

# **Non-Ferrous Metals Conference Aluminium in India – The Growth Story**

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## Asia - Aluminium Market Potential

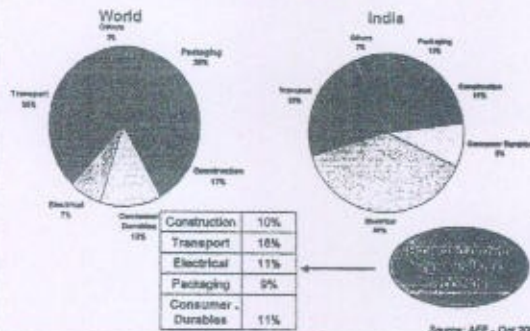
- Asia is the largest Aluminium consuming region in the World, which is in deficit – opportunity
- Consumption growth forecast at close to 12% pa, led by China
- Key players in the region: DUBAL, ALBA, CHINALCO, VEDANTA, HINDALCO
- China is emerging as the World's largest producer of semi-fabricated rolled products
- Middle East is emerging as a preferred smelting base
- Strong case to expand Aluminium smelting capacity in India:
  - Rich reserves of Bauxite
  - Large reserves of thermal coal and our ability to put up and generate power at competitive cost

## The Indian Demand Supply Scenario

Domestic Market	FY04	FY05	FY06	FY07
Primary Producer Sales	531	703	808	888
Non Scrap Imports	77	112	192	189
Scrap Imports	108	132	234	244
Total Domestic Market	816	947	1235	1318
Primary Production	827	902	1005	1162
Deficit	11	(45)	(230)	(167)

- Aluminum production set to outstrip demand for primary aluminum
- Healthy growth in demand
- Demand to grow at 7-8 % pa till 2009-10

## Sector-Wise Aluminium Consumption WORLD and INDIA



## Per capita consumption

Country	Per Capita consumption of Al in kg
Developed Countries (UK, Japan, USA, Germany, France, etc)	10 to 20
Developing countries (Argentina, Cameroon, Mexico, Turkey, etc)	1 to 6
Vietnam	8.4
Thailand	4
Malaysia	4
Saudi	3
China	5.31
India	0.85

With India's Aluminium consumption at 0.85 kg/person, there exists a huge potential for growth

## Drivers of Aluminium demand in India

- Low per capita consumption indicating strong growth potential
- Rapid growth in generation and distribution of electricity in India is the biggest driver of growth for aluminum consumption
- Transport sector is growing the fastest amongst all significant aluminum consuming sectors in India.
- Packaging, Railway wagon building & aerospace alloys are potential sectors which can drive demand in the time to come in India
- Aluminium demand in India is expected to grow at the rate of 7 – 8% pa up to 2009 – 2010

## Indian Aluminium Industry – way forward

- Cost reduction and productivity growth, with continuous increase in volumes to leverage
  - ✓ Presence in the fastest growing aluminum region in the world
  - ✓ 4<sup>th</sup> largest coal reserves in the world
  - ✓ 5<sup>th</sup> largest bauxite reserves in the world
  - ✓ Availability of skilled human resource
- New products and develop more end uses to increase per capita consumption
- More investment in Process Improvements and R&D
- Set a world benchmark in environment engineering
- Further strengthen efforts towards fostering development in local communities and areas

### Ideally Positioned to Capitalize on India's Growth and Resource Potential

**India's Growth & Strong Copper Demand**

- One of the fastest growing large economies in the world
- Strong growth at 7.2% and industrial production growth at 8.2% in FY07
- Excellent resource potential
  - World's best copper grade reserves?
  - World's best copper grade reserves?
- Low per capita water and electricity consumption
- High metal consumption growth
- Stable and increasing labor

**India's Growth & Strong Copper Demand**

Country	2006	2007	2008
Average	3.1%	9.8%	7.8%
India	7.2%	8.2%	8.2%

**World Bank Data & India's Growth**

Country	2006	2007	2008
China	11%	12.7%	15.1%
USA	3%	3.4%	3.4%
India	7.2%	8.2%	8.2%

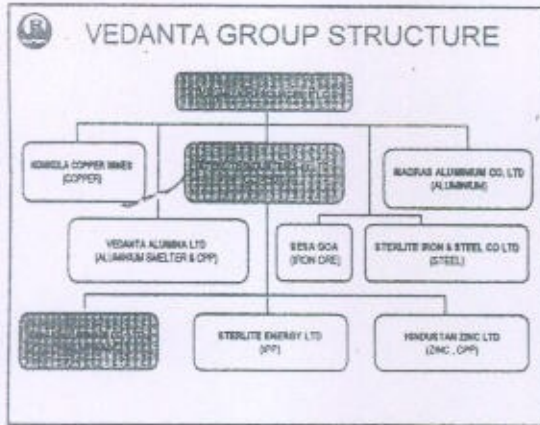
**India's Growth & Strong Copper Demand**

Country	2006	2007	2008
India	0.28	0.31	0.41
China	0.37	0.38	0.42

**Opening and building world class assets and operating them efficiently**

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Vedanta - A success story



### VEDANTA GROUP: GLOBAL PRESENCE

Operations

Legend:
 

- Copper
- Alumina
- Iron
- Steel
- Zinc

### Vedanta Group Overview

- A leading diversified producer of base metals
  - 2nd largest integrated producer of Zinc globally
  - 5th largest producer of refined Copper globally
  - On course to becoming a top 10 producer of Aluminium
  - and Alumina
- Listed on the London Stock Exchange - FTSE 100
- Market Cap - \$ 3 Billion
- 25000+ Employees, 5000+ professionals
- Strong operating results driven by competitive cost positions
  - Revenue up 79% at \$6.5bn, EBITDA up 143% at \$2.7bn
  - ROCE at 78.8% compared with 37.8% in 2004
  - Free cash flows, up 137% at \$ 1.5bn
- Growth pipeline 2002-2007 - \$ 7.2billion

**Revenue and EBITDA Growth (%)**

**Current capacity summary**

Commodity	Capacity (tpa)
Copper	~400
Zinc	~400
Alumina	~400

### Achieving 1 million tpa in aluminium

Capacity - Capacity

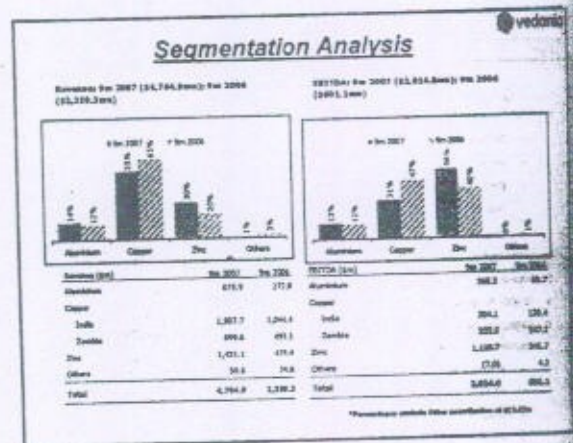
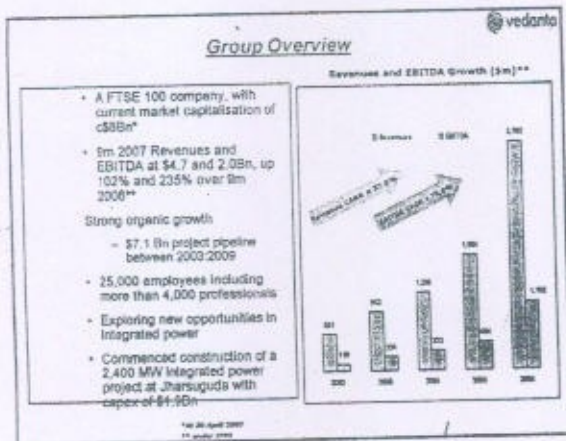
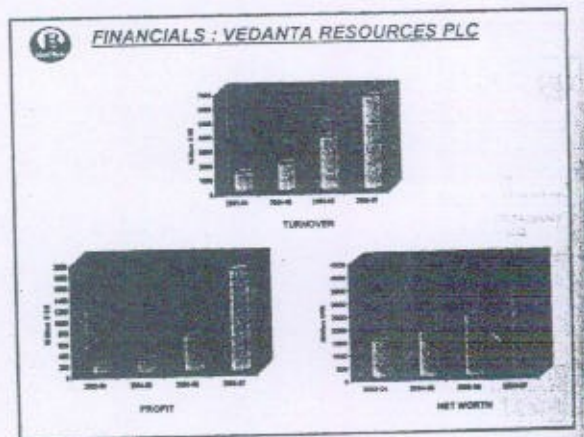
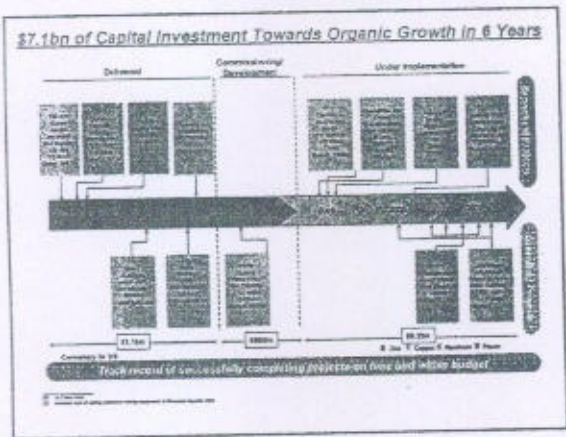
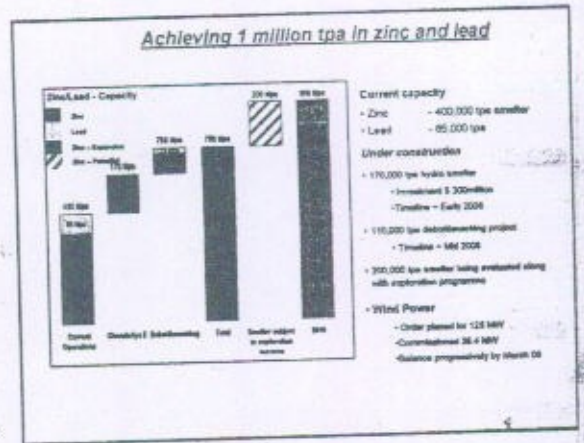
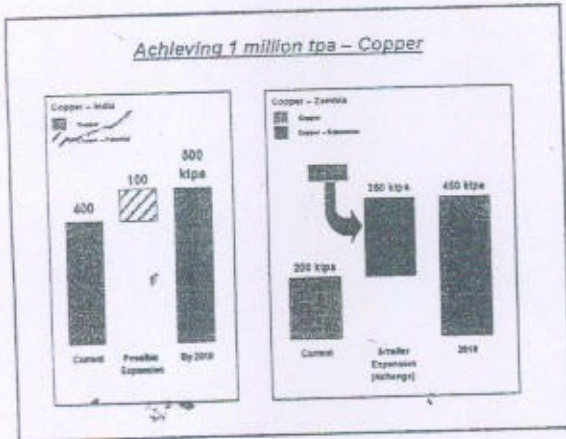
**Current capacity**

- 400,000 tpa

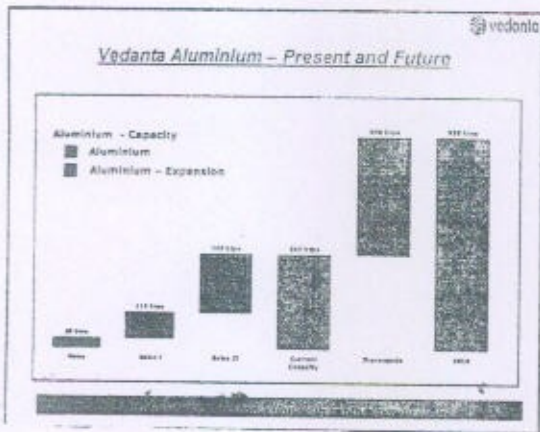
**Under construction**

- 500,000 tpa smaller at Anantnagar with 1,215MW CPP
- Investment \$2.1 billion
- Phase I start 2008
- Phase II 2010
- 1.4bn tpa greenfield alumina refinery with 700MW CPP
- Investment \$200 million
- Under commissioning
- Debarhanching project \$0.200 tpa

Full scale production with captive power



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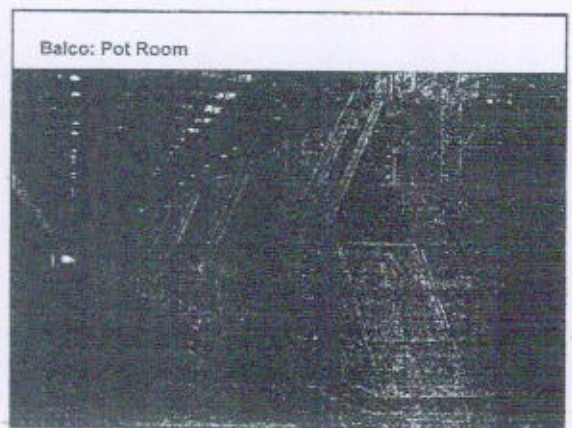
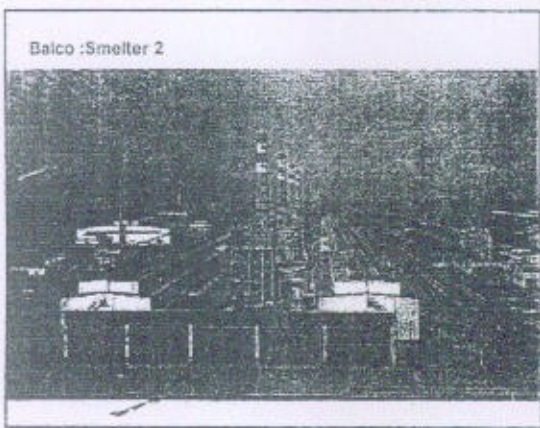
### BALCO Expansion - Smelter 2

- Capex of US\$ 550 million
- Capacity of 245 KTPA
- New plant with technology from GAMI, China

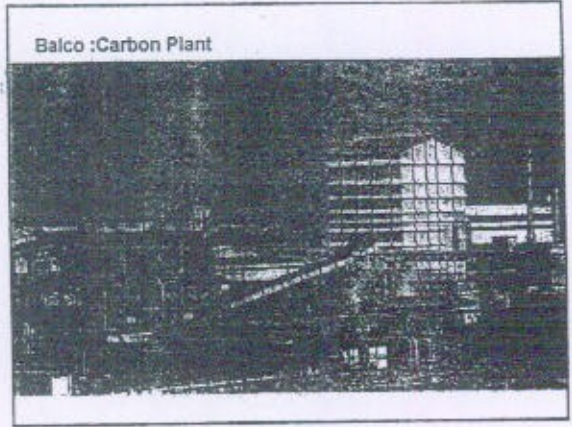
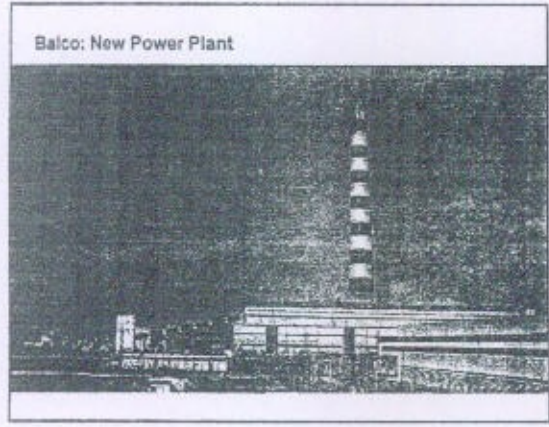
- Total installed smelter capacity to 345 KTPA
- The main product from Plant -2 will be Aluminium Ingots conforming to P1020 specification

Orissa Aluminium Smelters Park for Ingots

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### Jharsuguda Aluminium Smelter Project



- 500,000 tpa aluminum smelter project together with an associated 1,215 MW captive thermal power plant in Jharsuguda, Orissa in India
- Upon completion, this will increase Vedanta's total aluminum smelting capacity to 900,000 tpa, placing it among the largest integrated producers of aluminum worldwide
- The Jharsuguda project will comprise two pot lines each containing 288 cells. It will be implemented in two phases of 250,000 tpa each and is expected to be commissioned in early 2009.
- The total investment in the Jharsuguda project is based on the green-field nature of the project and is estimated at US\$2.1 billion, to be phased over five years

### Sustainable Development (Interface with Local Communities)



#### Corporate Social Responsibility Initiatives in local communities

Provision of safe water supply – manage waste water and solid waste systems

- Infrastructure development – roads, parks, forestry, housing
- Crisis counselling (Drugs, Alcohol, etc)
- Schools, Scholarships and youth support programs
- Vaccination and mosquito management
- AIDS Prevention & Care
- Vocational Training and Livelihood

