

# INDIA

*By G.R. Seshadri*

India has pitched for a larger global role by leveraging its growing economic clout. GDP growth in 2003-04 was 7%, an improvement on the previous period. The agricultural sector was aided by plentiful rainfall, which was evenly distributed all over the country. Inflation averaged 4 to 4.5%. With foreign exchange reserves of over US\$107 billion, as at end-February, 2004, India has shed its role of perpetual borrower and has become a net creditor to the International Monetary Fund (IMF). Its contributions have been used to assist Brazil, a bigger economy, and Burundi. The country also declined aid from a large group of nations, specifically the Scandinavian countries, and repositioned itself from a shortage economy to one of plenty.

The high foreign exchange reserves also enabled India to pre-pay close to US\$3 billion in high-cost external loans to the World Bank and the Asian Development Bank (ADB). Efforts were made in December 2003 to make a further pre-payment of US\$1.3 billion to the ADB. India has also written off debts of poor countries. Discarding its protectionist mindset of earlier years, India is poised to sign a slew of bilateral free-trade agreements with Bangladesh, Thailand, Singapore, Egypt, the ASEAN countries, Afghanistan, Myanmar and South Africa.

With five Indian companies bagging the globally-acclaimed Deming prize, India is emerging as a new destination for quality manufacturing. Global manufacturing companies such as Toyota, Ford, Yamaha, Mitsubishi, Volvo, Rover, Renault, Walmart, Honeywell and Siemens, are outsourcing jobs in India. The country is also becoming an important research and development hub for many US companies, for example, General Electric, Cisco Systems, Intel, IBM, Motorola and Texas Instruments.

## **Vedanta listing**

In what was claimed to be the second-largest listing on the London Stock Exchange (LSE), Vedanta Resources, controlled by Mr Anil Agarwal, chairman of Sterlite Group, raised US\$1 billion through an initial public offer (IPO) on the London Stock Exchange. The fund mop-up is among the largest by an Indian company in both overseas and Indian markets. Vedanta has appointed Mr Brian Gilbertson, the former high-profile chief executive of BHP Billiton as chairman, and plans to invest US\$2 billion over the next three years to expand its operations and develop new projects. The listing of Vedanta on the LSE made it the first Indian company to go for a direct listing on an international stock exchange.

Vedanta owns 60.8% of Sterlite Industries India Ltd (SIIL) and 80% of Madras Aluminium Co Ltd (Malco) through its wholly-owned subsidiary Twinstar

Holdings Ltd. Late in the year, Sterlite increased its stake in Hindustan Zinc Ltd (HZL), India's largest zinc and lead producer, from 46% to 64.9%. Sterlite also owns a 51% stake in Bharat Aluminium Co (Balco). Both HZL and Balco were formerly public-sector companies.

Over the next three years, Vedanta aims to invest over US\$2 billion to expand current operations and develop a portfolio of greenfield projects. Investments will include Balco's expansion at Korba, the establishment of a 1.3 Mt/y capacity alumina refinery at Lanjigarh in Orissa, and capacity expansion at the operations of Malco and HZL.

### **Oil and gas**

India imported about 31.7 Mt of crude oil in fiscal 2003-04. There is a proposal to build storage facilities to stock 15 Mt, equivalent to 45 days' requirement, to meet emergencies. India's share from oilfields abroad (where it has equity stakes) will rise three-fold to 13 Mt of crude by 2007. In order to meet domestic consumption, India imports 78 Mt/y of crude to supplement domestic output of 33 Mt.

The UK oil and gas major, BG group proposes to invest over US\$800 million in the next two years in the development of the Panna-Mukta and Tapti oil and gas fields to improve production from the offshore fields. About US\$145 million is to be pumped into the Panna-Mukta oil and gas field, and around US\$660 million in the development of the Tapti gas field, according to the company. The joint operators of the Panna-Mukta and Tapti oil and gas fields have launched a US\$740 million output-enhancement drive through a multi-well drilling programme. BG group, the French oil giant Total, Exxon Mobil of the US and Russia's Gazprom were all set to bid for Indian exploration blocks on offer in the fourth round of New Exploration Licensing Policy.

Reliance Industries' Krishna-Godavari gas find announced in 2002, is now estimated at 14 trillion ft<sup>3</sup> (equivalent to 300 Mt of crude oil), as against the earlier estimate of 10.5 trillion ft<sup>3</sup>. At current market prices, the oil and gas discoveries would mean annual incremental revenues of Rs100 billion. Reliance proposes to invest around Rs15,000 million by 2005 for oil and gas exploration. The company has also discovered a large gas reserve in Yemen, considered to be larger than the Panna-Mukta oil-field.

### **Gems and jewellery**

India is the largest processor of diamonds in the world. Indian gems and jewellery exports rose 31% by value to US\$11.9 billion in 2003-04 from US\$9.13 billion in the previous year, with the diamond sector witnessing a 21% increase and gold jewellery 68%. The Gem & Jewellery Export promotion Council has appointed global consultants KPMG to outline a roadmap for achieving an export target of US\$16 billion by 2007 and making the country a major jewellery-trading centre. Essentially, the growth will be driven by increasing the share of value-added items in jewellery, and diamond cutting and polishing.

Efforts were under way to implement diamond certification. The International Gemmological Institute (IGI) and the Gemmological Institute of America have set up offices in India, and the European Gemmological Laboratory (EGL) also has a presence.

By volume, India accounted for over 90% of the global market share in diamond cutting and polishing in 2002-03. However, by value, its share was just over 60%. Mr Pankaj Parekh, a top official of the Export Promotion Council, pointed out that India loses out on high-value categories like the cutting and polishing of bigger diamonds. "Efforts are being made to acquire this market. We must go up the value chain since, in terms of volume, India is comfortably placed. To increase export value, we have to look for value-added items," an expert said.

A similar situation prevails in the market for gold jewellery, where Indian exporters do not have a sizeable presence in the fashion-conscious European market. There the issue is with the make. "Our artisans are efficient in handcrafted jewellery made of 22 or 24 ct gold which is soft and malleable. In contrast, demand in Europe is for 14 ct gold jewellery which is stronger," Mr Parekh said.

Industry observers have stressed the need for mechanisation of the gold jewellery-making process in India. Moreover, they say, exporters, as well as artisans, must be exposed to changing fashions in the West and the need to deliver on evolving fashion trends quickly.

The West Bengal Government has set up Manikanchan, a greenfield special economic zone dedicated to the export industry, in Kolkata. Jewellery exports from West Bengal have grown by 77% since 1994-95. The high-carat, handcrafted pieces are popular among Indians resident in the US, Europe and southeast Asia. Manikanchan, inaugurated in November 2003, has elicited interest from many foreign companies which have shown an interest in opening facilities there, Dubai-based Lazurde being the first investor. Allen Bell from the US has also shown interest.

### **Gold**

India has, traditionally, held a vast hoard of gold, mostly in the form of jewellery. Gold production in the country has recently come mainly from the copper smelters as a by-product. Birla Copper and Sterlite have produced more gold than the only working gold mine at Hutti in Karnataka. The former produced about 5.2 t in 2003-2004, while Sterlite produced around 5.1 t.

Hutti Gold Mines Co, the sole primary producer of gold, is owned by the Government of Karnataka and has plans to raise production to 3.5 t/y. Its output of gold in 2003-04 was 3 t. The company has taken new initiatives to tap the Hutti South Block at the Hirabudini mine and to adopt bio-leaching technology. It is also modernising its ball mill, and is diversifying into gold refining, the production of gold coins and hallmarking. Gold deposits in its

vicinity are estimated to possess 600 t of metal. New deposits, with gold concentrations, ranging from 0.1 to 2.6 g/t Au, were discovered in the Chitradurga and Sandur districts of Karnataka some years ago.

According to the World Gold Council, India's official gold reserves in 2002 amounted to 358 t, the unofficial holdings being over 1,000 t.

Gold prices skyrocketed to an historic high of Rs625/gm in early January, 2004, from a level of Rs435/gm in mid-2003.

### **Coal**

India's output of coal in 2003-04 was estimated at 346.5 Mt, against 341.2 Mt in the previous year. In January 2004, the Indian Government reduced the import duty on coal by 25% to 15%. Although India is a major producer of coal, it produces only limited quantities of coking coal needed by its steel plants. As a result, it is a large importer of coking coal, mostly from Australia. The reduction in import duty on coal will assist the steel producers and improve their competitiveness.

India will soon join the select league of nations producing gas from coalfields when a coal-bed methane (CBM) block in West Bengal goes into production. Commercial production of gas, however, may not begin until 2005. India can produce 25 million standard m<sup>3</sup>/d of gas, about 40% of the current domestic gas output of 65 million m<sup>3</sup>/d, from coal-beds within five to six years, according to the Directorate-General of Hydrocarbons. The government awarded eight blocks for exploration and production of coal-bed methane in the second round of bids. ONGC was awarded four blocks and Reliance Industries three blocks. The amount of coal-bed methane contained in these blocks is estimated at 457 billion m<sup>3</sup>.

MMTC's ambitious Rs22,500 million venture to convert imported coal into metallurgical coke became operational by November 2003. It is expected to reach its full capacity of 880,000 t/y during 2004.

In a bid to break the public sector's monopoly over coal, the government proposed to introduce legislative changes allowing for private mining, whilst liberalising norms for the allocation of captive blocks permitting trading of coal. The government is contemplating the allocation of captive blocks for setting up washeries in the private sector, according to Lakshmi Chand, Assistant Secretary, Coal. Captive block holders would also be permitted to sell the coal in the open market. As many as 143 blocks have been identified for allocation, containing total estimated reserves of 30,000 Mt.

During 2003, new policy initiatives were on the anvil for the grading and pricing of coal, on the basis of gross calorific value as opposed to the concept of useful heat value currently in vogue in India.

The current legislative requirements permit private-sector investment only for the limited purpose of setting up coal washeries and captive mining for specified end-uses, including setting up power plants, fertiliser and steel units.

Neyveli Lignite Corp is to acquire the Barsingsar thermal power project in Rajasthan at a cost of Rs18,000 million. Two units of 250 MW each would be set up under the project to exploit the large lignite deposits in the Barsingsar area of Bikaner.

The Steel Authority of India Ltd (SAIL), the state-controlled umbrella organisation that owns the public-sector steel units, initiated talks with Australia's newly-commissioned coking coal mine, Hail Creek, for long-term coal import contracts. SAIL is heavily dependent on imported coal, and may see its coal imports rise to about 70% of its total consumption within the next few years. At present, the company imports 6-7 Mt/y of coking coal from Australia, from companies such as BHP Billiton and Glencore.

### **Iron ore**

India's output of iron ore in 2003-04 was estimated at 74 Mt, against 73.2 Mt in the previous year. After Brazil and Australia, India has become the world's third-largest exporter of iron ore, with shipments of 31 Mt in 2002-03.

The ailing Indian Iron & Steel Co Ltd (IISC), now under the management of the Steel Authority of India Ltd (SAIL), possesses one of the richest and biggest iron-ore deposits in the world at Chiria. SAIL decided to invest Rs3,000 million to develop the mines. Of this amount, Rs1,000 million is part of IISC's Rs8,000 million revival package. The development of Chiria will enable SAIL to source quality ore. SAIL will also be investing Rs8 -10 billion annually over the next few years for technological improvements. This will add 1 Mt/y of steel production to its existing level of 11 Mt/y in April-March 2004.

After failing to attract buyers for its loss-making special steel units, such as Alloy Steel Plant at Durgapur, Visvesvaraya Iron and Steel plant in Karnataka and Salem Steel Plant, SAIL has appointed the engineering consultancy Dasturco, to work out a performance improvement plan for its special steels business. SAIL's saleable steel output in the first seven months of 2003 was 6.15 Mt. The company paid back about Rs20 billion of debt in the first half of fiscal 2003-04 and is now on the profit-making track.

National Mineral Development Corp (NMDC) has sought to terminate its long-term annual contracts for supplying iron ore to Rashtriya Ispat Nigam (RINL). NMDC and India's other major ore supplier, Kudremukh Iron Ore Co (KIOCL), raised their prices for lumpy ores by 25%, and by a whopping 70% for sized ores. The increases reflect their increased export commitments to countries like China and Japan. Internationally, sized ore has jumped in price from US\$28 to US\$48.5/t within the past year.

### **Sponge iron**

In 2002, India became the world's largest producer of sponge iron, with output reaching 6.53 Mt. Production in 2002-03 was 6.9 Mt, and installed annual capacity was 7.03 Mt. The sponge iron business had a brisk time as it benefited from firm global scrap prices and a revival of the global steel sector.

Minerals & Metals Trading Corp (MMTC) commissioned its 1.7 Mt/y sintering plant at Jajpur in Orissa in November 2003. Built at a cost of Rs2250 million, this plant will service MMTC's Neelachal Ispat Nigam Ltd (NINL) pig-iron plant, which was, until then, using high-priced iron-ore lump for its blast furnace. Sinter is a mixture of iron-ore fines, coke breeze, limestone chips and dolomite. In 2002-03, the first full year of operation for NINL's blast furnace, the company produced 360,000 t of saleable pig iron. About 240,000 t was shipped to Japan, South Korea, Thailand, Malaysia and Indonesia from Paradip port. In 2003-04, the company is likely to produce 650,000 t, which would make it the largest producer of pig iron.

Grasim Industries Ltd, owned by the Aditya Birla group, has a sponge iron plant with a capacity of 900,000 t/y. The plant produced over 610,000 t last year. Its long-term prospects depend on the availability of power and natural gas, and its pricing.

### **Steel**

China has become a major importer of steel from India. In 2002-03, India exported 4.2 Mt of steel to China and the offtake is likely to be even higher in 2003-04. During the six months ended June 30, 2003, steel exports to China rose by 137% valued at US\$621 million. The exports consisted of special steels, hot- and cold-rolled coils, galvanised coils and pre-painted coils. China has been restructuring its steel sector and demand is growing at an annual rate of 10-15%, according to Indian industry sources.

Steel prices have risen sharply in the past six months. For instance, prices of hot-rolled coils - the key input for downstream steel products - have shot up from Rs18,500/t in August 2003 to Rs23,500/t in February 2004, a rise of over 27%. As steel prices have soared, they have triggered a fierce lobbying battle. On one side are the giant steel producers who, after years of losses and tight margins, are making profits. On the other side, are an equally powerful alliance, ranging from auto giants like Maruti and Hyundai, to big construction companies.

India's steel manufacturers were pushing the Indian Government to negotiate with the Chinese and demand coking coal in exchange for iron ore. Controls on iron-ore exports would benefit both the steel manufacturers and steel users. The integrated steel manufacturers, SAIL, Tisco, Essar, Jindal and Ispat, are also coming under fire from an unexpected quarter - the secondary steel mills, which use HRC (produced by the big mills) as a key raw material to process steel.

In February 2004, the government reduced customs duty on steel imports by 5% to 15% in order to check the rise in domestic steel prices. It also halved the excise duty on steel products to 8% in order to restrain price increases.

The Indian steel industry has caught global attention, and international players like Baosteel of China have been seeking strategic partnerships with Indian steel companies. The objectives are: to add new capacity in China; to enter into long-term contracts for the supply of iron ore; and to sell steel plant equipment to the Indian companies. Baosteel was seeking to enter into a strategic partnership with Tata Iron and Steel Co (Tisco). In turn, Indian steel majors, mainly Tisco and Ispat Industries, were looking at opportunities to add new capacity abroad in countries such as the Ukraine, Uzbekistan, and China. Mr Vinod Mittal, managing director of Ispat, was scouting for opportunities abroad for raw material supply and the conversion of hot-rolled coils into cold-rolled material.

Judging from the production in the April-September period of 2003, India's output of steel for the year should be around 34.10 Mt, of which 4.70 Mt was destined for China. The country is now the main destination for Indian steel exports, accounting for an estimated 50% of total exports.

Demand has also been keen for Indian rail steel, particularly by Malaysia which wanted 60,000 t. Egypt and Sri Lanka were seeking 40,000 t and 50,000 t respectively. The Bhilai steel plant, a constituent of SAIL, is the sole Indian producer of rail sections and increased its capacity from 650,000 t/y to 692,000 t/y. It is considering further expansion since it has been overbooked with orders from Indian Railways. The Bhilai plant is reputed to produce the cleanest steel in the world, and has reduced the hydrogen content of steel to below one part per million. Globally, the benchmark for hydrogen content is below 3 ppm. Jindal Steel and Power Co is setting up a rail steel unit in Raigad and has imported a steel plant from South Africa for the purpose.

Faced with an acute shortage of iron ore, state-owned Visakhapatnam Steel Plant (operated by the Rashtriya Ispat Nigam Ltd (RINL)), was trying to acquire captive mines in Orissa (Raoghat) and Chhattisgarh (Malantoli). Each mine is estimated to have some 200 Mt of reserves. Fresh mine acquisitions have become doubly important for RINL because of the steel plant's expansion plan to treble capacity by 2020. The company has drawn up a Rs170 billion plan to expand its capacity from 3 Mt/y to 10 Mt in three phases. For this, RINL proposes to use natural gas as its basic energy feedstock in place of conventional coal-based fuel operations. The Gujarat State Petroleum Corp, which has huge gas reserves in the Krishna-Godavari basin, has agreed to supply natural gas by April 2005. RINL's first-phase expansion will see its capacity expand from 3 Mt/y to 4.7 Mt/y by 2005-06; the second stage envisages its liquid steel capacity rising to 6.8 Mt/y and shifting to gas-based production. The final phase will see an addition to flat steelmaking capacity, and an overall rise to 10 Mt/y by 2019-20.

Tisco produced over 2 Mt of saleable steel in the six months from April to Sept 2003. This record production has been supported by strong domestic sales and exports. Disclosing that steel consumption in the Indian market had shot up by a record 50% in recent months, Tisco's managing director, Mr Muthuraman, said that demand would continue to be on the upswing, as a result of increasing housing/industrial construction activity and the ongoing quadrilateral/national highway infrastructure projects. "Demand is also coming from the automobile/two-wheeler sectors and (there is) greater consumption of steel for consumer and industrial appliances," Mr Muthuraman stated.

Tisco's total output of saleable steel rose by 11% for the 2003 full year, to 3.97 Mt. Branded products accounted for 14% of the company's sales, and this is expected to double in year to March 31, 2004. Considered the lowest-cost producer of steel in the world, Tisco is in the midst of an expansion project that will increase its crude steel capacity from 4 Mt/y to 5 Mt/y. There will be corresponding increases in downstream finishing capacities. To be implemented at a cost of Rs20,000 million, the project is scheduled for completion by March 2006.

Tisco is also involved in a ferrochrome project at Richards Bay in South Africa to produce 120,000 t/y of high-carbon ferrochrome. The project is to be implemented as a joint venture with a local partner, and may be commissioned in 2005. The 120,000 t/y capacity plant is only the first phase.

In India, the company has begun geological investigations and a feasibility study for a titanium project in the Tirunelveli/Tuticorin districts of Tamil Nadu.

During the year, Tisco examined the possibilities of taking over steel-manufacturing units in the CIS republics, many of which have lost their viability on a stand-alone basis after the dissolution of the former Soviet Union. The company is also looking at acquisitions within India, in particular the Orissa-based Neelachal Ispat and Bellary Steel. Internally, the company is hiving off its non-core activities to form separate entities. With a workforce of 43,000, the emphasis has shifted to restructuring and outsourcing non-core functions such as finance and communications. Amongst other developments, Tisco has been selected by Proton, the Malaysian car manufacturer, to source its autograde steel requirements.

Jindal Steel & Power, an OP Jindal group company, proposes a two-phase expansion of its sponge-iron capacity to 1.3 Mt/y and power generation by 50 MW to 255 MW by end-2005 at a cost of Rs5,500 million. In Orissa, Jindal proposes to set up a 1 Mt/y sponge-iron plant at a cost of Rs13 billion. The plant will utilise locally-available iron ore from the company's captive mines. The company is also planning to add coal mining to its portfolio if proposals to fuel the sponge-iron plant with piped-in gasified coal are implemented.

Three steel companies, Essar Steel, Jindal Vijayanagar Steel (JVS) and Ispat Industries, all heavily in debt, obtained reprieves by restructuring their loans.

The relief package consisted of the conversion of debt into equity, conversion into preference shares, repayment of unsecured foreign debt at discounts, and offers of personal guarantees by the promoters of the companies. Interest on their loans would be reduced to 14% from 16-17%, and rupee loans would be paid over 15 years; 40% of rupee term loans were to be converted into foreign exchange loans at 8%.

JVS consolidated its steel business with that of its promoter company, Jindal Iron & Steel Co (Jisco) in November, 2003. With the revival in the fortunes of the steel industry, JVS has turned around its financial performance, reporting a net profit of Rs230 million in the first half of 2003-04. The consolidation results in a Rs43.98 billion fully-integrated steel conglomerate, and will enable the integrated company to provide value-added products and become more competitive. Prior to the merger, JVS was a 1.6 Mt/y hot-rolled coil manufacturer. Jisco, which is financially stronger, could use its cash-flows for JVS' operations. The merged entity, to be called Jisco, will produce a range of products, from iron ore to galvanised products, and will have an annual turnover of about Rs50 billion and an asset base of Rs70 billion. Both companies, post-merger, will operate independently.

The Ispat Group, under Mittal, has signed a deal with the authorities in northern Bosnia to form a joint venture with the Lukavac coking plant. Ispat Group Global Infrastructure Some US\$45.4 million will be invested in a new company named Global Ispat Koksna Industrija Lukavac. Ispat Group will hold a 51% stake in the new company, and the Bosnian State will hold the remainder.

In India, Ispat Industries proposes to increase its steel-making capacity from 2.4 Mt/y to 3.6 Mt/y, and has commissioned its first stage expansion from 1.5 Mt/y to 2.4 Mt/y of hot-rolled coils at its Dolvi plant near Mumbai.

The Orissa Government has signed memoranda of understanding with four companies to set up integrated steel plants at an estimated cost of Rs24,160 million. Neepaz Metallics will construct a unit at Chandrihariharpur, near Rourkela, at a cost of Rs4,000 million to produce sponge iron, pig iron and steel; Aarti Steel will establish plants at Ghantikhal and Nidhipur in Cuttack district at a cost of Rs8,860 million (the state has already acquired 700 acres of land for the project which will produce sponge iron, pig iron and steel billets); and SCAW Industries has proposed a steel plant requiring an investment of Rs8,140 million. Its coal-based direct reduction plant will have a capacity to produce 1Mt/y of pig iron, and will have a 25 MW captive power plant.

### **Aluminium**

The three main growth areas for aluminium in India are the automobile, electrical-wiring and food-packaging sectors. Increased aluminium use in these areas is likely to boost *per capita* consumption from 0.6 kg to international levels of 20 kg. India's output of aluminium in the year ended

April 30, 2004, is estimated at 822,700 t, against 628,000 t in the previous year.

In June 2003, Sterlite Industries (India) Ltd (SIL) commenced work on its Rs40 billion bauxite mining and alumina refinery project at Lanjigarh in the Kalahandi district of Orissa. Considered one of the largest greenfield projects in the country, it will comprise a 1 Mt/y alumina refinery with associated bauxite mining facilities. Sterlite has already acquired the land for the project and drilling work at the site has started. The refinery infrastructure can be expanded to 1.4 Mt/y and is based on 150 Mt of bauxite committed by the Orissa Government for the project. The bauxite is of high quality (around 47% alumina content). It is expected that almost half the total alumina produced in the refinery will be exported and the rest used for domestic consumption. The power requirements for the venture are to be met through a new 100 MW power station, to be built as part of the project. Sterlite has retained the Worley construction group to construct the refinery.

Sterlite has drawn up plans to increase Balco's refining capacity from 100,000 t/y to 334,000 t/y, and Balco has signed a Rs10,000 million syndicated debt arrangement facility with a bank consortium led by ABN Amro Securities. The loan has a maturity period of six years and is to be repaid in 12 equal instalments commencing at the end of 39 months. Separately Vedanta Resources has allocated US\$800 million, from the US\$1.0 billion it raised in London, for the expansion of Balco's aluminium smelting capacity, from 150,000 t/y to 500,000 t/y by March 2006, according to press reports.

National Aluminium Corp (Nalco) is India's largest alumina producer and its second-largest producer of primary aluminium. It is one of the lowest cost producers of the metal in the world, and during 2003 it achieved major improvements, both in production and in profitability.

Hindalco Industries Ltd, the flagship company of the Aditya Birla Group, is India's largest non-ferrous metals producer, supplying world-quality aluminium and copper, besides gold and silver. Aluminium smelting capacity was about 310,000 t/y and its Rs18 billion brownfield expansion project, completed in August 2003, has raised this to 345,000 t/y. Alumina refining capacity has been raised to 660,000 t/y. Hindalco plans to raise its smelting capacity further, to 360,000 t/y, and also its alumina refinery capacity to 700,000 t/y, through modification, de-bottlenecking, and marginal plant changes. As part of the expansion programme, a 41 MW co-generation plant is to be constructed to complement the existing generating capacity of 779 MW at the captive Renusagar power plant.

Hindalco has acquired a 96% stake in Indian Aluminium Co (Indal), formerly owned by Alcan of Canada, and the Hindalco-Indal combine now accounts for over 70% of India's market for aluminium. In the 12 months to March 31, 2004, aluminium production reached 316,000 t compared with 262,000 t in the preceding 12 months. In June 2003, the company raised Rs2,300 million

through a US\$50 million five-year corporate bond at a floating rate linked to Libor.

### **Copper**

The copper business in India has suffered a setback because of the explosive growth of mobile cellphone networks and the emergence of 'wireless-in-loop' (WLL) telephony. The landline phones (until recently a government monopoly) had been the largest consumer of copper in India. The dramatic fall in the prices of optical fibre also impacted adversely on copper offtake, and despite improved demand for transformers, switchgears, motors and alternators, this has not been adequate to offset the reduced demand in the telecommunications sector. As a result, domestic consumption of copper in India last year grew by only 3-5%.

Birla Copper, after being hived off from Indo-Gulf Fertiliser Corp to become part of Hindalco Industries Ltd, completed the de-bottlenecking of its copper smelter at Dahej in 2002 and now has a rated smelting capacity of 150,000 t/y (actual capacity is 185,000 t/y). A brownfield expansion of this custom smelter is now under way and is likely to be completed in mid-2004. This will raise its capacity to 250,000 t/y. Production of copper cathodes in the year ending March 31, 2004, was estimated at 181,000 t, while that of continuous cast wire rods was 81,000 t. By-product output was estimated at 5.2 t of gold and 28 t of silver.

Birla Copper produces copper acceptable as Grade A quality by the London Metal Exchange. As it is a custom smelter, its profitability has been dependent on the concentrate treatment and refining charges it receives. However, its acquisition of the Nifty mine (located in the eastern Pilbara region of Western Australia) from Straits (Nifty) Pty Ltd, has enabled Birla Copper to become an integrated copper producer. The acquisition also gives Hindalco greater control over the value chain since mine production represents 75-70% of the value of copper. Nifty has a mine production capacity sufficient to yield 27,500 t/y of cathodes and possesses a large undeveloped sulphide resource. Total resources at Nifty amount to 148 Mt averaging 1.3% Cu, and a feasibility study for exploiting the sulphide ore was scheduled for completion at the end of 2003. Birla has also acquired a 50% interest in the Maroochydhore exploration project, and is exploring possibilities for acquiring additional mining capacity.

Elsewhere in Australia, Hindalco's wholly-owned Australian subsidiary, Birla Mineral Resources Pty Ltd, has acquired the Mt Gordon copper mine in Queensland for a total consideration of A\$21 million (over Rs650 million). According to the company's chairman, Mr Kumarmangalam Birla, "the acquisition is a major strategic step in our move to become a global competitive copper producer". Mt Gordon, owned by Western Metals, had gone into receivership in July 2003 as a result of depressed commodity prices and adverse exchange rates. The mine has the capacity to produce around 50,000 t/y of copper cathodes from a blend of open-pit and underground ore,

although its output in the 12 months ended June 30, 2003 was only 45,000 t. Resources are estimated at 20 Mt averaging 3.6% Cu, and there is significant exploration potential.

Sterlite Industries, which has already acquired mines in Australia and Tasmania (Mt Lyell) to provide concentrates to feed its smelter at Tuticorin, has been shortlisted as a preferred bidder for acquiring a stake in Konkola Copper Mines plc (KCM), the largest integrated copper mine in Zambia. According to a Zambian Minister's statement in December 2003, KCM's assets have been transferred to Sterlite.

KCM's assets include the Konkola underground mine, the Nchanga underground and open-pit mines, associated concentrators, the Nchanga tailings leach plant, the Nampundwe pyrite mine and concentrator, and the down-dip extension to the Konkola orebody. The company also plans to acquire further mines and plants in Africa and Europe. Earlier, Sterlite had to abandon its plans to divest its copper business because of stiff resistance from some shareholders and legal action by government agencies.

### **Zinc**

The Sterlite group has a controlling interest in Hindustan Zinc Ltd (HZL), and increased its interest further in November 2003 when it acquired from the government another 18.92% stake, taking its total holdings in HZL to 64.92%. Sterlite has large capital-intensive plans for the expansion of HZL's lead-zinc smelting complex at Chanderiya in Rajasthan, and proposes to invest around US\$400 million, using part of the proceeds of Vedanta Resources' IPO in London which realised US\$1.0 billion. Zinc smelter capacity is being increased from 220,000 t/y to 390,000 t/y. As part of the project, HZL is building a US\$86.7 million 154 MW captive power plant to meet the energy requirements of the complex. Construction is being undertaken by state-owned Bharat Heavy Electricals Ltd. The expansion of the complex is scheduled for completion by March 2005.

### **Lead**

India's output of lead is around 80,000 t/y, about half coming from primary production and half from scrap/residue-based secondary units. Domestic demand for lead is close to 170,000 t/y. The total primary smelting capacity in the country is 89,000 t/y, consisting of 65,000 t/y (HZL) and 24,000 t/y (Indian Lead Ltd). HZL's smelters are located at Chanderiya in Rajasthan (capacity: 35,000 t/y), Visakhapatnam in Andhra Pradesh (22,000 t/y) and Tundoo in Bihar (8,000 t/y). The Tundoo smelter, which also produces silver, has been faring very poorly, and has been closed. The smelter at Visakhapatnam has also been closed for some time as a result of environmental concerns by the Andhra Pradesh Government. Visakhapatnam was a loss-making unit and the costs of installing environment-friendly equipment would be prohibitive. HZL is in the midst of raising its annual lead-smelting capacity by 50,000 t.

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Indian Lead has two units, one in Calcutta and the other at Thane, near Mumbai, each with a capacity of 12,000 t/y. Both units treat imported concentrates.

Binani Industries possesses a 25,000 t/y lead recycling plant (from batteries) at Wada in Maharashtra under the name of Binani Lead.

### Production of Principal Minerals and Metals

	2001-02	2002-03	2003-04(e)
Coal (Mt)	299	337	340
Crude oil (Mt)	31.7	33.0	38.4
Iron ore (Mt)	72	73	74
Finished steel (Mt)	29.3	32.5	34.2
Aluminium ('000 t)	617	685	830
Copper ('000 t)	317	381	395
Primary zinc ('000 t)	207	236	253
Primary lead ('000 t)	35	39	40

(e): estimated