

ALUMINIUM

- The most commercially mined aluminium ore is bauxite, as it has the highest content of the base metal. The primary aluminium production process consists of three stages. First is mining of bauxite, followed by refining of bauxite to alumina and finally smelting of alumina to aluminium. India has the fifth largest bauxite reserves with deposits of about 3 bn tonnes or 5% of world deposits. India's share in world aluminium capacity rests at about 3%. Production of 1 tonne of aluminium requires 2 tonnes of alumina while production of 1 tonne of alumina requires 2 to 3 tonnes of bauxite.
- The aluminium production process can be categorised into upstream and downstream activities. The upstream process involves mining and refining while the downstream process involves smelting and casting & fabricating. Downstream-fabricated products consist of rods, sheets, extrusions and foils.
- Power is amongst the largest cost component in manufacturing of aluminium, as the production involves electrolysis. Consequently, manufacturers are located near cheap and abundant sources of electricity such as hydroelectric power plants. Alternatively, they could set up captive power plants, which is the pattern in India. Indian manufacturers are the lowest cost producers of the base metal due to access to captive power, cheap labour and proximity to abundant supply of raw material, i.e., bauxite.
- The Indian aluminium sector is characterised by large integrated players like Hindalco and National Aluminium Company (Nalco). The other producers of primary aluminium include Indian Aluminium (Indal), now merged with Hindalco, Bharat Aluminium (Balco) and Madras Aluminium (Malco) the erstwhile PSUs, which have been acquired by Sterlite Industries. Consequently, there are only three main primary metal producers in the sector.
- The per capita consumption of aluminium in India continues to remain abysmally low at under 1 kg as against nearly 25 to 30 kgs in the US and Europe, 15 kgs in Japan, 10 kgs in Taiwan and 3 kgs in China. The key consumer industries in India are power, transportation, consumer durables, packaging and construction. Of this, power is the biggest consumer (about 44% of total) followed by infrastructure (17%) and transportation (about 10% to 12%). However, internationally, the pattern of consumption is in favour of transportation, primarily due to large-scale aluminium consumption by the aviation space
- The metal has a long working life due to its propensity for recycling. Recycled metal requires significantly less amounts of energy for manufacturing of primary aluminium. Just to put things in perspective, the recycling of aluminium scrap requires 5% of the energy required for primary smelting, which is astoundingly lower, considering that power is such a high cost component.

FY08

- Global production of primary aluminum increased by 12% YoY to 38 MT in 2007. China alone accounted for 29% of global primary aluminum production. Asia, once again showed the largest annual increases in consumption of primary aluminum, driven largely by increased industrial consumption in China, which has emerged as the largest aluminum consuming nation, accounting for 30% of global primary aluminum consumption in 2007. As far as global consumption is concerned, it increased by 8.2% in 2006 and touched 34.7 MT. In 2007, the corresponding figures were 10% and 37.8 MT.
- The Indian aluminium industry registered a strong double-digit growth in 2007 in tune with the economic growth. Strong growths in industrial, infrastructure, automobile, transportation

and power sectors were the drivers for the metals demand. However, macroeconomic parameters like the rupee appreciation, import duty cut and unrelenting cost-push impacted the sector adversely. Thus causing margins to squeeze at both ends. Although the average LME remained strong but could not help the companies like Hindalco to increase the domestic realisation due to fall in import duty and rupee appreciation, causing a drop in average rupee realisation per tonne of the primary metal as compared to FY07.

KEY POINTS

Supply: Supply of aluminum is in excess and any deficit can be imported at low rates of duty. Currently, domestic production comfortably meets domestic requirements.

Demand: Demand for aluminium is estimated to grow at 6%-8% per annum in view of the low per capita consumption in India. Also, demand for the metal is expected to pick up as the scenario improves for user industries, like power, infrastructure and transportation.

Barriers to entry: Large economies of scale. Consequently, high capital costs.

Bargaining power of suppliers: Most domestic players operate integrated plants. Bargaining power is limited in case of power purchase, as Government is the only supplier. However, increasing usage of captive power plants (CPP) will help to rationalise power costs to a certain extent in the long-term.

Bargaining power of customers: Being a commodity, customers enjoy relatively high bargaining power, as prices are determined on demand and supply.

Competition: Competition is primarily on quality and price, as being a commodity, differentiation is difficult. However, the recent spate of consolidation has reduced the competitive pressure in the industry. Further, increasing value addition to aluminium products has helped some companies protect themselves from the high volatilities witnessed in this industry.

CURRENT SCENARIO AND PROSPECTS

- Globally, newer packaging applications and increased usage in automobiles is expected to keep the demand growth for aluminium over 5% in the long-term. Asia will continue to be the high consumption growth area led by China, which is expected to continue to register double-digit growth rates in aluminium consumption in the medium-term.
- With key consuming industries forming part of the domestic core sector, the aluminium industry is sensitive to fluctuations in performance of the economy. Power, infrastructure and transportation account for almost 3/4th of domestic aluminium consumption. With the government focusing towards attaining GDP growth rates above 8%, the key consuming industries are likely to lead the way, which could positively impact aluminium consumption. Domestic demand growth is estimated to average in the region of over 8% over the longer-term.
- Lowering of duties reduces the net tariff protection for domestic aluminium producers. Aluminum imports are currently subject to a customs duty of 5% and an additional surcharge of 3% of the customs duty. With reduction in import duties, domestic realisation of aluminium majors, namely Hindalco and Nalco, is likely to be under pressure, as the buffer on international prices is reduced. Moreover, with greater linkage to international prices, volatility in financials could increase. However, producers are moving downstream to negate the higher volatility.