



**Ministry of Steel**  
Government of India

# **Achievements and Milestones**

## **Ministry of Steel**

**Government of India**

**April 2017**

## Table of Contents

<b>1 EXECUTIVE SUMMARY</b>	<b>5</b>
<b>2 INTRODUCTION AND OVERVIEW OF THE INDIAN STEEL SECTOR</b>	<b>10</b>
<b>3 VISION, STRATEGY AND KEY INITIATIVES</b>	<b>13</b>
3.1 VISION	13
3.2 GOVERNMENT STRATEGY AND KEY INITIATIVES	13
3.3 PRIME MINISTER'S FLAGSHIP PROGRAMME	17
3.3.1 MAKE IN INDIA	17
3.3.2 SKILL INDIA	17
3.4 OTHER INITIATIVES	19
<b>4 KEY ACHIEVEMENTS</b>	<b>20</b>
4.1 CAPACITY ADDITION AND AUGMENTATION	20
4.2 ENHANCED INVESTMENTS	23
4.3 INNOVATION, R&D AND PROMOTING QUALITY	25
4.4 ENVIRONMENTAL INITIATIVES	27
4.5 PROMOTION OF STEEL USAGE	30
4.5.1 RURAL DEVELOPMENT	30
4.5.2 URBAN DEVELOPMENT	31
4.5.3 ROAD AND HIGHWAYS	32
4.5.4 AWARENESS INITIATIVES	32
4.6 DIGITAL INITIATIVES	34
4.7 OTHER ACHIEVEMENTS	38
4.7.1 STEEL AUTHORITY OF INDIA LIMITED (SAIL)	38
4.7.2 RASHTRIYA ISPAT NIGAM LIMITED (RINL)	40
4.7.3 NMDC LTD.	43
4.7.4 MOIL LTD.	43
4.7.5 KIOCL LTD.	44
4.7.6 MECON LTD.	45
4.7.7 FSNL	45
4.7.8 SWACHH BHARAT ABHIYAN	45
4.8 REACHING THE PUBLIC AND ENGAGEMENT WITH PEOPLE	48
4.8.1 YOUTH OUTREACH	48
4.8.2 SOCIAL MEDIA	50
<b>5 WAY FORWARD - INDIAN STEEL INDUSTRY</b>	<b>51</b>

## List of figures

Figure 1: India's steel capacity and production .....	10
Figure 2: Current steel footprint in India .....	11
Figure 3: Steady decline in imports and growth in exports .....	15
Figure 4: Snapshot of few initiatives under skill development (1/2) .....	18
Figure 5: Snapshot of few initiatives under skill development (2/2) .....	18
Figure 6: World crude steel production 1950 to 2015 in Million Tonnes .....	20
Figure 7: Top 20 steel producing countries in 2015 in Million Tonnes .....	20
Figure 8: Apparent steel use consumption per capita – 2015 in KGs .....	21
Figure 9: Capacity augmentation in the crude steel capacity since April 2014 .....	21
Figure 10: Crude steel production in MT (Left) and apparent consumption in MT (Right) .....	22
Figure 11: Bird's eye view of the Indian Steel Sector (% change in Apr-Dec.16 vis-a-vis Apr-Dec.15) .....	23
Figure 12: Exchange of MoU among Joint Secretary, Ministry of Steel, Secretary, Government of Jharkhand and CMD, NMDC Ltd. ....	24
Figure 13: CMD, MSTC signing the JV agreement with Mahindra Intertrade Ltd. in the presence of Hon'ble Steel Minister and Secretary, Steel .....	25
Figure 14: Hon'ble Steel Minister inaugurating Palletisation lab in RDCIS, SAIL .....	26
Figure 15: BIS accredited lab of NISST .....	27
Figure 16: Secretary, Steel inspecting the NEDO Project at RINL .....	28
Figure 17: Secretary, Steel inaugurating 5 MW Solar Power Plant at RINL .....	29
Figure 18: Organic Waste Converter Station of MECON, Ranchi .....	29
Figure 19: Steel Intensive structures for use in Rural areas by INSDAG .....	30
Figure 20: Prototype low cost houses by INSDAG in West Bengal and Maharashtra .....	31
Figure 21: Pre-cast mass housing by INSDAG (Left), Pre-fab building by INSDAG (Right) .....	31
Figure 22: Steel Bridges (Left) and Steel Crash Barriers (Right) .....	32
Figure 23: Hon'ble Steel Minister and Hon'ble Minister for Railways flagging off Vizag Steel Samta Express .....	33
Figure 24: Launching of MSTC's Metal Mandi Procurement Portal by Hon'ble MoS (Steel) in the presence of Secretary, Steel .....	33
Figure 25: Hon'ble Steel Minister inaugurating Steel Pavilion at IITF, 2016 at Pragati Maidan, New Delhi .....	34
Figure 26: Signing of MoU between NMDC and National Remote Sensing Centre, ISRO under Department of Space Technology .....	35
Figure 27: Snapshot of the web portal for e-bidding process for regional connectivity scheme .....	35
Figure 28: Snapshot of web portal for e-bidding for discovered small oil & gas fields in India .....	36
Figure 29: Snapshot of web portal for e-auction of coal linkages .....	36
Figure 30: Snapshot of web portal for DEEP .....	37
Figure 31: Snapshot of web portal for e-auction of non-coal mining blocks .....	37
Figure 32: "Kalyani" blast furnace of SAIL .....	39
Figure 33: Hon'ble Prime Minister dedicating modernised and expanded Rourkela Steel Plant to the Nation .....	39
Figure 34: Hon'ble Prime Minister dedicating the modernized and expanded IISCO Steel Plant to the Nation .....	40
Figure 35: Converter at RINL .....	41
Figure 36: Special Bar Mill at RINL .....	41
Figure 37: RINL receiving the Rajbhasha Keerti Puraskar .....	42
Figure 38: PV Sindhu – brand ambassador for RINL .....	42
Figure 39: NMDC's new pellet plant in Donimalai, Karnataka .....	43
Figure 40: Sinking of vertical shafts at Munsar Mine & Ukwa Mine of MOIL Limited .....	44
Figure 41: KIOCL's shipment to Iran .....	44
Figure 42: Swachh Bharat pledge being administered to the employees of Ministry of Steel .....	46
Figure 43: Construction of toilets as a part of the Swachh Bharat Abhiyan .....	46
Figure 44: Observing Swachhta Pakhwada under Swachh Bharat Abhiyan (1/2) .....	47

## Key achievements and milestones for the Ministry of Steel – 3 Years

Figure 45: Glimpses of Safai Pakhwada under Swachh Bharat Abhiyan at Jaggyyapeta Limestone Mines .....	47
Figure 46: Inauguration of Manganese Museum.....	48
Figure 47: Visit to Steel Museum of RINL by Secretary, Steel .....	49
Figure 48: Images of Saksham (Left) and Aastha Gurukul (Right).....	49
Figure 49: Snapshots of the Ministry of Steel in various social media platforms .....	50

## List of Tables

Table 1: Forecast for iron and steel demand and production by 2030-31 (Values in MT, unless specified).....	13
Table 2: Snapshot of production, exports, imports and consumption (All values in '000 Tonnes).....	22
Table 3: Details of training programmes conducted.....	32

# 1 Executive Summary

Steel is regarded as the barometer of the economic health and world's largest steel makers are one of the largest economies in the world. Steel is one of the most important products in the modern world and forms the backbone to any industrial economy. India, being one of the fastest growing economies in the world, and steel finding its extensive application right from construction industry, industrial machinery to consumer products is of strategic importance to the country. In India, steel sector has an output multiplier effect of nearly 1.4 times on GDP and employment multiplier factor of 6.8. On account of India's rapid industrialization and modernization, the sector has grown exponentially from a small capacity of 22 MT in FY 1991 - 92 to become the 3<sup>rd</sup> largest producer of steel in the world with a production of 97 MT and a capacity of 125 MT as on January 2017<sup>1</sup> contributing to about **2% of the country's GDP and employing about 5 lakh people directly and about 20 lakh people indirectly.**

Aftermath of the global back drop in the steel sector was evident in Indian steel market as well, with poor balance sheets and cash flows for major steel producers in the country. Over the last two years, the Government of India has taken number of strategic interventions to tackle the global glut in steel industry leading to effective decision making and a series of milestones and achievements in the sector including improved capacity utilizations, increased cash flows & profit margins for steelmakers, reduced imports and significantly high exports. With an increased focus on expansion of MSME sector, improved raw material security, enhanced R&D activities, reduction in import dependency and cost of production, Government aims to develop a **“technologically advanced and globally competitive steel industry that promotes economic growth”** eyeing self-sufficiency in production, developing globally economical steel manufacturing capabilities by facilitating investments and cost efficient productions with adequate availability of raw materials.

The expansion plans for the MSME Sector is focused on key strategic parameters and metrics **including expansion of capacity, better financing focused on lesser capital involvement, production of high quality of steel with enhanced and improved technology.** Over the years, the sector is estimated to add about 70 MT of capacity, thus overall capacity reaching to the tune of about 115 MT by 2030-31. The government is also emphasizing on roll out of quality products thereby mandating **adherence to Bureau of Indian Standards (BIS) certification** for 33 categories of steel. Focusing on the reduction in cost of production, the Government is pursuing all necessary measures with relevant Ministries to **bring down transport and logistics costs** along with **development of slurry pipelines for the evacuation of fines and pellets.** With an overall vision of reducing the country's import dependence and ensuring the availability of raw materials, the government has traversed a long way with a list of remarkable milestones. As India imports more than 85% of the total import requirement of coking coal, **it has been agreed with the Ministry of Coal to expedite installation of coal washeries to ensure minimum availability of 13%**

---

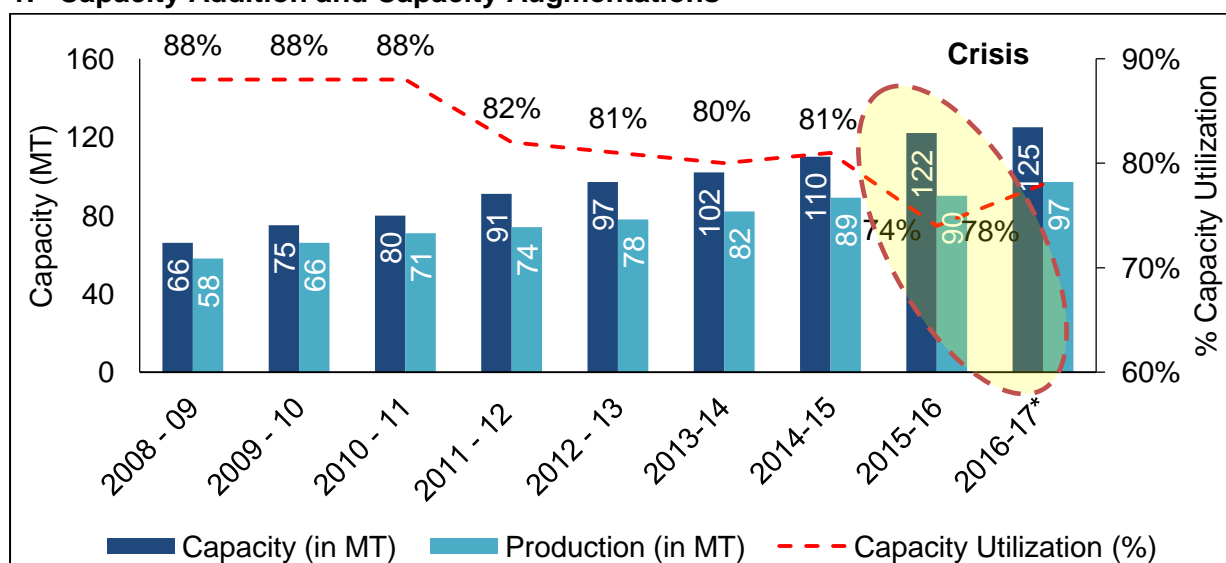
<sup>1</sup> Calculated on pro-rata basis (Apr'16 to Jan'17)

**ash content coking coal, auction of coal to private sector for long term thus encouraging investment in washeries and guaranteed long term security of 10+5 years in the linkage auction.** In order to enhance the affordability and availability of Natural Gas, the government has agreed for **overall pooling of gas to enhance availability and affordability and a 2.5% reduction in the import duty** thus benefiting stranded gas based steel plants while importing. Apart from these the government is taking all necessary steps to ensure future availability of scraps through policy reforms, enhanced investments and setting up of Auto/Steel Shredding units.

India is **all poised to become the second largest producer of steel in the world after China.** The key strategies adopted by the government include continuous pursued trade remedial measures with an aim to **improve price realizations and decrease imports and improve capacity utilizations of existing facilities.** The sector is also expected to focus on indigenous production of value added capacities by large players for Auto grade steel, CRGO, CRNO, etc. by 2019-20. The government is fully aware of the need for extensive research and development in order to achieve its vision. In order to promote R&D in the sector, Ministry of Steel has taken full cognizance of the technological scenario in Indian Steel Industry and has initiated a fresh move for preparation of a comprehensive blue print for promotion of R&D in Iron & steel Sector. To bring in all the stake-holders under one platform and promote steel research on themes of critical and vital national importance, an institutional platform called **“Steel Research and Technology Mission of India”** has been established with an objective to spearhead R&D of national importance in iron & steel, creating state-of-art facilities to conduct cutting-edge research, develop expertise & skill development, manage human resources and bolster a tripartite synergy amongst industry, national R&D laboratories and academic institutes.

The ambitious vision backed by strong administration leading to effective decision making and implementation of the correct measures have led to a series of milestones and achievements in the sector including

### 1. Capacity Addition and Capacity Augmentations

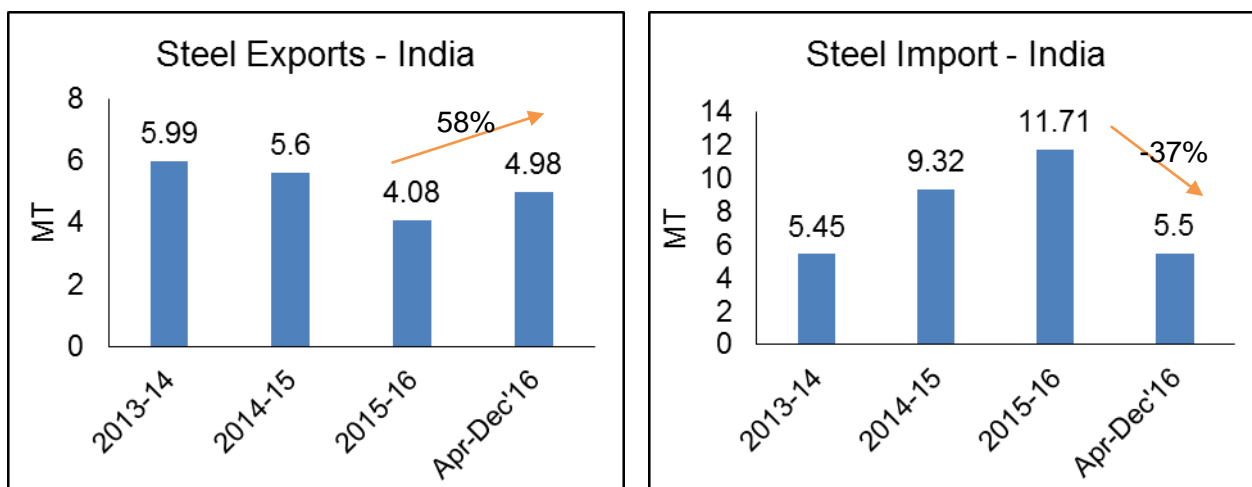


\* Calculated based on pro-rata basis of Apr'16 to Jan'17

As seen from the figure above it is evident that the sector has been growing at steady **CAGR of about 8%** over the past eight years with an improvement in the overall capacity utilization even with enhanced capacity. The same is a remarkable achievement as the global steel market is yet to fully recover.

## 2. Reduction in imports and enhancement of exports

The Indian steel sector witnessed a **58% spike in overall exports and a 37% decline in imports of steel products** during the period Apr-Dec'16 over the same time frame in the previous year owing to a series of measures taken on the curbing imports like the Anti-Dumping and Safeguard Measures



Source - JPC

## 3. Enhanced Investments

In order to achieve the ambitious target of 300 MTPA Steel Production Capacity by 2030, a concept of Special Purpose Vehicle was enunciated. Four mineral rich states namely Chhattisgarh, Odisha, Karnataka and Jharkhand have been identified for setting up of Integrated Steel Plant with the collaboration of Central and State PSUs through SPV route. MoUs for setting up of Steel SPVs in the State of Chhattisgarh was signed on 09.05.2015 and in Jharkhand on 28.06.2015

## 4. Innovation, R&D and quality promotion

The innovation and research institution mechanism namely Steel Research and Technical mission of India (**SRTMI**) **has been registered on 14th October, 2015 under the Societies Registration Act with an initial corpus fund allocation of INR 200 Crores** from the Ministry of Steel and other major companies in the sector. During the last three years, 3 R&D projects have been approved with total cost of **INR 18.6 crore with financial assistance of INR 10.75 crore from the SDF** and additionally, **14 R&D**



**projects have been approved with a total cost of INR. 51.39 crore with financial assistance of INR 31.12 crore from Government of India fund**

#### 5. Other milestones and achievements

- With the increasing prominence of '**Going Green**' across the globe, the Ministry of Steel is also promoting the same with the commissioning of **first of a kind power generation from green technology in collaboration with NEDO**, Japan at RINL. Under the NEDO Model Project of the Government of Japan, Government is facilitating setting up of model projects in integrated steel plants to implement energy efficient, clean and green technologies. Two model projects have been approved with a total cost of INR 100 crore and are being implemented at SAIL's plant at RSP, Rourkela and ISP, Burnpur
- Also as a part of Government's thrust to tap power from renewable energy sources, grid connected and solar roof top projects have already been commissioned at the plant premises of RINL in Vizag and MOIL's corporate office in Nagpur
- The government is also promoting rural and urban development through low cost housing designs by INSDAG and various other structures including culverts, Anganwari Panchayat Hall, Community Toilet, etc. Apart from these, all necessary actions are being taken to enhance usage of steel in roadways and railways sector through crash barriers in hilly terrains, steel bridges, steel reinforced pavements and roads, rail coaches, sleeper coaches, dedicated freight corridors, foot-over bridges etc.
- With the government's vision of digitizing India, an MoU for satellite based Geological Mapping for Mineral Exploration of Iron, Diamond and Other deposits between NMDC Ltd. and National Remote Sensing Centre (NRSC), Indian Space Research Organization (ISRO) was signed on 5<sup>th</sup> May, 2016
- The Ministry of Steel with its intensions of reaching to the public has been actively involved in the same through initiatives like inauguration of Manganese Museum on 19<sup>th</sup> December, 2016, the first of its kind in India at Nagpur showcasing not only the 100 years heritage of Manganese ore mining in the country but also its utility in the steel making process. Also, the Ministry has ensured strong social presence through various social medial platforms like Facebook, LinkedIn and Twitter

Today, the Indian steel sector is in a position where continued positive actions in terms of investments and Government interventions can take it to a position of global leadership yielding accelerated GDP, industrialization and massive employment opportunities. With such an immense potential to be tapped and with flagship initiatives like **Make in India** which forms the key impetus for enhanced steel demand across sectors from Infrastructure, Construction, Power & Energy, Defence and Aerospace, the Indian steel sector is soon expected to achieve new heights.

Untapped potential with a strong policy support becomes a huge platform for growth and with the finalization of the National Steel Policy 2017, it is envisaged that the industry can be steered with appropriate policy support in creating an environment for promoting domestic steel and thereby ensuring a scenario where production meets the anticipated pace of

## Key achievements and milestones for the Ministry of Steel – 3 Years

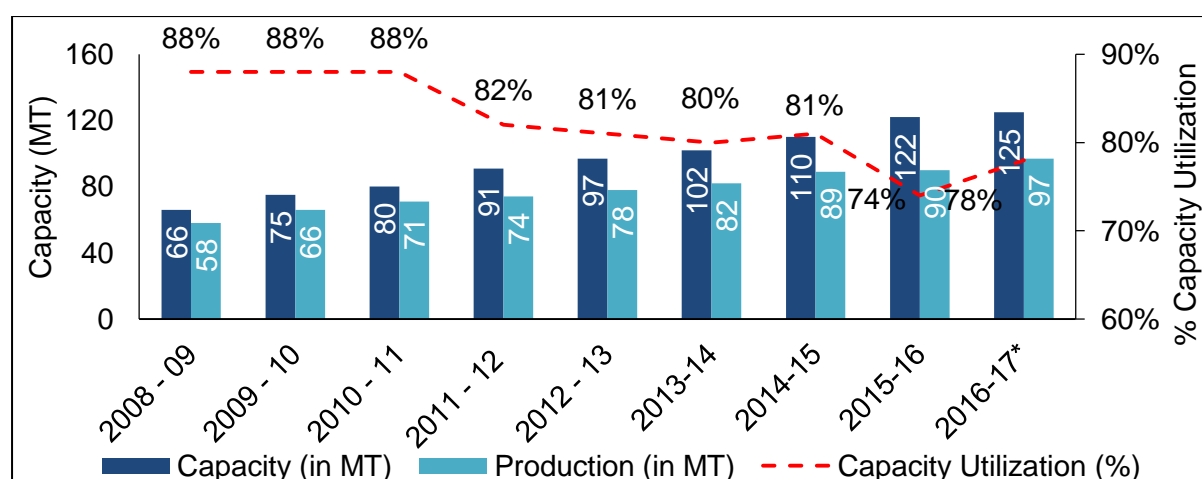
growth in consumption. Thus, the Indian steel sector is all set to achieve its vision thereby setting a global benchmark in terms of quality, standards and technology.

## 2 Introduction and Overview of the Indian Steel Sector

Steel is a product of large and technologically complex industry having strong forward and backward linkages in terms of material flows and income generation and hence forms the backbone for any growing economy and India which is one of the fastest growing economies in the world with massive industrialization, modernization and urbanization taking place the health of steel sector is of prime importance to the nation.

India is currently the third largest producer of steel in the world is all set to emerge as the second largest producer after China. On account of rapid industrial development, from a small capacity of 22 MT in FY 1991-92 prior to deregulation, India has become the 3<sup>rd</sup> largest steel producer in the world with a production of 97 MT and a capacity of 125 MT as on January 2017<sup>2</sup>. Today, the Indian steel industry contributes approximately 2% to the country's GDP and employs about 5 lakh people directly and about 20 lakh people indirectly<sup>3</sup>.

Figure 1: India's steel capacity and production



Source - JPC, Ministry of Steel, \*Calculated based on pro-rata basis of Apr'16 to 1<sup>st</sup> Jan'17

The domestic demand backed growth of the Indian economy and consequently the steel consuming sectors has been a key trait of Indian steel industry. The decade before liberalization of Indian steel industry in 1991, witnessed growth in crude steel production at a CAGR of 5.2%. Post liberalization, witnessed a decadal CAGR of 6.1% which accelerated to 8.3% during 2000-01 to 2015-16.

India's competitive advantage in steel production is driven, to a large extent, from the indigenous availability of high grade iron ore and non-coking coal – the two critical inputs of

<sup>2</sup> Calculated based on pro-rata basis for Apr'16 to Jan '17

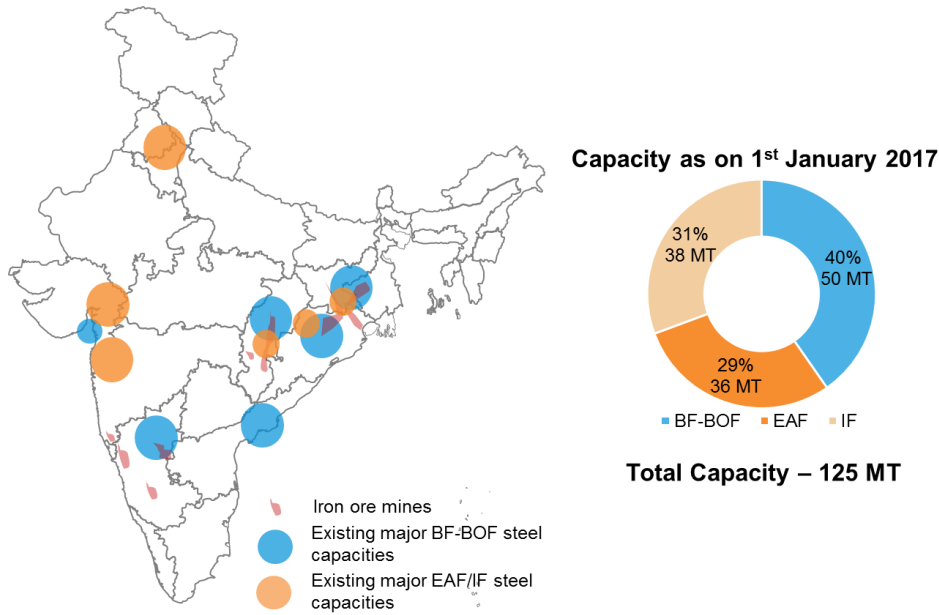
<sup>3</sup> MECON Estimates

steel production. In addition, it also has a vast and rapidly growing market for steel, strong MSME sector and a relatively young work force with competitive labour costs. Though, currently, the average per capita consumption of steel remains relatively low at 61 Kgs as compared to the global average of 208 Kgs, it is all set to grow with the enormous focus given on the infrastructure, construction, power and other sectors. The anticipated growth can be further attributed to several initiatives mainly, affordable housing, expansion of railway networks, development of domestic shipbuilding industry, opening up of defence sector for private participation, and the anticipated growth in the automobile sector. As a result in 2015, India was the only large economy in the world where steel demand continued to demonstrate positive growth at 5.3 %, as against negative growth in China (-5.4%), and Japan (-7.0%).

The Indian steel industry is structured in between three broad categories based on route wise production viz. BF-BOF, EAF and IF. BF-BOF route producers have large integrated steel making facilities which utilize iron ore and coking coal for production of steel. Unlike other large steel producers, the Indian steel industry is also characterized by the presence of a large number of small steel producers who utilize sponge iron, melting scrap and non-coking coal (EAF/IF route) for steelmaking. As on March 2016, there were 308 sponge iron producers that use iron ore/ pellets and non-coking coal/gas providing feedstock for steel production; 47 electric arc furnaces & 1128 induction furnaces that use sponge iron and/or melting scrap to produce semi-finished steel and 1392 re-rollers that rolls out semi-finished steel into finished steel products for consumer end use.

Over the past two decades, the Indian steel industry has developed capabilities of producing a wide range of value added steel at par with global best practices addressing diverse needs of the end user industries. However, India still needs to make a special effort to domestically produce number of value added products like automotive steel for high end applications, electrical steel (CRGO), special steel and alloys for Power equipment, Aerospace, Defence and Nuclear applications.

[Figure 2: Current steel footprint in India](#)



Source - Ministry of Steel, JPC

Though, in India, steel has an output multiplier effect of nearly 1.4 times on GDP and employment multiplier factor of 6.8, Indian steel sector also has its own disadvantages. It can be attributed mainly to limited availability of some of the essential raw material such as high grade lumpy Manganese ore & Chromite, coking coal, steel grade limestone, refractory raw material, Nickel, Ferrous Scrap etc. Further it can be attributed to the shortage of domestic coking coal, both in terms of quantity and quality resulting to which pig iron producers/ BF operators in India have to significantly depend on import of coking coal. In the recent past, multiple issues have also adversely impacted the steel sector, viz. cancellations of iron ore and coal mine allocations, delays in land acquisition, environmental clearances, which led to many of the projects facing significant cost and time overruns. Additionally, companies also faced substantially increased operating costs on account of increased logistics & raw material costs and other charges.

## 3 Vision, strategy and key initiatives

### 3.1 Vision

India's vision for the steel sector is to create technologically advanced and globally competitive steel industry that promotes economic growth. The country intends to create the Indian Steel Sector as a global benchmark for technology, sustainability, quality and standards.

Growth in steel consumption is however closely linked to the economic growth and steel intensity of the country. Gross Domestic Product, which is the key detrimental metric for the growth of nation and with the current growth rate of GDP, the steel demand will grow threefold in next 15 years to reach a level of 230 MT by 2030-31.

Table 1: Forecast for iron and steel demand and production by 2030-31 (Values in MT, unless specified)

Sr. No.	Parameters	Projections (2030 – 31)
1	Total crude steel capacity	300
2	Total crude steel demand/production	255
3	Total finished steel demand/production	230
6	Sponge iron demand/production <sup>4</sup>	80
7	Pig iron demand/ production	17
8	Per Capita Finished Steel Consumption (Kgs)	158

Source - Ministry of Steel, INSDAG, MECON, Note - All values in MT unless otherwise specified, Projections of Pig Iron & Sponge Iron represent the mean value based on the premise that 60-65 % of steel production in 2030-31 shall be coming through BF-BOF route and rest through EAF/IF route

However, the steel industry in India faces challenging external conditions manifest in slow economic growth and idle steel capacity globally. With weak global economic prospects, the Indian steel industry will have to strongly depend on the growth of domestic consumption for its future. Notwithstanding the current challenges, the Indian steel industry still has significant potential for growth.

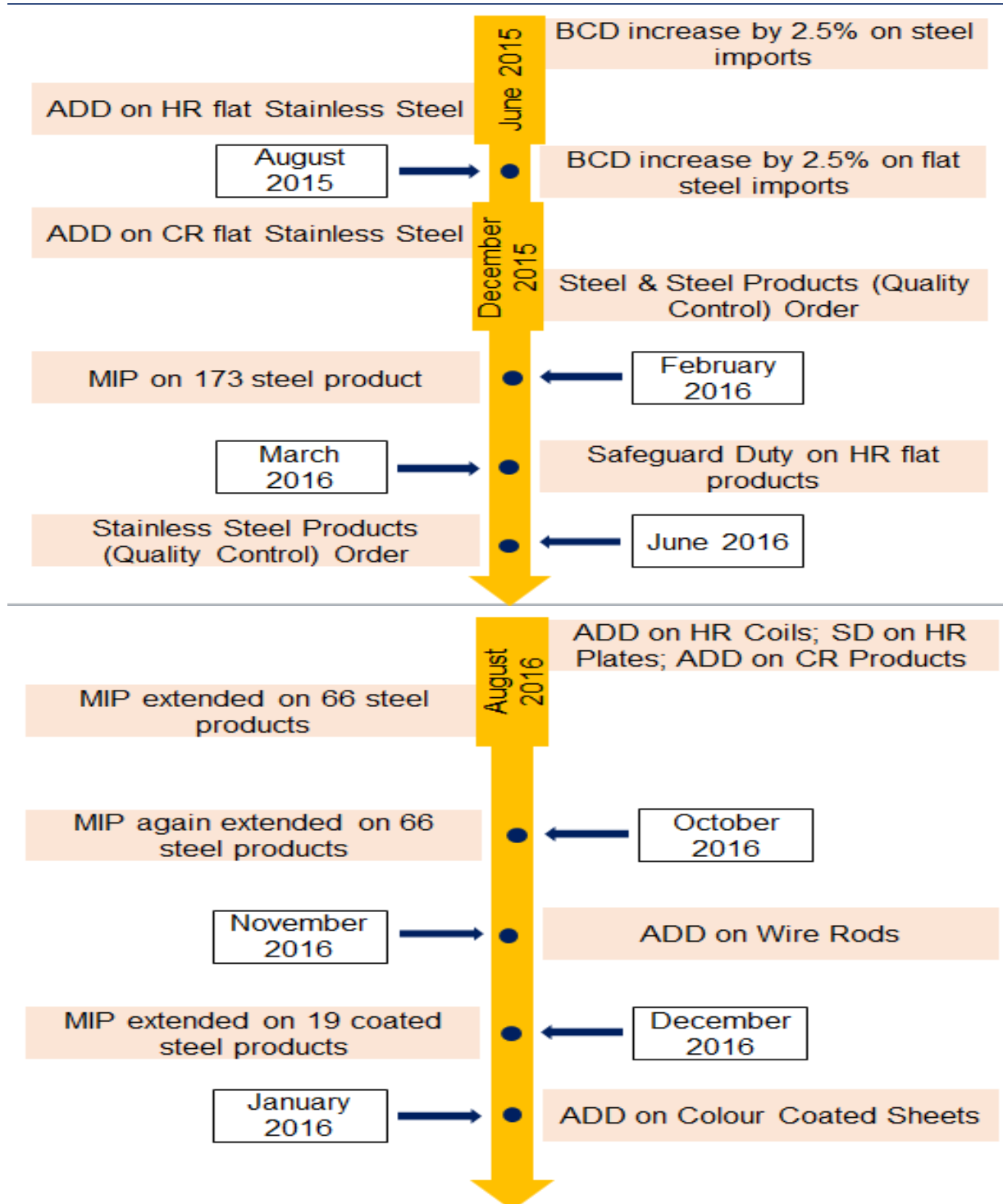
### 3.2 Government strategy and key initiatives

With its overall mission of providing a suitable environment for self-sufficiency in steel production, India is working progressively by providing policy support & guidance to private manufacturers, MSME steel producers, CPSEs & encourage adequate capacity additions,

<sup>4</sup> DRI made through coal based route : 70% {Balance through gas based route}

development of globally competitive steel manufacturing capabilities, cost-efficient production and domestic availability of iron ore, coking coal and natural gas, facilitate investment in overseas asset acquisitions of raw materials and enhance domestic steel demand.

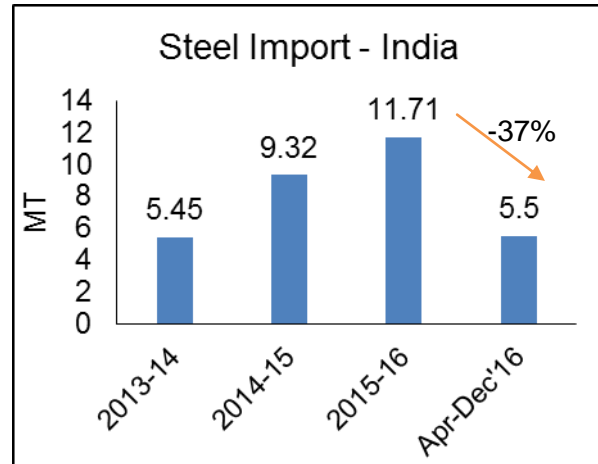
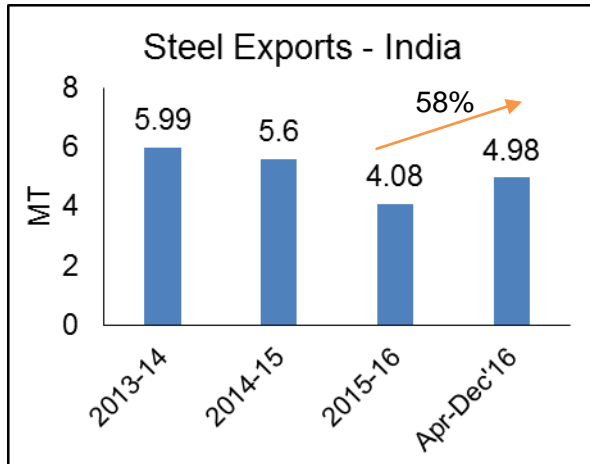
1. The government of India has taken several initiatives to check on the imports to the country as the disparity in the market prices has hit the domestic steel market. To lend support to the domestic steel industry which is already under stress and to provide a level playing field, Ministry of Steel has taken several proactive initiatives including:



These initiatives were backed by overwhelming results in Export and Imports of the steel products and witnessed a surge in the exports and a steep decline in the overall imports to the country.

Figure 3: Steady decline in imports and growth in exports





2. The expansion plans for the MSME Sector is focused on key strategic parameters and metrics including expansion of capacity, better financing focused on lesser capital involvement, production of high quality of steel with enhanced and improved technology. Over the years, the sector is estimated to add about 70 MT of capacity, thus overall capacity reaching to the tune of about 115 MT by 2030-31. The government is also emphasizing on roll out of quality products thereby mandating adherence to Bureau of Indian Standards (BIS) certification for 33 categories of steel.
3. Focusing on the reduction in cost of production, the Government is pursuing all necessary measures with relevant Ministries to bring down transport and logistics costs along with development of slurry pipelines for the evacuation of fines and pellets. With an overall vision of reducing the country's import dependence and ensuring the availability of raw materials, the government has traversed a long way with a list of remarkable milestones. As India imports more than 85% of the total import requirement of coking coal, it has been agreed with the Ministry of Coal to expedite installation of coal washeries to ensure minimum availability of 13% ash content coking coal, auction of coal to private sector for long term thus encouraging investment in washeries and guaranteed long term security of 10+5 years in the linkage auction. In order to enhance the affordability and availability of Natural Gas, the government has agreed for overall pooling of gas to enhance availability and affordability and a 2.5% reduction in the import duty thus benefiting stranded gas based steel plants while importing. Apart from these the government is taking all necessary steps to ensure future availability of scraps through policy reforms, enhanced investments and setting up of Auto/Steel Shredding units.
4. India is all poised to become the second largest producer of steel in the world after China. The key strategies adopted by the government include continuous pursued trade remedial measures with an aim to improve price realizations and decrease imports and improve capacity utilizations of existing facilities. The sector is also expected to focus on indigenous production of value added capacities by large players for Auto grade steel, CRGO, CRNO, etc. by 2019-20. The government is fully aware of the need for extensive research and development in order to achieve its vision. In order to promote R&D in the sector, Ministry of Steel has taken full cognizance of the technological scenario in Indian

Steel Industry and has initiated a fresh move for preparation of a comprehensive blue print for promotion of R&D in Iron & steel Sector. To bring in all the stake-holders under one platform and promote steel research on themes of critical and vital national importance, an institutional platform called “Steel Research and Technology Mission of India” has been established with an objective to spearhead R&D of national importance in iron & steel, creating state-of-art facilities to conduct cutting-edge research, develop expertise & skill development, manage human resources and bolster a tripartite synergy amongst industry, national R&D laboratories and academic institutes.

### 3.3 Prime Minister’s Flagship Programme

The demand for steel is further expected to rise with flagship programs like Make in India. The initiative forms a key impetus for enhanced steel demand across sectors from Infrastructure, Construction, Power & Energy, Defence and Aerospace. Thus, anticipating the same along with necessary capacity building and skill enhancement measures, the sector has achieved various milestones including:

#### 3.3.1 Make in India

1. SAIL has undertaken expansion and modernization of six steel plants at a total estimated cost of Rs.72,134 crore.
2. RINL had undertaken expansion & modernization of Vizag Steel Plant at a total cost of Rs.12,291 crore. The expansion from 3.0 MTPA capacity to 6.3 MTPA liquid steel capacity has been completed.
3. NMDC is setting up a green field 3.0 MTPA integrated steel plant at Nagarnar.
4. As a major initiative towards the ‘Make in India’ campaign and to reduce India’s dependence on import in the field of Steel, MECON indigenously developed design of 7 metre tall 1 MTPA Coke Oven Battery ‘Ángara 7.1’ & 4250 m<sup>3</sup> Blast Furnace ‘Loha 4250’. These indigenously designs were launched by Hon’ble Minister of Steel, Shri Chaudhary Birender Singh during his visit to MECON, Ranchi.

#### 3.3.2 Skill India

1. Ministry of Steel has entered into a strategic partnership through a MoU with Ministry of Skill Development and Entrepreneurship for facilitating skill development through CPSEs of the Ministry. SAIL, RINL, NMDC, MOIL & KIOCL each have signed MoUs with National Skill Development Corporation for skill development.
2. Indian Iron & Steel Sector Skill Council (IIS SSC) developed 47 job roles during 2014-15 and trained and certified 22529 persons during 2015-16.
3. MoU has been signed by RINL with Birla Institute of Technology and Science (BITS), Pilani to promote academic and research collaboration leading to skill upgradation of employees.
4. Hon’ble Steel Minister inaugurated the e-learning portal of SAIL, named E-Abhigyan which is the digital learning hub of SAIL from where people can explore different options for learning.

Figure 4: Snapshot of few initiatives under skill development (1/2)



Figure 5: Snapshot of few initiatives under skill development (2/2)



### 3.4 Other initiatives

1. On the intervention of Ministry of Steel for boosting of steel sector, Ministry of Railway has agreed to give right of way for slurry pipelines thus reducing the cost of freight.
2. In order to overcome the financial stress in the steel sector, a meeting by Ministry of Steel was held on 24th October, 2016 with Indian Bankers Association followed by a meeting chaired by Hon'ble Finance Minister and based on these discussions, RBI has revised guidelines on dealing with stressed assets.

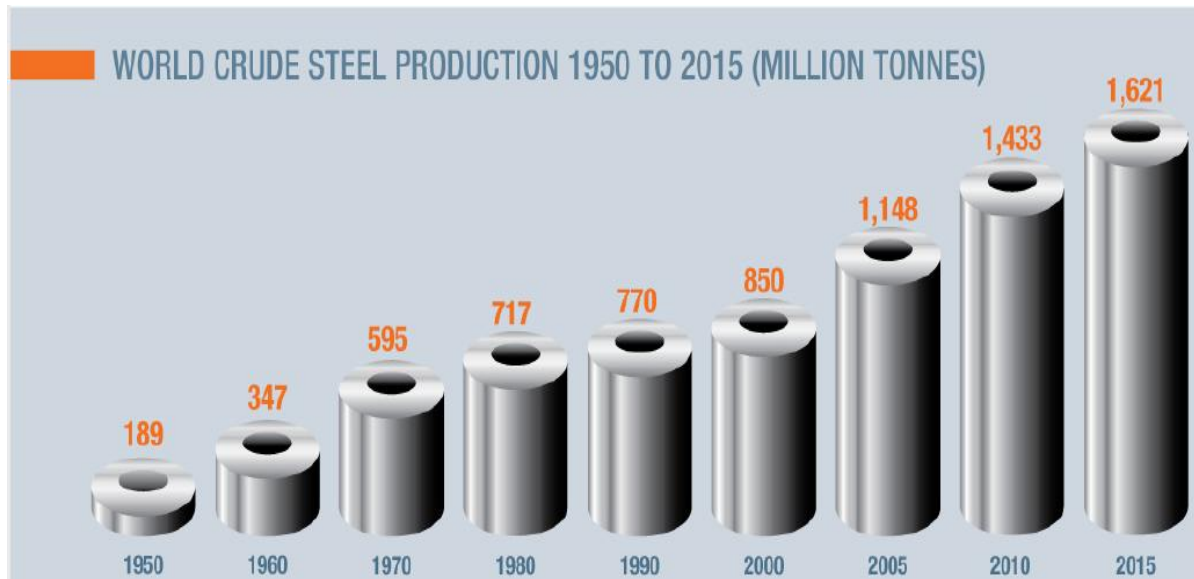
The ambitious vision backed by strong administration leading to effective decision making and implementation of the correct measures have led to a series of milestones and achievements in the sector.

## 4 Key achievements

### 4.1 Capacity addition and augmentation

1. As on 2015, the global production of crude steel reached to the tune of 1,621 MT and about 50% of the share can be attributed to China followed by Japan (~6.5%) and India (~5.5%)

Figure 6: World crude steel production 1950 to 2015 in Million Tonnes

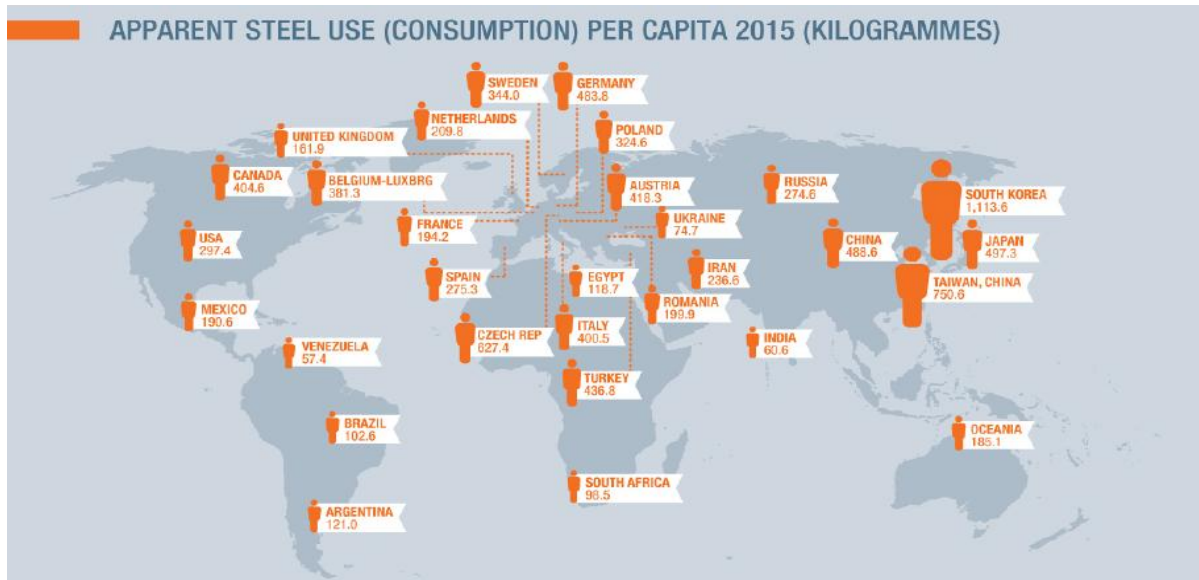


2. India is the third largest producer of crude steel globally, and is on track to become the second largest

Figure 7: Top 20 steel producing countries in 2015 in Million Tonnes



Figure 8: Apparent steel use consumption per capita – 2015 in KGs



- Notwithstanding 0.4% growth in global crude steel production in the first 11 months of calendar year 2016, steel production in India has increased by 7.1% to 87.5 million tonnes. **In April – December, in fiscal year 2016-17, crude steel production has increased by 8.5% to 72.16 million tonnes over the same period last year**
- India continues to maintain its lead position as the world’s largest producer of Direct Reduced Iron (DRI) (Sponge Iron)

Figure 9: Capacity augmentation in the crude steel capacity since April 2014

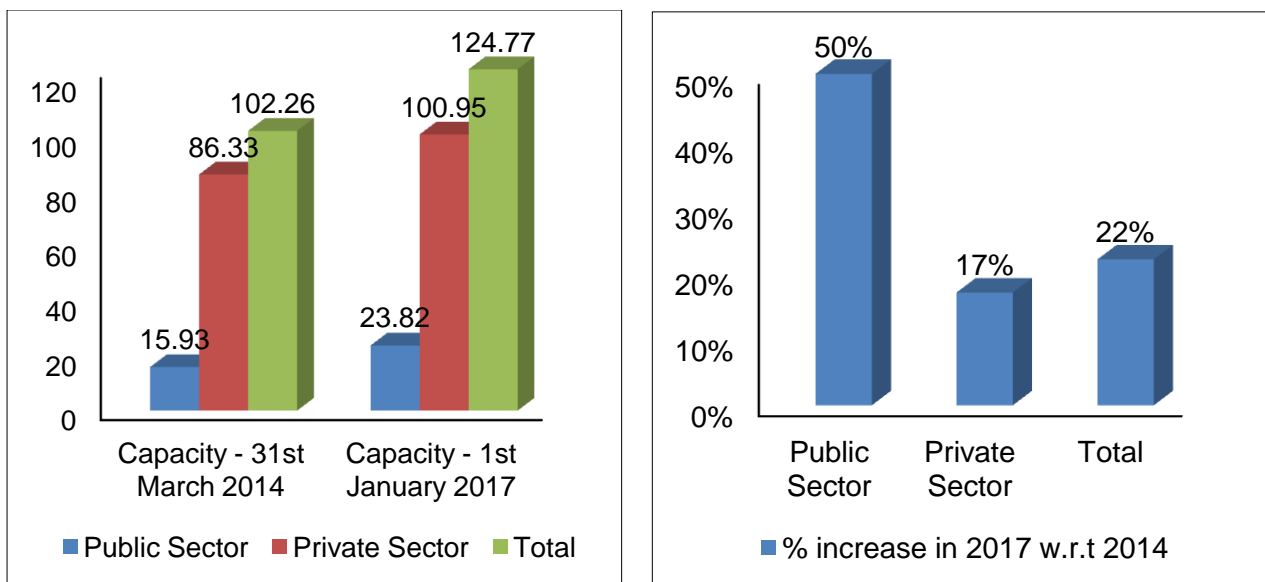
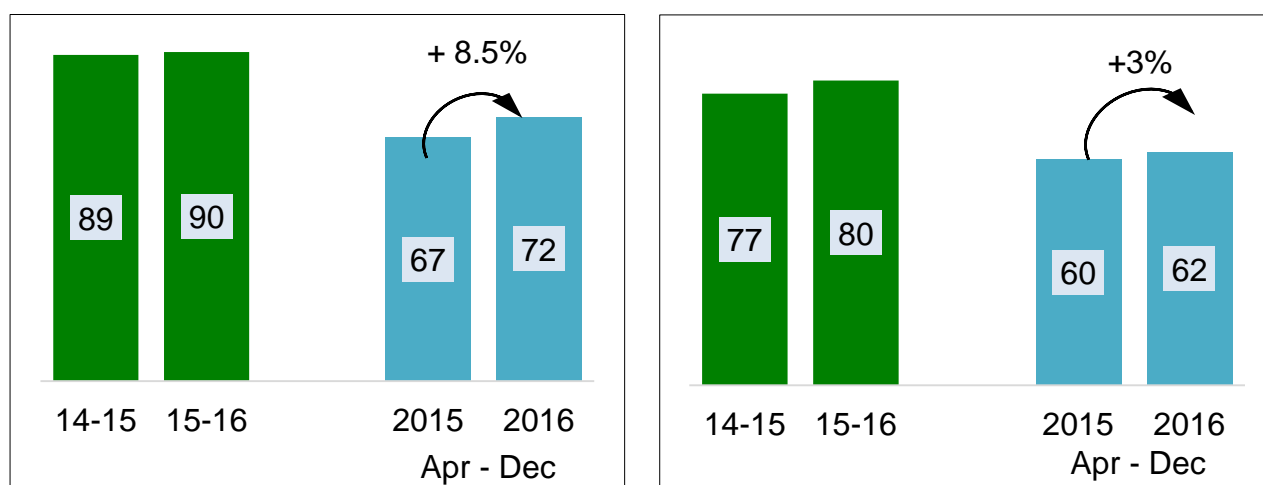


Figure 10: Crude steel production in MT (Left) and apparent consumption in MT (Right)



Source - JPC, Ministry of Steel

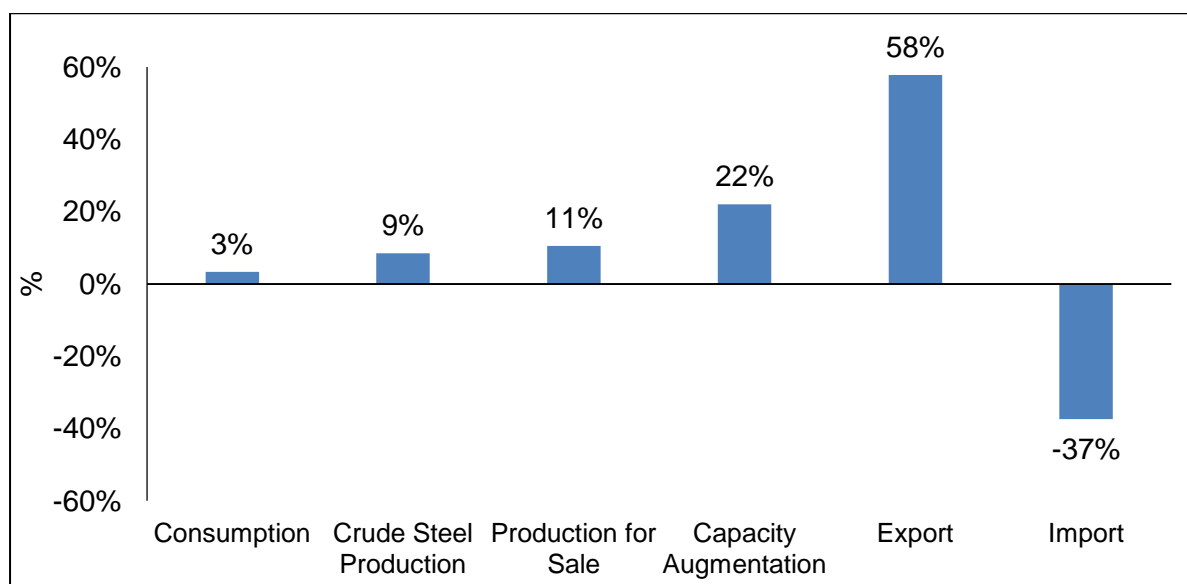
- Consumption of finished steel in the country registered a growth of 3.3% during Apr-Dec'16 over same period last year. Domestic production increased by 10.5% during the same period. Production, consumption, imports and exports of steel, as reported by JPC during 2015-16 and Apr-Dec'16 vis-à-vis corresponding period last year is given below-

Table 2: Snapshot of production, exports, imports and consumption (All values in '000 Tonnes)

Parameter	2014-15	2015-16	Apr-Dec'16	Apr-Dec'15	% change in Apr-Dec'16 vis-à-vis CPLY
Production for sale	92,157	90,391	73,771	66,756	10.5
Import	9,321	11,714	5,495	8,773	-37.4
Export	5,595	4,079	4,977	3,153	57.8
Consumption *	76,995	80,450	61,517	59,544	3.3

Source - JPC

Figure 11: Bird's eye view of the Indian Steel Sector (% change in Apr-Dec.16 vis-a-vis Apr-Dec.15)



## 4.2 Enhanced Investments

1. In order to achieve production of 300 MTPA of Steel by 2025, a concept of Special Purpose Vehicle (SPV) has been adopted by the Government in May, 2015 with respective State Governments of Chhattisgarh, Odisha, Jharkhand and Karnataka
2. Pursuant to this concept, the following MoUs were signed in the presence of Hon'ble Prime Minister, Hon'ble Minister for Steel & Mines and the Chief Minister, Chhattisgarh on 9th May, 2015

<p><b>Investment: ₹2000 Crore</b></p> <p>Govt. of Chhattisgarh, NMDC, IRCON and SAIL for 140km rail line between Rowghat and Jagdalpur.</p>	<p><b>Investment: ₹18000 Crore</b></p> <p>Ministry of Steel, Govt. of Chhattisgarh, SAIL and NMDC for 3 million ton Steel Plant</p>
<p><b>Investment: ₹4000 Crore</b></p> <p>Govt. of Chhattisgarh and NMDC for Slurry Pipeline and 2MTPA Pellet Plant at Nagamar in Bastar District.</p>	<p><b>Investment: ₹826 Crore</b></p> <p>Govt. of Chhattisgarh and SAIL for setting up 1MTPA Pellet Plant at Dalli-Rajhara, Balod District.</p>

3. Joint Venture with ArcelorMittal for production of Automotive Steel - SAIL has signed an MoU with ArcelorMittal on May 22, 2015 to construct a state-of-the-art cold rolling mill



and other downstream finishing facilities in India that will offer technologically advanced steel products to India's rapidly growing automotive sector

4. To provide information and facilitate investment, an Investment Facilitation Cell has been set up in the Ministry in January, 2015, details of which have also been uploaded on the Ministry's Website [www.steel.gov.in](http://www.steel.gov.in)
5. MoU has also been signed between State Government of Jharkhand and NMDC on 28th June, 2015 for setting up of 3 MTPA Steel Plant

Figure 12: Exchange of MoU among Joint Secretary, Ministry of Steel, Secretary, Government of Jharkhand and CMD, NMDC Ltd.



6. A joint Venture company "Mahindra MSTC Recycling PVT Ltd" has been incorporated with Mahindra Group on 16th December 2016 for setting up Auto Shredding plant and action for setting up collection cum dismantling Centres

Figure 13: CMD, MSTC signing the JV agreement with Mahindra Intertrade Ltd. in the presence of Hon'ble Steel Minister and Secretary, Steel



7. NMDC Ltd. signed a Tripartite MoU with Government of Madhya Pradesh (MP) and Madhya Pradesh State Mining Corporation Limited on 27th October 2016 at Bhopal in presence of Hon'ble Chief Minister, MP. The MoU is for geological & geophysical exploration of various minerals in the state of MP.
8. A Memorandum of Understanding (MoU) was signed on 27th October 2016 jointly with Mineral Resources Department, Government of Madhya Pradesh and Madhya Pradesh State Mining Corporation Limited (MPSMCL), a PSU under Govt. of Madhya Pradesh to conduct exploration and prospecting works by MOIL in Madhya Pradesh.

#### 4.3 Innovation, R&D and Promoting Quality

1. Government has promoted an innovative institutional mechanism namely Steel Research and Technology Mission of India (SRTMI) to promote joint collaborative research projects of national importance in Iron and Steel Sector in India. This is an industry driven platform and the initial corpus of Rs. 200 crore is being funded by Ministry of Steel as well as major companies in steel and associated sector. SRTMI has been registered on 14th October, 2015 under the Societies Registration Act.
2. Government has been facilitating production of quality steel for critical end use applications such as infrastructure, construction, housing and engineering sector. Towards this objective, Government has issued Steel & Steel Products (Quality Control) Order in December, 2015 covering 15 additional steel products and Stainless Steel Products (Quality Control) Order in June 2016 covering 3 stainless steel products. These orders are expected to go a long way in making available quality products thereby prohibiting production and import of substandard products.

3. During the last 3 years, 3 R&D projects have been approved with total cost of Rs. 18.6 crore with financial assistance of Rs. 10.75 crore from the SDF. Additionally, 14 R&D projects have been approved with a total cost of Rs. 51.39 crore with financial assistance of Rs. 31.12 crore from Government of India fund.
4. Ministry of Steel is providing financial assistance for setting up of Centres of Excellence in the IITs for creation of world class facility for metallurgical engineering and also for development of human resource for the steel sector. 2 more centers have been approved during the last 3 years- one at IIT - BHU and the other at IIT Chennai.
5. Ministry of Steel had approved a R&D project on development of pilot scale pelletization technology for Indian Goethitic/hematite iron ore/ fines by RDCIS, SAIL with total cost of Rs. 41.88 crore with financial assistance of Rs. 22.06 crore from Government fund. The Pilot Pelletising Plant has been setup which was inaugurated by Minister of Steel on 22nd December 2016. The Project is likely to be completed in March 2017.

Figure 14: Hon'ble Steel Minister inaugurating Palletisation lab in RDCIS, SAIL



6. Ministry of Steel is pursuing a joint collaborative R&D project to set up a R&D Pilot plant to pursue indigenous development of the technology of CRGO steel sheets. Ministry of Steel, DSIR (CSIR-NML), Tata Steel &RINL are the stakeholders in the R&D project. DPR of the project has been prepared and submitted by MECON which has been approved by the stakeholders in September 2016. Project will commence after signing of the Agreement between the stakeholders.
7. National Institute of Secondary Steel Technology (NISST), Mandi Gobindgarh, Punjab has been recognized on 28.10.2016 by Bureau of Indian Standards (BIS) to undertake the 15 tests for the specified products as per the Indian standards related to Iron & Steel. It is expected that the steel sector will be benefitted by the BIS recognized testing facility

of NISST in near future for achieving the common goal of producing and providing quality goods to the end users.

8. Ministry of Steel had taken up exclusive R&D initiatives to help the Induction Furnace based steel units in the country using indigenous material like DRI. An innovative flux has been produced at National Metallurgical Laboratory (NML) Jamshedpur with financial assistance from Government Fund. Industrial Trials have also been conducted successfully. The process will be commercialized in association of the Industry Associations.
9. A state of the art Hot Dip Process Simulator (HDPS) has been set up at National Metallurgical Laboratory (NML) Jamshedpur with total cost of Rs. 15.94 crore and financial assistance of Rs. 7.52 crore from Steel Development Fund, to evolve the galvanization technologies of Advanced High Strength or Dual Phase Steels for Automotive Applications in collaboration with Tata Steel Limited
10. A State of the art Welding Centre has been set up at Tata Steel to develop welding/ joining conditions and evaluate joint performance of sheet/tubes of formable/ High Strength/ Advanced High Strength steel using different processes with a total cost of Rs.21.35 crore and financial assistance of Rs.10.67 crore from Steel Development Fund

Figure 15: BIS accredited lab of NISST



#### 4.4 Environmental Initiatives

1. A trend setting project to generate power with green technology in collaboration with NEDO, Japan was successfully commissioned at RINL. This is the first of its kind in the country.

Figure 16: Secretary, Steel inspecting the NEDO Project at RINL



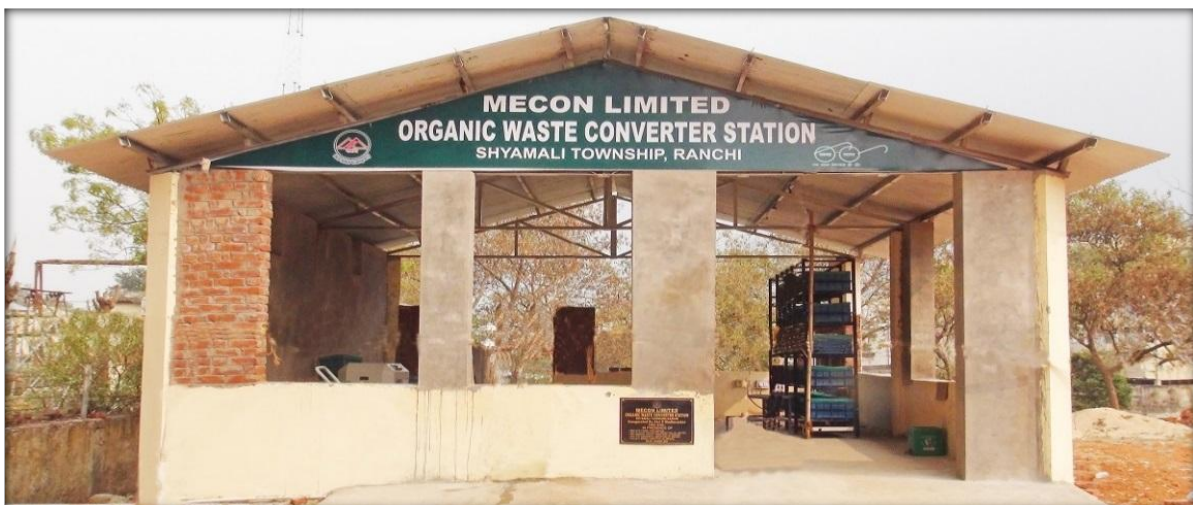
2. At Tata Steel, BF Stove Waste Heat Recovery project has been completed in collaboration with NEDO.
3. Under the NEDO Model Project of the Government of Japan, Government is facilitating setting up of model projects in integrated steel plants to implement energy efficient, clean and green technologies. Under this scheme, 2 model projects have been approved with a total cost of Rs. 100 crore, which are being set up at SAIL's plant at RSP, Rourkela and ISP, Burnpur.
4. Ministry of Steel and UNDP have worked together for energy conservation in 300 MSME units. Plans are on to up-scale the same to 1000 MSME units in the country, which can reduce 2.3 million tonne of CO<sub>2</sub> emissions. This is roughly equal to taking all passenger cars off Delhi's roads.
5. As a part of Government's thrust to tap renewable energy sources, a 5 MW Solar Power Plant, installed by RINL within its premises at Visakhapatnam was inaugurated by Steel Secretary on 20th December, 2016. With the commissioning of the plant, RINL, MOIL & FSNL has joined other major corporates in harnessing solar power which has assumed a greater significance in recent times.

Figure 17: Secretary, Steel inaugurating 5 MW Solar Power Plant at RINL



6. On 31st August 2016, MOIL has commissioned 48 KW capacity grid connected rooftop PV Solar System project with net-metering at its Corporate Head Quarter, MOIL Bhavan, Nagpur. It is the first grid connected rooftop solar system in Vidarbha with net-metering facility installed at Corporate Office Building
7. FSNL has installed another 10 KW Solar Power Plant at FSNL Corporate Office to proceed towards green office concept.
8. An Organic Waste Converter (OWC) system was installed and commissioned in Ranchi on 29th January 2016, first of its kind in Jharkhand.

Figure 18: Organic Waste Converter Station of MECON, Ranchi



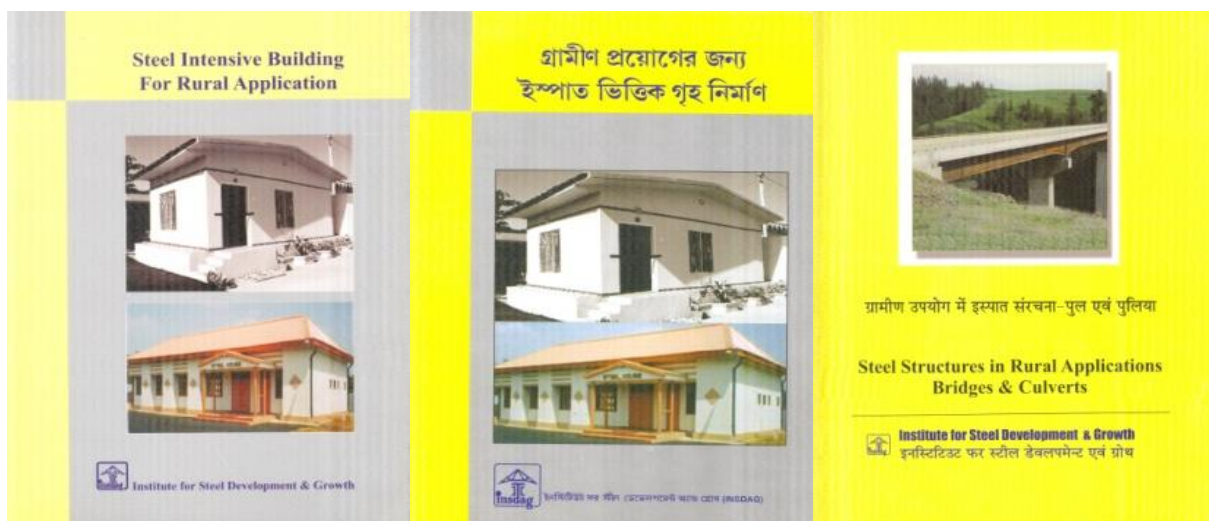
## 4.5 Promotion of Steel Usage



### 4.5.1 Rural Development

1. INSDAG developed designs of model Rural Houses, Culverts, Anganwari Panchayat Hall, Community Toilet, etc. with steel. INSDAG has brought out brief publications on the designs of such structures in rural areas and translated in vernacular languages in Hindi, Telugu and Bengali and distributed to panchayats of all states

Figure 19: Steel Intensive structures for use in Rural areas by INSDAG



- INSDAG developed prototypes of low cost houses with tubular steel frames and ferro-cement panels as walls and roofs in West Bengal, Maharashtra and Tripura. The average cost of such houses would be Rs.750/- per sq ft., which is comparable with the norms given in Prime Minister's Awas Yojana.

Figure 20: Prototype low cost houses by INSDAG in West Bengal and Maharashtra



- INSDAG developed two variants (rural and urban) of steel based toilets with stainless steel fittings and fixtures. Prototypes of toilet were displayed during India International Trade Fair 2015 at New Delhi for dissemination of knowledge.

#### 4.5.2 Urban Development

Figure 21: Pre-cast mass housing by INSDAG (Left), Pre-fab building by INSDAG (Right)





### 4.5.3 Road and Highways

Figure 22: Steel Bridges (Left) and Steel Crash Barriers (Right)



### 4.5.4 Awareness Initiatives

1. INSDAG organized steel campaign in rural areas by training the local engineers, architects and masons on the benefits of steel usage and promote best practices using reinforcement bars and other commonly used steel products. Till date, 56 such Training Programme covering 2994 local engineers, architects and masons were conducted by INSDAG in association with SAIL, Tata Steel, RINL and JSW.

Table 3: Details of training programmes conducted

Financial Year	No of Programs	Organized by	No attended
2012 – 2013	1	SAIL	30
2013 – 2014	14	Tata Steel, RINL	625
2014 – 2015	28	SAIL, Tata Steel	1146
2015 – 2016	6	SAIL	615
2016 – 2017	7	SAIL, RINL	578

2. Mr. Suresh Prabhu, Minister of Railways and Mr. Chaudhary Birender Pratap Singh, Minister of Steel flagged off the inaugural run of the daily Hazrat Nizamuddin – Visakhapatnam, Vizag Steel Samta Express at Nizamuddin station on 8th December 2016. The Vizag Steel Samta Express has been emblazoned with eye-catching Vizag Steel promotional visuals across its entire length. The train runs in both directions and covers 5 States from North to South India, thus effectively promoting the brand name of Vizag Steel as also Steel usage.

Figure 23: Hon'ble Steel Minister and Hon'ble Minister for Railways flagging off Vizag Steel Samta Express



3. Metal Scrap Trade Corporation (MSTC) Limited and the Ministry of Steel have jointly launched an e-platform called 'MSTC Metal Mandi' under the 'Digital India' initiative on 22nd October 2016 at New Delhi, which will facilitate sale of finished and semi-finished steel products. 42 principals (Sellers) and 460 buyers have been registered on this portal so far and successful business transactions have also taken place through this portal.

Figure 24: Launching of MSTC's Metal Mandi Procurement Portal by Hon'ble MoS (Steel) in the presence of Secretary, Steel



4. Hon'ble Union Minister for Steel, Chaudhary Birender Singh inaugurated Ministry of Steel (MoS) Pavilion at the 36th India International Trade Fair (IITF) 2016 along with Dr. Aruna Sharma, Secretary, Ministry of Steel. The Steel Pavilion showcased the Steel making process and myriad uses of steel.

Figure 25: Hon'ble Steel Minister inaugurating Steel Pavilion at IITF, 2016 at Pragati Maidan, New Delhi



5. Ministry of Steel along with Federation of Indian Chambers of Commerce and Industry and Joint Plant Committee organised a Conference on 22nd August, 2015 at Vigyan Bhavan, New Delhi to assess the readiness of the smaller secondary steel producers to face the issues and challenges in steel sector. The Conference was inaugurated by Shri Arun Jaitely, Hon'ble Minister for Finance, Corporate Affairs and Information & Broadcasting along with the then Hon'ble Minister of Steel & Mines and Hon'ble Minister of State for Steel & Mines.

#### 4.6 Digital Initiatives

1. An MoU for satellite based Geological Mapping for Mineral Exploration of Iron, Diamond and Other deposits between NMDC Ltd. And National Remote Sensing Centre (NRSC), Indian Space Research Organization (ISRO), Department of Space, Government of India was signed on 5th May, 2016.

Figure 26: Signing of MoU between NMDC and National Remote Sensing Centre, ISRO under Department of Space Technology



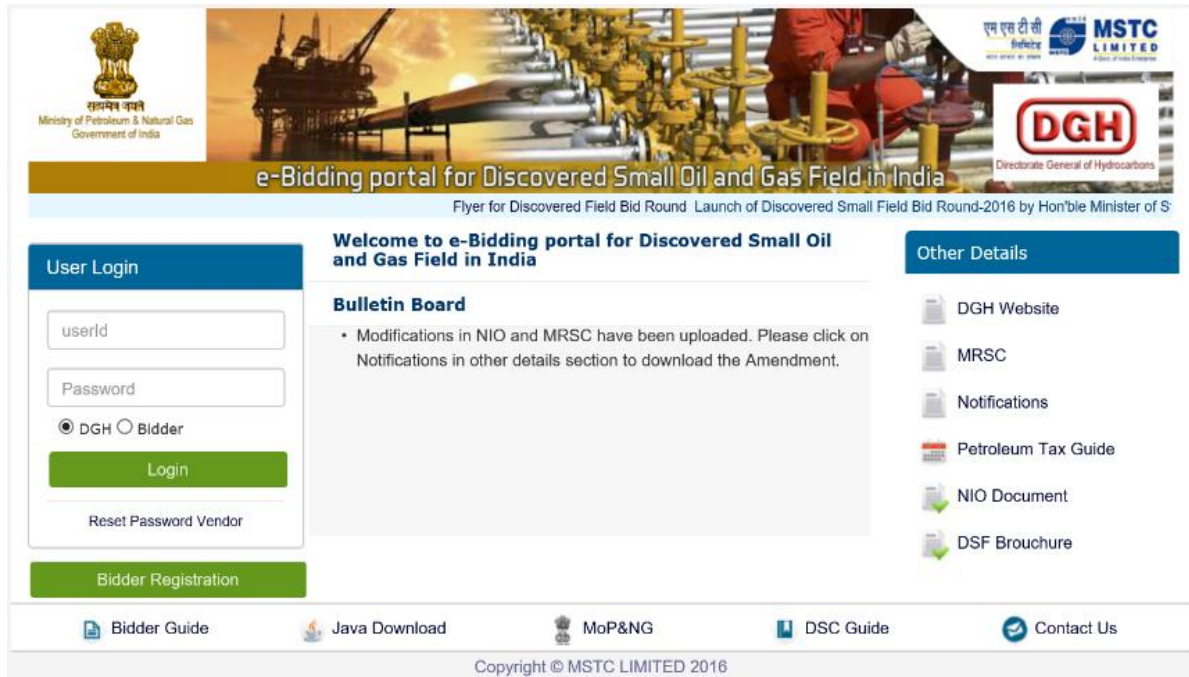
2. Ministry of Steel in association with NITI Aayog conducted a workshop on “Ushering in Cashless Transaction Environment” on 30th November 2016 to sensitize use of various existing electronic means/mechanisms for cashless transactions such as RTGS, IMPS, UPI, Paytm, various Credit/Debit cards etc.
3. RINL introduced SMS alert system to customers on Sales Order from 30th November 2016. This will help the customers to have immediate information on realization of their sales requests.
4. MSTC Ltd. has been appointed by Ministry of Civil Aviation to develop a web portal to start the e-bidding process for Regional Connectivity Scheme.

Figure 27: Snapshot of the web portal for e-bidding process for regional connectivity scheme



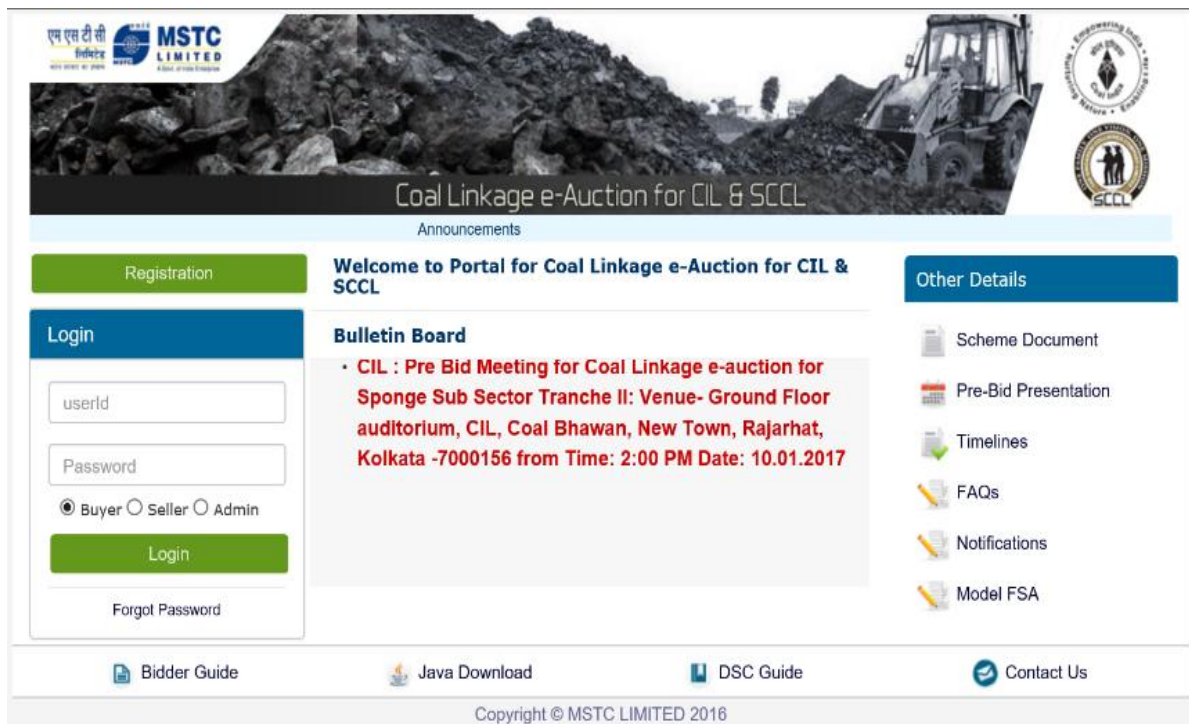
- MSTC Ltd. has been appointed by Ministry of Petroleum & Natural Gas to develop an e-bidding portal for Discovered Small Oil & Gas Fields in India.

Figure 28: Snapshot of web portal for e-bidding for discovered small oil & gas fields in India



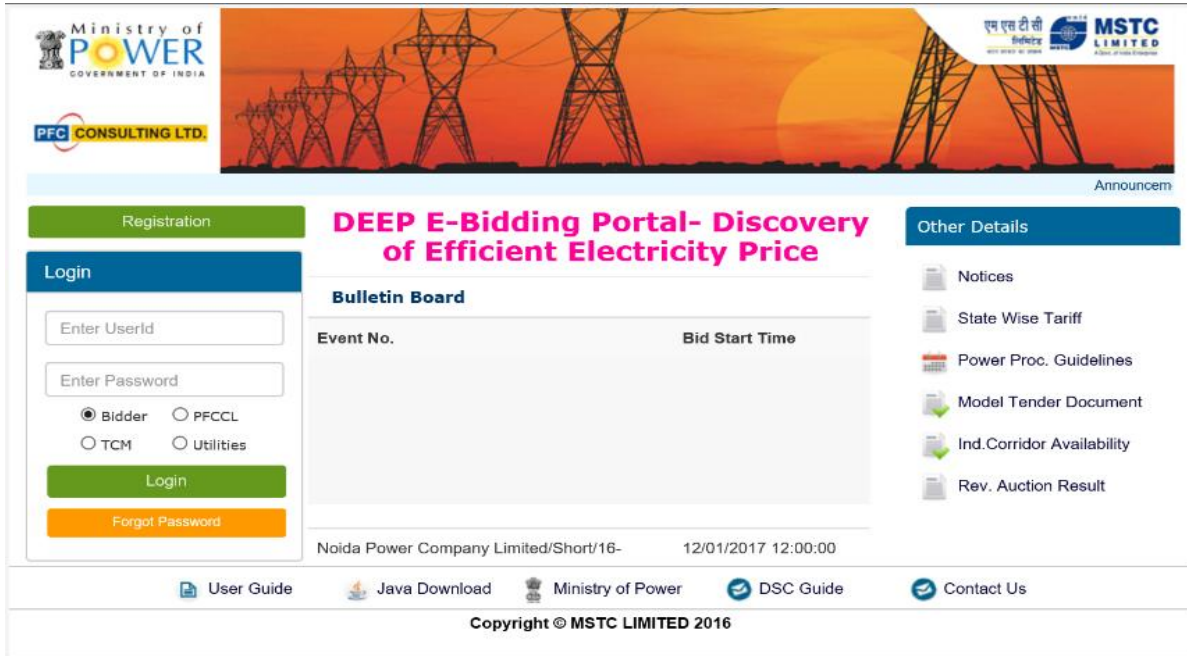
- MSTC Ltd. has been appointed to develop a portal for Coal Linkage e-auction for CIL & SCCL.

Figure 29: Snapshot of web portal for e-auction of coal linkages



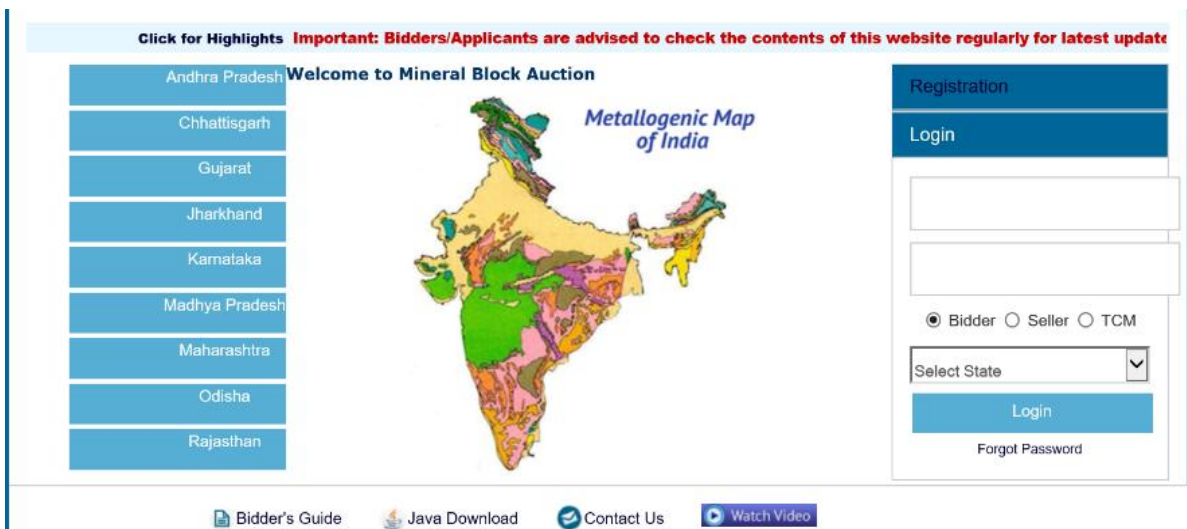
- Discovery of Efficient Electricity Price (DEEP) Portal for PPAs: MSTC has designed a completely automated solution for power Utilities to procure power which has been utilized by Govt. of Kerala, Uttarakhand, Gujarat, Bihar & Jharkhand as engaged by Ministry of Power.

Figure 30: Snapshot of web portal for DEEP



- MSTC successfully conducted auction of 29 and allotment of 41 (total 70) coal mining blocks to steel, cement & power sector and State owned entities respectively in a transparent and fair manner.
- Ministry of Mines has appointed MSTC as e-Auction service provider for Non-Coal Mining Blocks.

Figure 31: Snapshot of web portal for e-auction of non-coal mining blocks



10. Governments of Gujarat, Rajasthan, Maharashtra, Madhya Pradesh, Chhattisgarh, Jharkhand, Odisha, Andhra Pradesh have signed agreements with MSTC for e-Auction of mineral blocks in the respective states.
11. Government of Telangana has engaged MSTC for complete e-commerce services in line with that of Government of Andhra Pradesh for a period of 3 years. Under the Government order, MSTC will render e-Commerce services to all the departments in the state.
12. MSTC conducted e-Auction of Fly-ash emanating from Thermal Power Plant for the first time in country on behalf of NTPC Ltd.
13. Ministry of Power engaged MSTC to conduct e-Reverse Auction for revival of under-utilized and Stranded Gas Based power plants in the country utilizing Power System Development Fund of Rs.3500 Crore.
14. Government has put in place a transparent e-commerce trading platform for resource auction through MSTC, Consequent to this, MSTC had conducted e auctions for Ministries of Coal, Mines, Power as well as for a number of State Governments including Chhattisgarh, Jharkhand, Odisha, and Kerala from a Business volume of Rs. 26,883 Crore in 2014. MSTC has achieved a Business volume of Rs. 30,537 Crore till date (an increase of 13.6 %) making it the largest e-commerce portal in the Government Sector.
15. An E-procurement system fully designed & developed in-house was launched by FSNL in April 2016 to achieve benefits such as increased efficiency & cost savings and improved transparency.

## 4.7 Other Achievements

The overall growth in the sector is the result of a series of achievements and milestones for each of the stakeholders involved attributing mainly to the steel producing companies in the sector. The sector is expected to flourish when the major steel producing companies expand and achieve its full potential through various capacity addition plans, renovation and modernization, capacity building etc.

Few of the key achievements for the major companies in the sector are described below:

### 4.7.1 Steel Authority of India Limited (SAIL)

Steel Authority of India Limited (SAIL) is the largest steel-making company in India and one of the seven Maharatna's of the country's Central Public Sector Enterprises.

Key milestones for the company in the previous three years include:

1. Commissioning of India's largest blast furnace 'Kalyani' in SAIL's Burnpur Steel Plant

Figure 32: “Kalyani” blast furnace of SAIL



2. Completion of expansion of Rourkela Steel Plant (RSP) of SAIL and Hon'ble Prime Minister has dedicated the same to the nation on 1st April, 2015. The expansion of Rourkela Steel plant has resulted in addition of about 2.3 million tonne of crude steel capacity

Figure 33: Hon'ble Prime Minister dedicating modernised and expanded Rourkela Steel Plant to the Nation.





3. Completion of expansion of IISCO Steel Plant (ISP) of SAIL at Burnpur and Hon'ble Prime Minister has dedicated the same to the nation on 10th May, 2015. The expansion of ISP has resulted in addition of about 2.0 million tonne of crude steel capacity

Figure 34: Hon'ble Prime Minister dedicating the modernized and expanded IISCO Steel Plant to the Nation



4. Completion of expansion of Durgapur Steel Plant (DSP) of SAIL on June, 2015. The expansion of Durgapur Steel plant has resulted in addition of about 0.4 million tonne of crude steel capacity
5. Completion of expansion of SAIL's Bokaro Steel Plant (BSL) at Bokaro in September, 2015. The expansion of BSL has resulted in addition of about 0.25 million tonne of crude steel capacity

#### 4.7.2 Rashtriya Ispat Nigam Limited (RINL)

Rashtriya Ispat Nigam Limited (RINL) is second Government of India Enterprise in the sector which has been operating through its Visakhapatnam Steel Plant in Andhra Pradesh for over decades.

Key milestones for the company in the previous three years include:

1. Successful completion of the revamping of Converter-3 of Steel Melt Shop-1 as part of modernization. The first heat was taken on 27th October 2016 and the converter made record of 19 nos. in first 24 hours of commissioning.

Figure 35: Converter at RINL



2. Completion of expansion of capacity of RINL from 3 to 6.3 MTPA

Figure 36: Special Bar Mill at RINL



3. RINL received the Rajbhasha Keerti Puraskar for the year 2015-16 from Hon'ble President of India, Shri Pranab Mukherjee for the effective implementation of official Language Hindi on the occasion of Hindi Divas at Rashtrapathi Bhawan in Delhi.

Figure 37: RINL receiving the Rajbhasha Keerti Puraskar



4. RINL appointed Olympic Silver medallist PV Sindhu as its Brand Ambassador for promotion of its brand image both nationally and internationally.

Figure 38: PV Sindhu – brand ambassador for RINL



5. RINL also entered into a Joint Venture with PGCIL to manufacture 1.2 lakh tonne per annum of transmission line towers at Vishakhapatnam
6. Commissioned rainwater harvesting scheme with a potential to recover about 3.3 million gallons of rainwater per day

### 4.7.3 NMDC Ltd.

Incorporated in 1958 as a Government of India fully owned public enterprise, NMDC is under the administrative control of the Ministry of Steel, Government of India.

Key milestones for the company in the previous three years include:

1. Completion of the construction activities of 1.2 MTPA pellet plant in Donimalai, Karnataka and integrated load trials have been started

Figure 39: NMDC's new pellet plant in Donimalai, Karnataka



2. Successful completion of full load trial of crushing plant and conveyor of Bailadila Mine, Deposit 11 B of NMDC thereby adding additionally 7 MTPA of capacity
3. Performance of 'Bhoomi Pooja' for the Railway Siding Project at NMDC's upcoming Nagarnar Steel Plant in the presence of former Union Minister for Steel and the present Union Minister of State for Steel & Mines. The Railway Siding Project is a critical component of the Steel Plant to bring in critical raw material like iron ore, coking coal, limestone and dolomite, etc. for production and for outward movement of finished steel and slag. Package I of the Railway Siding Project envisages connecting the 6 kms stretch from the KK Railway line with Nagarnar Steel Plant at Ambagaon and Ammagauda by laying about 53 kms of railway line within the Steel Plant premises at a cost of ₹ 283 crores. The Project to be completed by IRCON is slated to be completed in the next 18 months to coincide with the Plant's production schedule.

### 4.7.4 MOIL Ltd.

Incorporated in 1962 originally as Manganese Ore (India) Limited, MOIL is Schedule "A" Miniratna Category-I Company.

Key milestones for the company in the previous three years include:

1. Successful completion of sinking of vertical shafts at Munsar Mine & Ukwa Mine of MOIL Limited in order to cater to the increased market demand of Silico-Manganese Ore

Figure 40: Sinking of vertical shafts at Munsar Mine & Ukwa Mine of MOIL Limited



#### 4.7.5 KIOCL Ltd.

KIOCL Limited, a CPSE under the Ministry of Steel, Government of India, with Mini Ratna status was formed on 2nd April 1976

Key milestones for the company in the previous three years include:

1. Achievement of one million ton mark in Production & Dispatch of pellets, after a gap of two years during the year 2016-17
2. During the year 2016, KIOCL exported 64,463 MT high grade pellets to Iran produced out of high grade concentrate imported from M/s Anglo American Marketing Ltd., Brazil under Make in India Concept and further exported two shipments of pellets 10,087 MT to China. Further, KIOCL exported 840,266 DMT of Pellets upto February 2017 and earned valuable foreign exchange of US \$ 70 Million for the country

Figure 41: KIOCL's shipment to Iran



3. Issue of Gazette Notification dated 24th January 2017 by Government of Karnataka for reserving an area of 470.40 hectares of Iron and Manganese Ore mining lease under Section 17 (A) 2 of the MMDR Act, 1957 in Devadari range, Sandur Taluk, Bellary Distt. of Karnataka in favour of KIOCL Limited
4. Listing of the Equity Shares of KIOCL with National Stock Exchange of India Limited (NSE) with effect from 29.11.2016.

#### 4.7.6 MECON Ltd.

Established in 1959, under the aegis of Central Engineering & Design Bureau (CEDB), MECON is India's frontline engineering, consultancy and contracting public sector undertaking organization under the Ministry of Steel, Government of India

Key milestones for the company in the previous three years include:

1. Providing detailed Design, Engineering and Consultancy services for the project under which 130 metre Long Rails from the Universal Rail Mill of Bhilai Steel Plant, SAIL was rolled out in 2016. It is the longest Rail (130 m long) ever produced in the World
2. Providing consultancy for "Kalyani" Project – India's largest blast furnace of SAIL

#### 4.7.7 FSNL

FSNL is a Government of India Mini Ratna II, IMS Certified Company under Ministry of Steel which is a wholly owned subsidiary of MSTC Ltd.

Key milestones for the company in the previous three years include:

1. Signing of MoU for the year 2016-17 between FSNL & MSTC Ltd., in July 2016 with the mission to generate "Wealth from Waste" by maximizing recovery from waste material generated during Iron and Steel making and other manufacturing process
2. Starting of Disposal Yard Management at Air India, Mumbai on 1st April 2016.
3. Awarded Rajbhasha Kirti Puraskar (3rd Prize) by the Hon'ble President of India on 14th September 2016 at Rashtrapathi Bhawan, New Delhi, for Implementation of Official Language in "C" Region during the year 2015-16

#### 4.7.8 Swachh Bharat Abhiyan

1. Ministry of Steel has actively participated in the Swachh Bharat Abhiyan since 2nd October, 2014. Swachhta Pledge is being administered to all the employees of Ministry of Steel on 2nd October every year and during observance of Pakhwadas.

Figure 42: Swachh Bharat pledge being administered to the employees of Ministry of Steel



2. More than 3000 toilets were constructed by the CPSEs under the Ministry under Swachh Vidyalaya Abhiyan

Figure 43: Construction of toilets as a part of the Swachh Bharat Abhiyan



3. CPSEs of Ministry of Steel observed Swachhta Pakhwada under Swachh Bharat Abhiyan from 1st to 15th May, 2016 and from 16th to 30th June, 2016.

Figure 44: Observing Swachhta Pakhwada under Swachh Bharat Abhiyan (1/2)



4. Thereafter, CPSEs of Ministry of Steel have been observing the Swachhta Pakhwada (fortnight) every month since August, 2016 observed the Swachh Bharat Pakhwada from 16th May to 31st May, 2016. Swachhta Pledge was administered by Secretary (Steel) to the employees of the Ministry on 16th May 2016.

Figure 45: Glimpses of Safai Pakhwada under Swachh Bharat Abhiyan at Jaggyyapeta Limestone Mines





## 4.8 Reaching the public and engagement with people

### 4.8.1 Youth outreach

#### Setting up of Museums

1. Minister of Steel inaugurated Manganese Museum on 19th December, 2016, the first of its kind in India at Nagpur (Maharashtra) showcasing not only the over 100 years heritage of Manganese ore mining in the country but also its utility in the steel making process. The museum will also serve as an outreach to the public especially to the youth for inspiring them to take up career in mining. The museum also provides a replica and a feel of the conditions of an underground mine & oral history as video of three generations of MOIL miners

Figure 46: Inauguration of Manganese Museum



2. A Steel Museum was set up in the premises of Technical Training Institute at RINL, which was inaugurated on 1st April 2016. The Museum will serve to create awareness about the steel industry to the general public as well as motivate school children and budding engineers to select the steel industry as their career option.

Figure 47: Visit to Steel Museum of RINL by Secretary, Steel



3. Kids' corner introduced on the website of MOIL (for Manganese Ore), RINL (for steel production) and KIOCL in order to raise awareness, open career choices, and take nuances of mining, ore production and steel making to the new generation.
4. NMDC under this Ministry has partnered with Govt. of Chhattisgarh and provided funds for establishing an 'Education City' in one of the most remote areas on the county – Geedam, Dantewara region. This Education City comprises a Polytechnic College, residential schools for the Maoists affected children (Aastha Gurukul) and schools for differently-abled children (Saksham 1&2). Around 2000 children are benefitting from the facilities set up here. The Hon'ble Minister of HRD and Hon'ble Prime Minister visited the 'Education City' and were highly appreciative of the latest facilities made available by NMDC in this region.

Figure 48: Images of Saksham (Left) and Aastha Gurukul (Right)



### 4.8.2 Social Media

Ministry of Steel has got its presence in various social media platforms such as Facebook, Twitter, LinkedIn, Instagram, etc.

Figure 49: Snapshots of the Ministry of Steel in various social media platforms



## 5 Way forward - Indian Steel Industry

1. In 2016, India retained its position as the fastest growing major steel economy in the world and our share in global steel production was 5.5% in 2015, which has increased to 5.9% in 2016. India would continue to lead the growth trend in world steel industry and is on its way to become world's second largest steel producer. The gap between India and Japan was 16 million tonnes in 2015, which has come down to 9 million tonnes in 2016.
2. There are five important thrust areas that need to be focused on. An acronym 'PRIDE' aptly sums up the way forward for the steel industry.
  - a. P stands for Production & Productivity
  - b. R for Research & Development
  - c. I for Indian-made steel
  - d. D for Demand of steel
  - e. E for Excellence in quality
3. Ministry of steel (MoS) is taking steps to demonstrate benefits of steel to potential users. Through Life Cycle Analysis, MoS will showcase that steel structures are highly cost-effective and have shorter lead time for erection. Steel has greater durability with high design comfort. MoS has directed all concerned to utilize every possible opportunity to showcase prototypes and exhibits of steel for this purpose.
4. MoS will use all marketing, branding avenues to push this message. That is the only way to meet the challenge of product substitution by aluminium, concrete, plastic, glass etc.
5. In draft National Steel Policy, MoS aims to more than double the capacity to 300 million tonnes. That means an investment to the tune of Rs. 10 lakh crore. Target is to increase per capita steel consumption to 160 kilogram.
6. MoS is working towards meeting the entire domestic demand of high-grade automotive steel, electrical steel and special steels from domestic production. These products constitute a major portion of the steel imports in India.
7. MoS is examining the feasibility of setting up scrap-based steel plants in India. These will be on the lines of 'Melt & Manufacture' steel technology in USA. Scrap-based steel plants are environment-friendly, energy-efficient and cost-effective. These will have the capability to produce special high-quality steels, a pre-requisite for Make in Steel. North and West India regions are important from the perspective of scrap-availability and steel import hubs.
8. MSTC- Mahindra Intertrade state-of-the-art Auto Shredding Plant is likely to be functional in 2018. Indian market has huge potential for auto-shredding.
9. For Research & Development in Indian Steel industry, MoS is aiming high and working on out-of-the-box solutions and technologies for steel making using indigenous resources.
10. Indian steel industry is dependent on imported raw material and certain high-end steel products. There is potential to enhance usage of domestic coking coal by setting up more coal washeries and MoS is working in that direction.
11. MoS is trying to bring together all R&D efforts under one umbrella of SRTMI (Steel Research & Technology Mission of India) with public-private partnership.

12. Ministry of Steel is in constant touch with different user ministries to ensure that steel-intensive structures are promoted through regulatory, advisory and other measures. MoS is in the process of talking to hill states to increase use of crash barriers to minimize fatalities due to road accidents on hills. Rural Development Ministry has already recommended use of steel-intensive structures in rural housing.
13. MoS is trying that “Indian Made Steel” can be defined in the light of existing Public Procurement Bill. This will provide for mandatory procurement from domestic bidders on the grounds of promoting domestic industry. Basically the aim is to emphasize lower life cycle costing while evaluating projects, rather than just looking at the upfront cost alone.
14. MoS is constantly working to think of and work on ways for increasing steel demand in India. MoS had the meeting of newly constituted Steel Consumer Council in Jan 2017. The ministry invited suggestions on increasing steel consumption in India on MyGov platform and is working on implementable suggestions. MoS constituted four task forces and committees of experts and users of steel to formulate strategies to increase steel consumption in India
15. Focus on areas such as ports, roads, affordable housing, physical infrastructure should provide the Indian steel sector necessary impetus to meet its growth targets.
16. The 2017-18, budget has given infrastructure status to housing and enhanced budget for housing, which is expected to revive domestic steel demand as it will push up demand for construction grade steel particularly those for roofing purposes. At present, around 40% steel consumption is from construction and infrastructure sector, and MoS wants to take it to 60% in long-term.
17. Indian steel industry needs to move to a 100% quality regime, for health and safety of end users. That is why MoS is going ahead with making BIS certification mandatory for most of the steel products.
18. All the above measures are being taken as a part of comprehensive strategy to generate steel demand in the country.