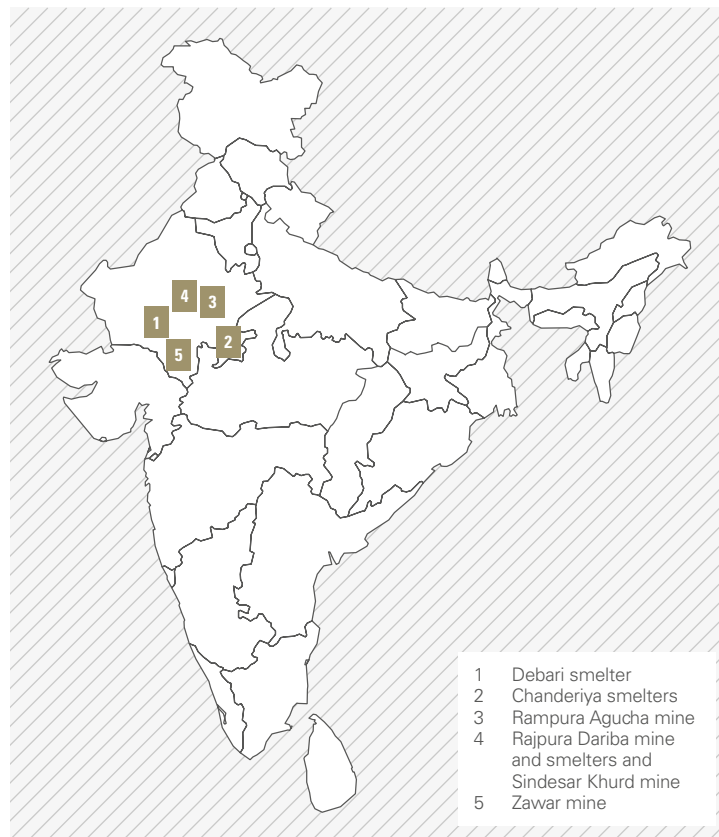
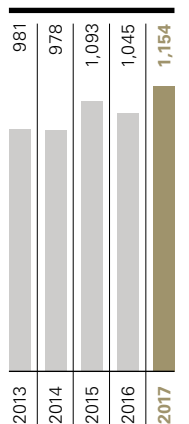
**R&R**  
(MT)



**EBITDA**  
(US\$ MILLION)



**UNIT COSTS**  
(US\$ PER TONNE)



- 1 Debari smelter
- 2 Chanderiya smelters
- 3 Rampura Agucha mine
- 4 Rajpura Dariba mine and smelters
- 5 Sindesar Khurd mine and Zawar mine

**SAFETY**

During the reporting year, we had a tragic crane accident at a Zinc India project site where four of our contractual workers lost their lives in a rare crane collapse. This tragedy triggered the development of a Group-wide safety standard on cranes and lifting.

We saw an improving picture in lost time injuries. Incidents were reduced from 23 in FY2016 to 15 in FY2017, and the lost time injury frequency rate was 0.3 compared to 0.5 in the previous year.

Since 2013, we have adopted various world-class safety management practices, such as the DuPont safety programme, to improve our safety culture.



During the year, we continued our transition programme away from open cast and into underground mining, from where 52% of our production is now derived.

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**ENVIRONMENT**

The business continued to improve its performance in conservation and recycling. During the reporting year, the water recycling rate was 33% (FY2016: 35%) and waste recycling rose to 93% compared to 95% in FY2016.

Further, the business took the initiative to replenish the groundwater by:

- › Creating a 1,200 m<sup>2</sup> groundwater recharge structure, developed at the Township Hospital of the Chanderiya lead zinc smelter. In a typical year, this has the capacity to conserve 900 m<sup>3</sup> of rainwater.
- › The deepening of nine water ponds in the neighbouring villages of the Sindesar Khurd Mine, resulting in increasing the water storage capacity by 2,77,575 m<sup>3</sup>.



# DIVISIONAL REVIEW CONTINUED

## ZINC INDIA

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### PRODUCTION PERFORMANCE

	FY2017	FY2016	% change
<b>Production (kt)</b>			
Total mined metal	<b>907</b>	889	2.0%
Production – zinc			
Mined metal content	<b>756</b>	744	1.6%
Refined metal	<b>672</b>	759	(11.5)%
Integrated	<b>670</b>	759	(11.7)%
Custom	<b>2</b>	–	–
Production – lead <sup>1</sup>			
Mined metal content	<b>151</b>	145	4.1%
Refined metal	<b>139</b>	145	(4.1)%
Integrated	<b>139</b>	140	(0.7)%
Custom	–	5	–
Production – silver (moz) <sup>2</sup>	<b>14.55</b>	13.65	6.6%
Integrated	<b>14.55</b>	13.56	7.3%
Custom	–	0.09	–

1 Excluding captive consumption of 5kt vs/7 kt in FY2017 vs/FY2016

2 Excluding captive consumption of 881 thousand ounces vs/1,108 thousand ounces in FY2017 vs FY2016.

### PRICES

	FY2017	FY2016	% change
Average zinc LME cash settlement prices US\$/t	<b>2,368</b>	1,829	29.5%
Average lead LME cash settlement prices US\$/t	<b>2,005</b>	1,768	13.4%
Average silver prices US\$/ounce	<b>17.8</b>	15.2	16.7%

### UNIT COSTS

	FY2017	FY2016	% change
Unit costs (US\$ per tonne)			
Zinc (including royalty)	<b>1,154</b>	1,045	10.5%
Zinc (excluding royalty)	<b>830</b>	804	3.3%

### FINANCIAL PERFORMANCE

(IN US\$ MILLION, UNLESS STATED)

	FY2017	FY2016	% change
Revenue	<b>2,525.0</b>	2,111.0	19.6%
EBITDA	<b>1,423.2</b>	995.0	43.0%
EBITDA margin (%)	<b>56.4%</b>	47.1%	–
Depreciation and amortisation	<b>149.2</b>	119.9	24.4%
Operating profit before special items	<b>1,274.0</b>	875.1	45.6%
Share in Group EBITDA (%)	<b>44.6%</b>	42.6%	–
Capital expenditure	<b>288.0</b>	234.9	22.6%
Sustaining	<b>50.4</b>	46.5	8.4%
Growth	<b>237.6</b>	188.4	26.1%

EBITDA in FY2017 was US\$1,423 million, an increase of 43% compared with FY2016. The increase was primarily driven by better zinc, lead and silver prices, higher realised premiums and rupee depreciation. However, these were marginally offset by lower metal volumes and a higher cost of production.

### OPERATIONS

In FY2017, mined metal production stood at a record level of 907,000 tonnes, in line with the mine plan.

Overall ore production rose slightly by 14%, to 11.9 million tonnes compared to 10.5 million tonnes during FY2016. Production from the underground mines ramped up significantly during the year, with ore production and metal in

concentrate (MIC) production from underground sources up by 44% and 32% respectively compared to previous year.

The increase was primarily due to higher production from the underground mines; in particular, from the Rampura Agucha underground and Sindesar Khurd mines. Cumulative MIC production from the underground mines increased by 32%

compared with the previous year. The share of mined metal production from underground mines increased to 52%. We achieved mined metal production in line with full year guidance, with second half production substantially higher than H1 FY2017.

Integrated zinc metal production was lower by 12% y-o-y and integrated lead metal production was down by 1% y-o-y. This was due to lower availability of mined metal in H1, caused by the cyclical pattern of the Rampura Agucha open cast mine plan for the year. Substantially higher mined metal production in H2 resulted in an increase in mined metal inventory, despite MIC sales of 26,000 tonnes during Q4. The closing stock of MIC was approx. 80,000 tonnes, which will be converted into refined metal in FY2018.

We achieved a record level of integrated silver production of 14.55 million ounces, 7% higher y-o-y, driven by higher grades and greater volumes from Sindesar Khurd mine.

We closed the fourth quarter of the year with the highest-ever quarterly production performance. Mined metal stood at a record 312,000 tonnes, integrated zinc-lead metal production was at an all-time high of 260,000 tonnes and integrated silver production set a record of 4.47 million ounces. These increases were in line with the availability of mined metal, also supported by enhanced smelter efficiencies.

In CY2016, zinc prices rallied with zinc LME prices reaching a nine-year high of US\$2900 per tonne. Supply of zinc ore drastically reduced as a result of the mine cutbacks that gathered pace last year, following a sustained period of low prices. Zinc's improving fundamentals, a weaker dollar and a low concentrate inventory all combined to propel the zinc rally and make it the most sought-after base metal. The zinc price averaged US\$2,368 per tonne compared with US\$1,829 per tonne last year; an increase of 30%.

Lead averaged US\$2,005 per tonne compared with US\$1,768 per tonne the previous year, which was an increase of 13%. This was primarily due to concentrate market supply constraints, owing to mine production cuts in 2015 and 2016.

Silver averaged US\$17.8 per ounce compared with US\$15.2 per ounce the previous year, rising by 17% y-o-y. According to the Silver Institute, silver will continue to benefit predominantly from higher industrial demand, notably in the solar sector.

The unit cost of zinc production increased by 11% to US\$1,154 per tonne in FY2017 compared with US\$1,045 per tonne in FY2016, due mainly to higher royalties driven by higher LME prices and Indian rupee depreciation.

Excluding royalties, the cost of zinc production increased from US\$804 per tonne to US\$830 per tonne. The increase was primarily driven by higher power costs, due to increased coal prices, metallurgical coke & commodity prices, mine development expenses and lower integrated production. This was partly offset by cost reduction initiatives for operational and commercial efficiencies.

According to the Wood Mackenzie report for CY2017, Zinc India's zinc composite cost of production remains in the first decile on the global cost curves position.

Out of the total cost of production of US\$1,154 per tonne, total government levies were US\$339 per tonne (FY2016: US\$277 per tonne), comprised mainly of royalty payments, the District Mineral Fund (DMF), the Clean Energy Cess, electricity duty and other taxes.

#### PROJECTS

The mining projects we have announced are progressing in line with the expectation of reaching 1.2 million tonnes per annum in FY2020.

Zinc India's successful transition from open cast to underground mining continues. When the mining expansion projects were announced in early 2013, share of mined metal from underground mines was 15%. This increased to 52% in FY2017 and is expected to reach 80% in FY2018 and 100% in FY2019.

Total mine development during the year reached 66,545 metres, an increase of 15% on a year ago.

Mine development at the Rampura Agucha underground mine ranked at an all-time high of 5,309 metres in Q4, after consistently exceeding the 4,000 metres benchmark for the previous four quarters. During the year, it produced 1.4 million tonnes of ore, compared with 0.2 million tonnes a year ago.

The sinking of the south ventilation shaft was completed during the year, following the sinking of the main shaft that reached the ultimate depth of 955 metres. Further commissioning of both production and service winders was completed during the year as shaft equipping work continued to progress satisfactorily. The underground mine achieved a record ore production run-rate of over 2 million tonnes per annum (mtpa) at the end of the fourth quarter.

At the Sindesar Khurd mine, environmental clearance was received in December 2016 for the expansion from 3.75 to 4.5mtpa in ore production and beneficiation from 4.5mtpa to 5mtpa. The current mining run-rate is above 4mtpa and is ahead of schedule. The winder foundation work for the shaft was completed during the year and head gear erection is nearing completion. The new mill of 1.5mtpa capacity was completed in a record 14 months and was commissioned in January 2017.

At Zawar, environmental clearance of the 4mtpa ore production and beneficiation was received in January 2017, and this was followed by consent to establish and operate. The mill expansion to 2.5mtpa and the associated power upgrade project are at an advanced stage, with completion targeted at August 2017.

The Kayad project is now complete and the mine has attained its rated capacity of 1.0mtpa.

In addition to the ongoing mining expansion projects, we started the Fumer project during the second half of the year, with duration of 18-20 months. This project will further improve cost and metal recoveries from the Company's hydro plant and could be replicated in other hydro plants in the coming years. The work is progressing well and anticipated to be completed in mid-FY2019.

In keeping with the Company's commitment to green energy, we have successfully commissioned 16MW of captive solar farms during the year, adding to the existing 273MW Wind Power Plant (WPP). A unique feature of this project was that, it was set up on un-utilisable land such as tailing dam and jarofix pond.

#### EXPLORATION

During the year, gross additions of 26.4 million tonnes were made to reserves and resources (R&R), prior to depletion of 11.9 million tonnes. As at 31 March 2017, Zinc India's combined mineral resources and ore reserves were estimated to be 404.4 million tonnes, containing 36.09 million tonnes of zinc-lead metal and 1,032 million ounces of silver. Overall mine life continues to be more than 25 years.

#### OUTLOOK

In FY2018, mined metal production is expected to be higher than in FY2017. Refined zinc-lead metal production will be around 950kt, which will be evenly spread through the year. Silver production will be over ~15.0 million ounces (or 500 metric tonnes). Both the Rampura Agucha and Sindesar Khurd shafts are on track for completion in FY2019.

Share of mined metal from underground mining, which was 52% of total production in FY2017, is expected to reach 80% in FY2018 and 100% by FY2019.

The cost of production excluding royalties is expected to be marginally higher based on current levels of coal and input commodity prices.

The capex on the ongoing mine expansion projects, the Fumer project and smelter debottlenecking will be around US\$350 million in FY2018.

#### STRATEGIC PRIORITIES

- › To progress the brownfield expansion of underground mines to achieve 1.2mtpa of mined zinc-lead, with mining projects completed in FY2020;
- › Ramp up underground mining in Rampura Agucha, Zawar and SK mine cluster;
- › Remain in the top cost decile with the focus on operational and commercial efficiencies;
- › Ramp up production volumes of silver; and
- › Continue our focus on adding more reserves and resources than we deplete, through exploration.

