

# ALL INDIA INDUCTION FURNACES ASSOCIATION



# AIIFA

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## What's Inside

- Marketing & Distribution Channel of Indian Steel

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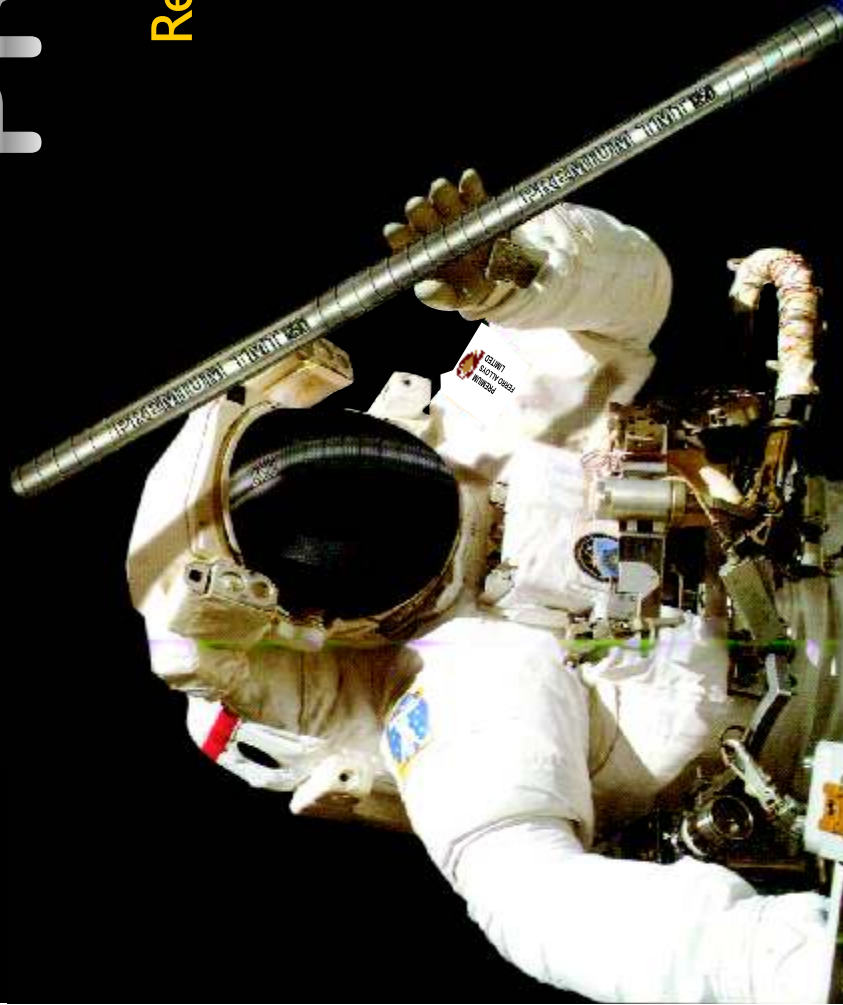
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# Marketing & Distribution Channel of Indian Steel

**Kamal Aggarwal**  
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*Consultant, AIIFA*

**Introduction:** India takes pride in its position of 2nd largest steel producer in the world and hoping to maintain same status in future also marching towards progress after the great leader China. Indian steel industry is poised for big growth post 1990, thanks to the liberalization of the Indian economy, entering into a new era of development since 2007-08, riding high on the resurgent economy and robust demand for steel. In the past 10–12 years, India's steel sector has expanded significantly both from BF+BOF route and EIF/EAF route. Production has increased by 75% since 2008, at the same time domestic steel consumption followed by increased demand in the consuming sectors.

In the pre-liberalization era, India's steel industry was highly regulated. Competition on quality and cost in domestic market was less and awareness of most of the consuming sectors was far below the then international level. Due to heavy import duties, there was no competition in local markets. License Raj ensured that companies like TISCO (now Tata Steel) could not expand their production, As a result, demand was always more than supply and steel would be rationed based on government directives on price and quantity. With no options for scaling up, Tata Steel ensured operation at 100 percent capacity level also ensuring efficient production through optimum utilization of available infrastructure. Rapid rise of India's steel production has resulted in India becoming the 2nd largest producer of crude steel for consecutive four years and the largest producer of sponge iron, the scrap substitute, in the world.

India's current steel production and consumption rate is 6.4% and 11.4%, respectively which may end up at around 3-5% and 9-10%, respectively. It is estimated that the Government's thrust towards infrastructure projects, a pick-up in construction and real estate activity as well as healthy demand from the automobile sector augur well for steel demand. Revival in economic activities from the end-user industries such as construction, infrastructure, automobile, real

estate, various manufacturing/engineering industries and consumer durables supported the steel consumption and further aid in enhancing steel production in India. During the current financial year, exports are likely to witness de-growth compared to FY22, mainly due to imposition of export duties which will make steel exports from India expensive. Similarly, duty on iron ore concentrates was raised to 50% from 30% and a duty of 45% was imposed on iron ore pellets to boost domestic supplies.

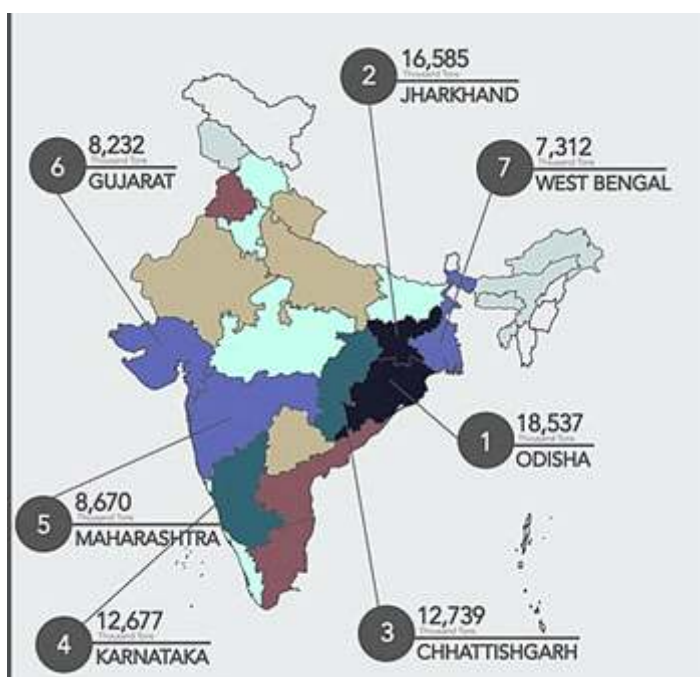
The higher availability of steel in the domestic market on account of export duty announcement will lead to continued moderation in steel prices in the near term. In addition, the increase in export duty of steel will help in producing steel at lower cost. However, domestic consumption of steel will continue to grow, backed by improved economic activity and the government's continued investment in infrastructure and construction sectors. To serve the growing domestic demand, local steel production will grow backed by sustained high-capacity utilization levels.

As per the [National Steel Policy \(NSP\) 2017](#), the [Ministry of Steel](#) predicts annual crude steel capacity to reach 300 million tonnes (MT) in 2030-31 from India's present crude steel production of 118 million tonne (MT) in 2021 from 100.3 MT in 2020, while global picture of leaders on the other hand is China recorded a 3 per cent decline to 1 032.8 MT in 2021. Output of other Global steel leaders Japan finished at 96.3 MT in 2021 against 83.2MT of previous year 2020, The United States' output 86 MT compared to 72.7MT a year ago, Russia produced 76 MT steel, South Korea produced 70.6 MT, Turkey 40.4 MT, Germany 40.1 MT, Brazil 36 MT and Iran produced 28.5 MT steel in 2021. However, production target of steel in India has been set at 255MT in 2030-31 with the export target of 24 MT when per capita steel consumption may like to rise at 160 kg seems to be a modest target from the current figure of only 61kg in comparison to the world average of 208kg..

## Steel Production & Flow Chart of Process Route

Capacity, Crude, FinSteel Prodction, Fin Steel Import & Export in Million MT	FY - Production – Million Metric Ton (MT), - Ref E&Y, Steel Min, JPC				
	2017	2018	2019	2020	2021
Installed Capacity	128.3	138.0	142.2	142.2	142.2
*Crude Steel Prod	97.9	103.1	100.9	109.2	102.5
Fin Steel Consumption	84	90.7	98.7	100.2	94.9
Fin Steel Import	7.2	7.5	7.8	6.8	4.8
Fin Steel Export	8.2	9.6	6.4	8.4	10.8

\*Installed Capacity Shown by Study of E&Y, But OECD Report indicates Capacity as - World 2362. 6, China 1152. 2, India 129.1, Japan 130.1, US 109.7, Korea 81.2, Germany 51.9, Russia 87, Brazil 50.7.



### State wise Steel Production in India

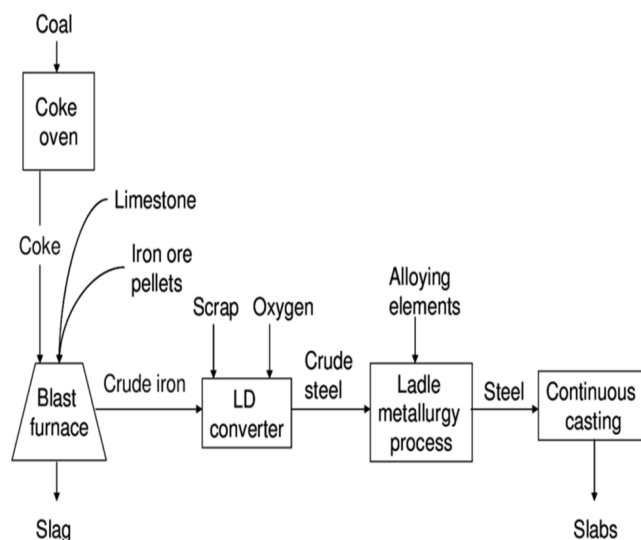
Break up of State wise Steel Production of India when produced 106.564 million tone of crude steel, state wise tonnage and ranking shown below Odisha – 18,537(1), Jharkand 16,585 (2), Chattisgarh – 12,739 (3), Karnataka 12,666 (4), Maharashtra 8,670 (6), Gujrat 8,232 (6) West Bengal 7,312 (7)

Indian steel industry has just delivered a decade of exponential revenue and profit growth The Indian steel industry has achieved significant milestones in terms of growth in capacity, production and exports to become a major player

in the global steel industry reducing emission level since all the countries mandated to reduce their carbon footprint looking at using low-carbon energy sources such as maximizing electrical process routes like EAF/IF and use of hydrogen, coal gasification in steel making route. Whereas China is producing presently 90% of crude steel from BF+BOF route and only 10% from electrical route when route wise production in India and USA from electrical route are respectively are 56% and 70% which indicates the efforts of emission reduction.

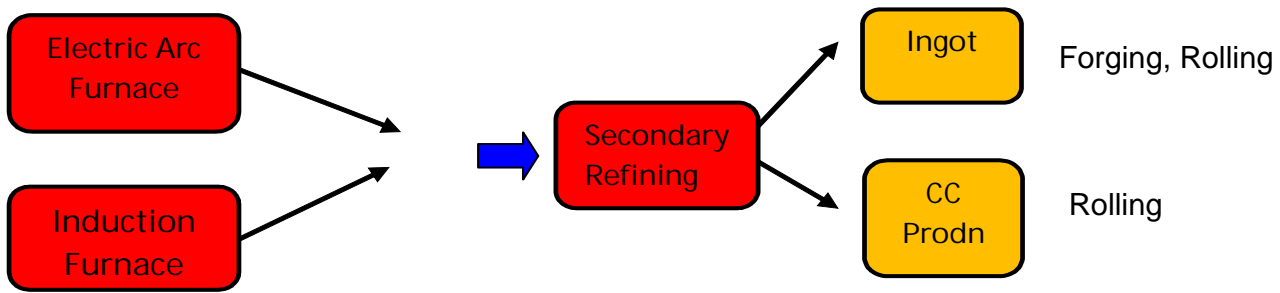
### Process Route

#### A. BF + BOF Route





## B. Electrical Route - EAF/EIF



NSP stresses on raising the level of R&D acquiring best of manufacturing facilities to cut India's import of products, machinery and technology for steel plants. Indian steel industries devote a mere 0.05-0.5% of their turnover to R&D against the 1% figure observed in major steel companies abroad. To introduce economies of scale and efficiency, the steel-making industries under Central Public Sector Enterprises (CPSE) are encouraged to focus on their core competency and divest the non-core assets via mergers and restructuring. However, excess capacity of Chinese and Japanese steel industry have hurt Indian steel exports.

**Country's Industrial Growth – Role of India's Steel Production:** Steel production was the major driving factor of the Industrial Revolution as seen in developed countries and is one of the periods of greatest change in history. Steel helped drive industry, globalization and urbanization. Steel Products are the **index of modernity and** development as the steel industry has a direct link with the development of a country acting as **a backbone for the physical infrastructure development of the country. In every development** issues that the change initiative is covering are addressed through engineering, technology and human ingenuity which are interconnected mechanisms have been at the forefront of industrial advancements over the years in developed countries and also in India.

The Global Financial Crisis of 2008-2009 was widely referred to as “The Great Recession.” With global financial crisis hitting several industrial sectors, profit making steel units in public as well as private sectors in India which adversely affected but steel industry, as a whole,

initiated steps to deal with the situation. Engineering materials have been the instrument through which all improvements in engineering developments have been implemented. It all began with the use of iron and steel to make large machines, like flywheels, forging presses and railway engines, construction activities with the help of forging and rolling industries.

India's steel production grew constantly from 57.8 MT in 2008 to 63.5 MT in 2009, 69 MT in 2010, 73.6 MT in 2011 and 76.7 MT in 2012 and Global rank remained unchanged at the fourth slot in 2013 with an output of 81.2 million tonnes (MT) and 87.3 MT in 2014. In 2015, India rose to third position by producing 95.5MT and then second position in 2018 with production of 109.3MT and same rank continues till 2022. This is despite India logging the second highest growth of 5.1% among the top five producers.

India now ranks as one of the largest economies in the world with the highest rate of GDP growth. The country's economic position can always be improved by developing infrastructure where steel played the most important role in the economic and infrastructure growth of any country. Since the Industrial Revolution, steel is used in diverse industries like infrastructure, manufacturing, construction, automobiles and more. In India, steel has a multiplier effect of 1.4x on GDP and 6.8x on employment. The growth in the steel sector is expected to improve further economic growth rate of India. The increasing demand for structural steel and its rising applications is expected to give a boost to the steel demand as well as the Indian economy.

Iron and steel industry **provides strong forward-backward linkages for the construction, industrial infrastructure, manufacturing and engineering industries..**Iron and steel industry is important also for the regional and rural development of the places where these industries are located. It plays a major role in the development of many other industries like the automobile industry, rlys, ship building, aero-space, defense etc. Iron and steel industry has generated huge employment especially in backward areas where these industries are located boosting to the transportation sector like road, railway, airway, and water ways. Iron and steel industry is important for the growth of the research and development sector in India.

**Contribution of Major & Main Steel Plants of India** - There are **Seven Central Public Sector Enterprises (CPSEs)** under the administrative control of Ministry of Steel. The private Sector [Steel Industry](#), in this group, is currently playing important role in the production and growth of the steel industry in the country, Such top steel companies of India are:

**Tata Steel Ltd** – As **Asia's first integrated private steel company established in India** in 1907 [fully owned by Tata Group](#)..Tata Steel is also the **second-largest steel producer in Europe** with a crude steel production capacity of over 12.1 MnTPA. Total Capacity is: **34 MnTPA**, Capacity in India: **19.4 MnTPA** Capacity and Overseas: **14.6 MnTPA**, Tata Steel acquired **Bhushan Steel Limited and Usha Martin Limited** through one of its subsidiaries. The company is biggest in the list of top 10 steel companies in India.

[JSW Steel Ltd](#) a flagship company of the JSW Group and the **second-largest steel companies of India** with steel making capacity of 18 MnTPA. **ranked 7th amongst Top 34 World Class Steelmakers by World Steel Dynamics**. It has a large scale presence in both India and international. JSW has plants in Karnataka, Tamil Nadu, and Maharashtra. The

Company is second in the list of top 10 steel companies in India based on the turnover.

**Steel Authority of India Ltd (SAIL)** is a **Government steel-making company** in India and one of the seven ['Maharatnas](#) of the country's, Central Public Sector Enterprises are **the Top Government steel companies in India**. The company is third in the list of top 10 steel companies in India based on the revenue, Total Capacity: **21 MnTPA**.

SAIL produces [iron and steel](#) at **five integrated plants and three special steel plants**, located principally in the eastern and central regions of India and situated close to domestic sources of raw materials. SAIL manufactures and sells a broad range of steel products from Bhilai, Rourkela, Durgapur, Bokaro and it is one the best steel company in India. Major SAIL products are: Pig Iron,Billet/ Bloom, Semis, Structural, TMT bars, Cold Rolled Products, Plate Mill Products, Galvanised Products, Rly products, Stainless steel Products, Electrical steel etc.

**Essar Steel India Ltd** is known for its **high quality of flat steel products**. The company focuses on high value-added grade steels and has developed over **300 grades of flat steel** for different applications. Essar Steel is a **10 MTPA integrated steel producer**. It caters to a wide section of industry segments that include auto, shipbuilding, white and yellow goods, general engineering, power plants, hydrocarbon industry, [pipe](#) making, [defense](#) among others. The company is fourth in the list of top 10 steel companies in India based on the total sales.

Essar Steel lays great emphasis on sustainability and is aligned with the World Steel Association's (WSA) sustainability indicators. Essar Steel is a climate action member and signatory to the Sustainability Charter, WSA and has been recognized for Safety & Health Excellence thrice over the last five years from the Association. Essar has attained the benchmark of being a **zero-waste company** by engaging in activities like efficient rainwater harvesting and controlled

water usage, better slag, and effluent gas management.

**Jindal Steel & Power Ltd** (JSPL), a part of the USD 22 billion diversified O. P. [Jindal Group](#), is a leading Indian Steel manufacturer and Power producer. The company is fifth in the list of top 10 steel companies in India based on turnover. JSPL's business operations span across the states of Chhattisgarh, Odisha, and Jharkhand in India, where it operates some of India's most advanced steel manufacturing and power generation capacities of a global scale. JSPL has created cutting-edge capacities to produce upto 9.95 Million Tonne Per Annum (MTPA) Iron catering to its 11.6 MTPA Liquid Steelmaking capacities across three locations in India and abroad. JSPL is one of the best steel company in India, Total Sales: Rs 39,652 Cr, Total Capacity: **11 MnTPA**, Capacity in India: **8.6 MnTPA**, Capacity in Oman: **2.4 MnTPA**. The company has a well-spread out installed finished steel capacity of 6.55 MTPA prudently spread over Bar Mills, Plate Mills, Rail and Universal Beam Mill (RUBM), Medium & Light Structural Mill (MLSM), and Wire Rod Mill, JSPL's captive iron ore mines at Tensa, Odisha have a production capacity of 3.11 MTPA. The company owns and operates combined power generation capacities of 5034 MW including the 3400 MW O.P. Jindal Super Thermal Power complex at Tamnar, Chhattisgarh.

**RINL** (Visakhapatnam Steel Plant, VSP) is a 7.3 MTPA plant. It was commissioned in 1992 with a capacity of 3.0 MTPA of liquid steel. The company subsequently completed its capacity expansion to 6.3 MTPA in April 2015 and to 7.3 MTPA in December 2017. RINL is one of the major players in the country for Long Products.

**Status of Indian Mini Steel Plant** - There are **around 650** mini steel plants in India .producing carbon, alloy steel forging, bars, flats in their forge shop and rolling mills in different grades and sizes scattered in different states .in the country Those units are producing steel from electrical route. By IF & EAFs. The induction

furnace (IF) process route accounted for around 33.3 million metric tons of crude steel, around a share of 28 percent of the total crude steel production in India at the end of 2021. In 2021, the production volume decreased mainly due to the impact of coronavirus pandemic. India was the world's second-largest steel producing nation in 2021. However, production also continued to suffer ddue to after effect of COVID..

**Merits of Mini Steel Plants** – With lowest cost of establishment, Mini steel plants require less capital for running their plants as compared to larger plants. Other advantages being **1. Short gestation period** - The production process of steel in mini steel plants are shorter than that of major plants making them more time-efficient and competitive. **2. Greater flexibility in operation** - Mini steel plants provide greater flexibility in their operations as compared to larger plants, since the raw materials already have steel content, there is greater flexibility in operations. **3. Instrumental in decentralized industrialization** - Since these industries are established near urban and semi-urban areas with low capital requirements, they cover more area as compared to larger steel plants, thus contributing in balanced regional growth. **4. Better position to meet local needs** - Mini steel plants are well suited to meet the local demands within a short span of time such as demand from utensil setups, steel rods for construction, etc. Since Mini steel plants use locality available raw materials, it has contributed in the decentralization of transportation and distribution networks, **5. Produces mild steel at low cost** - Since the raw material involved in the production of steel contains scrap, sponge iron and pig iron, the cost of processing is low. **6. Requires smaller infrastructure facilities-** The infrastructure facilities required for steel production is very less as compared to larger units due to the nature and process involved in the production of steel. **7. EAF & IFs can produce alloy steel** -In electrical steel making process, all the steel grades like highly critical grades like High strength low allo (HSLA, Micro

Alloy), Tool/ Die steel, Die block & Ball bearing, Creep steel etc can be produced in efficient way. .

### **Problem faced by mini steel plants**

1. Capital: Though the capital requirement is less as compared to larger plants, but still it requires large capital investment which small entrepreneurs find difficult to manage. Many plants have been established with foreign aid.
2. Lack of technology: Till the 1960s and 70s, India had advanced technology from the west and the efficiency of the plants was high, but after oil crisis, there was a steep hike in energy cost and other inputs which reduced the margin of profits. Therefore, a lower level of investment was made in technological development. Except for Bokaro and Vizag, efficiency suffered in other plants.
3. Low productivity: Per capita labour productivity is one of the lowest for Mini steel plants in India due to the presence of an excessively large no of labors. There is need of retraining and redeployment of labour to increase efficiency.
4. Low productivity utilization -The productivity utilization rarely exceeds 80 percent due to operational inefficiencies, attitude of workmen, scarcity of raw material, energy crisis, inefficiency in managing activities, infrastructure bottlenecks, and political influences.
5. In absence of secondary steel refining process at many plants, difficulty faced to produce clean and ultra-clean steel.

The Government of India (GoI) is taking measure to make India the global hub for manufacturing and to become the world's largest producer of steel by increasing the production capacity to 300 million tons annually by 2030 providing continuous support to Indian steel industries framing the broad policy contours considered as -

1. Steel-making capacity is expected to

reach 300 million tonnes per annum by 2030–31,

2. Crude steel production is expected to reach 255 million tonnes by 2030–31, at 85% capacity utilization.
3. Production of finished steel to reach 230 million tonnes, assuming an yield loss of 10% in the process of conversion of crude steel to finished steel – that is, a conversion ratio of 90%,
4. With 24 million tonnes of net exports, consumption is expected to reach 206 million tonnes by 2030–31,
5. As a result, per capita steel consumption is anticipated to rise to 160 kg,
6. An additional investment of INR 10 lakh crore is envisaged.

India is the second largest producer of steel in the world after China, with a production capacity of approximately 110 million metric tons per annum. An ambitious “Self-Reliant India” plan to make India a global hub for manufacturing for the automobile, defense, aviation, pharmaceutical, and other industries is initiated. The plan amplifies demand for ferrous scrap to produce steel and other metals.

Currently, India's scrap market is highly unorganized. Most operations are manual and carry major safety and environmental concerns. In 2019, primary and secondary steel producers used approximately 32 million metric tons of ferrous scrap, an increase of 11.4 percent over the previous year. Approximately 25 million metric tons were sourced through the local scrap dealers, and the remaining 7 million metric tons were imported from China, United States, United Arab Emirates, Saudi Arabia, Iraq, and other markets.

Despite the huge demand for steel in early 2020, the sector felt the impacts of the Covid19 pandemic. More than 60,000 containers of imported scrap accumulated at Indian ports in the first and second phase of the lockdown (March –

May 2020). As there was no demand for steel from other sectors. Manufacturers hesitated to clear those shipments from the ports. Moreover, the shortage of labor and inter-state restrictions halted the collection and supply of household and industrial scrap.

This resulted in the increase of finished goods prices in India. To overcome this situation, the Government of India permitted secondary sector steel producers to use directly reduced iron, sponge iron for production. This not only managed to meet the interim demand of the steel in the country, but also helped other industries to revive faster than expected.

The GoI has taken some major steps in the FY21 budget to boost the production of steel in India, such as removing duties on imports of scrap and clearing the Voluntary Vehicle Scrapping after end of life as per policy. As a result, scrap from steel, aluminum, and other ferrous and non-ferrous metals can be used again in the manufacturing of new products.

As the GoI works towards ambitious plans such as Self-Reliant India or “world's largest steel producer”, the consumption of ferrous scrap will increase in both the primary and secondary steel manufacturing segments, and is projected to reach approximately 75 million tons per annum by 2030.

The Government's vision to achieve a \$5 trillion economy by 2024 entailing investments worth INR 100 lakh crore in infrastructure sectors, including several steel intensive sectors like Housing for All, 100% electrification, piped water for all etc. and encouraging entrepreneurs to enter in the export market. Steel has several inherent advantages of durability, faster completion time, reduced environmental impact, and creation of a circular economy. Steel will have a crucial role to play in India's rise to a \$5 trillion economy.

**Physical Steel Trading:** Steel traders buy and sell different steel products worldwide. Most traders are specialised on specific product

ranges (longs, flats, scrap, stainless etc.) and they also focus on different countries/geographical area. Steel traders look to increase the revenue for their company by strengthening and growing their customer base, promoting the company's products, and tapping into new markets.

China is by far the largest producer and exporter of steel in the world, followed by Japan, South Korea, and Russia. The EU, the USA, Italy, Turkey and Vietnam are among the top importers of steel globally.

- 
**Consumption**
  - Develop structured intervention roadmap to facilitate growth in domestic steel consumption

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- 
**Trade**
  - Transform India's steel sector from a net importer to a net exporter

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- 
**Capacity - Make in India**
  - Provide appropriate policy support to facilitate capacity addition to enhance crude steel production from 111 MTPA to 169 MTPA by 2024

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- 
**Efficiency improvement**
  - Develop world class steel plants with best in class technology, environment adherence and safety norms

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- 
**Workforce welfare**
  - Create and facilitate employment (direct and indirect) for 12 Million people by 2024

### Ministry of Steel - Key Areas of Vision:

**Export & Import Opportunity:** The Directorate General of Foreign Trade is a government organization in our country which is responsible for formulating guidelines for imports and exports in our country. The main responsibilities include preparation, formulation, and implementation of Exim Policies. It is also responsible for assigning an import-export code(IEC). Before 1991, DGFT was known as the Chief Controller of Imports & Exports (CCI&E).

In 2020, the United States was the second largest exporter of ferrous scrap to India, with a 12.4 percent market share after the United Arab Emirates' 12.5 percent and exported ferrous scrap worth 337 million US Dollars to India. Therefore, the recent developments in the Indian

market will encourage full-service recycling companies and scrap traders to explore potential export opportunities to the Indian market.

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**Customers/ Consumers of Steel Products:**

Automobile Sector, Construction & Infrastructure Sectors, Aerospace Industry, Car manufacturers, Construction industry, Defence Production Units, Domestic electrical appliance manufacturers, Energy and power sector (e.g. oil/gas and structures etc.), Mechanical/ industrial equipment manufacturers, Packaging and utensil manufacturers (e.g. tins, tools), Rail infrastructure Operations, Shipyards.

**Hedging and Derivative Steel Trading:** Given the high volatility of the commodities market, the price of steel is subject to wide fluctuations. Since the steel market price is affected by a wide range of factors, both steel producers and traders hedge their price risk daily. Steel hedging allows risk managers to mitigate the risk of losing money if the steel prices are moving and they commonly hedge on exchanges like the London Metal Exchange (LME) and the New York Mercantile Exchange (NYMEX). Also, an over-the-counter (OTC) market in steel hedging has been developed, offering traders the opportunity to use derivative products like options and swaps.

**Attention Towards Reduction of Carbon Footprint:** There is an added emphasis on sustainability and reduction of carbon footprint by adopting a judicious mix of steel production routes rather than depending heavily on fossil fuel. The analysis, however, shows that it is

possible to bring down carbon dioxide (CO<sub>2</sub>) emissions from Indian iron and steel sector drastically by 2030 by specified actions of the individual plants, while tripling India's output of steel. All the units can emit even less than what emits do today – but all this will need proper planning, technology and funds as per Centre for Science and Environment (CSE) which refers to CSE's recent assessment report on the emissions footprints of India's iron and steel sector and how it can be decarbonizes. Govt is rendering all needed supports in this area.

The iron and steel sector is a hard-to-abate sector in terms of greenhouse gas (GHG) emissions; at the same time, it is a critical contributor to the economic development of the country. Globally, the sector accounts for some 7 per cent of total greenhouse gas emissions. In India., Scrap-based EAF/ EIF production will reduce emissions but each steel maker will need to decide whether and how to transition based on the affordability and availability of scrap and the desired quality of the end product. Indian major, main and mini steel producers have been focusing upon becoming customer-centric i.e. on cost and quality as opposed to the selling approach that had prevailed for more than four decades, to match up to the competition from local and global players.

**Steel Distribution:** This context assumes a lot of importance looking at the bulky nature of the product application areas and changing needs and expectations of customers. Steel producers particularly mini steel plant producing alloy and special steel in the country are in the process of tracing the evolution of distribution systems adopted by the steel producers, current strategies, competitiveness on cost, product quality, pre and post sales service and future trends in various ways suiting to individual plant facilities, processing stage wise development activities and overall capacity. With limited facilities of marketing and distribution of products to customers, mostly mini steel units depend on **Dealership Marketing Frame Work.** This

network is well aware about product, producers and customers through their net work, where consumption pattern looks like - **Industrial Construction 19%, Infrastructure 21%, Automobile 12%, Pipes & Tubes 9%, Consumer Durable 6%, Capital goods 5%, Others 29%**

**Marketing & Distribution Channel of Steel in India:** Indian Steel Industries mainly supply their products in major cases to original equipment manufacturers, like Automobile industry, Defense, Rlys, Construction and various Manufacturing/ Engineering sectors Consuming sectors in steel business is categorized as OE or Retail, based on whether the customer is serviced directly, or through the Retail / Distribution network. In OE, there are sub-segments like OEM distribution, and retail distribution. In OEM distribution, the customers specify the grade of steel, chemical composition and property of steel grades that they require and the steel makers/ take the responsibility of supply OEMs the same steel in the agreement termed as technical delivery condition as per purchase order. In retail distribution, companies maintain stocks of material for feeding its retail chain providing value for products. In Distribution, the Steel Mills are the key suppliers and they play a very valuable role in the supply chain as they are responsible for providing the timely delivery of correct quality of steel products, post- sales support and joint marketing support, settlement of customer complaints and disputes..

**Warehousing System for Ease of Product Distribution:** Warehouses and warehouse storage systems are adopted by different steel industries and also steel dealers in India for storing steel products maintaining easy handling proper storing and taking out as and when needed. The ideal system should be racking system for products rolled or forged as commongrade wise with proper identification of grade/ size wise product with different color coding. Proper ware housing system avoids mix

up of material, easy stacking and taking out for dispatch to customers. There are many different systems used in large warehouses to store steel products. Each of the systems employs the basic procedure of storing product on some sort of pallet storage system or gravity flow rail system.

Dealers should be well conversant to categorize the product also, to get the right material storage type, in order to optimize the space allocation or otherwise entire logistic cost, warehouse rentals likely to increase.. All these activities will also contribute to the productivity of the entire warehouse design. Dealers categorize the products as per their own standard for ease of working system to get the right material storage and dispatch to customers in order to optimize the space allocation aligning the entire system increasing process the efficiency.

**Managing Logistics by Indian Steel Industry:** For most Indian steel makers, managing logistics requirements is arduous, challenging and costly. The primary raw material for steel making is iron ore, besides coal or coking coal. Both are bulk minerals, and steel is also a bulk commodity. So, whether it is physical transportation of raw materials for steel making to the steel mills or physical transportation of finished steel to demand centres, transportation of bulk materials is always arduous. Moreover, most Indian steel plants are located inland, unlike in China, Japan or Korea, where they are located close to the sea. This increases the challenge of managing logistics requirements for most steel plants in India. Railways are naturally the preferred mode of transportation for steel makers. More than 80% of the total logistics requirements of the steel industry are met through the railway network, as the sea route can be partially leveraged for only three steel plants. Moreover, transportation through roadways for bulk materials is economically unviable. The railways face huge infrastructure constraints, which makes managing logistics challenging for Indian steel makers.

**Products Storing in Production Units**



**Ideal Stacking System Inside Shop**



**Stock Outside the Shop**



**General Stacking of Products**



**Tube Products**



**High Speed Tool Steel Product**

**Proper Stacking of Finished Steel Products inside Covered Space**

**Common Stacking & Handling Arrangements in Ware House at Dealers End**



**Tube & Pipe Product**







**Wire Product**



**Fork Lift Used for Stacking**



	
<b>Steel Products in Ware House</b>	<b>TMT Bars Stacking</b>
	
<b>Stacked Flat Products</b>	<b>Stacked Forged Products</b>
<b>Finished Products Stacking in Ware House of Main &amp; Major Indian Steel Plants</b>	

Steel Dealers and Traders assist in supplying products for India's infrastructural development by contributing millions of tonnes of steel products to projects of National Importance even at remote corners in the country by meeting the needs in construction and infrastructure project activities. Main and Major Steel plants of India mostly in the process of steel product distribution through dealers or traders tying up with product properties, composition of steel grades and agreement on various other commercial formalities.

Indian steel industries assess the level of steel consumption in the country's consuming sectors in keeping with the National Steel Policy. Indian steel majors have set up a countrywide network of Dealers who ensure availability of quality steel in all the areas even at remote corners in the country for structural long-lasting, cost-effective and safe structures construction with a common

centric approach even launching new category of TMT bars in line with world standard branding in different names through Distributor-Dealer network all over the country. The steel industries of their own have constructed Ware Houses at different zones and at major cities in the country maintaining stock yard opening up branch sales offices.

**Storage equipment and Storing Facilities in Ware House:** As key role of internal logistic processes allowing a more efficient and better use of the available space ensuring proper identification of products, the ware houses maintaining **In & Out** stock in an organized manner, increasing productivity maintain computerized records of storage system with industrial racking system using fork lift, mobile or overhead crane and trained worker in line with handling material, identification of products avoiding possibility of any mix up.

The most well known warehousing system utilizes pallets loaded with high valued product with cases of product stored in pallet racks. The pallets are moved by forklifts from the area of the warehouse where they are received to the storage locations, and the pallets are placed on racks. When the containers are needed for shipment, a forklift and a driver are required to remove the pallet from storage and place it in a selection location. The shipper then selects containers to be shipped to stores.

A small system used in warehousing is the gravity flow rail system. This system requires forklifts, forklift drivers and laborers to break the pallet loads down and store containers on rollers. The gravity flow rail is limited in that it can handle only hard bottom cases. Products stored in bags or pails will not flow directly on the gravity flow rail system.

As a preliminary step to the design of the storage system and the industrial steel racking, it is necessary to consider the specification of the materials to be stored, like dimensions, weight, durability or economic aspects.

**Product availability at Distant Location of Construction:** It is observed that the steel producers are available at one location and they have to supply to different locations for the utilization of products at different construction/fabrication sites. This is streamlined and made available with the help of dealers present at different locations. These dealers based at different locations make the product available for the consumers, far away from manufacturers making the products available at locations closer to the construction sites who ensure easy access and supply of the products. Dealers in the vicinity make it easier for the products to be shipped to the customers' location, reducing the shipping costs as opposed to the products to be delivered from the manufacturing unit to the construction site.

The availability of dealers in their neighborhood of construction site makes it easier for construction materials to reach site in a timely fashion. The delivery is faster from a dealer in the vicinity and the costs for these deliveries are also cut down considerably. For a construction site, delivery of the key raw materials is very time-bound and the dealers present in your location help you meet your process milestones and avoid any additional costs and time. Similar situation is followed in production units as the essential and urgent raw material for steel production is provided by traders or dealers in faster ways. The wide network of dealers available at different locations also act as marketing hubs for specific brand and the availability of the products familiarizes the customers about the manufacturers.

**Conclusion:** Being the second-largest steel producer in the world, India exports around 50% of the steel produced and steel products the global market and steel export business of India contributes 30% to the country's economy. Right from various finished steel product to steel components / parts, Indian steel industry is known to manufacture a wide range of products and export the same in competitive way on quality and cost. Major Indian Steel Industries, over the years, have developed their steel dealers who used to sale their products in their brand name if desired.

All the technical details about the products are available to them. Efforts given to dispatch steel products movement in faster way so as to maintain minimum cost for logistics. The steel producing industries should have open discussion with steel traders and dealers about handling and marketing of their products as per their own production target as per their share of contribution as envisaged in National Steel Policy. Performance and Time bound Activities should be monitored for further action taken for mutual interests.



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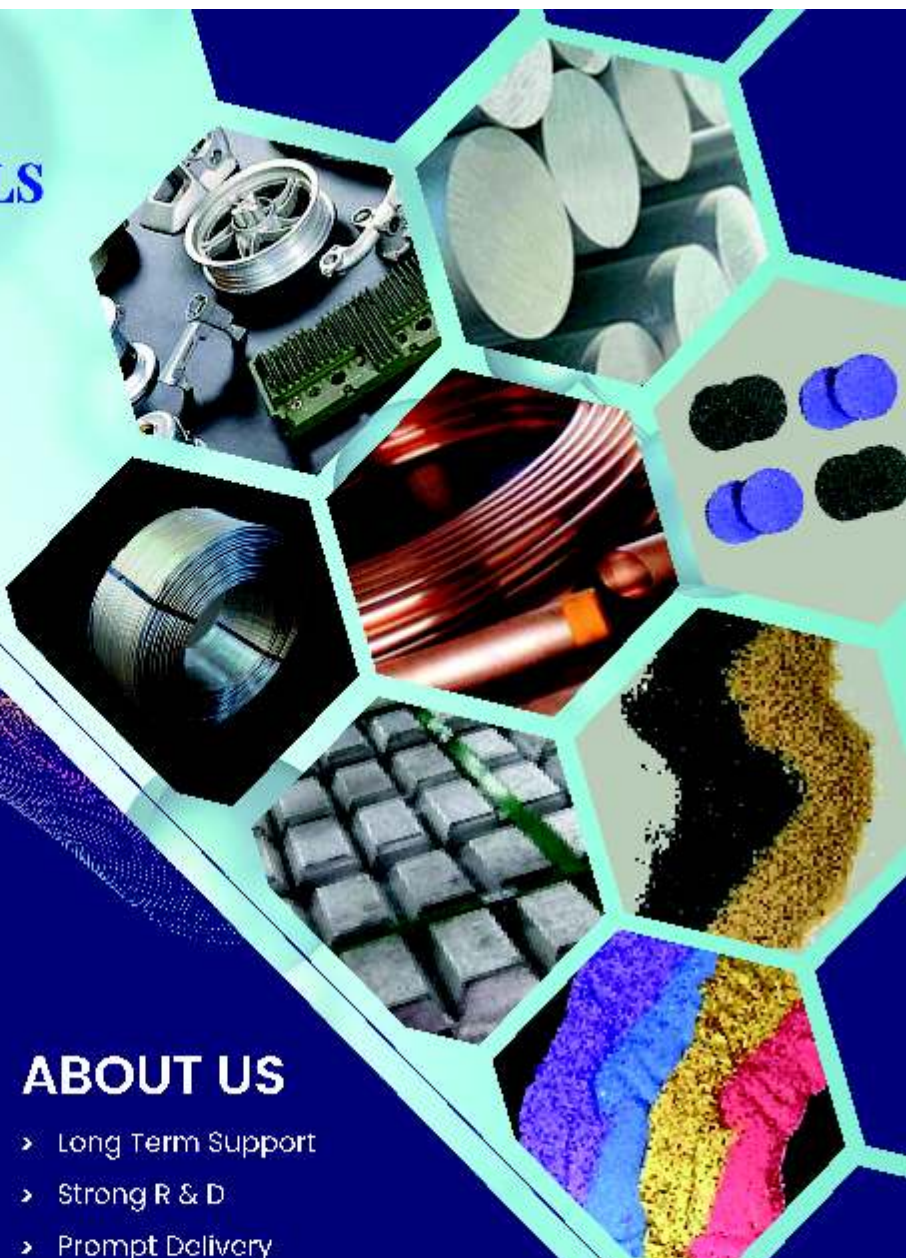


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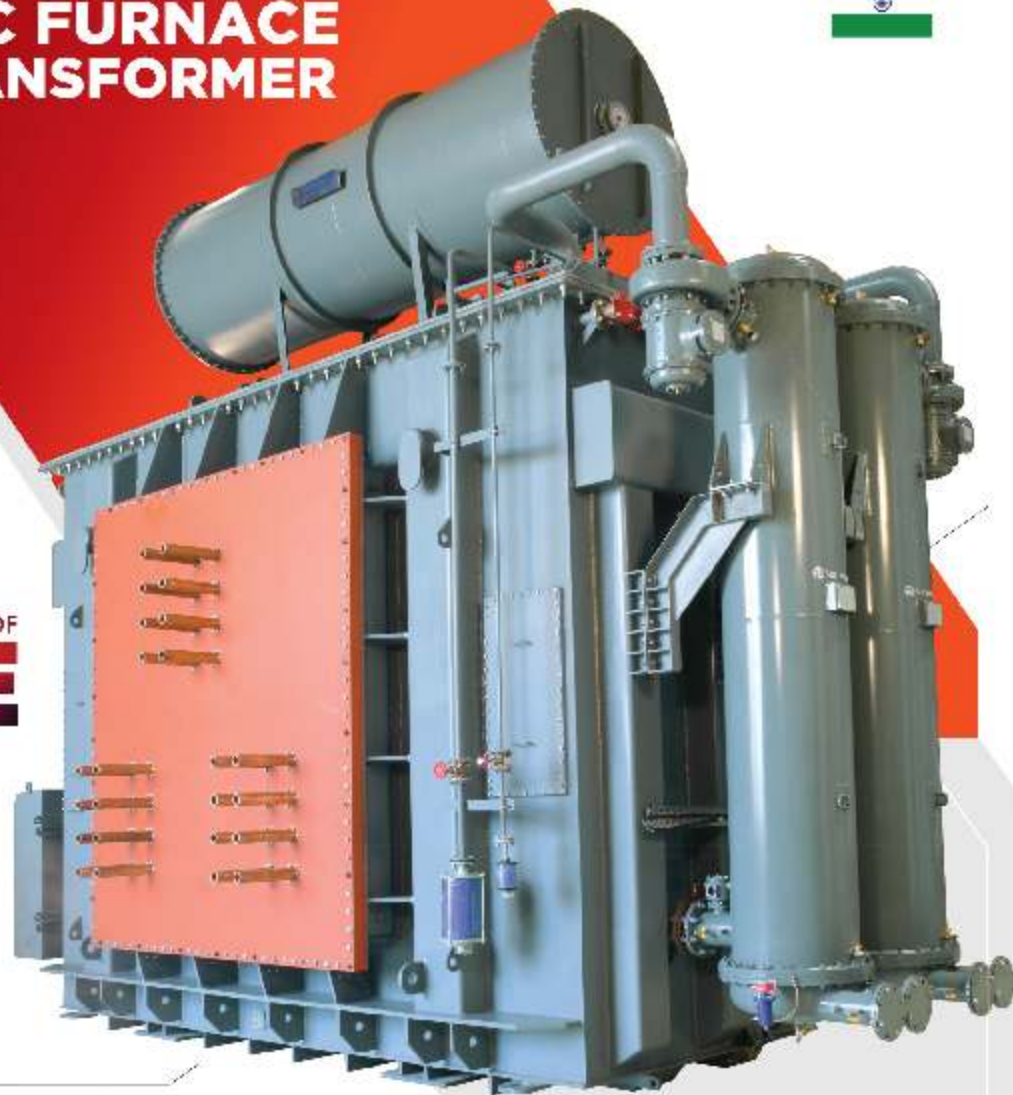


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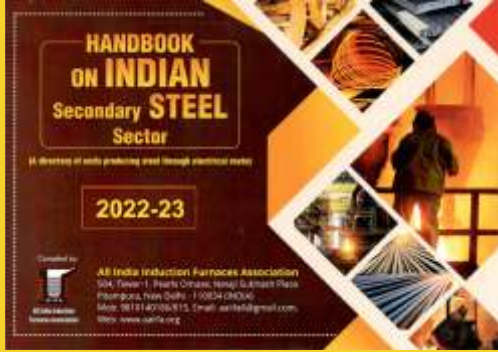
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