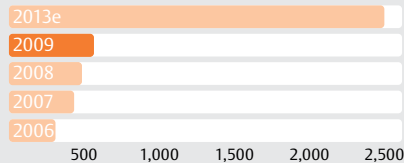


Aluminium



Aluminium ktpa
Production and proposed capacity



Description

Vedanta is one of the largest Aluminium producers in India with mining and processing facilities located in India.

120.5 million tonnes of Reserves and Resources of bauxite.

Key locations

India - Bauxite Mines

Niyamgiri
Mainpat
Bodai-Daldali
Pandrapat
Jamirapat
Yercaud
Kolli Hills
Poondi

Aluminium smelters

Korba
Jharsuguda

Alumina refinery

Lanjigarh
Korba

The performance of our Aluminium Business in FY 2009 is set out in the table below.

(in US\$ millions, except as stated)	FY 2009	FY 2008	% change
Production volumes (in kt)			
Alumina – Lanjigarh	586	267	119.5
Alumina – Korba and Mettur	241	291	(17.2)
Aluminium – Jharsuguda	82		
Aluminium – Korba	357	359	(0.6)
Aluminium – Mettur	23	37	(37.8)
Sale of commercial power (in million units)	545	199	173.9
Average LME cash settlement prices (US\$ per tonne)	2,234	2,620	(14.7)
Average exchange rate (INR per US\$)	45.91	40.24	14.1
Unit costs			
Aluminium Business (US\$ per tonne) ²	1,702	1,771	(3.9)
Aluminium Business (INR per tonne) ²	78,139	71,258	9.6
BALCO Plant II – Production cost (US\$ per tonne)	1,623	1,674	(3.0)
BALCO Plant II – Production cost (INR per tonne)	74,517	67,362	10.6
BALCO Plant II – Smelting cost ¹ (US\$ per tonne)	859	805	6.7
BALCO Plant II – Smelting cost ¹ (INR per tonne)	39,436	32,385	21.8
Revenue ²	937.1	1,140.2	(17.8)
EBITDA ²	196.1	380.7	(48.5)
EBITDA margin	20.9%	33.4%	
Operating profit	117.2	307.0	(61.8)

1 Smelting cost comprises production cost excluding alumina cost.

2 Excluding Jharsuguda operations as smelter is under trial runs.

Production Performance

Record production of 462,000 tonnes of aluminium in FY 2009 was an increase of 16.7% compared with FY 2008. This increase in production is attributable to the first time production contribution of 82,000 tonnes from the new Jharsuguda aluminium smelter in FY 2009, which was offset to some extent by the ramp down of the MALCO smelter in mid December 2008 and a shutdown of a part of the BALCO Plant I smelter in Q4 FY 2009, due to higher operational costs. Consequently, we are selling surplus power to maximise returns.

The production of wire rods, a value added product, was 150,000 tonnes in FY 2009, up 10% compared with FY 2008.

The Lanjigarh refinery produced 586,000 tonnes of alumina from the first stream, feeding our captive requirements. The second stream commenced commissioning activities in April 2009. We expect to start progressive feeding of the refinery with our own Niyamgiri bauxite by mid FY 2010.

We commenced progressive commissioning of the 250,000 tonne Phase 1 of the Jharsuguda aluminium smelter where 264 pots out of 304 pots have been brought on-line to date. The first phase of 250,000 tpa is expected to be fully operational in the first quarter of FY 2010.

Unit Costs

FY 2009 witnessed two divergent halves with H1 FY 2009 driven by the buoyancy in the global markets leading to higher input costs. This contrasted with the deteriorating economic conditions in H2 FY 2009 as a result of which input costs of commodities started softening.

Unit CoP at BALCO Plant II was US\$1,623 per tonne (INR 74,517 per tonne) in FY 2009 compared with US\$1,674 per tonne (INR 67,362 per tonne) in FY 2008. Smelting costs at BALCO Plant II were US\$859 (INR 39,436 per tonne) per tonne in FY 2009 compared with costs of US\$805 (INR 32,385 per tonne) per tonne in FY 2008, primarily due to higher input costs including carbon and coal, despite improved operational efficiencies. Continued focus on reducing costs helped in achieving an exit smelting cost of US\$637 per tonne at BALCO Plant II at end of FY 2009.

Sales

We improved our penetration of the domestic market, selling 353,000 tonnes in FY 2009, up 17.1% compared with FY 2008. Domestic sales represented 77% of total sales, which provided a benefit vis-a-vis exports due to import tariffs.

Financial Performance

Despite an increase in annual volumes and lower input costs in H2 FY 2009, EBITDA in FY 2009 was US\$196.1 million, down 48.5% compared with FY 2008, primarily due to the 14.8% reduction in LME prices and higher input costs for the full year which negatively impacted EBITDA by US\$120.4 million and US\$105.1 million respectively, partially offset by the sale of surplus power commercially which contributed US\$15.9 million to EBITDA in FY 2009.

Projects

Jharsuguda I Aluminium Smelter

The first 250,000 tpa phase of the 500,000 tpa Jharsuguda I aluminium smelter is progressing well and is expected to be fully operational by the first quarter of FY 2010, six months ahead of the original schedule. Work on the second 250,000 tpa phase is on schedule with phased commissioning expected to commence from June 2009 and full operations by end FY 2010.

Jharsuguda II Aluminium Smelter

The new 1.25 mtpa Jharsuguda II aluminium smelter project is progressing well with civil construction activities in progress in all major areas of the four pot lines and associated plants. All major packages have been ordered and the project is on schedule for phased commissioning from March 2010 and full operations by September 2012.

Balco Aluminium Smelter

Work on the new 325,000 tpa aluminium smelter at BALCO has commenced, long lead-time equipment ordered and construction commenced. Construction of the 1,200 MW captive power plant is in full swing, main plant foundation completed and equipment erection started. The first metal tapping from October 2010, as previously announced.

Lanjigarh Alumina Refinery

The first stream of the 1.4 mtpa alumina refinery at Lanjigarh is fully operational and produced 171,000 tonnes in Q4 FY 2009, close to its rated capacity. The refinery produced 586,000 tonnes of alumina in FY 2009. The second stream of the alumina refinery has also recently commenced operations. Currently, bauxite feed for this refinery is being sourced from BALCO, nearby bauxite



Case study

Balco Fuse Technology

Aluminium is produced through electrolysis process. In Balco, all the pots in the pot line are connected in a series and 320 KA current is passed through each pot using risers and shorted joints, to produce aluminium metal. To put pots online, insulation plates are inserted at the shorted joints of the riser to avoid any bypass of current to the next pot. So, to take any pot into line, the power of whole pot line was to be switched off to 0 KA for about 6 to 10 minutes which led to disturbance to operating pots, production losses and increased PFC (per-fluro carbon) emissions.

To tackle this operational issue, BALCO invented a fuse, with which 320 KA current could be bypassed to the next pot through the fuse, instead of the shorted joint for about

ten minutes. As the fuse operation depends on the self-generation of heat under conditions of excessive current by means of the fuse's own electrical resistance, it is designed to withstand ten minutes of the shortened riser current safely. During this period the pot was brought into the circuit by inserting insulation plates between the shorted joints and after ten minutes the fuse melts and the pot is put on power. So by using the fuse technology, pots could be powered on at 320 KA without reducing the power to 0 KA.

Balco has won the Ideas UK Technology Trophy, 2008 and Special prize for "Production Technics" in the European Aluminium Award for the "Balco Fuse Technology".

mines and from central India. We expect to start progressive feeding of the Lanjigarh alumina refinery with our own Niyamgiri bauxite by mid FY 2010, which will reduce unit operating costs.

Work on the 600,000 tpa debottlenecking project at our Lanjigarh alumina refinery is progressing on schedule for completion by March 2010, as earlier announced.

Ordering of critical items has commenced for the new 3 mtpa Lanjigarh alumina refinery expansion project and work is in full swing. The project is expected to be commissioned, in phases, by Mid 2011.

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