

## Operations Review

In a challenging year for the global economy and our industry, we are pleased to report strong results across our businesses.



### Summary

In a challenging year for the global economy and our industry, we are pleased to report strong results across our businesses. We have remained focused on our core strengths of low cost production, operational efficiency and successfully developing high value accretive projects for our shareholders. We have increased volumes across all businesses whilst keeping costs under control and are well placed to benefit from the sustained recovery in our industry.

We delivered a strong EBITDA performance of US\$2,296 million in 2010, a 42% increase as compared to US\$1,612 million achieved in 2009. During the year all our businesses delivered volume growth, with record iron ore, aluminium and mined metal production of zinc and lead. Our ongoing cost reduction measures have helped to contain the impact of higher input prices while higher volumes have also benefited unit operating costs. Stronger commodity prices for copper and zinc have also contributed to the increase in EBITDA.

An analysis of the movement in EBITDA between FY 2010 and FY 2009 is set out below.

- Higher sales volumes (including power sales) resulted in higher EBITDA of US\$421 million.
- Lower operating costs improved EBITDA by US\$99 million, whilst higher rates of royalties reduced EBITDA by US\$82 million.
- Despite lower average prices of iron ore and aluminium, higher average LME prices of copper, zinc and lead increased EBITDA by US\$221 million.
- Favourable foreign exchange movements contributed US\$56 million.

Providing  
industry leading  
growth

- ▶ All businesses delivered volume growth, with record iron ore, aluminium, zinc and lead production
- ▶ A total of US\$3.5 billion spent on our expansion projects, which are progressing well
- ▶ To ensure we deliver sustainable growth going forward, we continue to add new resources in excess of annual production



- EBITDA reduced by US\$83 million in allied businesses ie phosphoric acid, silver, metcoke and pig iron.

We have made excellent progress during the year in executing our industry leading organic growth programme. We delivered both significant production growth this year and put in place plans to substantially increase capacity in all our businesses for 2011. During the year we spent a total of US\$3.5 billion on our expansion projects, which are all progressing well. Highlights this year include:

- At Hindustan Zinc Limited ('HZL'), commissioning of the zinc concentrator at Rampura Agucha and the 210 ktpa zinc smelter at Dariba, three months ahead of schedule.
- At Konkola Copper Mines ('KCM'), commissioning of the KDMP mid-shaft loading station, which will increase hoisting capacity and speed up mine development work.
- At Vedanta Aluminium Limited ('VAL'), excellent progress at the 500 ktpa Jharsuguda aluminium smelter, 250 ktpa operating at near capacity. All nine units of the associated 1,215 MW captive power plant have been commissioned.

On 11 June 2009, we acquired VS Dempo's iron ore assets based at Goa. The acquisition offered significant growth opportunity and has brought operational synergies through the sharing of infrastructure with Sesa Goa.

To ensure we can deliver sustainable growth going forward, we continue to add new resources in excess of annual production. Exploration continues to be a major focus and has yielded excellent results during the year.

- Addition of 64 mt to reserves and resources in the Iron Ore business, extending the mine life to 17 years at current production capacity. Active exploration will continue at our iron ore operations in support of our plans to become a 50 mtpa producer in the next three years.
- Added 33.7 mt to reserves and resources in the Zinc business, extending the mine life to 42 years at current production capacity.
- Added 14 mt of reserves and resources in our Zambian Copper business, extending mine life to over 50 years.

During the year we repaid US\$1.2 billion of debt and raised long-term funds totalling to US\$4.2 billion. US\$2.1 billion was raised through the issue of convertible bonds, US\$1.1 billion by issue of equity by our subsidiary Sterlite and US\$1.0 billion through issue of convertible bonds by our subsidiaries Sterlite and Sesa Goa.

In response to improved market conditions, we reactivated work on the US\$2.15 billion 1,980 MW power plant project at Talwandi in Punjab, North India. We also announced the following expansion projects:

- In anticipation of rapidly growing copper consumption in India, and in order to significantly reduce the power cost at existing smelting operations, we announced a 400 ktpa expansion of copper smelting capacity at Tuticorin, along with a captive power plant of 160 MW for an estimated capex of US\$500 million.
- We are expanding our pig iron production capacity by 0.375 mt and met coke capacity by 0.280 mt with an estimated capex of US\$150 million.
- We are expanding our iron ore mining capacities at Goa and Orissa to 40 mt, with an estimated capex of US\$500 million.
- We entered the growing port and infrastructure sector in India, winning a tender from the Government of India's Vizag Port Company to construct a coal berth on a revenue sharing basis in a joint venture with Leighton Contractors (India) Pvt. Ltd. This will require an estimated capex of US\$150 million.

We believe all these project expansion initiatives will add significant value for all stakeholders.

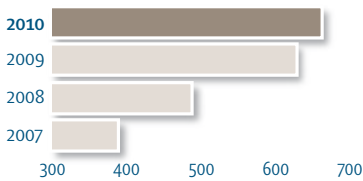
EBITDA recorded by the individual businesses is set out below.

(in US\$ million, except otherwise stated)	FY 2010	FY 2009	% change
Aluminium	154.9	177.4	-12.7%
Copper	317.7	222.9	42.5%
Zinc	982.8	603.3	62.9%
Iron Ore	673.0	557.1	20.8%
Energy <sup>1</sup>	170.7	53.3	220.3%
Others	(3.2)	(1.8)	-
<b>Total</b>	<b>2,295.9</b>	<b>1,612.2</b>	<b>42.4%</b>

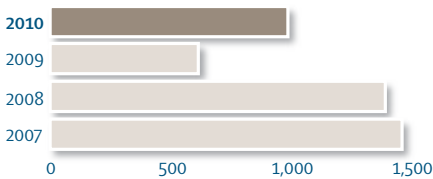
<sup>1</sup> Reclassified to include temporary surplus power sales from various captive power plants in addition to the sales from power plants of 100 MW at MALCO, 270 MW at BALCO-1, and 123 MW wind power plant at HZL.

# Operations Review Zinc-Lead-Silver

## Production (kt)



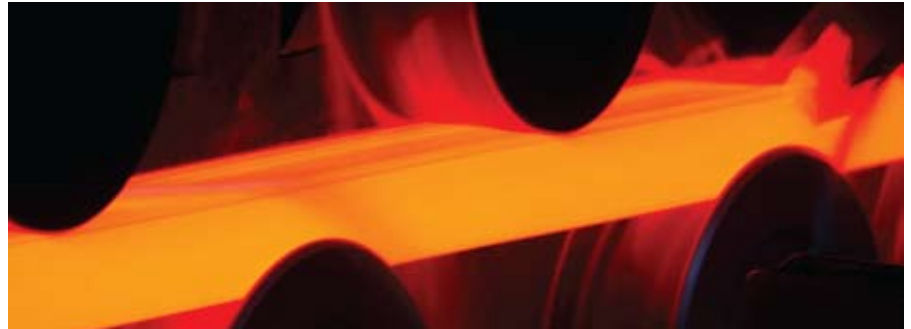
## EBITDA (US\$ million)



(in US\$ millions, except as stated)

	FY 2010	FY 2009	% change
Production – zinc (kt)			
Mined metal content	683	651	4.9
Refined metal	578	552	4.7
Production – lead (kt)			
Mined metal content	86	84	2.4
Saleable metal	64	60	6.7
Production – saleable silver (moz)	4.46	3.38	32.0
Average LME zinc cash settlement prices (US\$ per tonne)	1,936	1,563	23.9
Average LME lead cash settlement prices (US\$ per tonne)	1,990	1,660	19.9
Unit costs			
Zinc (US\$ per tonne)	850	710	19.7
Zinc (other than royalty) (US\$ per tonne)	698	609	14.6
Revenue <sup>1</sup>	1,651.7	1,209.1	36.6
EBITDA	982.8	603.3	62.9
EBITDA margin	59.5%	50.2%	–
Operating profit	918.4	546.2	67.5

1 FY 2009 revenue includes US\$6.4 million for sale of surplus power. EBITDA and EBITDA margin is on revenue excluding surplus power.



### Production Performance

Mined metal production for zinc and lead from all our mines was 769 kt in FY 2010, up 5% over FY 2009, primarily due to improved operational performance in the mines.

Refined zinc and lead production in FY 2010 was 578 kt and 64 kt respectively, an increase of 5% and 7% respectively, over the previous year due to improved operational efficiencies. The new 210 ktpa zinc smelter at Rajpura Dariba and the new 1 mtpa concentrator at Rampura Agucha were commissioned at the end of Q4, three months ahead of schedule.

Production of silver in FY 2010 was a record 4.46 million troy ounces, up 32% compared with FY 2009. This increase was primarily due to increased mine production and improvement in silver recovery.

### Unit Costs

Unit cost of production in FY 2010 excluding royalties was 15% higher at US\$698 per tonne compared with US\$609 per tonne in FY 2009, primarily due to lower sulphuric acid credit which fell by US\$123 per tonne and wage increases arising out of a long-term wage settlement agreement. Royalties were higher at US\$152 per tonne in FY 2010 on account of increased LME prices and

higher royalty rates. The royalty rate, which is linked to LME, was increased from 6.6% to 8.4% for zinc and from 5.0% to 12.7% for lead, with effect from 13 August 2009.

### Sales

Our domestic sales of Zinc metal at 386 kt in FY 2010 were up 16% compared with FY 2009, benefitting from a 25% growth in zinc consumption in India, on the back of sustained robust growth in the infrastructure sector. We also sold 223,000 dry metric tonnes of zinc concentrate and 31,000 dry metric tonnes of lead concentrate, in FY 2010.

Refined zinc and lead production in FY 2010 was 578 kt and 64 kt respectively, an increase of 5% and 7% respectively.

### Financial Performance

EBITDA for FY 2010 was US\$982.8 million, up 63% compared with FY 2009, primarily due to higher volumes contributing approximately US\$100 million and an increase in LME zinc and lead prices by 24% and 23% respectively contributing approximately US\$300 million. This increase was partially off-set by increased net operating costs and royalties.

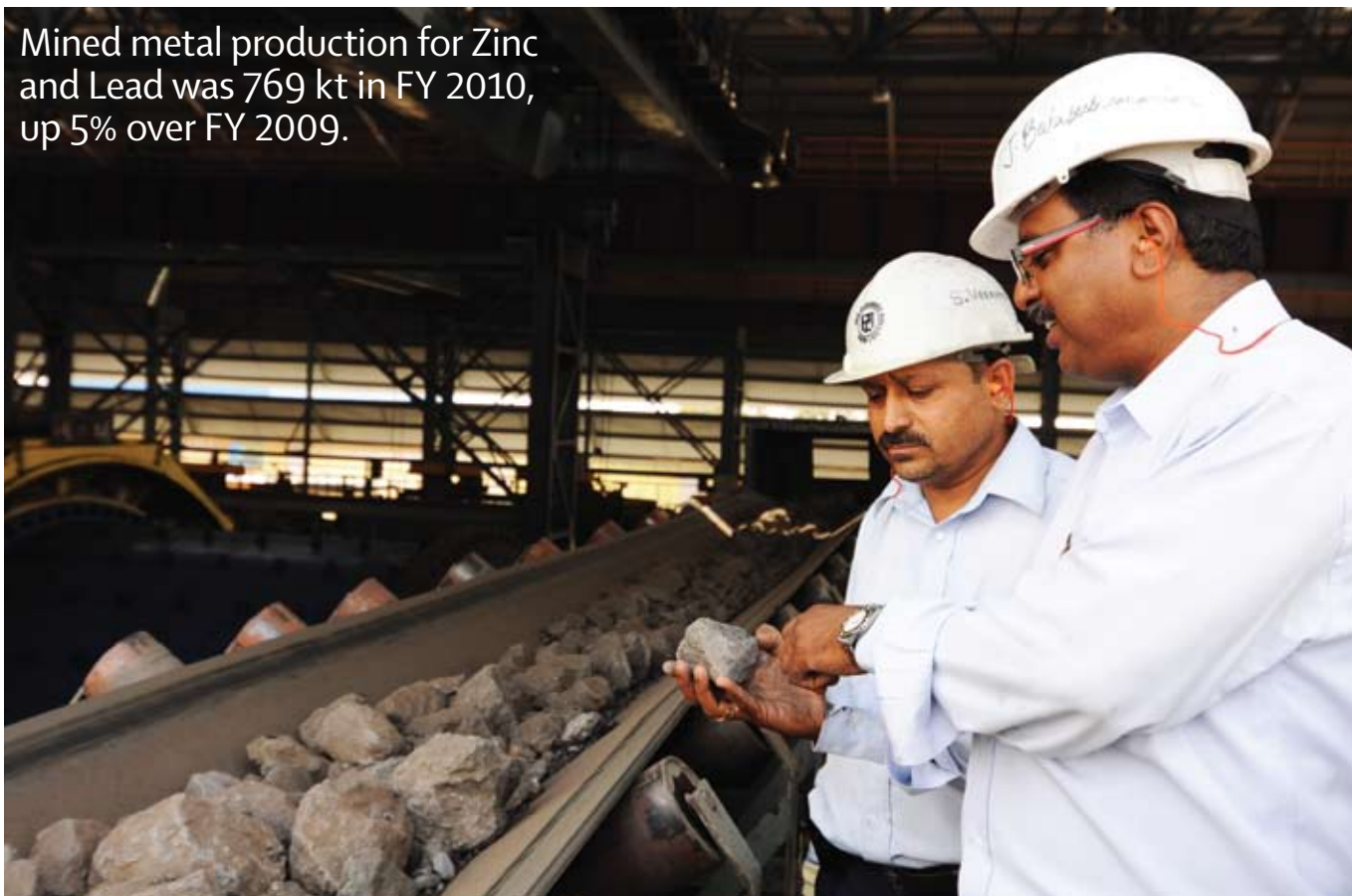
**US\$918.4 million**  
Operating profit

**578 kt**  
Zinc production

**150 kt**  
Lead production

**4.46 moz**  
Silver production

Mined metal production for Zinc and Lead was 769 kt in FY 2010, up 5% over FY 2009.



#### Projects

##### Rajpura Dariba Lead Smelter

Construction activities at the 100 ktpa lead smelter at Rajpura Dariba and 160 MW captive power plant is progressing well and on schedule for completion by Q2 FY 2011.

##### Sindesar Khurd Mine

Work at the mining projects at Sindesar Khurd from 0.3 mtpa to 1.5 mtpa is progressing on schedule for progressive commissioning from Q1 FY 2011.

#### Exploration

Ongoing exploration activities at HZL have yielded significant success with an increase of 33.7 mt to gross reserves and resources, prior to production of 7.1 mt in FY 2010. Contained zinc-lead metal has increased by 3.4 mt, prior to production of 0.8 mt during the same period. Total reserves and resources at 31 March 2010 were 298.6 mt containing 34.1 mt of zinc-lead metal and 832.7 moz of silver.

A highlight of our exploration success has been additions at Rajpura Dariba belt (covering Sindesar Khurd, Rajpura Dariba) where we have now established a reserve and resource base of 103.03 mt (83.4 mt in FY 2009).

#### Case Study

#### Zinc Sector

## Mixing pug mill to improve throughput

### The Challenge

Our roasters are designed to handle a certain size range of concentrate feed. Fine-grinding techniques developed for mines to improve metal recoveries, reduces the compatibility of the feed with our roasters. To overcome this and to improve the throughput rate, we decided to pre-mix the concentrate with water or a slightly acidic solution.

### The solution

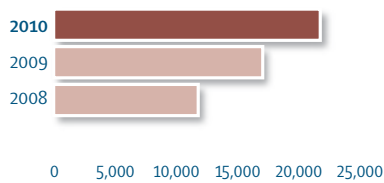
Following extensive research by the team, we installed a mixer (pug mill) in the feed preparation stage to ensure significant improvement in the consistency of the feed in terms of size and moisture content, thereby improving our ability to mix dross and secondaries with concentrate. These were placed directly on-site during March 2010 at both the Hydro smelters at Chanderiya Smelting Complex, where other retro fittings had already been completed to accommodate the mixer.

### The result

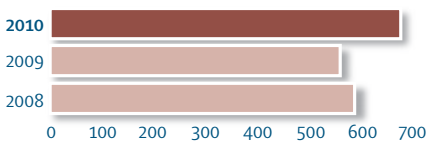
This has resulted in more consistent bed temperatures, a reduction in fly-over and the adverse affect of high Sulphide/Sulphur on Calcine. We are anticipating that this initiative will increase throughput by c. 0.3 – 1 tonne per hour.

# Operations Review Iron Ore

## Production (kt)



## EBITDA (US\$ million)



During the year we acquired Dempo Group's iron ore mining assets in Goa. Dempo owns or has the rights to mineable reserves and resources estimated at 70 mt of iron ore in Goa. Dempo's Goa mining assets includes processing plants, barges, jetties, transshippers and loading capacities at Mormugoa port.

The performance of our Iron Ore business in FY 2010 is set out in the table below.

(in US\$ millions, except as stated)	FY 2010	FY 2009	% change
Production (kt)			
Saleable ore	21,412	15,986	34.0
Pig iron	280	217	29.0
Sales (kt)			
Iron ore	20,523	15,103	35.9
Pig iron	279	224	24.6
Revenue	1,221.7	1,070.4	14.1
EBITDA	673.0	557.1	20.8
EBITDA margin	55.1%	52.1%	
Operating profit	453.0	348.0	30.2

### Production Performance

Saleable iron ore produced in FY 2010 was 21.41 mt, a record for Sesa Goa and an increase of 34% over full year production of 15.99 mt in FY 2009. The higher volumes were a result of 3.6 mt contributed by Dempo's operations acquired in June 2009 and increased throughput from Sesa's existing operations.

Production of pig iron was a record 280 kt during FY 2010, 29% higher compared with FY 2009. The pig iron plant will be shut down for planned maintenance next year for approximately 60 days.

### Sales

Iron ore shipments during FY 2010 were a record 20.5 mt, of which 82% of sales volume was in the form of fines and the rest in the form of lumps, consistent with the higher production. In Q4 FY 2010, we had the highest ever quarterly shipment of 7.4 mt of iron ore. During FY 2010, a majority of the production was sold in the spot market.

We sell globally with exports to China, Japan, Pakistan and other Asian and European countries. Exports accounted for nearly 94% of total sales with the remainder being sold in the domestic market. China accounted for 84% of our total exports. We sold 279 kt of pig iron in FY 2010, consistent with production volumes.

### Financial Performance

EBITDA in FY 2010 was US\$673.0 million, 20.8% higher compared to the prior year. EBITDA was higher on account of higher volumes contributing approximately US\$170 million and lower operating costs which were partially off-set by lower average prices, and increased royalties. During the year the Government of India increased the royalty from approximately Rs 30 per tonne to 10% of ex-mine Net Sales Realisation ('NSR') while the export duty was also raised from 0% to 5% on fines and from 5% to 10% on lumps.

The operating profit was US\$453.0 million in FY 2010 as compared with US\$348.0 million in FY 2009, in line with the increase in EBITDA.

### Projects

#### Iron Ore Mining Expansion

Consistent with our mission to reach 50 mt over the next two to three years, we have pursued a number of initiatives to expand mining capacity and logistics at Goa and Karnataka to increase their capacity to 30 mt and 10 mt, respectively. These comprise of additional investments in mining equipment, processing plants, barges, and infrastructure such as loading facilities at railway sidings at an estimated capex cost of US\$500 million to be spent over next two to three years.

#### Pig Iron Expansion

Work on the expansion of the pig iron plant capacity to 625 ktpa and associated expansion of the metallurgical coke plant capacity to 560 ktpa is progressing well with engineering activities completed, ground activities started. The project is on schedule for commissioning by Q1 FY 2012.

### Exploration

We had significant success in exploration at Sesa Goa and Dempo, and added 64.3 mt reserves and resources, prior to production of 21.4 mt in FY 2010. Total reserves and resources at 31 March 2010 were 352.7 mt.

**US\$453.0 million**  
Operating profit

**21.4 mt**  
Saleable ore

**280 kt**  
Pig iron production

**20.5 mt**  
Sales



Iron ore shipments during FY 2010 were a record 20.5 mt, up 36% due to the Dempo acquisition and increased throughput from Sesa's existing operations.



#### Case Study Iron Ore Sector

## Removal of Transhipper Vessel bottleneck

### The challenge

TV Orissa Transhipper loads cargo from barges to the mother vessel. It has two loaders, mounted on a gantry and two mobile cranes for each loader via a feed hopper. Crane Number 1 and 2 feed the front loader and Crane Number 3 and 4 feed the aft loader. Crane Number 1 is fixed, whereas the other cranes are mobile. We noticed that Crane Number 1 was idle for 60 hours per month, while the rest were working continuously.

### The solution

As a part of our Business Excellence initiative, the in-house Sesa team initiated a project to reduce Crane 1's idle time. After detailed discussions we took the decision to extend the conveyor belt structure by a further 4 metres, considerably reducing the bending moment on the arm, making it safer and ensuring the hopper was more accessible.

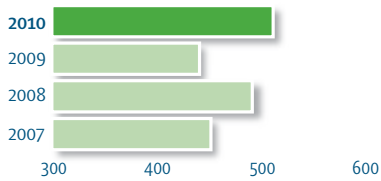
### The result

This has reduced the idle time at a cost of less than US\$1 million, in-turn enhancing capacity of the transhipper by 0.2 mt pa. It has also helped in ensuring optimum utilization of resources, improving Overall Equipment Effectiveness (OEE) along with substantial cost savings.

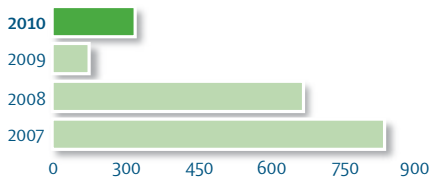


# Operations Review Copper

## Production (kt) – India and Zambia



## EBITDA (US\$ million) – India and Zambia



**US\$98.4 million**  
Operating profit  
(Australia, India and Zambia)

**24 kt**  
Mined metal  
production – Australia

**334 kt**  
Copper production  
– India

**173 kt**  
Copper production  
– Zambia

The performance of our Copper-India/Australia business in FY 2010 is set out below.

(in US\$ millions, except as stated)	FY 2010	FY 2009	% change
Production (kt)			
Australia – mined metal content	24	27	(11.1)
India – cathode	334	313	6.7
Average LME cash settlement prices (US\$ per tonne)	6,112	5,885	3.9
Unit conversion costs (US cents per lb)	10.4	3.1	235.5
Realised TC/RCs (US cents per lb)	13.6	11.7	16.2
Revenue	2,741.4	2,537.9	8.0
EBITDA	165.9	293.7	(43.5)
EBITDA margin	6.1%	11.5%	-
Operating profit	65.9	242.9	(72.9)



### Production Performance

Production of cathodes at our Copper-India business was 334 kt in FY 2010, up 6.7% year on year reflecting both the impact of planned maintenance undertaken and the effect of lower copper grades in concentrate on production volumes during FY 2009. The Tuticorin plant will be shut down for its biannual maintenance during June–July 2010 for around 20 days.

Mined metal production at our Australian mines was 11% lower at 24 kt in FY 2010 due to the impact of a mud rush in Q2. The mine has now resumed normal production.

**Copper sales in the domestic market were 206 kt in FY 2010. 78% of these were value added copper rods, supplied largely to the rapidly growing power sector.**

### Unit Costs

Operationally, Copper-India performed well delivering a reduction in gross conversion cost from 17.8 US cents per lb to 16.6 US cents per lb. However during the period we experienced a sharp fall in sulphuric acid realisation which reduced the by-product credit from 10.4 US cents per lb to 2.7 US cents per lb, generating an increase in net conversion cost from 3.1 US cents per lb to 10.4 US cents per lb. Currently, sulphuric acid realisation is rising on the back of a recent increase in sulphur prices, which should show a positive impact on cost.

Unit CoP at our Australian operations, excluding Tc/RCs, in FY 2010 was 143 US cents

per lb up from 121 US cents per lb in FY 2009, mainly due to costs incurred for mud rush recovery resulting in lower production volumes, and an increase in royalties.

### Sales

Copper sales in the domestic market were 206 kt in FY 2010. 78% of these were value added copper rods, supplied largely to the rapidly growing power sector. The Indian copper market continues to demonstrate a robust growth rate of 4% growth in FY 2010.

### Financial Performance

EBITDA for FY 2010 was US\$165.9 million, 43.5% lower than the EBITDA of US\$293.7 million for FY 2009. This was primarily due to higher operating costs, a fall in phosphoric acid prices to US\$551 per tonne, and lower by-product realisations resulting in a decrease of US\$135 million. These were partially off-set by improved TC/RC (15%) and higher realisations from our Australian mining operations.

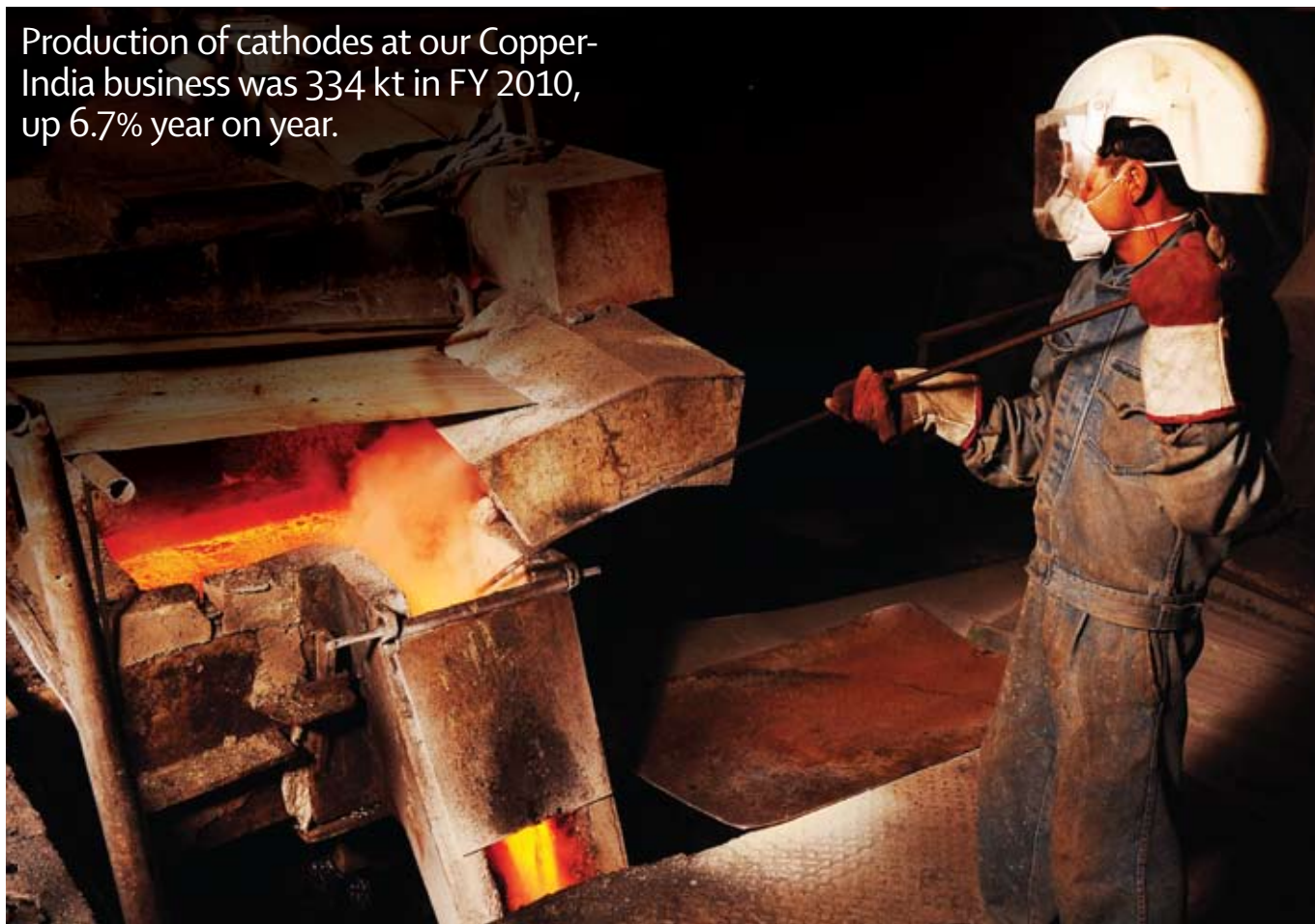
Operating profit was US\$65.9 million in FY 2010 as compared with US\$242.9 million in FY 2009, which was further impacted by non-recurring write offs of abortive acquisition related expenses of US\$58 million.

### Projects

#### 400 ktpa Copper Smelter

The 400 ktpa copper smelter project and associated 160 MW captive power project at Tuticorin are progressing well, with detailed engineering and procurement activities under way for scheduled commissioning by mid 2011.

Production of cathodes at our Copper-India business was 334 kt in FY 2010, up 6.7% year on year.



## Case Study Copper - India

# Reducing Furnace Oil (FO) Consumption

### The challenge

Furnace Oil is one of the major consumables at the ISA Smelter at Tuticorin. It is not only used to initiate the smelting and to keep the reaction temperature at the required level, but also to maintain the metal temperature. Typically, FO consumption was 100 Kg per hour.

### The solution

After a detailed study and analysis, a fine tuned valve was installed to lower the FO flow rate, the standard operating practice for the converter was modified, atomisation of Burner System was undertaken and the FO heaters were revamped to maintain high FO temperature.

### The result

These initiatives halved FO consumption from 100 Kg per hour to 50 Kg per hour. FO consumption in the converter reduced from 4.8 Kg per tonne in FY 2009 to 3.7 Kg per tonne in FY 2010.



# Operations Review Copper continued

The mid-shaft loading station at the Konkola Deep Mine Project was commissioned in March 2010 – this resulted in an increase in the hoisting capacity of the mine.

**173,000 tonnes**  
Zambia production 2009-10



The performance of our Copper-Zambia business in FY 2010 is set out below.

(in US\$ millions, except as stated)	FY 2010	FY 2009	% change
Production (kt)	173	133	30.1
Integrated	126	108	16.7
Custom	47	25	88.0
Average LME cash settlement prices (US\$ per tonne)	6,112	5,885	3.9
Unit costs (US cents per lb)	184.4	258.3	(28.6)
Revenue	1,070.8	773.1	38.5
EBITDA	151.8	(70.8)	-
EBITDA margin	14.2%	(9.2%)	-
Operating (loss)/profit	32.5	(165.9)	-

We had significant success with the ongoing exploration at our Zambian copper business, increasing gross reserves and resources by 14 million tonnes.

#### Production Performance

Integrated production was 126 kt in FY 2010 as compared with 108 kt in FY 2009, due to better mine management and performance. This will improve further with augmented production from the new mid-shaft loading station at Konkola. Tail Leaching Plant ('TLP') production was lower at 46 kt in FY 2010 as compared with 50 kt in FY 2009, largely due to falling ore grades. This will improve with the opening of COP A and Fitwaola mines from Q1 FY 2011.

Cathode production at our Zambian operations was 173 kt in FY 2010 compared with 133 kt in FY 2009. The 30% increase in production was primarily due to the progressive ramp-up of the new Nchanga smelter.

#### Unit Costs

Unit CoP was 184.4 US cents per lb in FY 2010, down 29% compared with FY 2009, primarily as a result of the reduction in sulphur consumption, better specific consumption of various inputs, lower maintenance cost, outsourcing of mining activities at some of our mines, increased mine production and depreciation of the Kwacha.

#### Financial Performance

The EBITDA in FY 2010 was US\$151.8 million compared to an EBITDA loss of US\$70.8 million in FY 2009, mainly due to



increased production, lower operating costs and a higher average LME copper price. Also, in 2009 a sharp fall in copper prices resulted in an inventory write-down of around US\$100 million. The operating profit was US\$32.5 million in FY 2010 compared with an operating loss of US\$165.9 million in 2009, due to increase in EBITDA, partially off-set by higher amortisation and depreciation on the new Nchanga smelter.

### Projects

#### Konkola Deep Mine

The mid-shaft loading station at the Konkola Deep Mine Project was commissioned in March 2010 as scheduled. This resulted in an increase in the hoisting capacity of the mine, which has allowed the mining of ore to commence while simultaneously allowing the continued development of the shaft to an ultimate depth of 1,500 metres. Construction work on the bottom shaft sinking is progressing well for completion by end 2011. The cost of the KDM Project has been revised upward from US\$674 million to US\$973 million due to the weak ground conditions, increase in scope post detail engineering and consequent extra time required, and commodity price increase.

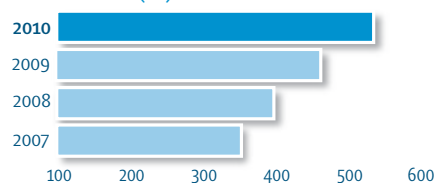
### Exploration

We had significant success with the ongoing exploration at our Zambian Copper business, increasing gross reserves and resources by 14 million tonnes, prior to production of 8.4 million tonnes. Total reserves and resources at 31 March 2010 were 707 mt at an average copper grade of 1.96%, including Konkola mine reserves and resources at 226 mt with 3.55% copper.

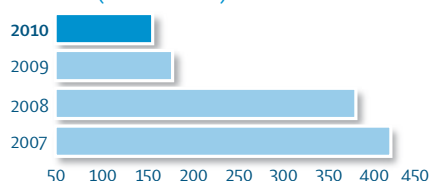


# Operations Review Aluminium

## Production (kt)



## EBITDA (US\$ million)



**US\$50.3 million**  
Operating profit

**805 kt**  
Alumina production

**533 kt**  
Aluminium production

**410 kt**  
Aluminium  
domestic sales

The performance of our Aluminium business in FY 2010 is set out in the table below.

(in US\$ million, except as stated)	FY 2010	FY 2009	% change
Production (kt)			
Alumina – Lanjigarh	762	586	30.0
Alumina – Korba I and Mettur <sup>1</sup>	43	241	-
<b>Total alumina</b>	<b>805</b>	<b>827</b>	
Aluminium – Jharsuguda <sup>2</sup>	264	82	222.0
Aluminium – Korba II	250	251	-
Aluminium – Korba I and Mettur <sup>1</sup>	19	129	-
<b>Total aluminium</b>	<b>533</b>	<b>462</b>	<b>15.4</b>
Average LME cash settlement prices (US\$ per tonne)	1,868	2,234	(16.4)
Unit costs			
Jharsuguda (production cost) <sup>3</sup> (US\$ per tonne)	1,645	-	-
Jharsuguda (smelting cost <sup>4</sup> ) <sup>3</sup> (US\$ per tonne)	925	-	-
BALCO Plant 2 (production cost) (US\$ per tonne)	1,534	1,623	(5.5)
BALCO Plant 2 (smelting cost <sup>4</sup> ) (US\$ per tonne)	862	859	-
Revenue <sup>5</sup>	914.2	937.1	(2.4)
EBITDA	154.9	177.4	(12.7)
EBITDA margin	16.9%	19.6%	-
Operating profit	50.3	113.2	(55.6)

1 Plants no longer operational.

2 Include aluminium production of 174 kt under trial run in FY 2010.

3 Cost of production for 250 ktpa smelter post commencement of commercial production in December 2009.

4 Smelting cost comprises production cost excluding alumina cost.

5 FY 2009 revenue includes US\$30.5 million for sale of surplus power. EBITDA and EBITDA margin is on revenue excluding surplus power.

## Production Performance

Aluminium production in FY 2010 was a record 533 kt, an increase of 15%. This increase is primarily due to the increase in production from the new 250 ktpa Jharsuguda aluminium smelter, although partially offset by the shut-down of Korba I smelter in Q1. The Korba II smelter continues to operate above its full capacity.

The 250 ktpa smelter at Jharsuguda is operating close to its full capacity. Progressive commissioning of balance pots to achieve 500 ktpa smelter capacity is under way. During the second half of April 2010, the production at smelter was disrupted as a result of a power failure. Necessary remedial measures are being taken.

All nine units of the 1,215 MW CPP are now operational. Surplus power is currently being sold in the wholesale market on spot basis. The 1.4 mtpa Alumina refinery at Lanjigarh has been fully commissioned and produced 762 kt in FY 2010. Currently, bauxite feed for this refinery is being sourced internally from BALCO's mines and externally from bauxite mines in central and eastern India.

## Unit Costs

Unit cost of production at our BALCO Plant II was US\$1,534 per tonne for FY 2010, 5.5% lower than the unit cost of US\$1,623 per tonne in FY 2009. Smelting costs at BALCO Plant II were marginally higher at US\$862 per tonne in FY 2010 compared to US\$859 per tonne in FY 2009. Operational efficiencies and savings in procurement

costs of carbon and other raw materials being more than off-set by the fixed costs of BALCO I of around US\$77 per tonne, being absorbed in the BALCO II smelter costs.

## Sales

Our domestic aluminium sales at 410 kt in FY 2010 were up 16% year on year benefitting from a 10% growth in aluminium consumption in India. Profitability was also improved due to higher premiums charged and a 9% increase in sales of value added products such as rods and rolled products driven by sustained robust growth in the power sector.

## Financial Performance

EBITDA for FY 2010 was US\$154.9 million, 13% lower than FY 2009. This was primarily due to a 16% decrease in LME prices, which was partially off-set by lower operating costs and higher volumes and premium. Operating profit was lower at US\$50.3 million, primarily as a result of higher depreciation for the Jharsuguda smelter following the commencement of commercial production during the year.

## Projects

### Jharsuguda Aluminium Smelter

All nine units of 135 MW have been commissioned. The commissioning of the remaining 76 pots of 500 ktpa Jharsuguda smelter I is scheduled for Q1 FY 2011. The project cost of the Jharsuguda 500 ktpa smelter project increased from US\$2.1 billion to US\$2.3 billion, mainly due to foreign exchange variations.

Our domestic aluminium sales at 410 kt in FY 2010 were up 16% year on year benefitting from a 10% growth in aluminium consumption in India.

The 1.25 mtpa Jharsuguda aluminium smelter project is on schedule for final completion by Q2 FY 2013 with the first metal tapping now scheduled for Q2 FY11.

#### Lanjigarh Alumina Refinery and Bauxite Mining Project

As scheduled, the second stream of the 1.4 mt Lanjigarh Alumina refinery has been commissioned. The 0.6 mt debottlenecking project will be commissioned in Q1 FY 2011, which will be dependent on bauxite availability. Further 3 mtpa expansion of capacity, in three lines of 1 mt each, is now scheduled for commissioning progressively from Q4 FY 2011.

The State of Orissa is rich in bauxite, and mining such materials has been identified by the Indian authorities as an important opportunity for socio-economic development in the region. The estimated reserves of Bauxite in India are 2.9 billion tonnes and Orissa itself has about 60% of India's Bauxite Reserves<sup>1</sup>. The Lanjigarh mining development project, a joint venture undertaken by our subsidiary company (SILL) in conjunction with the Orissa Mining Corporation, was approved by the Supreme Court of India in August 2008. The refinery is already operational. Commencement of mining operations awaits final clearance from the forestry authorities and has received all other clearances. We expect to receive the outstanding clearance in the near term; some complaints have been received from external third parties in relation to this project. However, Vedanta has and continues to operate within the legal framework and the jurisdictional control of the Government of India and vigorously defends its record in this regard.

#### BALCO Aluminium Smelter

Work on the new 325,000 tpa aluminium smelter at BALCO is progressing well. The first metal tapping is expected in Q4 FY 2011. Construction of the 1,200 MW captive power plant was disrupted in September 2009 due to the collapse of a chimney under-construction. Work had resumed in January 2010 and is now in full swing. Despite disruption for about four months, we are working toward synchronisation of the first unit of 300 MW in Q3 FY 2011 and remaining three units progressively by Q2 FY 2012.



#### Case Study Aluminium Sector

## Increasing amperage and production at Balco 2 Smelter

### The challenge

Our team at Balco 2 Smelter undertook a technological challenge to increase the amperage of the potline from 325.5 KA to 340 KA, aiming to raise production from 2.4 tonnes to 2.6 tonnes per pot per day. When the project was initiated at the beginning of March 2010, average potline amperage was 331.3 KA, delivering production levels of 2.4 tonnes per pot per day.

### The solution

Several actions were undertaken to achieve this, including changes in the pot controller settings, implementation of a Process Assessment Model, and improved anode settings.

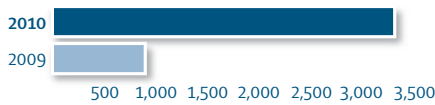
### The result

By the end of March, the increase in amperage through these measures resulted in an additional 1000 tonnes of production during the month.

1 Source: National Portal of India (website: <http://india.gov.in>)

# Operations Review Commercial Energy

## Production (MU)



## EBITDA (US\$ million)



Commercial Energy identified as a separate segment from FY 2009.

The performance of our Energy business in FY 2010 is set out in the table below.

(in US\$ millions, except as stated)	FY 2010	FY 2009	% change
Power Sales (MU)	3,279	882	271.8
BALCO, MALCO, Wind Energy	2,187	376	481.6
Surplus from CPPs	1,092	506	115.6
Revenue <sup>1</sup>	330.7	88.2	274.9
EBITDA	170.7	53.3	220.3
EBITDA margin	51.6%	60.4%	-
Operating profit	147.5	23.7	522.4

1 FY 2009 figure reclassified for comparative purposes.



**US\$147.5 million**  
Operating profit

**2,187 MU**  
Power sales –  
BALCO, MALCO and  
wind energy

**1092 MU**  
Power sales – surplus  
from CPPs

**3,279 MU**  
Total sales

### Production Performance

In addition to the sales from power plants of 100 MW at MALCO, 270 MW at BALCO-1, and 123 MW wind power plant at HZL, the energy segment includes temporary surplus power sales from various captive power plants.

We sold 3,279 million units of power during FY 2010 compared to 882 million units sold in FY 2009. This growth in volume was mainly on account of surplus power sales due to the shut-down of high cost aluminium operations at MALCO and BALCO 1 and surplus power from the Jharsuguda CPP.

**We sold 3,279 million units of power during FY 2010 compared to 882 million units sold in 2009.**

### Financial Performance

EBITDA in FY 2010 was US\$170.7 million, significantly higher than EBITDA of US\$53.3 million in FY 2009. EBITDA was higher primarily on account of higher volumes and realisation rate, partially offset by higher operating costs.

### Projects

#### Jharsuguda IPP

Work on the 2,400 MW (600 MW x 4) coal based commercial power plant at Jharsuguda, Orissa is progressing well. The first unit is scheduled to be commissioned by Q1 FY 2011 with the remaining three units expected to be progressively commissioned by the end of FY 2011.

#### Talwandi Sabo IPP

The EPC contract has been finalised for the 1,980 MW supercritical IPP project at Talwandi Sabo. The EPC contractor has appointed subcontractors to carry out pre-construction activities at the site and orders have also been placed for turbines, generators and power houses. Project completion is expected by Q2 FY 2014.

## Operations Review Other Business

### Vizag Coal Berth

In order to make an entry into the growing port and infrastructure sector in India we have participated and won a tender from the Government of India's Vizag Port Company to construct a coal berth on a revenue sharing basis in a joint venture with Leighton Contractors (India) Pvt. Ltd. The estimated cost of the project is US\$150 million to be completed by mid 2012.



## Operations Review Outlook

The recovery in demand and commodity prices backed by growth momentum in China, Brazil and India appears well founded. The medium- and long-term outlook for the resource sector remains positive. We are well positioned to benefit from the upswing, benefitted by our structurally low cost position. We have a well laid out growth pipeline and all our expansion projects are on track to deliver industry leading organic growth.

