

# Operational Review

## Aluminium

ALUMINIUM



### Key achievements

- Record aluminium production of 774kt
- Both BALCO and Jharsuguda smelter operated above rated capacity
- Considerable improvement in operational efficiencies
- Maintained second quartile cost position
- 12.3% increase in value added product volumes from 404kt to 453kt

### Strategic priorities

- Expedite development of captive coal block at BALCO
- Secure captive bauxite mine and realise true cost efficiency potential
- Start-up of Lanjigarh 1.0mtpa refinery
- Complete ongoing expansion project

### Production (kt)



### EBITDA (US\$m)



### Map index

- 1 Lanjigarh alumina refinery
- 2 Jharsuguda smelters & power plants
- 3 Korba smelters & power plants



- Aluminium
- Projects under development
- ⚡ Captive thermal power plant

## Operations

Production of aluminium in FY 2012–13 was 774kt tonnes, an increase of 14.7% compared with the previous year. This was primarily attributable to the 22.6% increase in production to 527kt from the Jharsuguda-I 500ktpa aluminium smelter. The Jharsuguda-I operated above the rated capacity, with significant improvement in specific power consumption, throughput and other operational parameters.

Operations at the Korba smelter were stable and it continued to operate at its rated capacity.

Alumina production at Lanjigarh remains temporarily suspended since 5 December 2012, due to inadequate availability of bauxite. We remain engaged with the Orissa State authorities for allocation of bauxite as per our existing memorandum of understanding ('MoU') with the Orissa State Government. A ministerial level committee is looking into the issue of bauxite supply and is expected to submit its report shortly.

The Ministry of Environment and Forests ('MOEF') had earlier rejected the application for the final stage forest clearance for the Niyamgiri mining project of Orissa Mining Corporation ('OMC') which is one of the sources of supply of bauxite to the alumina refinery of VAL. Following the petition filed by OMC challenging the MOEF decision, the Honourable Supreme Court through its order dated 18 April 2013 has directed the State Government of Orissa to place unresolved issues and claims of the local communities under the Forest Right Act before the Gram Sabha, the council representing the local community. The MOEF through the State Government of Orissa within three months. On conclusion of the proceedings of the Gram Sabha, the MOEF will then take a final decision on granting the stage II forest clearance for the Niyamgiri mining project within two months.

## Production performance

(In US\$ millions, except as stated)	FY 2012–13	FY 2011–12	% change
Production (kt)			
Alumina – Lanjigarh	527	928	(43.2)%
Aluminium – Jharsuguda	527	430	22.6%
Aluminium – Korba	247	246	0.4%
Total Aluminium	774	675	14.6%
Sale of Surplus power (million units)	1,564	2,045	(23.5)%

## Production cost

	FY 2012–13	FY 2011–12	% change
Aluminium production cost	1,879	2,091	(10.1)%
Jharsuguda CoP	1,869	2,188	(14.6)%
BALCO CoP	1,901	1,922	(1.1)%

## Financial performance

(In US\$ millions, except as stated)	FY 2012–13	FY 2011–12	% change
Revenue	1,920.8	1,873.5	2.5%
EBITDA	214.0	182.5	17.3%
EBITDA margin (%)	11.1%	9.7%	–
Depreciation and amortisation	192.8	221.5	(13.0)%
Operating (loss)/profit	21.1	(40.3)	152.4%
Share in group operating profit (%)	0.8	(1.7)	–
Capital expenditure	424.1	779.9	(45.6)%
Sustaining	41.2	68.5	(39.9)%
Growth	382.9	711.4	(46.2)%



Above: Aluminium rolled products, BALCO.



Above: Engineers at power plant, BALCO.

Opposite: 540MW Power Plant, BALCO.

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Above: Turbine Generator of the 1,215MW Power Plant, Jharsuguda.

## CASE STUDY

**Focusing on quality to generate production growth**

Production at the Jharsuguda smelter has been significantly increased through a focus on continuous improvement techniques that have brought the smelter performance back up to its design capacity.

Initiatives to increase the number of pots and reduce the frequency of pot failures included immediate action following the observation of any major deviations in cell behaviour followed by root cause analysis to avoid repetition of the problem. A war room was set up to review issues on a daily basis and focus on process optimisation. Combined with an improvement in baking parameters and anode quality, this relentless focus on quality pushed production volumes up by 21% in the financial year up to 526kt.

**Unit costs**

CoP of hot metal at Jharsuguda decreased to US\$1,869 per tonne compared with US\$2,188 per tonne in the previous year, reflecting improved operating performance, a decrease in prices of e-auction coal and favourable rupee movement, partly offset by increased carbon and alumina cost. Even without captive bauxite and the reliance on imported alumina, our aluminium operations were ranked in the second quartile of the global cost curve.

Operating costs at the Korba smelter were also lower during the year but higher than Jharsuguda, primarily due to higher coal costs on account of coal tapering from May 2012 and other fixed costs.

**Financial performance**

EBITDA for FY 2012–13 was US\$214.0 million improved by 17.3%, as compared to US\$182.5 million in FY 2011–12. EBITDA increased due to higher volume and metal premiums with improved operational and cost efficiencies offset by lower metal prices which dropped significantly by 14.7%. We witnessed a substantial rise in aluminium premiums year-on-year following the shortage of primary metal in the physical market due to capacity cutbacks. The premium on aluminium ingots has increased significantly from US\$150 per tonne to US\$175 per tonne. Operating profit also increased to US\$21.1 million.

**Projects**

At the 325ktpa Korba-III aluminium smelter, mechanical and electrical completion and pre-commissioning of the first phase of 84 pots out of a total 336 pots have been completed. Further work is in progress, and we plan to tap first metal in Q2 FY 2013–14. The smelter plans to initially draw power from the existing 810MW power plants at BALCO. The 1,200MW power plant is awaiting final stage regulatory approvals.

Having obtained the stage II forest clearance for the 211mt coal block at BALCO, the process for forest land has been initiated by the State Government, and we are in the process of signing the mining lease agreement. We expect to commence mining by the end of Q2 FY 2013–14.

We continue to evaluate the potential start-up date of the 1.25mtpa Jharsuguda-II Aluminium smelter.

**Outlook**

We expect our existing facilities will continue to operate at close to their rated capacities in the coming year. The resultant increased volumes, combined with operational efficiencies and expected higher proportion of value added products should provide improved returns.



Top: Operator at anode rodding plant, Jharsuguda.

Middle: Molten aluminium metal inside electrolytic pot, BALCO.

Bottom: Control room of power plant, BALCO.