

IRON & STEEL AND SCRAP



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IRON & STEEL AND SCRAP

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**GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES**

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9 Iron & Steel and Scrap

Steel is decidedly the vital component of a country's economy and is considered amongst the driving force of modernisation. The level of per capita consumption of steel is treated as one of the important indicators of socio-economic development and living standards in any country. Steel continues to be the foremost engineering material, environment-friendly and recyclable.

The finished steel production in India has grown from a mere 1.1 million tonnes in 1951 to 87.68 million tonnes in 2013-14. The growth in the steel sector in the early decades after independence was mainly in the public sector units. However, following the adoption of new economic policy and subsequent deregulation and decontrol of Indian Iron & Steel Sector, the 1990s witnessed accelerated growth in the private sector, catapulting its share of finished steel production from 45% in 1992-93 to 84.7% in 2013-14.

Steel exports from India began in 1964. Exports in the first five years were mainly the result of low demand in the domestic Iron and Steel market. Exports subsequently declined due to revival of domestic demand. India once again started exporting steel in 1975 only to witness slump due to rising domestic demand. Post liberalisation, a rejuvenation in the steel sector resulted in large-scale exports of iron and steel. In 1991-92, the main producers exported 3.87 lakh tonnes iron & steel as against 11.96 million tonnes in 2013-14, including finished steel exports of 5.12 million tonnes. Though the country's production of iron & steel is sufficient to meet the domestic demand, it imports mainly finished/semi-finished steel and iron & steel (scrap) to meet requirement and supply of essential grades.

Liberalisation of the Indian Steel Sector

The Government's new economic policies have opened up opportunities for expansion of the Steel Industry. With a view to accelerating growth in the steel sector, the Government since 1991 has been initiating and implementing a number of policy measures. These measures have impacted the Indian steel sector to achieve a positive growth.

NATIONAL STEEL POLICY-2005

The National Steel Policy (NSP) was announced in 2005 and is presently under review and Ministry of Steel has formulated a Committee in May, 2012 to review the existing National Steel Policy 2005.

Further, the new National Steel Policy-2012 is being framed and some of the major objectives of the draft National Steel Policy 2012 are enumerated below:

- a) To attract investments in Indian steel sector from both domestic and foreign sources and facilitate speedy implementation of investment intentions on board so far, so as to attain crude steel capacity level of 300 million tonnes by 2025-26 to meet the domestic demand fully.
- b) To ensure easy availability of vital inputs and necessary infrastructure to achieve a projected production level of 275 million tonnes by 2025-26.
- c) To provide greater focus on Research and Development (R&D) for developing indigenous technologies, especially for finding solutions for optimum utilisation of indigenous resources and mitigating

- the concerns of environment and climate change.
- d) To develop indigenous capabilities of design, engineering and manufacturing of critical capital equipment required for steel production.
 - e) To encourage production and consumption of value added steel by providing necessary focus on availability and product development, especially for (a) meeting the special requirements of rural India; b) meeting the special requirement of auto, power, construction and shipping sectors; and c) producing lighter but stronger steel which helps in achieving higher energy efficiency in end applications and also helps in mitigating the concerns on environment, climate change and human health.
 - f) To foster competition at the market place, discourage cartelisation and encourage production of quality steel for maximisation of consumer welfare and for protecting the interests of common man and the producers against unfair practices of domestic and overseas competitors.
 - g) To ensure sustainable development of the industry with minimum possible displacement of local people and loss to their livelihoods and with minimum damage to the environment by adopting best practices in the production processes and ensuring adoption of environment friendly practices by the investors.
 - h) To become globally competitive by achieving efficiency levels at par with the global standards, especially in areas such as energy consumption, material efficiency, quality of steel, water consumption, productivity of major iron/ steel making equipment, pollution levels and CO₂ emissions.

Steel Sports Policy – July, 2014

The ‘Steel Sports Policy’ aims at consolidating the progress made so far, formulating new initiatives and for making periodic adjustments that shall enable the Ministry of Steel and its ten Public Sector Undertakings – Steel Authority of India Limited (SAIL), NMDC Limited, Rashtriya Ispat Nigam Limited (RINL), MOIL Limited, MSTC Limited, Ferro Scrap Nigam Limited (FSNL), Hindustan Steelworks Construction Limited (HSCL), MECON Limited, KIOCL Limited and the Bird Group of Companies to promote sports with resolve and vigour, as well as provide excellent opportunities to promising sportspersons.

The objectives of the Policy are:

- i. Promoting excellence in sports and allied activities
- ii. Encouraging promising sportspersons
- iii. Promoting existing performers
- iv. Setting up and managing sports complexes and infrastructure by the Steel PSUs, efficiently and effectively at different locations
- v. Encouraging sportspersons to ensure increased participation in national and international championships
- vi. Recognising talent in sports and rewarding young women and men, who have achieved excellence in sports as also their coaches/mentors who have been

instrumental in grooming such sportspersons and to felicitate them appropriately

vii. Having a focus on encouraging sports that do not fall in the category of conventional sports

viii. Be a part of the endeavour to raise national and international level teams in identified games through scientific coaching, providing state of the art equipment and infrastructure

ix. Promoting rural sports

x. Providing opportunity to employees of the Ministry of Steel and the Steel PSUs / organisations and their families to participate in games and sports to promote good health, physical fitness and sports consciousness

xi. To generate corporate goodwill and brand equity by sponsoring / co-sponsoring various sports / games events at State, National and International level

STRUCTURE AND ROLE OF INDIAN STEEL INDUSTRY

India has risen to the 4th position as largest crude steel producing country in the world in 2013-14. The Indian Steel Industry comprises integrated steel plants in the primary sector using BF-BOF route of iron & steel production. In the primary sector, there are 13 integrated steel plants in the public and private sectors. In 2013-14, the reported production of hot metal was 14.45 million tonnes; crude steel 13.6 million tonnes; saleable steel 12.9 million tonnes respectively by SAIL, a Public Sector Company.

The secondary sector constitutes Electric Arc Furnace/Induction Furnace, pig iron/sponge iron units, re-rolling units, HR units, CR units, galvanised/colour coated units, tin plate units,

wire-drawing units, etc. for producing either semi-finished or finished steel.

Traditionally, Indian steel industry was classified into Main Producers and Secondary Producers. However, with the coming up of larger capacity steel making units of different process routes, the classification has been characterised as Main Producers & Other Producers. Other Producers comprise Major Producers in Private Sector namely, Tata Steel, Essar Steel, JSW Steel, Jindal Steel & Power Ltd, Bhushan Steel Ltd and Bhushan Power & Steel Ltd as well as large number of Mini Steel Plants based on Electric Furnaces & Energy Optimising Furnaces (EOF). Besides the steel producing units, there are a large number of Sponge Iron Plants, Mini Blast Furnace units, Hot & Cold Rolling Mills & Galvanising/Colour Coating units which are spread across the country. India's crude steel capacity and production in 2013-14 was 99.57 million tonnes, and 81.54 million tonnes respectively while the capacity utilisation was 82%.

The structure of the Indian Steel Industry in 2013-14 is given in Table-1. Production of iron & steel by main producers and others during 2009-10 to 2013-14 is furnished in Table-2 and by public/private sector in Table-3. The details on plant-wise capacity and production of hot metal and crude/liquid steel are given in Table-4. Table-5 elucidates the production of crude/liquid steel by BOF and EAF/IF routes. Prices of steel are provided in Table-6.

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Table – 1 : Structure of the Indian Steel Industry, 2013-14(P)

(In million tonnes)

Sector	Type of units	Working		Non-working		Total		Production	
		No. of units	Annual capacity	No. of units	Annual capacity	No. of units	Annual capacity	2012-13(R)	2013-14(P)
Primary (Crude/ Liquid Steel)	Integrated plants (Oxygen route)	13	35.55	–	–	13	35.55	33.35	35.52
Secondary	Electric Arc Furnace (EAF)	47	25.76	0	0	47	25.76	19.38	18.59
	Induction Furnace (IF)	1321	33.95	–	–	1321	33.95	25.69	27.58
	Pig iron	>19	+4.83	–	–	>19	+4.83	6.87	7.95
	Sponge iron	324	37.3	NA	NA	324	37.3	23.01	22.87
	HR (sheets/strips/ plates rerolling units)	1720	30.98	568	4.21	2288	35.19	NA	NA
	HR steel (sheets, strips, plates units)	12	14.39	–	–	12	14.39	NA	NA
	CR Mills (sheets & strips)	65	9.55	–	–	65	9.55	NA	NA
	Steel wire drawing units	35	0.71	65	0.73	100	1.44	NA	NA
	GP/GC/PVC - coated sheets/strips	20	5.06	–	–	20	5.06	NA	NA
	Tin plate	1	0.10	2	0.11	3	0.21	NA	NA

Source: Annual Report of Ministry of Steel, 2013-14.

Table – 2 : Production of Iron and Steel, 2009-10 to 2013-14(P)

(In '000 tonnes)

Item/producers	2009-10	2010-11	2011-12	2012-13(R)	2013-14(P)
I. Pig Iron : Total	5884	5684	5371	6870	7950
Main Producers	731	579	502	674	552
Other Producers	5153	5105	4869	6196	7398
II. Sponge Iron : Total	24326	25341	24971	23006	22872
Gas Based	6148	6071	5166	3940	2683
Coal Based	18178	19270	19805	19066	20189
III. Crude Steel : Total	65839	70672	74291	78416	81693
Main Producers	22969	23543	23314	24417	25932
ASP + VISL	308	308	291	195	135
Other Producers					
EAF Units (Including Corex & MBF/EOF)	22738	23880	26750	28119	28047
Induction Furnaces	19824	22941	23936	25685	27579
IV. Finished Steel for Sale (Alloy/Non-alloy) : Total	60624	68621	75696	81680	87675
Main Producers	18038	18407	17978	19244	22196
Other Producers	51093	57890	66426	70376	73382
Less: Inter Plant Transfer/Own Consumption	8507	7676	8708	7940	7903

Figures rounded off.

Source: Ministry of Steel, Annual Report, 2013-14 and 2014-15

EAF: Electric Arc Furnace, MBF: Mini Blast Furnace, EOF: Energy Optimising Furnace.

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Table – 3 : Production of Iron and Steel, 2009-10 to 2013-14 (P)
(By Sectors)

(In '000 tonnes)

Item/producers	2009-10	2010-11	2011-12	2012-13(R)	2013-14(P)
I. Pig Iron : Total	5884	5683	5371	6870	7950
Public Sector	731 (12.4%)	579 (10.2%)	502 (9.3%)	674 (9.8%)	552 (6.9%)
Private Sector	5153 (87.6%)	5104 (89.8%)	4869 (90.7%)	6196 (90.2%)	7398 (93.1%)
II. Crude/Liquid Steel : Total	65839	70672	74291	78416	81693
Public Sector	16714 (25.4%)	16996 (24%)	16477 (22.2%)	16482 (21%)	16777 (21.1%)
Private Sector	49125 (74.6%)	53676 (76%)	57814 (77.8%)	61934 (79%)	64916 (79%)
III. Finished Steel for Sale (Alloy/Non-alloy) : Total	60623	68620	75698	81681	87675
Public Sector	13018 (21.5%)	13249 (19.3%)	12523 (16.5%)	12818 (15.7%)	13439 (15.3%)
Private Sector	47605 (78.5%)	55371 (80.7%)	63175 (83.5%)	68863 (84.3%)	74236 (84.7%)

Figures rounded off.

Source: Ministry of Steel, Annual Report, 2012-13 and 2013-14.

Table – 4 : Capacity and Production of Hot Metal and Crude/Liquid Steel, 2012-13 and 2013-14 (P)
(By Principal Producers)

(In '000 tonnes)

Unit	Annual installed capacity		Production			
	Hot metal	Crude/Liquid steel	Hot metal		Crude/Liquid steel	
			2012-13(R)	2013-14(P)	2012-13(R)	2013-14(P)
Public Sector						
Bokaro Steel Plant (Jharkhand)	4585	4360	4124	4100	3757	3776
Bhilai Steel Plant (Chhattisgarh)	4700	3925	5202	5377	5008	5136
Rourkela Steel Plant (Odisha)	2120	1900	2366	2538	2209	2291
Durgapur Steel Plant (West Bengal)	2088	1802	2241	2191	2034	2019
IISCO Steel Plant, Burnpur (West Bengal)	550	500	231	220	135	127
Visvesvaraya Iron & Steel Plant (Karnataka)	205	118	94	21	64	13
Salem Steel Plant (Tamil Nadu)	–	320	–	–	73	91
Alloy Steel Plant, Durgapur (West Bengal)	–	264	–	–	131	122
Visakhapatnam Steel Plant (Andhra Pradesh)	3400	3000	3814	3769	3071	3202
IDCOL Kalinga Iron Works Ltd	170	–	–	–	–	–
Private Sector						
JSW Steel Ltd (Karnataka)	NA	6800	NA	NA	8518	9257
Tata Steel Ltd (Jharkhand)	NA	9700	8858	9898	8130	9155
JSW Steel (Maharashtra)	2000	3000	NA	NA	2711	2971
Essar Steel Ltd (Gujarat)	NA	4600	NA	NA	4163	3245
Jindal Steel & Power Ltd (Chhattisgarh)	1670	3000	NA	NA	3032	2836
Lloyds Steel Industries Ltd (Maharashtra)	–	850	–	NA	601	566
Jindal Stainless Ltd	–	NA	–	NA	1107	1111
Bhushan Steel Ltd	–	–	–	–	–	1084
Bhushan Power & Steel Ltd	–	–	–	–	–	1714

Figures rounded off.

Source: Annual Report of Ministry of Steel, 2012-13, 2013-14 and individual plants.

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**Table – 5 : Production of Crude/Liquid Steel, 2009-10 to 2013-14 (P)
(By Route)**

	(In '000 tonnes)				
Route/plant	2009-10	2010-11	2011-12	2012-13(R)	2013-14(P)
All Routes : (A+B) Total	65839	70672	74291	78416	81694
A. Oxygen Route : Total	29832	30646	31226	33349	35522
Bhilai Steel Plant (Chhattisgarh)	5108	5329	4901	5008	5136
Durgapur Steel Plant (West Bengal)	1966	1961	1914	2034	2019
Rourkela Steel Plant (Odisha)	2128	2160	2170	2209	2291
Bokaro Steel Plant (Jharkhand)	3599	3592	3647	3757	3776
IISCO Steel Plant (West Bengal)	400	411	330	135	127
Salem Steel Plant (Tamil Nadu)	-	-	96	73	91
Visvesvaraya Iron & Steel Ltd (Karnataka)	103	108	91	64	13
Visakhapatnam Steel Plant (Andhra Pradesh)	3205	3235	3128	3071	3202
Tata Steel Ltd (Jharkhand)	6563	6856	7128	8130	9155
JSW Steel Ltd (Karnataka)	6254	6508	7442	8518	9257
Other Oxygen Route	506	486	379	350	455
B. Electric Route : Total	36007	40026	43065	45067	46172
Electric Arc Furnace	16180	17085	19129	19382	18593
Alloy Steel Plant, Durgapur (West Bengal)	205	200	200	131	122
Essar Steel Ltd (Gujarat)	3474	3392	4348	4163	3245
JSW Ispat Steel Ltd (Maharashtra)	2689	2377	2466	2711	2971
Jindal Steel & Power Ltd (Chhattisgarh)	1961	2270	2759	3032	2836
Lloyds Steel Ltd (Maharashtra)	505	553	620	601	566
Jindal Stainless Ltd (Haryana)	679	703	752	1107	1111
Bhushan Steel Ltd	-	-	-	-	1084
Bhushan Power & Steel Ltd	-	-	-	-	1714
Other Electric Arc Furnace Route	6667	7590	7984	7637	4944
Electric Induction Furnace	19827	22941	23936	25685	27579

Figures rounded off.

Source: Ministry of Steel, Annual Report, 2012-13 and 2013-14..

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**Table – 6 : Prices of Steel, 2011-12 to 2013-14
(Domestic Markets)**

(In ₹ per tonne)

Grade	Market	2011-12	2012-13	2013-14
TMT Bars (ISI, 8 mm)	Delhi	34,742	36,741	36,806
Joists (150 x 75 mm)	"	32,066	34,407	34,502
Channels (75 x 40 mm)	"	32,671	35,214	38,302
MS Squares (8 mm)	"	33,742	35,964	36,010
MS Angles (25 x 3 mm)	"	34,532	36,835	36,862
Melting Scrap	"	27,679	30,421	29,423
Induction Ingots	"	-	35,024	35,506
Blooms (SAIL, 150 mm)	Mandi Gobindgarh	39,035	39,321	37,656
Melting Scrap (rolling)	"	29,853	31,314	29,188
MS Rounds (10 mm)	"	38,219	40,590	38,680
MS Squares (8 mm)	"	37,396	39,988	38,637
MS Angles (25 x 3 mm)	"	40,256	43,019	41,690
Joists (150 x 75 mm)	"	30,508	32,924	33,071
Induction Ingots (round)	"	35,891	37,375	36,362
Old Ship Breaking Scrap	"	32,427	34,358	34,140
Arc Ingots	Mumbai	-	35,217	35,908
Joists (150 x 75 mm)	"	30,626	33,034	33,185
MS Angles (40 x 6 mm)	"	32,892	35,278	35,577
Induction Ingots	"	30,606	34,499	34,908
Melting Scrap	"	27,740	28,450	28,715
TMT Bars (local 8 mm)	"	32,975	35,253	35,467
MS Rounds (8 mm)	"	31,915	34,051	37,867
Concast Billet Ingots	"	-	35,234	35,623
TMT Bars (ISI, 8 mm)	Kolkata	28,389	31,725	32,025
MS Squares (8 mm)	"	28,085	30,338	30,272
MS Angles (25 x 3 mm)	"	34,092	36,416	36,472
Channels (75 x 40 mm)	"	29,221	31,736	31,550
Joists (150 x 75 mm)	"	25,932	29,441	30,215
Induction Ingots	"	28,048	32,486	33,156
Melting Scrap	"	25,519	30,749	30,487
Arc Ingots	"	27,913	33,118	33,604
Concast Billet Ingots	"	28,954	32,747	33,877

Source: Minerals & Metals Review.

Finished Steel

The Indian Steel Industry continued to record increased production of finished steel from 60.62 million tonnes in 2009-10 to 87.68 million tonnes in 2013-14. Finished steel produced by the steel plants of SAIL in 2013-14 was 10.12 million tonnes. In 2013-14, Visakhapatnam Steel Plant of Rashtriya Ispat Nigam Ltd produced 2.81 million tonnes and Tata Steel produced 8.76 million tonnes. JSW Steel (Vijayanagar) is the largest finished steel producer among private sector integrated steel plants. JSW Steel produced 11.86 million tonnes saleable steel in 2013-14. Various finished steel products produced by principal steel plants are furnished in Table-7.

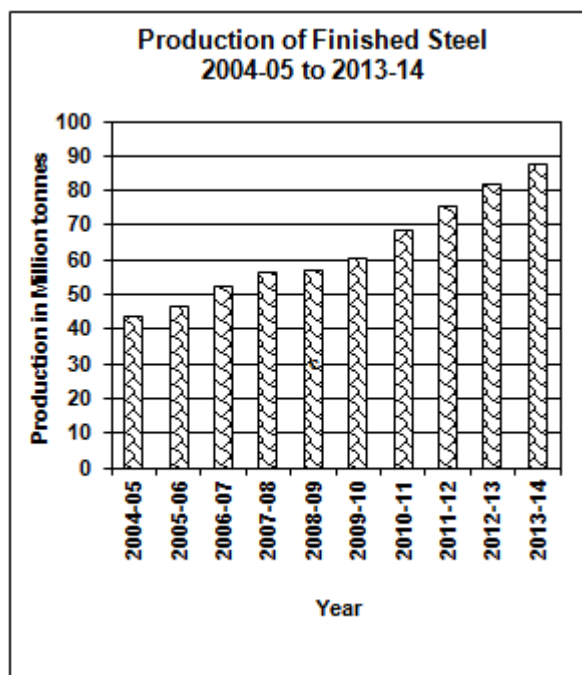
Electric Arc Furnace (EAF)

Steel produced in the Secondary Sector is mostly by recycling of steel scrap using Electric Arc Furnace (EAF). Presently, there are 47 EAF based steel plants operational in the country with an aggregate capacity of 25.76 million tonnes per annum. The reported production of steel ingots/concast billets by EAF units in 2013-14 was estimated at 18.59 million tonnes as against 19.38 million tonnes in 2012-13 (Table-5).

The recent developments in EAF technology, viz, to increase oxygen consumption, to reduce power consumption and to reduce tap time have led to increase in metal production. The development of thin slab casting has made EAF route more productive. This route enables slab strips rolling at lesser cost, facilitating production of cheaper strips/sheets than those that can be achieved through BF/BOF route.

Induction Furnace (IF)

Presently, in India, EAF based industries are yet to switch over to induction furnace route. An induction furnace is an electrical furnace in which heat is generated through electro-magnetic induction in an electrically conductive medium.



Induction furnaces use steel melting scraps, sponge iron and pig iron/cast iron. On an average, the proportion of these items is 40% sponge iron + 10% cast iron or pig iron and the remaining is steel melting scraps. Induction furnace has capability to operate on a charge up to 85% DRI (sponge iron). There are 1,321 induction furnaces with an aggregate capacity of 33.95 million tonnes. These units reported production of about 27.58 million tonnes steel in 2013-14 as against production of 25.69 million tonnes in 2012-13.

Pig Iron

Pig iron is one of the basic raw materials required by the foundry & casting industry for manufacturing various types of castings for the engineering section. The main sources of pig iron have traditionally been the integrated steel plants of SAIL besides plants of Tata Steel Ltd and Rashtriya Ispat Nigam Ltd. Domestic production of pig iron lags behind and is not in tandem with the demand. Efforts were, therefore, made to increase pig iron manufacturing facilities in the secondary sector.

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Table – 7 : Various Finished Steel Products Produced by Principal Steel Plants

Plant	Products
Bokaro Steel Plant (Jharkhand)	Plates, HR coils, HR sheets, CR coils, CR sheets, GP/GC sheets, TMBP.
Durgapur Steel Plant (West Bengal)	Bars & rods, rails & railway materials, wheels and axles, fish plates, sleeper structurals, bars, rods, TMT bars, skelp, bloom, billets, slabs.
Rourkela Steel Plant (Odisha)	Flat products, bars and rods, plate, HR coil, CR coil, CR sheets, GP/GC sheets, electrical sheets, electrolytic tin plates, spirally welded large dimension pipes.
Bhilai Steel Plant (Chhattisgarh)	Billets, slabs, rails & railway materials, heavy structurals and squares, plates, merchant products, wire rods, plates and blooms.
IISCO Steel Plant (West Bengal)	Bars & rods, rail & railway materials, foundry & pipes and structural steel.
Visvesvaraya Iron & Steel Ltd (Karnataka)	Stainless steel, tool steel, other alloys & steel, bearing steel, spring steel, free cutting steel, constructional steel (a) carbon steel, (b) case hardening steel & (c) heat treatable steel.
Visakhapatnam Steel Plant (Andhra Pradesh)	Steel products in long categories, finished steel (round & square), wire rods, re-bars, angles (equal & unequal), sections, channels, beams, saleable billets, flat products, light & medium merchant products (bars), medium merchant products (structural).
Tata Steel Ltd (Jharkhand)	Bars & rods, HR sheets and strips, CR coils, rolled/forged bars & structurals, plates, GP/GC sheets.
JSW Steel Ltd (Karnataka)	Plates, HR sheets, HR coils, CR coils/sheets, GP/GC sheets.
Ispat Industries Ltd (Maharashtra)	HR coils, CR coils/sheets, GP/GC sheets.
Essar Steel Ltd (Gujarat)	Plates, HR sheets, HR coils, CR coils/sheets, GP/GC sheets.
Jindal Steel & Power Ltd (Chhattisgarh)	Plates, structurals, HR coils, rails & railway materials.

Source: Annual Report of Ministry of Steel, 2011-12, 2012-13, 2013-14 and information from individual plants.

As a result of various policy initiatives taken by the Government, private sector showed considerable interest in setting up new pig iron units, especially in the post-liberalised period. This has resulted in drastic change in the contribution of other producers (private/secondary sector units) from merely 8% in 1991-92 to about 93.1% by 2013-14. In 2013-14, about 7.95 million tonnes pig iron was produced. The

production of pig iron by public and private sector plants is furnished in Table-3. The share of private/secondary producers in the years 2012-13 and 2013-14 was around 90.2% and 93.1%, respectively, in spite of the unprecedented increase in the prices of imported metallurgical coke that the industry was constrained with. Location and capacity of principal pig iron units in private sector are furnished in Table - 8.

Table – 8 : Location and Capacity of Principal Pig Iron Units

(In lakh tonnes)

Sl.No.	Unit	Location	Capacity
1.	Lanco Industries Ltd	Chittoor, Andhra Pradesh	2.25
2.	Sathavahana Ispat Ltd	Anantapur, Andhra Pradesh	1.20
3.	Jayaswal NECO Industries Ltd	Raipur, Chhattisgarh	7.50
4.	Sesa Goa Ltd	Bicholim, Goa	1.80
5.	Usha Martin Industries	Jamshedpur, Jharkhand	1.10
6.	JSW Steel Ltd	Bellary, Karnataka	7.20
7.	Kalyani Ferrous Industries Ltd	Koppal, Karnataka	1.20
8.	Kirloskar Ferrous Industries Ltd	Koppal, Karnataka	2.40
9.	KIOCL Ltd	Mangalore, Karnataka	2.27
10.	Usha Ispat Ltd	Redi, Maharashtra	3.00
11.	JSW Ispat Steel Ltd	Dolvi, Raigad, Maharashtra	20.00
12.	Kalinga Iron Works	Barbil, Kendujhar, Odisha	1.70
13.	Kajaria Iron Castings Ltd	Durgapur, West Bengal	1.10
14.	Electrosteel Castings Ltd	Khurdah, West Bengal	1.10
15.	Tata Metaliks Ltd	Kharagpur, West Bengal	0.90
16.	Sona Alloys Pvt. Ltd	Satara, Maharashtra	3.14
17.	Aparant Iron & Steel Pvt. Ltd	Sanguem, Goa	1.55

Source: Development Commissioner for Iron & Steel, Ministry of Steel, Kolkata and individual plants.

Sponge Iron

India is the largest producer of sponge iron in the world. Sponge is produced from iron ore by using non-coking coal. Direct reduced iron (DRI), called as sponge iron is a metallic material formed by reduction of iron oxide at temperatures below the fusion point of iron. Hot briquetted iron (HBI) is a product obtained after densification process where the DRI feed material is at temperature more than 650°C at the time of moulding (hot briquetting) with density more than 5.0 g/cm³.

During early 1990s, sponge iron industry was specially promoted to provide an alternative to steel melting scrap which was increasingly becoming scarce. The production of sponge iron during the last five years is given in Table-2. The installed capacity of sponge iron has also increased over the years from 1.52 million tonnes in 1990-91 to currently at 37.30 million tonnes, which includes 3 gas-based units having

9.3 million tpy capacity. The production has risen from 0.9 million tonnes in 1991-92 to about 22.87 million tonnes in 2013-14. Over the years, the coal-based route has emerged as a key contributor to overall production; its share has increased from 63% in 2004-05 to 88% in 2013-14. About 80% coal-based sponge iron produced in the world comes from India. However, the constraints faced by sponge iron industry include non-availability of right grade of iron ore and non-coking coal at affordable prices.

Production of the sponge iron in the country has also resulted in providing an alternative feed material to steel melting scrap which was hitherto imported in large quantities by the Electric Arc Furnace units and the Induction Furnace units for steel making. This has resulted in a considerable saving in foreign exchange. The available data on annual installed capacity of principal sponge iron units are given in Table-9.

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Table – 9 : Capacities of Principal Sponge Iron (DRI) Plants

(In lakh tonnes)

Unit	Location	Capacity
Gas-based		
Essar Steel Ltd	Hazira, Gujarat	68.00
Welspun Maxsteel Ltd (formerly Vikram Ispat)	Salav, Raigad, Maharashtra	9.00
JSW Steel (formerly Ispat Industries Ltd)	Geetapuram, Dolvi, Raigad, Maharashtra	16.00
Coal-based		
Action Ispat & Power Pvt. Ltd	Marakuta & Pandaripathar, Jharsuguda, Odisha	2.50
Adhunik Metaliks Ltd	Chandrihariharpur, Sundergarh, Odisha	1.80
Alliance Integrated Metallics Ltd	Bemta, Raipur, Chhattisgarh	5.00
Anjani Steel Ltd	Ujalpur, Raigarh, Chhattisgarh	1.02
API Ispat Powertech Pvt. Ltd	IGC Siltara, Raipur, Chhattisgarh	1.05
Beekay Steel & Power Ltd	Uliburu, Barbil, Odisha	1.05
Bhushan Steel & Strips Ltd	Meramandali, Dhenkanal, Odisha	2.80
Bihar Sponge Iron Ltd	Chandil, Singhbhum, Jharkhand	2.10
Crest Steel & Power Pvt. Ltd	IGC Borai, Durg, Chhattisgarh	1.15
Deepak Steel & Power Ltd	Topadihi, Keonjhar, Odisha	1.44
Gallant Metal Ltd	Samakhiali, Kachchh, Gujarat	1.70
Global Hi-tech Industries Ltd	Gandhidham, Gujarat	1.05
Goa Sponge Iron & Power Ltd	Santona, Sanguem, Goa	1.00
Godawari Power & Ispat Ltd	IGC Siltara, Raipur, Chhattisgarh	4.95
Goldstar Steel & Alloys Ltd	Srirampuram, Vizianagaram, Andhra Pradesh	2.20
Ind Synergy Ltd	Kotmar, Raigarh, Chhattisgarh	3.00
Jai Balaji Sponge Ltd	Baktarnagar, Raniganj, West Bengal	1.05
Jai Shri Balaji Steel Pvt. Ltd (HEG Ltd)	Borai, Durg, Chhattisgarh	1.20
Jayswal Neco Ltd	IGC Siltara, Raipur, Chhattisgarh	2.55
Janki Corporation Ltd	Sidiginamola, Bellary, Karnataka	1.80
Jindal Steel & Power Ltd	Kharsia Road, Raigarh, Chhattisgarh	13.70
Lloyds Metals & Engineering Ltd	Ghuggus, Chandrapur, Maharashtra	2.70

(Contd.)

IRON & STEEL AND SCRAP

Table - 9 (Concl'd.)

Unit	Location	Capacity
Mastek Steels Pvt. Ltd	Holakundi, Bellary, Karnataka	1.05
MGM Steels Ltd	Chintapokhri, Dhenkanal, Odisha	1.00
Monnet Ispat Energy Ltd	Chandkhuri Marg, Hasaud, Raipur, Chhattisgarh	3.00
Monnet Ispat & Energy Ltd	Naharpalli, Raigarh, Chhattisgarh	5.00
MSP Steel & Power Ltd	Jamgaon, Raigarh, Chhattisgarh	1.92
Nalwa Steel & Power Ltd	Taraimal, Raipur, Chhattisgarh	1.98
Nova Iron & Steel Ltd	Dagori, Bilaspur, Chhattisgarh	1.50
OCL Iron & Steel Ltd	Lamloi, Sundergarh, Odisha	1.20
Orissa Sponge Iron Ltd	Palaspanga, Keonjhar, Odisha	2.50
Prakash Industries Ltd	Champa, Janj-gir-Champa, Chhattisgarh	4.50
Rungta Mines Ltd	Karakola and Kamando, Sundergarh, Odisha	3.30
Sarda Energy & Minerals Ltd	IGC Siltara, Raipur, Chhattisgarh	2.10
Scaw Industries Pvt. Ltd	Gundichapara, Dhenkanal, Odisha	1.00
Shivshakti Steel Ltd	Chakradharpur, Raigarh, Chhattisgarh	1.00
Shri Bajrang Power & Ispat Ltd	Urla, Raipur, Chhattisgarh	2.10
Shraddha Ispat Pvt. Ltd	Santona, Sanguem, Goa	0.60
Shyam Sel Ltd	Dewabdighi, Burdwan, West Bengal	1.00
Singhal Enterprises Pvt. Ltd	Taraimal, Bilaspur, Chhattisgarh	1.56
Sree Metaliks Ltd	Loidapada, Kendujhar, Odisha	1.74
S.K.S. Ispat & Power Ltd	Raipur, Chhattisgarh	2.70
Sunflag Iron & Steel Co Ltd	Bhandara, Maharashtra	1.50
Sunil Ispat & Power Ltd	IGC Siltara, Raipur, Chhattisgarh	1.15
Sunil Sponge Iron Ltd	Chiraipani, Raigarh, Chhattisgarh	1.05
Tata Sponge Iron Ltd (Ipitata Sponge)	Joda, Kendujhar, Odisha	3.90
Topworth Steel Pvt. Ltd	IGC Borai, Durg, Chhattisgarh	0.60
Vandana Global Ltd	IGC Siltara, Raipur, Chhattisgarh	2.16
Vallabh Steels Ltd	Sahnawal, Ludhiana, Punjab	1.20
Visa Steels Ltd	KIC, Jajpur Road, Odisha	3.00
Zoom Vallabh Steels Ltd	Dughda, Saraikela-Kharswan, Jharkhand	1.20

I.G.C.: Industrial Growth Centre.

Source: *Sponge Iron Manufacturers' Association (SIMA) and individual plants.*

Apparent Consumption of Steel

India's per capita steel consumption increased from 38 kg in 2005-06 to 60 kg in 2013-14 and it is far below the level of other developed and developing countries. The world and China average of per capita steel consumption in 2014 is estimated at 210 kg and 460 kg, respectively.

Apparent consumption of steel is calculated by taking into consideration with respect to export of steel, total domestic production and import of steel in the country. Sometimes, change in stock is adjusted to arrive at the consumption figures. It is also treated as the actual domestic demand of steel in the country. The apparent consumption of finished steel since 2004-05 is given in Table-10.

Table – 10 : Domestic Consumption of Finished Steel

(In million tonnes)	
Year	Consumption
2004-05	36.38 (9.84%)
2005-06	41.43 (13.88%)
2006-07	46.78 (12.91%)
2007-08	52.13 (11.41%)
2008-09	52.35 (0.42%)
2009-10	59.34 (13.35%)
2010-11	66.42 (11.93%)
2011-12	71.02 (6.93%)
2012-13	73.48 (3.46%)
2013-14	74.09 (1.01%)

Source: Annual Report, Ministry of Steel, 2008-09 to 2013-14.

Figures in parentheses indicate the percentage increase over the previous year.

The normal demand of steel for infrastructure is 23%, construction 22%, manufacturing 18%, automobiles 12%, consumer durables 6% and other sectors 19%. With the ongoing economic liberalisation resulting in faster economic growth, the steel consumption is expected to increase rapidly.

With the expansion of capacities in the integrated plants and installation of new plants, additional supply of steel in Indian markets has increased considerably. This has created an intense competition in the domestic market in the short run.

MODERNISATION & EXPANSION

Modernisation and expansion works undertaken by different plants are as follows:

SAIL

SAIL is in the process of modernising and expanding its production units. The objective is to achieve a production capacity of 26.2 million tonnes/annum of hot metal. The expansion plans would increase the hot metal production capacity of SAIL from 14.61 million tonnes in 2006-07 per annum to 26.18 million tonnes by 2012-13.

Order for all major packages of ISP & SSP and part packages for expansion of Bokaro, Bhilai, Rourkela and Durgapur Steel Plants have been placed and they are in various stages of implementation. Objectives of expansion plan are:

- * 100% production of steel through Basic Oxygen Furnace (BOF) route.
- * 100% processing of steel through continuous casting.
- * Value addition by reduction of semi-finished steel.
- * Auxilliary fuel injection system in all the Blast Furnaces.
- * State-of-the-art process control computerisation/ automation.
- * State-of-the-art online testing and quality control.
- * Energy saving schemes.
- * Secondary refining and
- * Adherence to environment norms.

With respect to the Modernisation & Expansion plan, SAIL has made a giant leap forward with an increase of 5 million tonnes per annum (MTPA) in hot metal production capacity, which has increased to 19.5 MTPA. Integrated operations of 2.5 MTPA new steel 3 plant at Burnpur commenced from November, 2014 with the lighting up of the state-of-the-art 4160 m Blast Furnace 'Kalyani', which is the largest Blast Furnace in India.

SAIL is finalising its Vision-2025 document, which will steer the company to increase its production capacity of Hot Metal to 50 MTPA, along with related/

enabling business activities, in line with growing demand of steel in the country. This will not only enhance SAIL's contribution to nation building but will also place SAIL amongst the top steel companies globally.

Bhilai Steel Plant

Bhilai Steel Plant (BSP) is India's sole producer of rails and heavy steel plates and major producer of structural products. The plant is the sole supplier of the country's longest rail tracks of 260 metres. With an annual production capacity of 3.153 MT of saleable steel, the plant also specialises in other products such as wire rods and merchant products.

The Board of SAIL has given in principle approval to the proposal for modernisation and capacity expansion of Bhilai Steel Plant to 7.5 million tonnes of hot metal and 7 million tonnes of crude steel per annum. The proposal includes: a) Installation of a new blast furnace; b) A new 7 metre tall coke oven battery and a new sinter machine; c) Phasing out of ingot route with 100% continuous casting by adding a new steel melting shop of 4 million tpy capacity; d) Installation of a universal beam mill of 1 million tpy capacity; e) Addition of a new bar & roll mill of 0.9 million tpy capacity; f) Installation of a new universal rail mill of 1.2 million tpy capacity and g) capacity expansion of plate mill to 1.65 million tpy. The present and future capacities of hot metal crude steel, etc. is given below.

Present and Future Capacity

(Unit Million tonnes per annum)

Item	Present rated capacity	Capacity after expansion
Hot metal	4.080	7.50
Crude Steel	3.925	7.00
Finished steel	2.620	5.85
Semis	0.533	0.72
Saleable steel	3.153	6.56

Bokaro Steel Plant

The hot metal production in 2013-14 was 4.1 million tonnes.

Rourkela Steel Plant

The hot metal production from RSP was 2.54 million tonnes in 2013-14.

Durgapur Steel Plant

DSP's hot metal production was 2.19 million tonnes in 2013-14.

IISCO Steel Plant

The plant has produced 0.22 million tonnes hot metal in 2013-14.

Salem Steel Plant

Expansion and modernisation of the Salem Steel Plant envisages installing Steel Melting and Continuous Casting facilities to produce 180,000 tpy slabs along with expansion of Cold Rolling Mill complex for stainless steel products from 60,000 tpy to 146,000 tpy and an additional Roll Grinding Machine for Hot Rolling Mill for enhancing the production to 364,000 tpy.

Rashtriya Ispat Nigam Ltd (RINL)

Visakhapatnam Steel Plant (VSP) of RINL is the first shore-based integrated steel plant located at Visakhapatnam in Andhra Pradesh. The plant was commissioned in 1992 with a capacity to produce around 3 million tonnes of liquid steel per annum. The plant has been built to match international standards in design and engineering with state-of-the-art technology, incorporating extensive energy saving and pollution control measures. Visakhapatnam has excellent layout which allows expansion of the plant capacity. VSP is in the midst of implementing an expansion plan to double its annual liquid steel making capacity from the present level of 3 million tpy to 6.3 million tpy and is almost completed. Other units namely Blast Furnace-3 and Wire Rod Mill-2 with first billet rolling have been commissioned in April, 2012 and June, 2012, respectively. RINL is further implementing modernisation scheme which would further add one million tonne capacity by 2016-17 taking its overall capacity to 7.3 mtpa by 2017.

Tata Steel Ltd (formerly TISCO)

The company has been rechristened as Tata Steel Ltd (TSL). The company has an integrated steel plant located at Jamshedpur, Jharkhand, with annual crude steel making capacity of 9.7 million tonnes and variety of finishing mills. TSL has produced 8.76 million tonnes of finished steel in 2013-14 as compared to 6.43 million tonnes in 2012-13. The production of crude steel in 2013-14 was 9.16 million tonnes as against 8.13 million tonnes in 2012-13.

Setting up of a new integrated steel plant with 12.5 million tonnes capacity in Kalinganagar, Jajpur, Odisha by TSL is currently underway, which the company plans to complete in phases. It is set to augment production capacity by 3 mtpa in the first phase. Government of Odisha has allotted 2000 acres of land for the plant at Kalinganagar. The company has further plans to set up a 7.0 million tpy capacity integrated steel plant at Jagdalpur in Bastar region of Chhattisgarh. In the first phase, installation of a 2 million tpy capacity plant is likely to be taken up and it is expected to be completed in 3 to 5 years. Capacity expansion to 5 million tpy will be undertaken subsequently. The process of acquiring of land is under progress. The company also signed an MoU with the Government of Jharkhand for setting up of a 12 million tonnes per year integrated steel plant at Saraikela in phases. The above projects are, however, subjected to raw material linkages and requisite approvals.

JSW Steel Ltd

JSW Steel Ltd's installed combined capacity at (Karnataka, Tamil Nadu and Maharashtra plants) of crude steels was of 14.3 million tpy with value added products constituting 1.8 million tpy spread across four locations; Toranagallu (Vijayanagar Works), Salem (Salem Works), Vasind and Tarapur (downstream units). Vijayanagar Works existing operations produce flat and long steel products, Salem Works focus only in long

products and the downstream units produce CR/ Galvanised, colour coated, value added flat products. All the existing operating facilities have been accredited with OHSAS-18001, ISO-9001: 2000 and ISO - 14001. Vijayanagar Works has integrated operations from beneficiation plant to 1 million tpy Cold Rolling Mill Complex. The Salem Works has an integrated manufacturing facility with an overall crude steel capacity of 1 million tpy, comprising sinter plant, blast furnace, EOF, billet caster, bloom caster and rolling with associated facilities such as coke oven, power plant, oxygen plant, etc. The slabs and HR coil produced at Vijayanagar Works are further processed in downstream units at Vasind and Tarapur into value added HR plates, CR, galvanised, galvalume and colour coated products.

The Company has enhanced the total capacity to 10 million tpy at Vijayanagar Works. Two subsidiaries of the company - M/s JSW Bengal Steel Ltd and M/s JSW Jharkhand Steel Ltd are incorporated to set up greenfield steel plants with 10 million tpy capacity each in West Bengal and Jharkhand, respectively. The company is in possession of required land in West Bengal, while in Jharkhand, it has obtained a mining lease for iron ore.

In January 2011, company acquired the assets of Integrated Steel Plant division of Bellary Steel & Alloys Ltd. In February 2011, the company commissioned the Sinter plant 3 (5.75 mtpa capacity) at Vijayanagar Works, the largest of such facility in India. In October 2011, the company signed a joint venture agreement with Marubeni-Itochu Steel Inc. Tokyo, (MISI) to set-up a steel processing center in North India, under the name of JSW MI Steel Service Centre Pvt Ltd. The company has decided to set up a new cold rolling mill complex of 2.3 mtpa in two phases at its Vijayanagar Works, considering the growing demand from consumer durables and automobile segment for CRCA products. By 2020, the

company aims to produce 34 million tonnes of steel annually with Greenfield integrated steel plants coming up in West Bengal and Jharkhand.

Jindal Steel & Power Ltd (JSPL)

JSPL has set up a rail & universal beam plant with capabilities to produce 121 m long, the world's longest rails and is the first in the country to manufacture large-size parallel flange beams. The company has captive coal mines at Dongamahua in Raigarh district, Chhattisgarh and coal washing unit with capacity of 6 million tonnes per year to wash 47-48% coal ash to 26%. The sponge iron plant at Raigarh, Chhattisgarh has capacity of 1.37 million tpy. Facilities at Raigarh also include following capacities - steel 3 million tonnes (Rail and structurals 0.75 million tonnes, plates 1.00 million tonnes and slabs, rounds, blooms and billets 1.25 million tonnes), hot metal 1.67 million tonnes and captive power plant 623 MW.

As part of expansion projects, JSPL is setting up a 6 million tpy integrated steel plant at Angul in Odisha. Other plants being set up are: 6 million tpy integrated steel plant at Patratu, Jharkhand and 7 million tpy steel plant at Raigarh, Chhattisgarh. It has planned to implement these projects in phases. The present plant at Raigarh is also under expansion to 7 million tpy (3 million tpy through EF route and 4 million tpy through BOF route) comprising 3 million tpy flat products and 4 million tpy long products. It will also have 6 million tpy gas-based DRI plant with matching coal gasification unit and 4 million tpy hot metal capacity.

Essar Steel Limited (ESL)

A state-of-the-art hot rolled coil steel plant was set up at Hazira, Gujarat with 4.6 million tpy capacity and is expanded to 10 million tonnes per annum. It is the largest fully-integrated manufacturer of high-quality flat steel products in western India. Company's operations include 8 million tpy and 12 million tpy beneficiation plants at Bailadila in Chhattisgarh and Dabuna in Odisha. Essar has the world's second largest slurry pipeline of 267 km and also 253 km to transport beneficiated iron ore slurry to the pellet plants namely, 8 million tpy pellet complex at Visakhapatnam, Andhra Pradesh and

6 million tpy plant at Paradip, Odisha. The Essar Steel Complex at Hazira in Surat district, Gujarat houses the world's largest gas-based single location sponge iron plant with a capacity of 6.8 million tpy. The complex also houses 1.4 million tpy cold rolling plant, 4.6 million tpy electric arc furnace, 4.6 million tpy continuous caster and 3.6 million tpy hot strip mill. Outstanding performance has been observed in the 3 DRI-HBI modules of the company.

The company has plans to set up a steel plant of 6 million tonnes per annum capacity at Paradip, Odisha. The scheme also includes installation of pellet plant and iron ore beneficiation plant. The company has plans to set up a steel plant of 3.2 million tonnes per annum capacity at Bastar, Chhattisgarh, (In first phase, a 1.6 million tpy steel plant with a captive power plant is to be set up), 3 million tonnes per annum in Jharkhand and 6 million tonnes per annum in Karnataka.

JSW Ispat Steel Ltd (formerly, Ispat Industries Ltd)

JSW Steel has acquired a 45.53% majority stake in JSW Ispat Steel w.e.f. 21.12.2010. It has set up one of the largest integrated steel plants in the private sector in India at Dolvi in Raigad district, Maharashtra. The plant has a capacity to produce 3 million tpy of hot rolled coils (HRC). The company also manufactures sponge iron and pig iron at their Dolvi complex. The company has a gas-based DRI plant of 1.6 million tpy capacity and an ultra-modern blast furnace of 2 million tpy capacity to produce hot metal/pig iron. It also has a 2.24 million tpy sinter plant at Dolvi. The integrated steel plant functions on the Converter-cum-Electric Arc Furnace route (CONARC process) to produce steel through modern Twin Shell Electric Arc Furnace.

JSW Ispat Steel Ltd has plans to expand its HR coils capacity at Dolvi to 3.6 million tonnes per year. A new 2 million tonnes sinter plant, a 1,260 tonnes/day oxygen plant and a new electric arc furnace have also been commissioned at IIL Dolvi. The company is considering to scale up the plant capacity to 5 million tpy and also has plans to set up 5 million tpy integrated steel plant at Paradip, Odisha.

Neelachal Ispat Nigam Limited (NINL)

NINL has a 1.1 million tonnes per annum capacity iron & steel plant located at Kalinganagar, Duburi, Jajpur districts, Odisha. The NINL and Odisha Government will be setting up one million tonne steel plant at Kalinganagar, Jajpur, Odisha. The other product of the company that is sold in the domestic market is granulated slag which is consumed by several cement plants.

NEW STEEL PROJECTS

In the context of long-term demand projection of steel, the Government adopted a two-pronged strategy for increasing steel production in the country. Firstly, through modernisation and expansion of existing public sector steel plants in the country and secondly, by offering initiatives to private sector to install new steel capacities. After the announcement of the Industrial Policy in 1991 and encouraged by the various other policy initiatives of the Government, substantial interest by several entrepreneurs to set up new steel plants has been witnessed. Besides the steel PSUs, massive capacity addition is in the pipeline by private steel producers including foreign direct investors. As per the latest information, 301 MoUs have been signed in various states with intended capacity of around 488.66 million tonnes with an investment of over ₹5-10 lakh crore by 2020. Some projects were at various stages of implementation. POSCO has planned to set up 12 million tpy capacity steel plant in Odisha by using "Finex" process with direct utilisation of sinter feed iron ore (-8 mm) besides utilising the advantages of "Corex" technology. Similar expansion is also coming up in secondary steel sector consisting of sponge iron, EAF, induction furnace, rolling mill, etc. With these new steel plants, contribution of private sector units is gradually increasing and this trend is expected to continue.

National Mineral Development Corporation Ltd

NMDC is now directing its resources to diversify into steel making. An integrated steel plant with a capacity of three million tonnes will be set up in Chhattisgarh near Nagarnar, Bastar district. NMDC is in the process of expanding its business through forward integration in both

greenfield and brownfield projects by setting up (a) 2.0 million tpy pellet plant in Chhattisgarh (b) 1.2 million tpy pellet plant at Donimalai in Karnataka and (c) 0.36 million tpy BHI ore beneficiation plant at Donimalai.

Further, NMDC has acquired 50% equity in Legacy Iron Ore Ltd Australia and has signed an MoU with RINL for laying a slurry pipeline from Bailadila Complex (Chhattisgarh) to Vizag (Andhra Pradesh) via Jagdalpur to facilitate evacuation of iron ore concentrate.

NMDC sold 28.21 million tonnes in domestic market during 2013-14 as against 24.67 million tonnes during corresponding period last year (CPLY). The company exported 2.30 million tonnes of iron ore to Japan, South Korea and China valued at approximately ₹1,600 crores during current year compared to 1.60 million tonnes valued at ₹956 crore in the CPLY. Total sales during the year was 30.51 million tonnes as against 26.27 million tonnes during CPLY. NMDC produced 30.18 million tonnes of iron ore during 2013-14 compared to 27.18 million tonnes in CPLY.

KIOCL Ltd

The company is operating 350 cu m capacity blast furnace at Panambur, New Mangalore Port for production of pig iron with 2.27 lakh tpy capacity and a Ductile Iron Spun Pipe (DISP) plant of 100,000 tonnes per year capacity. The hot metal from blast furnace will be the main feed stock for the DISP plant. The company is also in the process of selecting a joint venture equity partner for an integrated steel plant to be set up in Karnataka with initial capacity of 1.5 mtpa and expandable to 5 mtpa with equity participation. The company also operates a 3.5 million tpy pellets plant at Mangalore with hematite ore purchased from NMDC. It has signed an MoU with Kerala State Industrial Development Corporation Ltd (KSIDL) for setting up of iron ore mining, beneficiation and pelletisation plant in Kerala.

Government of Andhra Pradesh has approved the draft MoU to be entered between Andhra Pradesh Mineral Development Corporation (APMDC) and KIOCL for joint exploration of iron ore deposits located in Nemkal in Anantapur Distt., AP.

IRON & STEEL AND SCRAP

KIOCL produced 1.71 million tonnes and sold 1.62 million tonnes of pellets during 2013-14.

VISA Steel Ltd

VISA Steel is a leading player in the Special Steel, Ferro Chrome and Metallurgical Coke Business in India. The Company is setting up an integrated 1 million TPA Special Steel Plant at Kalinganagar Industrial Complex in Odisha. The first phase of 0.5 million TPA Special Steel Long Product Plant is fully operational. The facilities include a 2,25,000 TPA Pig Iron Plant, 3,00,000 TPA Sponge Iron Plant, 5,00,000 TPA Steel Melt Shop (with EAF, LRF and VD) & 500,000 TPA Rolling Mill (Bar & Wire Rod Mill). VISA Steel is also operating 180,000 TPA Ferro Chrome Plant and a 75 MW Captive Power Plant. VISA Sun Coke Limited, a joint venture company between VISA Steel Limited and Sun Coke Energy, USA, is operating a 400,000 MT per annum heat recovery coke plant and associated steam generation units at Kalinganagar in Odisha.

IRON & STEEL SCRAP

Iron & Steel Scrap is one of the essential requirements for manufacture of steel in mini-steel industry. It is also consumed by some major steel plants. Scrap, especially from the ship breaking industry supplies substantial quantity of re-rollable steel and steel scrap for the iron & steel industry. Iron scrap is available in the country in the form of pressed bundles, a mixture of used steel components (called as a commercial scrap), turnings and borings and heavy melting scrap. These are generated by industries of all sectors like automobiles, railways and engineering workshops.

The collection and processing of scrap in an organised manner is undertaken by a few units in the country. In the local market, scrap is supplied by dealers who in turn arrange to have scrap collected manually or through sub-dealers.

The consumption of scrap is mainly reported by Induction Furnace and Electric Arc Furnace units, integrated steel plants and alloy steel & foundry industries. Scraps are used in the steel sector after recycling. Recycling scrap helps in

conservation of energy as remelting of scrap requires much less energy than production of iron or steel from iron ore. Also, the consumption of iron and scrap by remelting reduces the burden on land fill disposal facilities and prevents the accumulation of abandoned steel products in the environment. It increases the availability of semi-finished material, which otherwise would have to be produced using the ore. Thus, it helps in conservation of natural resources.

Ship breaking

Ship breaking has been a major source of scrap generation. Ship breaking activities are carried out at various places on the Indian Coast, the largest concentration being in the West Coast. Private entrepreneurs handle the task of ship breaking in India. It is a labour-intensive job, and in India, it is cost efficient activity. Locations of present ship breaking activities are:

- i) Alang and Sosiya yards in Bhavnagar district, Gujarat,
- (ii) Sachana district, Gujarat
- (iii) Mumbai and
- (iv) Kolkata

Alang & Sosiya yards account for 90% concentration of the ship breaking industry in India. During 2011-12, 2012-13 and 2013-14 a total of 291, 394 and 298 ships were beached by the industry accounting for 3.1 million tonnes, 3.8 million tonnes and 3.06 million tonnes, respectively, in terms of LDT (Light Displacement Tonnage, viz, physical weight of a ship). Today, Alang possibly represents the single largest concentration of ship breaking industry in the world. The life of an average ocean-going ship is about 20 years. About 40% of the ships broken are dry cargo ships, while the remaining 40% of the ships broken are wet cargo, tanker and specialised ships. These recyclable steels mainly as steel scrap provide feed to steel and foundry industry in India. The steel generated from ship recycling contributes to around 1% to 2% of the domestic steel demand.

The recommendations of a committee of Technical Experts on Ship Breaking set up by the Government of India on the directions of the Hon'ble Supreme Court have been accepted by the Hon'ble Supreme Court on 6.9.2007, on the issue of handling & management of the hazardous industrial waste generated during ship breaking. The Court has also directed the Government to formulate a comprehensive Code incorporating the recommendations which are operative till the statutes are amended. The Code is under formulation in the Ministry of Steel.

MSTC Ltd (Formerly Metal Scrap Trade Corp. Ltd)

Presently, the company undertakes trading activities, e-commerce, disposal of ferrous and non-ferrous scrap, surplus stores and other secondary arising mostly from Public Sector Undertakings and Government Departments, including Ministry of Defence. The Company also undertakes import of raw materials in bulk required by large industrial houses on back-to-back basis. The items of import include petroleum products, Low Ash Metallurgical Coke, Coking Coal, Steam Coal, DR Pellets, HR Coils and Heavy Melting Scrap, etc. It also undertakes trading in items within the country in competition with any other private trader.

Ferro Scrap Nigam Ltd (FSNL)

FSNL is a wholly owned subsidiary of MSTC Ltd under the Ministry of Steel. The company undertakes the recovery and processing of scrap from slag and refuse dumps in the nine steel plants at Bhilai, Bokaro, Burnpur, Durgapur, Rourkela, Visakhapatnam, Dolvi, Duburi and Haridwar and Rail wheel factory Bengaluru. The scrap so recovered is returned to the steel plants for recycling disposal and the company is paid processing charges on the quantity recovered at varying rates depending on the category of scrap. Scrap is generated during iron & steel making and also in the Rolling Mills. In addition, the company

provides steel mill services, such as scarfing of slabs, handling of BOF slag, etc.

The recovery of scrap by FSNL in 2013-14 was 2.52 million tonnes in comparison to 2.33 million tonnes in 2012-13.

TRADE POLICY

As per the modified Export-Import Policy incorporated under the Foreign Trade Policy (FTP) for 2009-14, the imports of primary forms of pig iron, spiegeleisen, sponge iron, ferro-alloys, stainless steel, remelting scrap, as also the semi-finished products of iron, non-alloy steel or stainless steel (such as flat-rolled products, bars, rods, coils and wires), primary and semi-finished forms of other alloy-steels, etc. are unrestricted. Similarly, the exports are also allowed freely. In order to preserve iron ore resources for domestic use on cheaper rates, export duty on iron ore has been increased to 30% ad valorem on all varieties of iron ore (except pellets) from December, 2011. The export duty on pellets has been imposed to 5% ad valorem vide notification No.3/2014-customs dated 27th January, 2014.

WORLD REVIEW

The world production of pig iron in 2013 was about 1,239 million tonnes as against 1,183 million tonnes in 2012. China, Japan, India, Russia, Rep. of Korea, Brazil, USA, Ukraine and Germany were the principal producers (Table-11).

The world crude steel production in 2013 increased marginally to 1,607 million tonnes from 1,546 million tonnes in 2012. China was the top producer accounting for 48% of world's crude steel production, followed by Japan (7%), USA and India (5% each). Other important producers were Russia, Korea, Republic of, Germany, Turkey, Brazil, Ukraine and Italy (Table-12).

FOREIGN TRADE**Exports**

Exports of iron and steel (total) increased by 15% in 2013-14 to 11.96 million tonnes from 10.38 million tonnes in the previous year. Steel exports in 2013-14 comprised finished steel (including cold rolled sheets) 5.12 million tonnes (43%) and semi-finished steel (including steel ingots) 4.68 million tonnes (39%). Other items together accounted for remaining 18% exports. Exports in 2013-14 were mainly to USA (10%), UAE (9%), Nepal (6%), Vietnam & Saudi Arabia (5% each) and Italy (4%). Exports of pig and cast iron including spiegeleisen increased sharply to 11.13 lakh tonnes in 2013-14 from 4.34 lakh tonnes in the previous year. Exports were mainly to Korea, Rep. of (30%), Thailand (20%), Malaysia (17%), and Chinese Taipei/Taiwan (15%) (Tables - 13 to 22).

Imports

Imports of iron and steel (total) in 2013-14 decreased sharply to 12.26 million tonnes from 19.3 million tonnes in the previous year. Imports in 2013-14 comprised semi-finished steel, including ingots 2.92 million tonnes (24%) iron and steel scrap 4.78 million tonnes (39%) and finished steel, including cold rolled sheets 3.04 million tonnes (25%). Imports in 2013-14 were mainly from China and Korea, Republic of (13% each), Japan (12%), UAE (8%), UK and South Africa (6% each). The imports of pig and cast iron (including spiegeleisen) increased considerably to 69 thousand tonnes in 2013-14 from 54 thousand tonnes in the previous year. Imports were mainly from South Africa (24%), Indonesia (21%), Italy & Spain (8% each) and Sweden (7%) (Tables-23 to 32).

Table – 11 : World Production of Pig Iron (By Principal Countries)

(In '000 tonnes)			
Country	2011	2012	2013
World : Total	1160000	1183000	1239000
Brazil	33416 ^e	32448 ^e	31552
China	629693	657905	708970
France	9697	9532	10300
Germany	27943	27046	27177
India*	66460	62057	64893
Iran	12670	13725	16465
Japan	81028	81405	83849
Korea, Rep. of	42213	41718	41045
Mexico	10463	10198	11011
Russia	48200	50500	50000
Taiwan	12940	11748	12122
Ukraine	28878	28487	29089
USA	30233	32062	30381
Other countries	126166	124133	122146

Source: World Mineral Production, 2009-2013

* India's production of pig iron in 2011-12, 2012-13 and 2013-14 was 5,371 thousand tonnes, 6,870 thousand tonnes & 7,950 thousand tonnes, respectively.

Table – 12 : World Production of Crude Steel (By Principal Countries)

(In '000 tonnes)			
Country	2011	2012	2013
World : Total	1517000	1546000	1607000
Brazil	35220	34524	34163
Canada	12891	13507	12415
China	683883	716542	779041
France	15781	15607	15685
Germany	44284	42661	42645
India *	72200	76715	81213
Iran	13040	14463	15422
Italy	28735	27257	24079
Japan	107601	107232	110595
Korea, Rep. of	68519	69073	66061
Mexico	18110	18073	18208
Russia	68400	70400	68800
Spain	15504	13639	14130
Taiwan	22879	19927	21466
Turkey	30562	35885	34658
Ukraine	35512	33509	33199
UK	9478	9579	11857
USA	86000	88695	86955
Other countries	148401	138712	136408

Source: World Mineral Production, 2009-2013.

* India's production of crude steel in 2011-12, 2012-13 and 2013-14 was 74,291 thousand tonnes, 78,416 thousand tonnes & 81,694 thousand tonnes, respectively.

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**Table – 13 : Exports of Iron & Steel (Total)
(By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	10377748	723047018	11959782	833731286
USA	1076200	115811007	1137353	113240135
UAE	1069868	66604717	1019247	77068137
Germany	242751	35063007	202716	34071975
Italy	355957	26643706	512345	33485294
Saudi Arabia	518607	28693842	539674	31671486
UK	168634	18424371	365468	29466143
Belgium	411123	24410599	436608	26433566
Nepal	638271	21747942	769363	25959169
Vietnam	227401	9478840	623855	23178189
Thailand	574137	21954809	442876	18470097
Other countries	5094799	354214178	5910277	420687095

**Table –15 : Exports of Iron & Steel (Steel wire)
(By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	115175	17682899	127627	18235819
USA	19130	3305466	18619	3549065
Netherlands	1863	341635	10710	1729106
Turkey	3829	640149	6015	972945
Nepal	6892	281925	20416	911955
Belgium	6496	1215861	4684	906298
Italy	7825	1329121	4975	856050
Germany	10590	2090701	3482	712614
Iran	1133	190845	3666	655368
UAE	8995	648313	8202	650968
UK	3288	633015	3182	578415
Other countries	45134	7005868	43676	6713035

**Table – 14 : Exports of Iron & Steel
(Finished Steel Including CR
Sheet) (By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	4756319	299617400	5123998	322641749
USA	601795	48467486	612770	45131642
UAE	532079	31265024	485583	29863184
Belgium	121535	9878250	187368	12815587
Italy	147812	10350499	155762	11279209
Nepal	353199	11242435	347286	11115163
Iran	88256	4624898	135197	9805194
Mexico	33812	2424818	126991	8690628
UK	40702	3239712	135606	8343508
Indonesia	146599	11264119	104210	7705542
Bangladesh	111038	5584060	208866	7613391
Other countries	2579492	161276099	2624359	170278701

**Table – 16 : Exports of Iron & Steel
(Other Finished Steel, NES)
(By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	1837420	241606755	1763329	275039552
USA	350375	53359669	295416	50294006
UAE	133549	19139446	142678	31319029
Germany	159442	22360708	137404	23228961
UK	104555	13522624	106951	15946171
Saudi Arabia	91972	9154169	84805	11710787
Canada	83816	9393344	70825	8751573
Italy	44958	7810442	38802	8054874
France	28695	4446596	28161	5901933
Brazil	30050	3827587	38817	5194847
Netherlands	25696	3970418	29767	5141313
Other countries	784312	94621752	789703	109496058

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**Table – 17 : Exports of Iron & Steel
(Semi-Finished Steel Including Steel Ingot)
(By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	3448184	150846587	4677636	203432087
Vietnam	203842	7466644	605948	20867655
UAE	390753	14982348	380419	14941724
Saudi Arabia	326786	12131124	395393	14892986
Italy	153584	6534821	310952	12834185
Thailand	405351	14002585	344431	11868879
Nepal	208911	7436832	335293	11104189
Belgium	258756	9817975	225243	9759102
USA	50329	6046304	151602	9539577
Kenya	105294	3678199	168472	6041693
Netherlands	9607	1527228	21873	5905850
Other countries	1334971	67222527	1738010	85676247

**Table – 18 : Exports of Iron & Steel : Alloy Steel
(Granules)
(By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	3975	96583	456	40456
China	42	2832	92	11039
Germany	-	-	33	8955
USA	5	2694	52	6234
UAE	4	211	84	4804
Romania	-	-	72	3166
Saudi Arabia	104	5816	25	1378
Chinese Taipei/Taiwan	-	-	25	1246
Sudan	49	2333	15	721
Israel	++	++	16	716
Morocco	-	-	12	624
Other countries	3771	82697	30	1573

**Table – 19 : Exports of Iron & Steel: Alloy Steel
(Powder)
(By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	37	6120	13	603
Bangladesh	-	-	10	251
Nepal	3	345	3	164
UAE	-	-	++	89
Korea, Rep. of	-	-	++	79
Saudi Arabia	-	-	++	18
Germany	3	538	++	2
Other countries	31	5237	-	-

**Table – 20 : Exports of Iron & Steel (Scrap)
(By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	4226	438100	6960	540925
Sweden	1894	286251	2456	385788
Bhutan	-	-	2815	46110
Germany	286	36757	114	29541
Netherlands	-	-	214	23673
China	533	35954	113	14625
Oman	388	11484	386	12089
Bangladesh	210	3994	360	7359
UAE	150	4779	102	4214
Belarus	-	-	3	3860
Japan	192	8255	83	3589
Other countries	573	50626	314	10077

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**Table-21: Exports of Iron & Steel(Sponge iron)
(By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	116916	2796923	166616	4138487
Bangladesh	50432	1202797	67807	1502312
Bhutan	12278	250708	18886	905368
Nepal	31667	714874	40708	794286
Malaysia	9255	229315	11823	280076
Egypt	-	-	11000	228149
Kuwait	5624	150368	8798	201840
Sri Lanka	3658	81740	3610	80282
Indonesia	-	-	2094	48232
USA	613	68423	358	39030
Ethiopia	516	13676	829	20244
Other countries	2873	85022	703	38668

**Table - 23 : Imports of Iron & Steel (Total)
(By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	19300675	920848863	12257822	721849461
China	2319214	155064154	1618714	127694257
Korea, Rep. of	1909881	107327331	1578448	98341244
Japan	1782715	108012517	1424333	97173228
Germany	903122	60692191	381711	39482946
USA	1330321	56659781	539317	36097798
UAE	1093790	34661478	940572	31028107
UK	1410302	47113919	761144	30727243
South Africa	1259986	33210319	705477	19713118
Italy	129722	16785293	66613	15607557
Thailand	116787	12768963	123604	13445807
Other countries	7044835	288552917	4117889	212538156

**Table – 22 : Exports of Pig & Cast Iron
(Including Spiegeleisen)
(By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	433884	10218710	1113219	26350078
Korea, Rep. of	178538	4003092	330402	7668352
Thailand	31844	743634	219990	5069654
Malaysia	97174	2258556	194059	4459978
Chinese Taipei/ Taiwan	10520	265235	168690	4012327
Saudi Arabia	349	18140	59138	1487315
UAE	2399	79724	36355	890908
China	27114	509575	32735	795891
Japan	5514	191491	27367	723533
Indonesia	33134	875704	13434	325432
Nepal	17098	403110	12370	249612
Other countries	30200	870449	18679	667076

**Table – 24: Imports of Iron & Steel
(Finished Steel Including CR
Sheet) (By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	3634316	262406713	3035485	241891701
China	1190742	71688833	935955	66056358
Japan	600115	44387178	537364	41206828
Korea, Rep. of	427099	34808024	518127	39556112
Germany	198550	16553228	100152	13337134
USA	144714	13260346	107710	11407813
Italy	46498	7868372	31129	6636975
France	54927	6769009	28819	6554945
Belgium	93639	6095904	81304	6192838
Russia	171751	10133069	68041	5572405
Ukraine	85061	3123018	154738	5333592
Other countries	621220	47719732	472146	40036701

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**Table – 25 : Imports of Iron & Steel
(Steel Wire)
(By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	192924	14961445	150982	13231089
China	91551	5484801	78336	5234257
Japan	8306	1819996	8100	1805667
Malaysia	22995	1470663	17314	1265931
Korea, Rep. of	13498	1290238	11397	1205457
Nepal	25038	1557825	17320	885145
Germany	1621	532287	1402	556324
Sweden	523	380139	538	454403
Thailand	5054	296007	4502	272111
USA	768	234198	624	241426
France	1959	242998	1652	222570
Other countries	21611	1652293	9797	1087798

**Table – 27 : Imports of Iron & Steel
(Semi-Finished Steel Including Steel Ingots)
(By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	5227821	211315791	2917886	126954514
Korea, Rep. of	1326712	55176264	919704	41245358
Japan	1102124	42029251	829294	33577576
China	640992	24583323	291379	12217049
Ukraine	309724	11051570	203787	6405326
Germany	339206	18244865	85324	5331505
Iran	130561	4180323	118720	3906278
Russia	411472	13468925	73387	2795886
Sweden	10054	1751485	12643	2665766
Saudi Arabia	28290	1003834	60615	2191620
Austria	2902	388524	34319	2019413
Other countries	925784	39437427	288714	14598737

**Table – 26 : Imports of Iron & Steel
(Other Finished Steel, NES)
(By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	543999	137195031	425133	132080721
China	251586	42406061	191921	33193810
Japan	46992	17429639	30489	17078098
Germany	34858	12782280	26434	12954953
Korea, Rep. of	41021	10085218	33709	10546460
USA	21677	8567857	15222	9396214
Italy	12692	4796438	12892	6540439
Thailand	22362	6830476	16165	5650673
UK	9113	4497333	6450	5193318
France	7537	3863911	7060	4168159
Malaysia	13690	2304279	12743	2899268
Other countries	82471	23631539	72048	24459329

**Table – 28 : Imports of Iron & Steel:
Alloy Steel (Granules)
(By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	16185	873541	17931	1052000
Spain	5242	281283	5946	360688
France	3088	150603	3570	183451
Italy	2215	119815	2043	120734
Germany	938	61356	1313	99761
China	1743	88299	1510	83966
South Africa	948	43797	1219	61222
Chinese Taipei/ Taiwan	818	40119	1057	57440
Thailand	202	11181	780	42312
USA	290	22213	194	16985
Japan	48	6120	77	11523
Other countries	653	48755	222	13918

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**Table – 29 : Imports of Iron & Steel : Alloy Steel (Powder)
(By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	1877	437692	1963	515692
UK	98	65801	194	141064
Sweden	404	65502	453	91536
Canada	921	107519	695	76252
China	221	77611	252	76076
USA	192	79685	234	59463
Belgium	16	14361	28	23821
Australia	-	-	70	22805
Japan	22	25930	10	11117
Singapore	-	-	2	6450
Germany	1	323	++	1659
Other countries	2	960	25	5449

**Table – 30 : Imports of Iron & Steel (Scrap)
(By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	8197924	243564965	4779786	164549339
UAE	923588	26108070	784830	23972448
UK	1314857	36587627	717222	21713633
South Africa	1211967	30449526	674044	17675575
USA	1130223	32626130	398808	13523649
Netherlands	285579	15945755	137337	10123906
Malaysia	141842	6752525	121749	6560309
Australia	140250	4086289	159621	5554883
Thailand	67469	3592339	76244	5492083
Singapore	163084	5737474	111855	4933244
Germany	257451	7856861	133999	4288853
Other countries	2561614	73822369	1464077	50710756

**Table – 31: Imports of Iron & Steel (Sponge Iron)
(By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	1084524	22910852	578317	12654741
Oman	762634	16097773	414710	9214796
UAE	68096	1392968	113629	2337419
Russia	37600	778715	47937	1044225
Saudi Arabia	82338	1880843	1019	24228
Iran	-	-	490	11414
Sweden	120	3554	194	10919
Pakistan	-	-	305	6867
Japan	-	-	10	3585
Germany	-	-	23	1287
Other countries	133736	2756999	++	1

**Table – 32 : Imports of Pig & Cast Iron
(Incl. Spiegeleisen)
(By Countries)**

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	53930	3129091	68502	4021121
Indonesia	2816	84963	14666	555648
South Africa	16530	473061	16411	439328
Sweden	5158	426827	4540	419191
Italy	5210	294160	5682	352888
Spain	2669	142452	5635	330453
Germany	1384	216140	860	292528
USA	2172	267722	2593	270110
China	3462	253216	3152	254248
Japan	193	118810	374	197691
UK	400	118284	552	153730
Other countries	13936	733456	14037	755306

FUTURE OUTLOOK

India ranked fourth as a largest producer of crude steel in the world and is expected to become the 2nd largest producer by 2015-16, provided all requirements for fresh capacity creation are met. The Steel Industry in general is on the upswing due to strong growth in demand propelled by the strong domestic demand for steel particularly from the construction, manufacturing and automotive sectors. India is also the largest producer of sponge iron in the world. The economic reforms and the consequent liberalisation of the Iron & Steel sector brought a sea change in the industry, particularly in the field of greenfield steel plants in the private sector.

The growth of the steel sector is linked intricately with the growth of the Indian economy, especially with growth of the steel consuming sectors. Union Budget 2013-14 has maintained its focus on infrastructure development, especially rural infrastructure. This coupled with 12th Plan's target of trillion dollar infrastructure investment are big positives for steel demand.

As per the report of Working Group on Mineral Exploration and Development (other than coal & lignite) for XII Five Year Plan (2012-17) of the Planning Commission, technologies for agglomeration, pelletisation and direct use of fines to produce steel must be identified and taken up in Mission Mode to achieve the national goal to produce 200 million tonnes per annum of steel by 2020.