PRIVATE SECTOR

Introduction

The Private Sector continued to play a dominant role in augmenting steel availability in the country. Their contribution in finished steel production increased to about 68% in 2003-04 as compared to 45% in 1992-93. Similarly, the private sector is also playing a significant role in the production of pig iron and sponge iron. Production of pig iron in the secondary steel sector was about 81% of the total production in the country. In the area of sponge iron the industry continued to the largest producer in the world.

During pre-liberalization phase, there was only one integrated steel plant in the private sector in the country i.e. Tata Iron & Steel Co. Ltd, which is in existence since 1907. In addition, there was a large number of mini steel plants (electric arc furnace units) and steel processing units (i.e. stand alone Hot/Cold rolling mills, galvanising and colour coating units etc.), a few sponge iron units and one pig iron unit. In the post-liberalization phase, the scenario changed with the setting up of several new/green field iron/steel plants. This was associated with structural changes in the sector. While steel plants based on world class capacity and state-of-the-art technologies (viz. Corex technology for iron making, twin shell electric arc furnace and thin slab casting compact strip mill, energy optimising furnaces) were commissioned, inefficient and un-competitive units continued to close down.

The performance of the five major private sector producers as well as the general performance of various sectors of the industry i.e. EAF Industry, Sponge Iron Industry, Pig Iron Industry etc. are given below:

TATA IRON AND STEEL COMPANY LIMITED(TISCO)

TISCO has an intergrated Steel Plant, with an annual crude steel making capacity of 4.0 Million Tonnes, located at Jamshedpur, Jharkhand.

Location of biodiversity rich habitats

The Steel Works is situated at Jamshedpur in the State of Jharkhand, India. The factory covers 800 hectares of land. West Bokaro Division in Hazaribagh District covers 2000 hectares land in which mining and coal beneficiation activities are performed. Jharia Division occupies 2500 hectares of land for its industrial, mining and domestic activities in the District of Dhanbad both in the State of Jharkhand. The Iron Ore and Dolomite Mines are located at Noamundi in the State of Jharkhand and at Joda, Katamati, Khodbond and Gomardih in the State of Orissa.

Over the years, Tata Steel has emerged as a thriving, nimble, steel enterprise, due to its ability to transform itself rapidly to meet the challenges of a highly competitive global economy and commitment to become a supplier of choice. Constant modernisation and introduction of state-of-the-art technology at Tata Steel has enabled it to stay ahead in the industry.

Tata Steel's four-phase Modernisation Programme in the steel works has enabled it to acquire the most modern steel making facilities in the world. Recently, Tata Steel commissioned its 1.2 million tonne capacity Cold Rolling Mill complex at 'Global Speed and Cost'. Its fifth phase of the Modernisation Programme leveraged the intellectual capabilities of its employees to generate sustainable value for the stakeholders. Most recently, it has embarked on a programme for expansion of its existing steel making capacity by 1million tonne to reach a rated capacity of 5 million tonnes per annum.

Tata Steel has continuously been on the growth path and is constantly striving to improve the EVA of the company by seizing the opportunities of tomorrow and by exploring newer avenues of operations such as a ferro-chrome and titanium.

Tata Steel, after completion of their four phases of modernization has achieved a production of 3.54 million tonnes of finished steel and 4.22 million tonnes of crude steel in 2003 – 2004, surpassing all previous records. The performance of TISCO was marked by higher volumes, richer product – mix and considerable achievement in the areas of cost reduction and improvement.

ESSAR STEEL LIMITED

Essar is a state of the art 2.4 metric tonnes per annum hot rolled steel coils plant situated at Hazira, Gujarat. It is India's first integrated Steel plant to receive both the ISO 9002 & ISO 14001 certifications.

Availability of the world's best and latest equipment and high levels of automation has ensured a niche position for Essar's high quality products not only within the county but also on a global front. Essar Steel Ltd is the single largest exporter of Flat products in the country with major exports spanning the globe viz., Far East, Southeast, Middle East, China, Europe and Africa.

The modifications carried out have benefited the company in terms of increase in productivity, reduction in cost & improvement in quality of the product.

Technological changes and process improvements

During the year 2003-04, all the up-gradation work was completed in the HBI Plant. Presently the capacity of the module is 110 T/hr as against the earlier level of 76 T/hr i.e. increase in productivity by 44.7%.

Similarly in-house modifications/innovations were carried out successfully in this calendar year in the Steel Melt Shop, Such as panels coating with refractory material. The slag door design has been changed to a cylinder-operated type, which has yielded an easy to maintain and higher reliable slag door operational practice. It has also yielded benefits in form of extraction of sensible heat from slag and facilitated holding of fines for higher yield.

ISPAT INDUSTRIES LIMITED (IIL) :

Ispat Industries Ltd. (IIL) has set up a 3 million tones per annum of hot rolled steel coil plant at Dolvi in Raigad District, Maharashtra. The Dolvi complex also has a modern blast furnace (setup by a group company Ispat Metallics India Limited) capable of producing 2.0 million tones per annum of Hot Metal / Pig Iron and a DRI plant with a capacity of 1.2 million tones per annum. It is ISO 9002 and ISO 14001 certified. Further, the complex envisages adding 110 MW captive power plant (which will use the BF gas) by the year 2005.

The steel plant is using the electric arc furnace route (CONARC process) for producing steel. In this project, IIL have uniquely combined the usage of hot metal and DRI (sponge iron) in the electric arc furnace for production of liquid steel. For casting and rolling of liquid steel, IIL have the state-of-the art technology called compact strip production (CSP) process, which is installed for the first time in India and produces high quality and specifically very thin gauges of HRC. IIL's products are well accepted in international markets.

Technological Improvements in sponge iron plant:

- Automated Lime coating system for high temperature operation to enhance productivity.
- Oxygen injection system to increase the Bustle gas temperature to enhance productivity.
- Process improved to consistently use high % of lump ore in the feed mix to reduce cost of production.

Operational Performance:

The operational performance of the DRI plant is given below.

All fig. In Mts

Installed Capacity	1999-00	2001-02	2002-03	2003-04
12,00,000	11,62,957	9,61,125	10,35,530	10,56,493

The operational performance of the HR Coils plant is given below.

All fig. In Mts

Installed Capacity	2001-02	2002-03	2003-04
15,00,000 18,00,000 from Aug'03	8,70,422	12,40,254	16,19,170

Production at Cold Rolling and Galvanising Complex, Kalmeshwar

All fig. In Mts

Product Name	Installed Capacity		1999-00	2001-02	2002-03	2003-04
	1999 to 2002	2002-04				
Cold Rolled Carbon Steel	300000	330000	269499	248371	331443	321189
Galvanised Coils	225000	325000	195154	199379	321584	316497
PVC Coated Sheets	50000	50000	19084	21767	33151	25544

JINDAL VIJAYANAGAR STEEL LIMITED(JVSL)

Jindal Vijayanagar Steel Limited (JVSL) is a 1.6 millions tonnes per annum hot rolled coils capacity, integrated steel plant based on Corex Process of oxygen iron making. The production facilities include 1.5 mtpa iron ore Beneficiation unit, 3 mtpa Pellet Plant, two Corex units 0.8 mtpa each, 2 x 130 t convertors, two slab casters and hot strip mill with state of art coil box technology. JVSL has a distinction of being certified to ISO-9001:2000 Quality Management System, ISO-14001:1996 Environment Management System and OHSAS 18001:1999 Occupational Health and Safety Management System. JVSL has also been conferred the National Quality Award among integrated steel plant category by Indian Institute of Metals for the year 2002 and Commendation Certificate for Strong Commitment to TQM from CII-Exim Bank.

Production Performance

During the year 2002-03 JVSL has produced 2.863 millions of pellets, 1.46 million tonnes of hot metal, 1.46 million tonnes of prime slabs and 1.42 million tonnes of hot rolled coils. The estimated production from April-03 to March-04 of HR coils is 1.54 million tonnes.

JINDAL STEEL & POWER LTD.

It is a Direct Reduced Iron- Mini Blast Furnace- Electric Arc Furnace based steel plant at Rajgarh, Chhattisgarh engaged in the production of long products, structurals and rails with captive iron ore, coal mines and power plant production performance during 2003-04.

S.No.	Item	Production	% increase over the last year
1.	Direct Reduced Iron	427909 M.T.	- 3.30%
2.	Blast Furnace (Hot Metal)	167213 M.T.	0.23%
3.	Ferro Chrome	15961 M.T.	- 17.00%
4.	Steel (Rounds, Blooms, Slabs)	203038 M.T.	21.63%
5.	Electric Power	8426 Lacs Kwh	7.69%
6.	Rail & Universal Beam Mill	54069 M.T. (RUBM)	Commissioned in Feb. 03

MT – Metric Tonnes

STATUS OF VARIOUS SEGMENTS OF PRIVATE SECTOR INDUSTRY

(I) Electric Arc Furnace based steel plants

(a) Status

	NUMBER	CAPACITY (IN TONNES)
COMMISSIONED UNITS	188	12778000
CLOSED UNITS	153	6059000
WORKING UNITS	35	6719000

(b) Production

(In '000 tonnes)

Category	2000 – 2001	2001 – 2002	2002 – 2003	2003-2004
Mild Steel	1162.6	965.2	1652.2	1817.3
Medium/High Carbon Steel	1386.3	1025.4	874.6	961.3
Alloy Steel	740.6	689.2	793.6	873.3
Stainless Steel	455.2	471.5	594.0	653.3
Others	165.8	171.4	313.4	344.8
Total Reported	3910.5	3322.7	4227.8	4650.0
Total Estimated	924.1	960.0	960.1	1056.0
Grand Total	4834.6	4282.7	5187.9	5706.0

(2) Hot Rolled long products units

(a) Status

	NUMBER	CAPACITY (IN TONNES)
COMMISSIONED UNITS	1271	24633000
CLOSED UNITS	527	10362000
WORKING UNITS	744	14271000

(b) Production

Production of Hot Rolled Long Product manufacturing units which are reporting their production to the office of the Development Commissioner for Iron & Steel, during the last three years and current year is as under: -

(In '000 tonnes)

Category	2000 – 2001	2001 -- 2002	2002 – 2003	2003-2004 (Prov.)
Bars/Rods (Incl. Squares)	2227.0	2403.7	2670.0	2803.6
Wire Rods	787.8	776.2	719.7	755.7

Structural	875.2	929.3	901.5	946.6
Hoops	7.7	7.6	20.4	21.3
Special Section	233.4	214.0	136.5	143.3
Slabs/Plates	570.6	605.5	582.3	611.4
Total Reported	4701.7	4936.3	5030.4	3961.9
Total Estimated	1692.7	1730.1	2173.5	2282.1
Grand Total	6394.4	6666.4	7203.9	7564.0

(3)Steel Wire drawing units

(a) Status

	NUMBER	CAPACITY (IN TONNES)
COMMISSIONED UNITS	94	1207000
CLOSED UNITS	61	760000
WORKING UNITS	33	447000

(b) Production

Production of Steel Wire Drawing Units, which are reporting their production to the office of the Development Commissioner for Iron & Steel during the last three years and current year is as under: -

(In '000 tonnes)

Category	2000 – 2001	2001 – 2002	2002 – 2003	2003-2004
Mild Steel	117.9	115.8	141.8	134.6
Medium/High Carbon Steel	196.3	200.7	157.3	149.5
Alloy Steel	11.1	10.2	12.7	12.0
Stainless Steel	11.0	10.7	11.4	10.8

Others	10.7	21.0	39.2	37.3
Total Reported	347.0	358.5	362.4	344.2
Total Estimated	171.6	25.5	3.3	3.2
Grand Total	518.6	384.0	365.7	347.4

(4) Hot Rolled steel sheets/strips/plates units

(a) Status

	NUMBER	CAPACITY (IN TONNES)
COMMISSIONED UNITS	13	6628000
CLOSED UNITS	5	263000
WORKING UNITS	8	6365000

(b) Production

Production of Hot Rolled Steel Sheets/Strips, which are reporting their production to the Development Commissioner for Iron & Steel, during the last three year is given below and current year is as under: -

(In '000 tonnes)

Category	2000 -- 2001	2001 – 2002	2002 – 2003	2003-2004
Hot Rolled Steel Sheets/Strips	3843.7	3963.8	5090.0	5630.0
Plates	308.5	246.2	205.0	222.0
Total Reported	4152.2	4210.0	5295.0	5852.0

(5) Cold Rolled steel sheets/strips units

(a) Status

	NUMBER	CAPACITY (IN TONNES)
COMMISSIONED UNITS	85	4592000
CLOSED UNITS	31	700000

WORKING UNITS	54	3892000

(b) Production

Production of Cold Rolled Steel Sheets/Strips Units, which are reporting their to the Development Commissioner for Iron & Steel, production during the last three-year and current year is given below: -

(In '000 tonnes)

Category	2000 -- 2001	2001 – 2002	2002 – 2003	2003-2004
Mild steel	2418.7	2623.2	2862.4	2948.8
Medium Carbon Steel	413.9	144.2	70.2	72.4
High Carbon Steel	---	---	---	---
Alloy Steels	0.3	0.4	0.5	0.4
Stainless Steel	69.1	89.2	169.6	174.6
Others	151.4	235.3	129.8	133.7
Total Reported	3053.4	3092.2	3232.5	3329.5
Total Estimated	81.4	172.7	141.7	146.0
Grand Total	3134.8	3264.9	3374.2	3475.5

(6) GP/GC, PVC/Vinyle coated sheets/strips units

(a) Status

	NUMBER	CAPACITY (IN TONNES)
COMMISSIONED UNITS	22	2203000
CLOSED UNITS	4	144000
WORKING UNITS	18	2059000

(b) Production

Production of GP/GC Sheets/Strips Units, which are reporting their production to the office of the Development Commissioner for Iron & Steel,during the last three years and current year is as under: -

(In '000 tonnes)

Category	2000 – 2001	2001 -- 2002	2002 – 2003	2003-2004
GP/GC Sheets/Strips (including colour Coated)	1500.4	1835.7	2124.0	1775.0
Total Reported	1500.4	1835.7	2124.0	1775.0

(7) Tin Plate units

(a) Status

	NUMBER	CAPACITY (IN TONNES)
COMMISSSIONED UNITS	3	152000
CLOSED UNITS	1	60000
WORKING UNITS	2	92000

(b) Production

Production of Tin Plate Units, which are reporting their production to the office of the Development Commissioner for Iron & Steel, during the last three years and current year is as under: -

(In '000 tonnes)

Category	2000 -- 2001	2001 – 2002	2002 – 2003	2003-2004
Oil Can Size	102.0	102.4	108.0	112.0
Non Oil Can Size	---	---	---	---
Total Reported	102.0	102.4	108.0	112.0

(8) **Pig iron industry**

Pig Iron is one of the basic raw materials required by the foundry and casting industry for manufacture of various types of castings for the engineering sector. M/s. Usha Martin Industries Limited, M/s. Jindal Steel & Power Ltd. and M/s. Ispat Industries Ltd. have integrated the Mini Blast Furnace (MBF) and are using the hot metal in the charge – mix directly for manufacture of steel through Electric Arc Furnace. M/s. Hospet Steel, a Joint Venture of Kalyani and Mukand and M/s. Southern Iron and Steel Company Limited have integrated their MBF with Energy Optimizing Furnace for manufacture of steel. The excess hot metal produced by them supplements the pig iron production. Besides MBF, a COREX Plant (alternative to conventional MBF/BF) along with down – stream steel making through Basic Oxygen Furnace (BOF) which has been commissioned in Karnataka by Jindal Vijaynagar Steel Limited, also supplements the production of pig iron.

The production of pig iron during the last 5 years is given in the following table :-

(In million tonnes)

Sl. No.	Name of the unit	1999 – 2000	2000 -- 2001	2001 – 2002	2002 – 2003	2003-2004(Prov.)
1.	Private/ Secondary Producers	1.955 (61%)	2.434 (72%)	3.055 (75%)	4.178 (79%)	4.250 (81%)

NB. : The figures within brackets indicate the percentage contribution by the respective sectors. Production data in respect of Private/Secondary Sector Upto December 2003 has been reported to the level of 70% .

The pig iron industry faced an unprecedented increase in the price of imported metallurgical coke. To give relief to the industry, Government reduced import duty on metcoke from 10 % to 5%.

(9) Sponge iron industry

India is the world's largest producer of Sponge Iron. The growth of sponge iron especially during the last 5/6 years in terms of capacity and production has been substantial. The installed capacity of sponge iron increased from 1.52 million tonnes per annum in 1990 – 1991 to 8.75 million tonnes per annum in 2002 – 2003. The production has increased from 0.9 million tonnes in 1990-1991 to 8.085 million tonnes in 2003-2004. As on 31.12.2003, there were 54 sponge iron units installed in the country having a capacity of 8.75 million tonnes per annum. Out of this, there were 51 Coal Based Units with a capacity of 4.45 million tonnes per annum. One

coal based unit with a capacity of 30 thousand tonnes per annum is lying closed. There are 3 gas based units with a total capacity of 4.3 million tonnes per annum.

The production of sponge iron units, which are reporting their production during the last three years and the current year is given as under: -

(In '000 tonnes)

	2000 – 2001	**2001 -- 2002**	**2002 – 2003**	**2003-2004**
Total Reported	5484.2	5444.0	6908.4	8085.0
Total Estimated	---	---	---	---
Grand Total	5484.2	5444.0	6908.4	8085.0

(10) **Coke Manufacturing Units**

Integrated steel plants of TICSO, RINL and SAIL used to have their own coke oven plants to meet the coke requirements of their blast furnaces for production of hot metal/pig iron. Over time, small pig iron plants based on mini-blast furnace technology came into existence to produce pig iron. These plants are mostly using imported met coke from China. Wild fluctuation in the prices and its availability in the international market has forced the Indian iron and steel industry to develop their own coke oven plants. Highlights of some of the coke oven plants are as under:-

Konark Met Coke Limited (KMCL) is jointly promoted by MMTC Limited. Industrial Promotion and Investment Corporation of Orissa Limited (IPICOL) and Orissa Mining Corporation (OMC). It has set up a Coke Oven Battery having annual production capacity of 0.81 million tonnes of Blast Furnace (B.F.) Grade Coke with a By-Product Plant to produce Crude. Tar and Ammonium Sulphate and a Captive Power Plant of capacity 62.50 MW. National Mineral Development Corporation Limited (NMDC), a Government of Undertaking has picked up equity to the extent of Rs.49 crore. Bharat Heavy Electricals Limited (BHEL) is also a shareholder in KMCL.

(11) **Ship breaking industry**

Ship breaking is an eco-friendly activity and is now known as the Ship recycling industry. The most positive aspect of this industry is that more than 90% is its output is recycled. About 2 to 2.5 million tones of steel produced through such recycling of ships saves about 6.5 million tones of natural resources like iron-ore, coal etc. for production of equivalent quantity of steel through integrated steel plants and restores ecological balance to that extent. It also saves substantial electric power, which is in short supply in the country.

The Industry is highly labour intensive and provides employment, both direct and indirect to about 1 lakh people. Availability of rerollable scrap from breaking of old ships is a major source of raw material for the rerolling industry.

Ship recycling is concentrated in the Western region in the State of Gujarat, catering to the markets mainly of Gujarat, MP, Rajasthan and Western UP. The entire Southern, Northeast, Eastern UP and rest of country do not receive any supplies from ship recycling.

The type of steel scrap generated out of ship breaking activity is as follows:-

Re-rollable scrap - 65%

Melting scrap - 7-8%

Besides a host of other materials including machinery and equipment are generated.

Re-rollable scrap helps in bridging the gap between demand and availability of semi-finished steel for Re-rolling mills. Melting scrap arising from ship breaking activity is used as an input to the Electric Arc Furnace and Induction furnaces in the secondary sector to produce semi-finished steel either for conversion to long products in their downstream facility (Re-rolling) mills or supply to other Re-rolling units.

Shipbreaking output during the last four years is given below:

Year	Number of ships brought for breaking	Tonnage (Mil. LDT)
2000-2001	373	2.25
2001-2002	428	2.94
2002-2003	390	2.68
2003-04	375	2.17

(12) Induction Furnace industry

During 2002 – 2003, it is estimated that 636 units were in operation. The total production of induction furnace units was estimated to be around 4.75 million tonnes against estimated production of 4.30 million tonnes in 2001-02.

During 2003-2004 (upto December 2003), it is estimated that 650 units are in operation. They are expected to produce about 4.9 million tonnes in 2003-04. Joint Plant Committee has undertaken an All India Base-line Survey of the Induction Furnace industry to assess the present status.