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K L Mehrotra - Chairman, Delhi Chapter | **S C Suri** - Editor-in-Chief (IIM-DC Newsletter)

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In The Issue

HRD HALL OF DELHI CHAPTER

VIEW OF AUDITORIUM OF DELHI CHAPTER

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SAIL Steel
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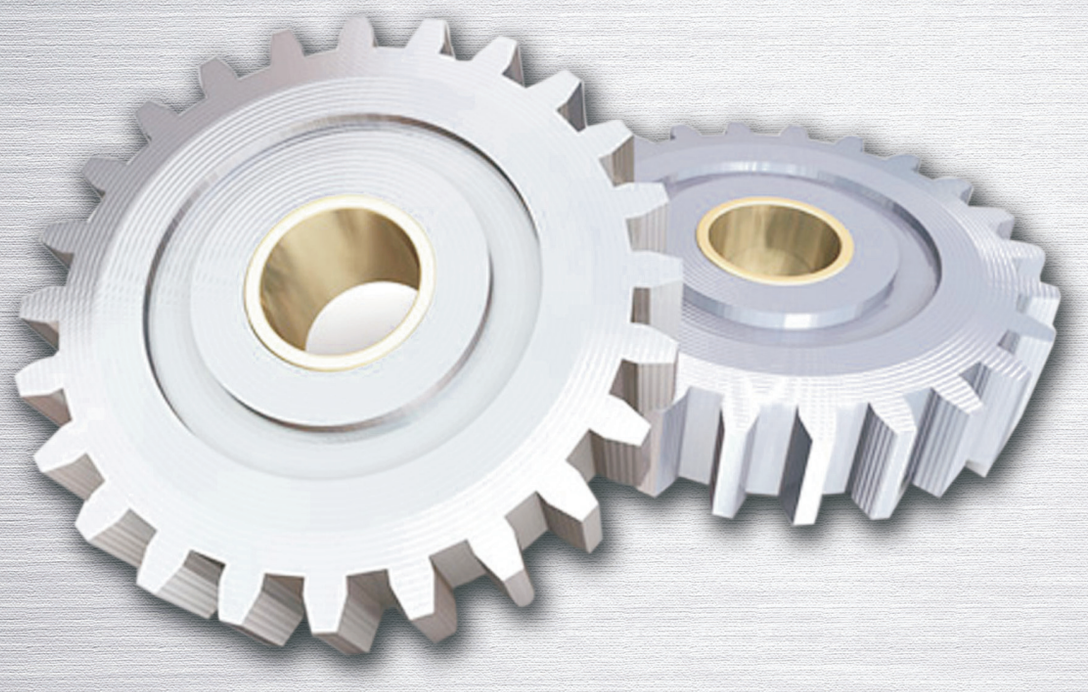
सेल SAIL



Steel Authority of India Limited - The Largest Producer of Steel in India.
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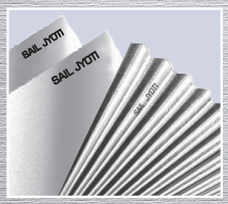
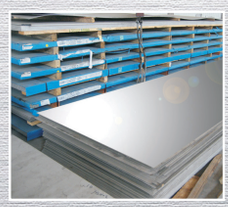


SAIL GP/GC


SAIL HR/CR Coil


SAIL TMT


SAIL Plates

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CHAIRMAN'S MESSAGE

I extend my grateful thanks to the newly constituted Executive Committee of our Chapter for once again reposing trust in me to discharge the responsibilities of Chairman for 2017-18. I am humbled to accept this position with a sense of responsibility for serving the interests of the Chapter for one more year.

In the year 2016-17, our Chapter conducted a number of technical activities at our Chapter. The flagship event of the Chapter, namely, MMMM 2016 event consisting of Exhibition and concurrent International Conference in Minerals, Metals, Metallurgy and Materials (MMMM) was successfully organised at Pragati Maidan, New Delhi, from 10th to 12th August 2016. This would not have been possible without the cooperation of our esteemed members. About 35 countries participated in the Exhibition. While the Exhibition was visited by about 15000 trade visitors, the Conference was attended by about 200 participants from various organisations in India and abroad.

Our Chapter possesses excellent infrastructural facilities in terms of auditorium, board room and library. In 2015-16 we installed CCTV coverage at our Chapter. In 2016-17, we installed elevator and solar panel at the roof top of our Building. This has added sheen to the ambience of our Chapter. This has also resulted to some extent to minimise the carbon footprint in terms of mitigation of Co2 emission.

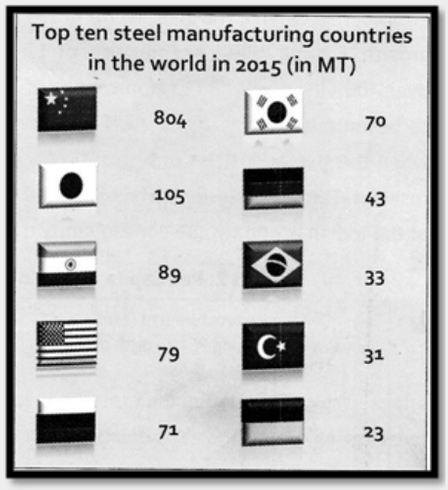
Although we are trying our best to undertake technical activities to the members' expectations, there is always a scope for improvement. This year we have made a calendar of technical activities planned to be undertaken by us. This is an ambitious plan of technical activities. Our learned members have immense potential to further the cause of the metal and mineral sector. I look forward to the cooperation and involvement of all our valued members in implementing this plan of technical activities at our Chapter. I have no doubt that with the active support and involvement of all members our Chapter will scale new heights in technical activities.

I once again convey my gratitude to the members in entrusting me the responsibility to serve the Chapter for 2017-18.

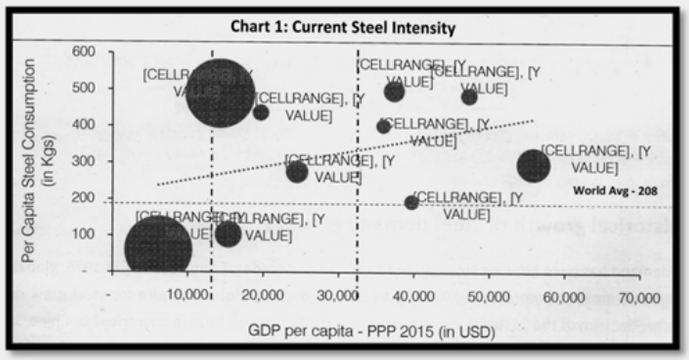
KL Mehrotra
Chairman

Demand Growth In Indian Steel Sector

India is world's third largest steel producing country



The steel sector in India has grown on the back of a large domestic market and future growth of the Indian steel market is a foregone conclusion. The fact that per capita steel consumption of India at 61 kg is less than one third of the world average (208 kg), underlines the huge potential for long term growth of the sector, notwithstanding improving efficiencies and change in steel usage patterns. However, a pertinent question remains as to what is the stable range of demand and rate of growth.

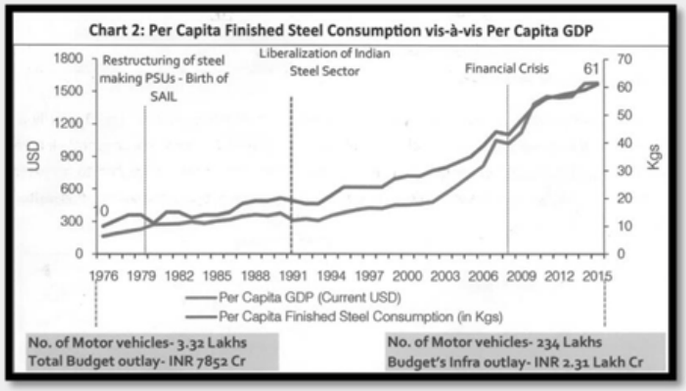


To delve further in the issue of stable demand level, world average consumption may not be the only benchmark but the per capita consumption of China (489 kg) or South Korea (1114 kg) may as well be argued to be achievable (though prima facie the two countries are export oriented and hence, incomparable). This also has a bearing on the capacity addition in the sector along with the raw material planning (iron ore, coal, natural gas etc).

This article attempts to evaluate this question at a macro level and develop scenarios around demand growth.

A. Historical growth of steel demand in India

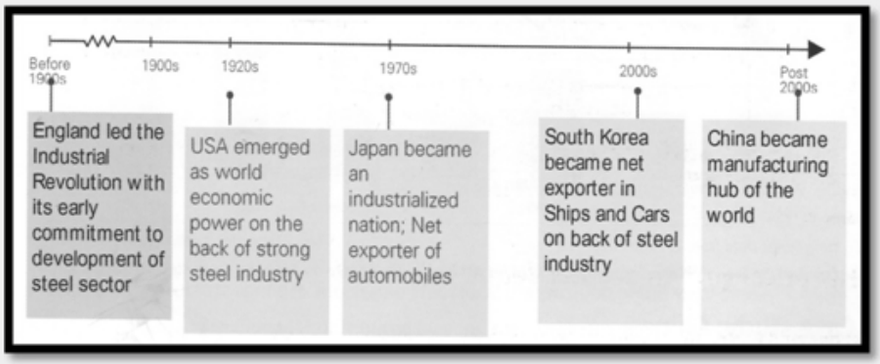
Post liberalization of the steel sector in 1991-92, the Indian steel industry has witnessed unprecedented growth. From a modest production of 17 million tonnes of crude steel in 1991-92, it has grown by over 400% to reach ~89 million tonnes in 2015-16. In fact, in 2015, India overtook the United States to become the third largest steel producer. Even during the global economic downturn of 2008-09, when the steel industries of rest of the major producing countries faltered, Indian steel industry stood resilient. The key driver for such an increase in production has been the domestic demand backed growth of the Indian economy and consequently the steel consuming sectors.



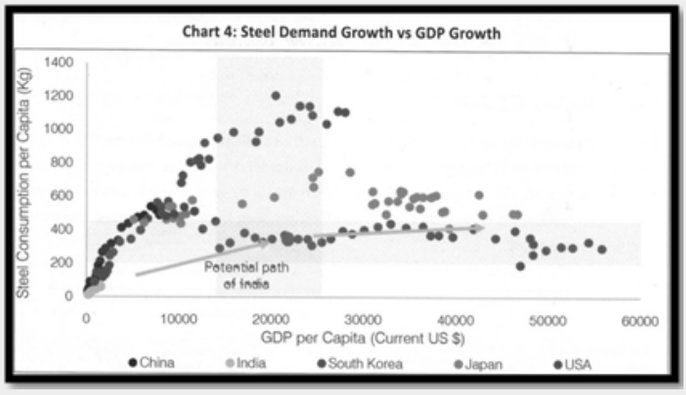
B. Historical growth of steel demand globally

Steel demand has been growing steadily over the last few decades. From ~200 MT in 1976, global steel demand has grown to more than 1000 MT by 2015. However, global appetite for steel grew rapidly only after the turn of the 21st century with growth of manufacturing base

in countries like China, Japan, South Korea. Between 2001 and 2008, global demand increased at CAGR of 6% compared to CAGR of 2% during 1976-2000. The global steel demand in these eight years nearly doubled. However in recent years, i.e. 2008 onwards, the global demand has slowed down to 3% CAGR as the growth in China and other developed countries moderated. China was by far, the largest contributor to this growth in the sector. Over the same period (2001-08), its demand grew at CAGR of 16%, accounting 36% of the global demand by 2008, which has increased to 45% in 2015.



The global steel demand has been fuelled by different countries at different points in time. Typically, as the countries have entered into the industrialization phase, the steel demand has consequently increased. In case of India, thought, the economic growth has been driven by service sector and to an extent; it has leap frogged the stages of economic evolution typically seen in other economics (agriculture -> manufacturing -> services).



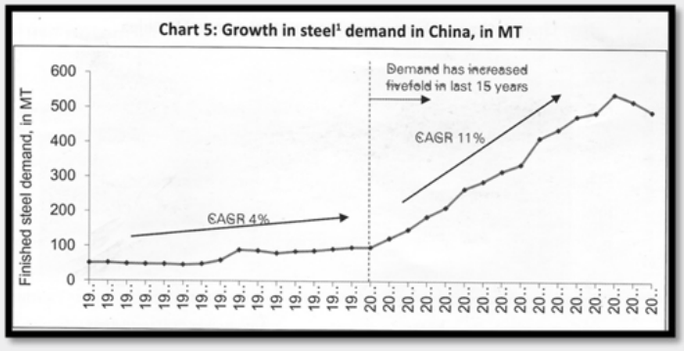
Generally speaking, the economic growth and steel consumption are typically correlated though the trends are different across countries. During the period of industrialization in USA and Japan, steel consumption rose sharply as GDP increased and peaked at GDP of ~ USD 20,000 per capita. With further GDP growth, steel consumption has remained stagnant/ declined (Chart-4). This is understandable since as economy matures, the GDP growth is driven by value added industries and service sector which are not steel intensive.

Similarly, countries like China and South Korea saw significant increase in steel demand on the back of burgeoning manufacturing sector and infrastructure investment in the first decade of 21st century. However, the level of consumption in the two economies is significantly higher compared to other economies, possibly due to focus on export of capital goods. In the case of South Korea, the lower population is also a determinant of higher per capita consumption. From the Chart 4, it appears that South Korea and China have achieved peak steel consumption.

Developing countries like India are currently experiencing a strong rise in demand. However, with the potential substitution of steel with other materials (plastics, aluminium and alloys), early rise in service sector and limited manufacturing capacity, India may follow a different consumption trajectory, possibly closer to that of US than China.

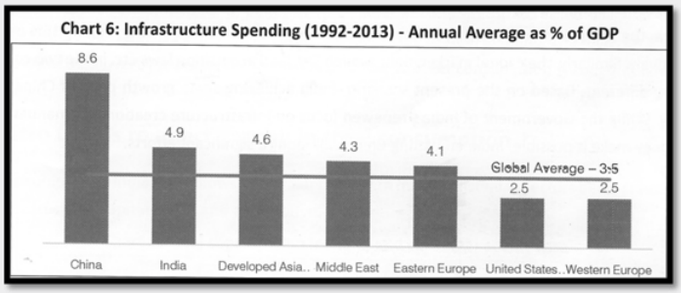
C. Case study: China

Steel demand in China has increased significantly over the period. From a modest level of 51 MT in 1985, steel demand in China has increased to ~489 MT by 2015. It is lower than the



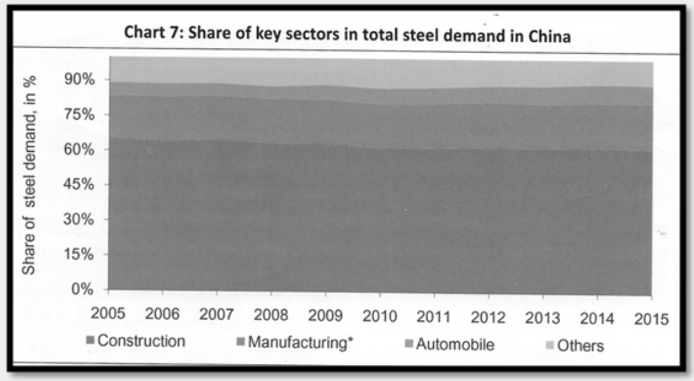
peak demand of ~540 MT in 2013 but it is still a significant feat nonetheless. As now China has begun adjusting to their domestic consumption driven growth, the steel demand is expected to stabilize or taper down to a lower level.

China's steel demand has been driven by significant investment in infrastructure, e.g. infrastructure build out for 2008 Beijing Olympics, rapid urbanization and manufacturing sector. Post economic crisis of 2008, economic stimulus package of 4000 billion Renmimbi also boosted the infrastructure build out. China is still continuing with its investment on roads, bridges, sewers etc. To put things in perspective, China spends ~9% of its GDP on domestic and foreign infrastructure projects annually, more than the combined spend by North America and Western Europe.



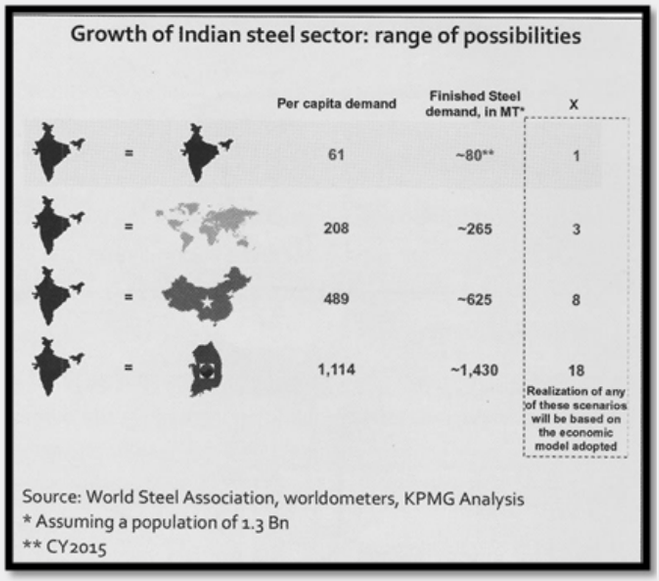
The impact of infrastructure spend is also visible in sectoral composition of the steel demand. More than 60% of the steel demand in China is contributed by construction sector, higher than the global average of 52%.

Chinese growth story has created benchmarks in consumption levels. However, can India emulate a similar growth path, is a big question. The nature of Indian and Chinese economies is very different. For instance, the share of manufacturing sector in the GDP for the India and China is roughly 16% and 30% respectively. Similarly, the capital market, debt availability, land acquisition laws etc. in the two countries are very different. Based on the present scenario, India achieving same growth path as China seems unlikely. While the Government of India's renewed focus on infrastructure creation and manufacturing sector may make it possible, India emulating China will require significant efforts.



D. Future potential

As mentioned in the opening para, long term growth of Indian steel sector is fairly certain. Even growing at the current level of 5-5.5% per annum, steel demand is likely to reach ~200 MT by 2030. Though this cannot be underestimated and will require sustained investment in infrastructure and manufacturing sector. The larger question is if Indian can achieve a higher level, say 300

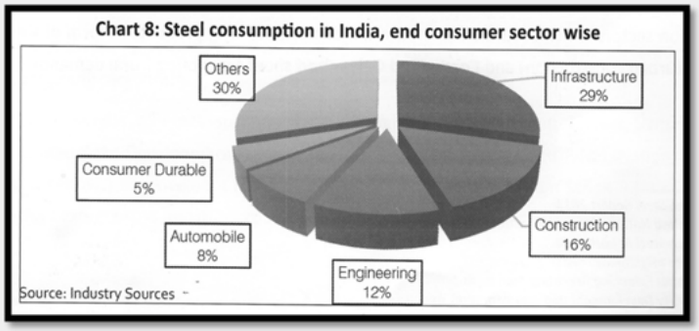


MT or even beyond by 2030. Overall economic growth, and more specifically accelerated spend in infrastructure sector including roads, railways and ship building, anticipated growth in defence sector and the automobile sector are expected to create significant demand for steel in the country. In addition to this, favourable demographics, improvement in various socio-economic indicators, increasing penetration of steel in rural area, increased usage of steel in bridges, crash barriers are

also expected to contribute positively to steel demand. The focus on the Make in India initiative is overall expected to give a fresh boost to steel consumption through defence and ship building.

E. Macro trends to affect growth in steel consumption

Steel consumption in India also follows the similar trend with major consuming sectors being construction and infrastructure, capital goods and automobile.



Construction & Real Estate

The Indian real estate sector consumed ~22 million tonnes of steel in 2013 for the construction in 3.6 billion sq. ft. Currently, there are various levers which shall continue to drive the growth of real estate sector.

(i) Share of urban population in India is only 33% in 2015 which is slated to reach 40% by 2030 and 50% by 2050. Combined with an increase in population, the aggregate demand for housing is going to increase considerably, with about 8.2 billion sq. ft. At present level of consumption, it shall require ~50 million tonnes of steel by 2025.
   a) Increasing population in tier – I cities may lead to greater vertical development (high rise buildings), which will result in an increase in the overall steel to cement ratio in construction in India.

(ii) Growth of services sector will cause an unprecedented demand for office space.

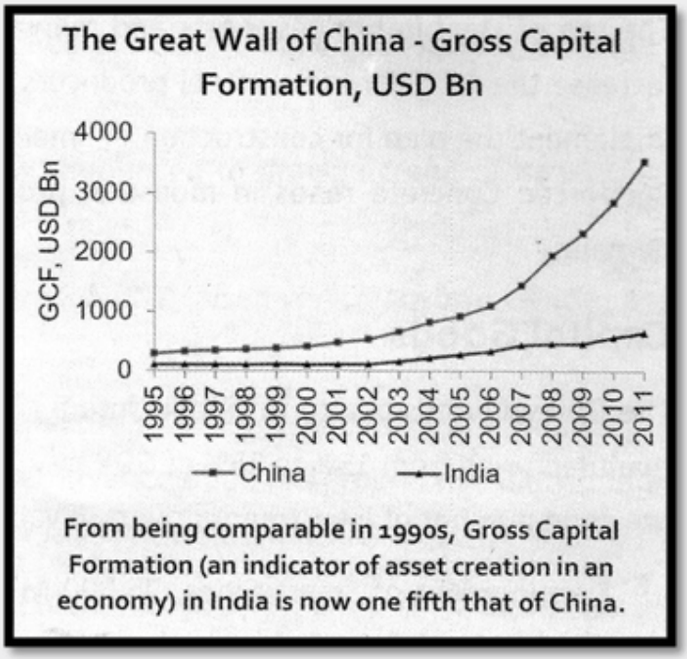
(iii) Need for affordable housing is the primary focus of the Government. This will cater the housing needs of the below poverty line and will also lead to reduction in slums in urban areas. Initiatives such as **'Housing for all Mission (by 2022)'** aim to provide homes for all.

(iv) Enforcement of regulations for the earthquake resistant buildings and need for structures with shorter lead time, longer life durability, cost effectiveness and high design comfort will lead to an increase in steel intensity in construction sector with a shift from brick and mortar based structures to Pre-fabricated and Pre-Cast Steel based structures.

The government is also trying to reform the sector by steps like enactment of Real Estate Act to improve transparency, clearance of REITs to facilitate access to capital, easing of approval mechanism such as construction permits, convergence of IFRS and relaxation of FDI norms. All these reforms along with initiatives such as development of Smart Cities, Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Pradhan Mantri Awas Yojana, HRIDAY will enable accelerated growth of the real estate and construction sectors which in turn will increase the demand for **long products in form of Re-Bars and H-Beams** (urban construction) and **Corrugated Galvanized sheet for roofing** (rural demand).

Infrastructure

As per the 12th Plan, total investment planned



in infrastructure was US$ 1 trillion (8.18% of GDP). The Union Budget 2016 provided further impetus to infrastructure development with 3 fold increase, over the previous year's budget, in the planned expenditure. With a combined outlay of INR 221,246 crores, Union Budget of 2016-17 and Indian Railway has the potential to drive steel demand significantly high.

In its bid to reform the infrastructure sector in India, the Government has also taken the following initiatives,

- Addition of more than 50,000 Kms of road network in next 5-6 years; Investment of ~USD 250 billion
- Upgradation of various railways stations, high speed train connectivity movement and is driving investments in upgrading railways infrastructure such as overhead poles and fittings
- Development of tier-II city airports
- Increased focus on urban infrastructure through JNNURM
- Mass Rapid Transport System (MRTS) such as metro rail in major cities
- Setting up of Ultra mega power plants (UMPP) and new transmission line infrastructure in power
- Shipping, Ship building, ports
    a. Granted infrastructure status to shipyard industry
    b. Granted financial assistance of ~ Rs 4,000 crores over the next 10 years to ship builders – both state-owned and private – on each ship they build, irrespective of the size and type.
    c. Focus on the development of terminals that deal with a particular type of cargo, under the increasing cargo traffic.
- Launched various schemes such as National Highways Development Project (NHDP), Special Accelerated Road Development Program for the North-East region (SARDP-NE), National Highways interconnectivity Improvement Project (NHIIP) and Pradhan Mantri Gram Sadak Yojana (PMGSY) to construct expressways and other roads in order to achieve last mile connectivity.

The use of steel in bridges, ports and railways coaches to ensure longer life and increased safety will increase the focus of Indian steel producers in producing high value steel. The government may also implement the plan for construction of small span steel concrete composite bridges and high strength Reinforced Concrete roads in monsoon prone areas to drive both, infrastructure quality and steel demand.

Capital Goods

The Government's aim to turn India into a global manufacturing hub by increasing the contribution of manufacturing from 15% to 25% of GDP by 2025 will boost steel demand. In the current scenario, there are good number of investment drivers in various sub-sectors of capital goods industry.

- Development of Smart Cities, 75,000 MW clean energy initiative by 2022, upgradation of power distribution infrastructure and increase in power consumption will increase demand for power equipment/plants.
- Make in India is going to boost the competitiveness of Engineering Goods.
- Continuous mechanization in mining industry will boost the demand of Heavy Earth Moving Machines.

All these drivers will ultimately increase the demand of **steel forgings, steel pipes and flat steels**.

Automotive

The demand for automobiles in India which is mainly linked to the GDP growth, the rise in the income levels and above all the low per capita penetration i.e. 22 cars per thousand people, offers phenomenal potential for the auto industry. With an increasing CAGR growth of 10% for the next 10 years, it is aptly described as the next sun rise sector for the Indian economy.

As a response, steel producers need to gear up to innovate or collaborate to produce differentiated, high-value steel to cater the rising demands of this sector. In addition, stringent environmental and safety norms and new generation of transport are necessitating the production of lighter and high-strength steel. Global car manufactures have been

ramping up investments in India to cater to growing domestic demand and to set up export-oriented production hubs. To encourage investments in the sector, the Government of India has taken following initiatives:

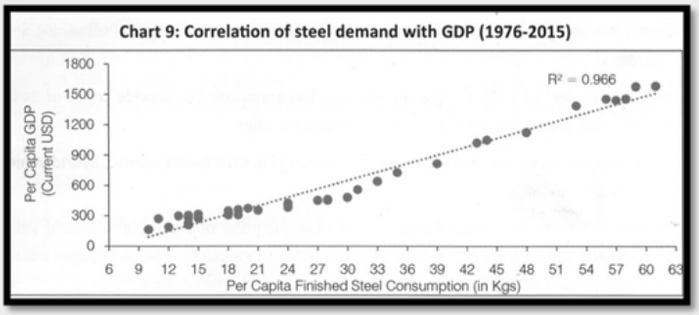
- Allowed 100% FDI under the automatic route.
- Announced plans to set up a separate independent Department for Transport, comprising of experts from the automobile sector to resolve issues such as those related to fuel technology, motor body specifications and fuel emissions, apart from exports.
- Launched the automotive mission plan 2016-2026 aimed at accelerating and sustaining growth in this sector.
- In the Union budget of 2015-16, the Government has announced to provide credit of Rs 850,000 crore to farmers aimed at boosting the tractors segment sales.
- Continuously promoting eco-friendly cars in the country i.e. CNG based vehicle, hybrid vehicle, and electric vehicle.
- Formulated a Scheme for Faster Adoption and Manufacturing of Electric and Hybrid Vehicles in India, under the National Electric Mobility Mission 2020 to encourage the progressive induction of reliable, affordable and efficient and hybrid vehicles in the country.
- Planning to set up of National Automotive Testing and R&D Infrastructure Project (NATRiP) centres in association with private players such as Hyundai, Suzuki and GM.

Several Indian steel players have fostered partnership with international steel majors to produce automotive grade steel. For example – Arcelor Mittal, has recently agreed a joint venture with Steel Authority of India Ltd. (SAIL) to set up an automotive steel manufacturing facility in India. With most global automotive players setting up manufacturing bases in India, there is huge opportunity for steelmakers to increase their competitiveness through co-development of product, thus making India a more attractive destination for investment.

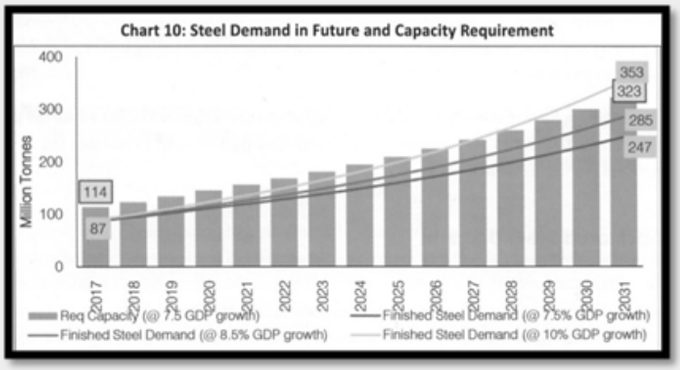
The Government initiatives planned in all the above mentioned key sectors are likely to drive the growth in India's current GDP which will ultimately provide additional push required to increase the domestic steel demand in short to medium term.

F. Anticipated Steel Demand

Growth in steel consumption in a country is closely linked to the rate of growth in its GDP and the estimated 'GDP-elasticity of steel demand'. While growth in GDP is a crucial determinant of growth in steel consumption, GDP elasticity of steel demand is the definitive parameter specific to an economy and determines the rate of growth in its steel demand over time.



Assuming 7.5% rate of GDP growth y-o-y and elasticity of steel demand with GDP to be 1.14 till FY20 and 1.0 from FY20 onwards, steel demand is expected to reach ~250 million tonnes by 2032.

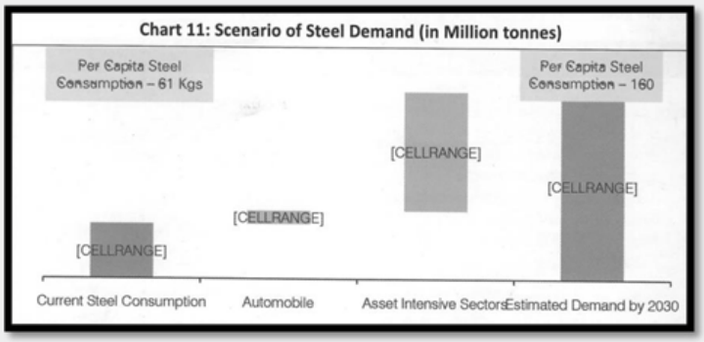


Assuming a capacity utilization of 85%, required steel capacity shall be ~300 MT by 2032, an incremental capacity of ~200 MT. It may be noted that even with ~250 MT of finished steel consumption by 2032, India's per capita consumption at ~160 Kgs would be lower than the current global level.

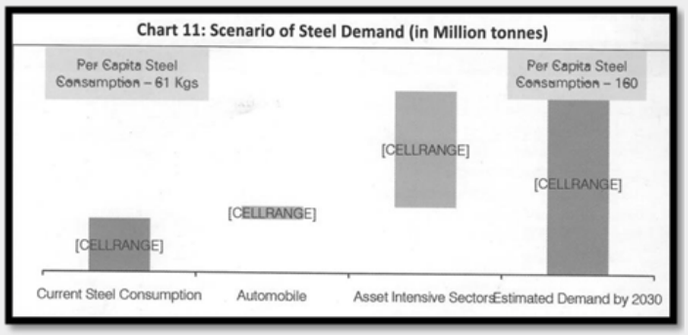
In case of higher economic growth, the steel demand may be still higher. On the other hand, emergence of substitute materials (Aluminium/ plastics/ carbon fibre), consumption efficiencies

may reduce the steel intensity and thereby overall steel demand.

Looking from a different perspective, based on GCF, the aggregate demand for various asset intensive sectors may reach around ~250 – 260 million tonnes by 2032 i.e. ~165 Kg per capita. Similarly, assuming a 10% growth for automobiles sector in India up till 2032, the steel demand from the automobile sector may reach 25 MT.



However, the actual demand may be lower for various factors like composition of India economy may be different from chat that of China, consumption efficiencies, vehicle mix etc. In any case, a demand of 200 – 250 MT may be a reasonable target to continue with.

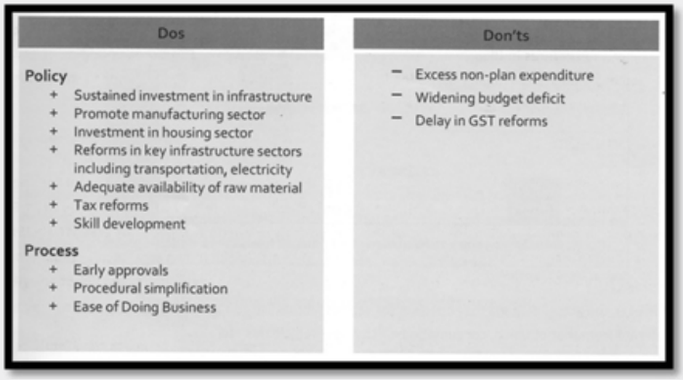


G. Efforts needed to push steel demand

As pointed above, the growth in steel sector is very much possible provided a well-thought strategy is led by Government to facilitate its stakeholders and investors. Following

H. Efforts needed to push steel demand

As pointed above, the growth in steel sector is very much possible provided a well-thought strategy is led by Government to facilitate its stakeholders and investors. Following may be the possible Dos and Don'ts for the government to push the growth to higher trajectory.



I. Flexible approach to expansion for long term demand growth

Indian steel sector while targeting a certain growth will have to ensure that its approach is agile. With technological evolution and interconnected markets, the volatility in today's world is more pronounced than ever before. Steel sector is not immune to these developments and the companies in India will have to rethink the business models and adopt a multi-pronged strategy to respond to such changes.

Some of the potential strategies for the sector could be,

1. **Increased use of technology and big data, automation:** Steel sector will have to invest in technology adoption in areas like demand forecasting, plant operations. Big data will be a key lever to drive efficiencies and overall productivity improvements. Automation will also be a key trend in steel sector like many other manufacturing set ups, reducing the need to human resources and improving safety.
2. **Operational excellence:** Focus on operational excellence through adoption of smarter technology across the asset lifecycle.
3. **Greater collaboration within steel producers and other stakeholders:** Companies will have to get over competition and identify opportunities where they can collaborate and create value for each other. Raw material sourcing, value added products, supply chain could be some of

the areas where different companies can collaborate to create value and mitigate risks.

4. **Increased R&D:** The sector will have to invest significantly in R&D to identify new products, measures for energy efficiency and emission reduction etc. They may facilitate development of innovation centres in their organisations to continuously research and explore application of new-age technologies in bringing disruption in their existing business and operating models. R&D is also one of the key areas where the larger sector can collaborate to develop solutions.

J. Conclusion

The growth of Indian steel sector is assured even if the exact levels of steel demand and capacity may be variable. However, it is likely that the demand will grow up to 200 – 250 MT by 2032. To address such demand, Indian steel sector will be required to create a capacity of 300 MT (@85% utilization), an incremental capacity of 200 MT in next 15 years. As the Indian steel sector embarks on such capacity addition, it will have to take cognizance of the changing environment and adopt an agile and collaborative approach.

Extracted from Assocham's Publication

"10th India Steel Summit"

EXCERPTS OF INTERVIEW OF HON'BLE MINISTER OF STEEL WITH ECONOMIC TIMES

- **In next 2 years, India will be an automotive hub: Steel Minister Chaudhary Birender Singh**

  ArcelorMittal and Steel Authority of India (SAIL) are on the verge of signing a deal to make high-value products, in line with the government's make-in-India mission, steel minister Chaudhary Birender Singh told ET. In an interview with Sarita Singh and Himangshu Watts, Singh also said India's steel sector was poised for strong growth and that his ministry had proposed to build houses made of steel for Rs 2 lakh under the Centre's housing schemes. Edited excerpts:

- **The steel policy is about capacity building while low consumption remains a major concern. How will you address this?**

  In our national steel policy, we aim to create a capacity of 300 million tonnes. Consumption is a concern but one thing is clear that there is a bright future for Indian steel industry in times to come. For the next 50 years, Indian steel industry would be comfortable in terms of demand. In India, you are still to cover 80% of the infrastructure. In union budget 2017-18, a provision of Rs 4 lakh crore for infrastructure spending includes railways, shipping, national highways has been made. Five crore houses are to be built under Pradhan Mantri Grameen Awas Yojana. If you take out 10% of this infra spending, you would be increasing steel consumption by Rs 40,000 crore. We want to carry the message of our industry that we can prepare houses made of steel for Rs 2 lakh. If that clicks, we may have lot of demand.

- **Have you spoken to other departments to secure tenders for houses made of steel?**

  We are in touch with the rural development ministry where three crore houses need to be constructed under PMAY and also urban development ministry where 1.95 crore houses are to be built. We have also approved a policy where for government tenders above Rs 50 crore, domestically manufactured iron and steel products should be given preference. Raising demand is not that difficult for us. I have been to Luxemburg where one of the offices had beautiful steel curtains. This is how one has to be innovative in marketing, I am sure consumption is not that a big issue.

- **How can the local steel industry be made competitive?**

  Coking coal, the most important raw material is not available in our country. There should be replacement if want to be competitive. We have thought of two things. We will set up washeries as most

coal taken out in India is supposed to be thermal coal. If it is washed, 20-25% can be converted into coking coal. We have huge stocks of fines, which in layman's language is sand. We want some pellet plants be put up and have asked PSUs to set up or award private companies. These two put together, we may not be able to replace imports, but saving 25-30% or Rs 8,000-10,000 crore of forex.

- **Imports from China have been a major worry. Is the governm**ent considering minimum import price (MIP) or duties?

MIP was imposed 15 months ago and it gave good results to us. After that anti-dumping was also imposed on some of the products. In the last 3 months, MIP has been completely withdrawn. Earlier, some products were flooding our markets, now there are zero imports. Imports have gone down to 37%, while exports increased to 102%. Though I must admit it is a very small quantity, it is a feather in the steel industry's cap that it has become a net exporter of steel.

- **When will ArcelorMittal's joint venture with Steel Authority of India (SAIL) materialise?**

The deal with ArcelorMittal is finally going to be clinched. About 99% of the bottleneck has been resolved. I held two meetings and the secretary steel, sat with them for hours. SAIL has an autonomous board, they had some matters to resolve during negotiations. The last date was May 31and now extension has been granted for three months. The format for the joint venture has to be vetted by legal experts. As soon as that is final, SAIL will be signing the joint venture. This is one achievement where a plant of 1.5-mt capacity will be put up and they will be producing all value addiction steel which would be useful for automobile industry. India is moving to a direction where in next 1-2 years it would be automotive hub. About 28% of car manufacturing will be done in our country. Mittal's JV will be of great help in this.

- **Will there be subsidy support for specialised steel products?**

Subsidy may not be of any help. We are taking steps where raw material can be made available at lesser cost. We are talking with railways to build slurry pipelines alongside railway tracks. We may save 67% of transport cost of any material. I have appointed a committee to see there should not be quick fluctuations in iron ore pricing. Gas for steel manufacturing was not in priority list earlier. We got in touch with ONGC and oil ministry and we have some understanding that gas for steel making be included in priority list. Gas will be cheaper and price pooling will be the next step.

- **Where do you see the steel industry two years?**

Steel industry contributes over 2% of GDP. It is in a better position. SAIL has made a cash profit for the first time. In the next few months, we would be the second largest steel producing country in the world, outdoing Japan. This is an example that things are moving in the correct direction.

Source: The Economic Times

Coal India will set up 1,000 Megawatt solar power generation capacity: Piyush Goyal

Power, coal, mines and renewable energy minister Piyush Goyal has announced that state-owned miner Coal India Ltd (CIL) will set up 1,000 Megawatt (Mw) solar power generation capacity in a bid to reduce its carbon footprint. "Power PSUs are working on switching to renewable energy sources for generation of power. Coal India is also working to set up 1 GW of solar power generation. We will continue to work towards achieving 10 GW of renewable power capacity addition," Goyal said here during a press briefing recently. Highlighting the achievements of his ministries in the past three years, Goyal also stated that India crossed major milestones in its mission of achieving 175 GW of renewable power by 2022 in the previous financial year.

"By introducing competitive bidding, the

government has ensured that renewable energy is affordable and attractive for consumers. This year we saw the lowest tariffs in both solar (Rs 2.44 per unit) and wind (Rs 3.46 per unit) energy," Goyal said. According to a statement issued by the ministry, 2016-17 also marked the first year when net capacity addition of renewable energy was higher than that of conventional energy. In addition, the past year also saw the highest ever addition of solar and wind power, the statement added.

Speaking on stressed hydro and thermal projects, Goyal said that the government is working on reviving the projects and is close to finding a resolution. "We have had very exciting engagement amongst all the stakeholders with the banks and financial institutions, REC and PFC along with officials from the state and central government. We have come very close to a resolution mechanism for at least those stressed power plants where the promoters are not found to be wilful defaulters," he said.

Goyal also added the bankers are taking very proactive steps to take-over the plants which have defaulted. "We are working on solving the stress in the hydro power projects also. You are aware that Shree Maheshwar Hydel Power project has started. We have asked the state governments if they or the bankers can take over the stressed plants then we can look at finding the solutions to resolve the hydro projects also keeping in mind the economic feasibility," Goyal said.

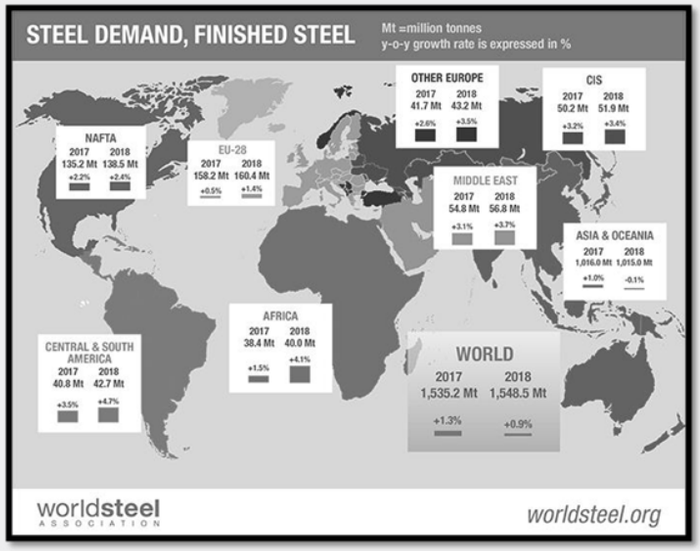
The minister also informed that Niti Aayog is in the process of drafting an energy policy for the next 25-30 years. "We will have an evolutionary and a dynamic energy policy which will keep changing with evolving technologies of the world. As of now we are trying to ensure that the maximum amount of clean energy that can be fed into the grid is being brought into use and it also leads to low cost energy. Coal will continue to be the base load of power and we will continue to support new coal plants," Goyal said. The ministry also said in a statement India became a net exporter of electricity in 2016-17. Goyal said the concept of "One Nation, One Grid, One Price" was further strengthened with surplus electricity available at affordable rates.

Source: Coaljunction

WORLDSTEEL SHORT RANGE OUTLOOK 2017-2018

Steel recovery strengthens, but geopolitical uncertainty clouds outlook

The World Steel Association (worldsteel) recently released its Short Range Outlook (SRO) for 2017 and 2018. worldsteel forecasts that global steel demand will increase by 1.3% to 1,535.2 Mt in 2017, following growth of 1.0% in 2016. In 2018, it is forecast that global steel demand will grow by 0.9% and will reach 1,548.5 Mt.



Commenting on the outlook, Mr T.V. Narendran, Chairman of the worldsteel Economics Committee said, "In 2016, steel demand recovery was stronger than expected with the upside mostly coming from China. We believe in 2017 and 2018 we will see a cyclical upturn in steel demand with a continuing recovery in the developed economies and an accelerating growth momentum in the emerging and developing economies. We expect that Russia and Brazil will finally move out of their recessions. However, China, which accounts for 45% of global steel demand, is expected to return to a more subdued growth rate after its recent short uplift. For this reason, overall growth momentum will remain modest.

Global economy is gaining strength, but

uncertainty escalates

With the risk of global recession receding and economic performance improving across most regions, a number of geopolitical changes still create some concern. US policy uncertainties, Brexit, the rising populist wave in current European elections and the potential retreat from globalisation and free trade under the pressure of rising nationalism adds a new dimension of uncertainty in investment environments. To balance this, risks from ongoing conflicts in the Middle East and in Eastern Ukraine appear to be reducing.

In the capital markets, the probable US FED interest rate increase and any appreciation of the US dollar is likely to have global impact. In particular, it may provoke capital outflows from the emerging economies and place a risk on corporate debt in the developing countries, which has climbed significantly over the last few years.

Oil and other commodities

The pickup in oil prices in 2016 helped the fiscal position of oil producing countries. In 2017-18 oil prices are expected to show a moderate gain but any spike in oil prices to the levels seen in 2010-12 seems unlikely despite the recent OPEC agreement on oil production cuts. Other commodity prices also rebounded due to stronger activities in China, but no further hikes are envisaged. The mildly rising oil prices may stimulate investment in economies worldwide.

Automotive sector will decelerate, but construction sector could pick up

The automotive sector has been the top performer among key steel using sectors thanks to the consumption driven recovery in the developed economies, low oil prices and the government stimuli programmes supporting automobile purchases in several countries. However, this may now be approaching a peak. The construction, building and infrastructure sector, which accounts for 50% of global steel use, has been showing a divided picture between the developing and developed economies. This sector has been a major driver for steel demand in the developing countries driven by urbanisation, but activity in the developed economies since the 2008 financial crisis has been more subdued. This appears to be about to change with a recovery in construction activities apparent in the EU through the improving economic conditions and the potential renewal initiatives for infrastructure in the US.

The machinery sector could also benefit from rising investment activities if the uncertainties surrounding the global economy can be contained. On the other hand, depression in shipbuilding activities is expected to continue for some time given the global glut in shipping capacity.

China slowdown

The economic rebalancing and reform agenda of the Chinese economy continued for the first half of 2016, only to be interrupted by the government's mini stimulus measures designed to reduce the speed of the decline. This produced a short term boom in infrastructure investment and the housing market, which stimulated demand for steel and other commodities. As a result, China's steel demand showed growth of 1.3% in 2016. While the Chinese economic outlook appears stable and steel demand continues to remain strong in the early part of 2017, this is expected to gradually decelerate as the government tries to retighten its real estate policies. China's steel demand is expected to remain flat in 2017 and then decline by -2% in 2018.

Developed world

Benefiting from strong fundamentals, newly announced measures related to fiscal stimuli and rising infrastructure spending, the United States is expected to continue to lead growth in the developed world in 2017-18. However, despite a recovery in oil prices, a rebound of investments in the oil and gas sector may be limited given the increased efficiency of shale producers. The EU recovery is solidifying with many positive developments. Eurozone monetary policy is expected to remain on its current path, at least in 2017, while fiscal tightening is not expected to strengthen further and risk of disinflation has significantly receded. If political stability can be maintained,

investment is expected to pick up to provide a further boost to the recovery. Benefiting from the improving global economy and weak yen, Japan's steel demand is expected to show a stable recovery. Steel demand in the developed economies will increase by 0.7 % in 2017 and 1.2 % in 2018.

Developing world

Having dealt with the structural problems and fall in commodity prices, the Russian and Brazilian economies are stabilising and expected to show modest growth in 2017. Russian growth will continue to pick up in 2018 as structural reforms take more effect. After the demonetisation shock, the Indian economy is expected to resume growth, although on a slightly weakened basis. The ASEAN countries are expected to demonstrate solid growth in 2017-18. However, the region remains vulnerable to currency volatilities associated with US interest rate hikes and dollar appreciation. Steel demand in the emerging and developing economies excluding China, which accounts for 30% of world total, is expected to grow by 4.0% in 2017 and then 4.9% in 2018.

Source: World Steel Association

Forthcoming GST regime will be a game changer for steel industry: ISSDA

Indian Stainless Steel Development Association (ISSDA), the country's apex stainless steel industry body, has said the forthcoming GST regime will be a game changer for the industry. While it is expected to simplify tax and logistics issues, the stainless steel industry urged the government to include key inputs like electricity, furnace oil and natural gas under ambit of GST to help retain its competitive edge. While GST rates for the primary stainless steel products have been set at 18%, the current rates on these products amount to 19.5% with 12.5% excise duty, 5% of VAT and 2% CST. This will help the industry in reducing tax compliances. However, the industry would stand to gain more if electricity, furnace oil and natural gas could also be considered under the ambit of GST, ISSDA said in a statement.

"GST is a good policy change for the Indian stainless steel industry, K K Pahuja, President-ISSDA said while commenting on the GST implementation. 'India has shown impressive growth to become the second largest stainless steel producer in the world. Per capita stainless steel consumption is expected to increase due to increased spend on infrastructure, construction, railways, food processing and many other end-use sectors where stainless steel scores better than other materials on account of life cycle cost,' he added. The country's stainless steel output rose to 3.32 million tonne for FY2016 over FY2015 showing an impressive growth of more than 9%. The industry will also benefit in GST regime with inclusion of raw materials like coal and iron ore in tax slab of 5%. Logistics is also expected to reduce significantly with seamless movement of goods across the states.

However, concerns on the implementation of GST, additional compliance costs in IT network etc. need to be addressed, the statement added. In particular, the association has urged the government to include electricity, furnace oil and natural gas which are key inputs for production of Stainless Steel into the scope of GST. Stainless steel is majorly produced through Electric Arc Furnace Route or Induction Furnace, where electricity is a major cost of production. Similarly, furnace oil and natural gas are used for re-heating steel. Keeping these components out of GST purview, may affect competitiveness of the industry in the long run, ISSDA said.

Source: The Economic Times

JSW Steel proposes Rs 2,100-cr slurry supply pipeline

JSW Steel has proposed a Rs 2,100-crore slurry pipeline project to transport iron ore and coal at more competitive prices in Karnataka, where it is operating a 12 million tonnes per annum (mtpa) integrated steel plant. Such transportation will contribute to alternate

sourcing of ore from outside Karnataka at a competitive price and is environment-friendly, with no pollution. It estimates the pipeline can be set up within 24 months. The project, approved by the board of directors, will enable the company to source almost half its current requirement of ore at the Vijayanagar (Bellary district) works from outside Karnataka, either via import or from Odisha/eastern sector at lower prices than in Karnataka.

It said it was also exploring the feasibility of slurry pipelines for transporting coal from coastal Karnataka to the Vijayanagar works. "We have already outlined a capex programme of Rs 26,800 crore to expand overall steel-making capacity to 23 mtpa by March 2020 and increase our downstream flat steel capacity to seven mtpa by September 2019, along with a few other strategic projects. These key projects will be set up at a very competitive capital cost and improve our return ratios further," group chairman Sajjan Jindal told shareholder at the company's 23rd annual general meeting. Jindal said they were trying to operationalise all the five iron ore mines won in Karnataka in October 2016. This would meet a fifth of the ore requirement at Vijayanagar. He added the company would continue to bid for more mines, both iron ore and coal.

Jindal added they were "working towards operationalising our US coal mines in the current year. Moreover, with better prospects for infrastructure spending in the US and, hence, demand for key end markets for plates and pipes, we expect a turnaround at our US plate and pipe mill facility in the current year." JSW has installed steelmaking capacity of 18 mtpa. Its plant at Vijayanagar is one of the largest single location producing facilities in the country.

Source: Business Standard

Foreign investors with modern technology welcome in steel sector, says Steel Minister

The government has welcomed foreign investors with modern technology to set up steel plants in India as the country aims to increase the output to 300 million tons (MT) by 2030. "If somebody comes with a new technology with any joint venture or some company from abroad wants to put their plant they are also welcome," Steel Minister Chaudhary Birender Singh said. "The ministry is quite open to this. Any transfer of technology will be welcomed. May be they can have joint ventures, they can have MoUs," the minister said.

The government aims to more than triple the crude steel output in the country from current 97 MT to 300 MT. "In such a situation they would be coming with a new technology....In this sector even 100 per cent FDI is allowed. So they have all their funds utilised for that. That means this would also serve to have sufficient FDI... Our target by 2030 is 300 MT. We are going to create this capacity," the minister said.

In 2016-17, India's crude steel production was at 97.385 MT, registering a growth of 8.5 per cent over the year-ago period.

SAIL and ArcelorMittal have already inked a pact to set up a Rs 5,000-crore auto-grade steel plant. The joint venture is in final stage and is progressing fast. It will produce high-end steel based on latest technology. In March, the steel minister had said that SAIL and ArcelorMittal will resolve differences over setting up of this plant.

The two companies had inked a pact in May 2015 to explore the possibility of setting up an automotive steel manufacturing unit under JV arrangement.

The proposed JV will construct world-class facilities that will offer technologically advanced steel products for India's rapidly growing automotive sector.

Source: Metaljunction

India steel: Supply likely to exceed domestic demand

Following strong 8.5% y-o-y (7.6 million ton volume) growth in Indian crude steel production in FY17, we would focus more on sluggish domestic steel demand, since this

would determine further volume/price growth over FY17-20. Expected capex spends in large steel consuming sectors do not lend comfort to support 4.5% CAGR in domestic demand. This is critical to absorb incremental supply of 14mt, even assuming PSUs deliver 50% of our base-case volume estimates and net exports sustain at current levels. This would limit pricing gains for steel producers, especially if JSW Steel and Tata Steel operate at desired maximum utilisation, given their lower costs. Although we remain positive on both, sustained healthy demand growth would be the key to stock price performance from here on. We estimate 20 mt of incremental domestic steel supply over the next three years. Out of this, 11 mt could be delivered by PSUs viz. SAIL, NMDC, and RINL, if they are able to ramp up their upcoming capacity.

There have been repeated delays during construction, commissioning and ramp-up of new steel capacities by these PSUs in the past few years and further delays cannot be ruled out. Even assuming these PSUs are able to deliver only 50% of their expected incremental volumes; domestic steel production would increase by 14 mt by FY20, implying 4.6% volume CAGR over FY17-20. If PSUs deliver 75% of base case estimates, production CAGR would increase to 5.4% over FY17-20. Beyond 2020, there is a visibility for JSTL's expansion at Dolvi (5 mtpa to 10 mtpa) and Tata Steel's Kalinganagar Phase 2 (3 mtpa to 8 mtpa). These two projects would alone add 8-10mt over FY20-25.

Domestic steel demand remains subdued. India's finished steel consumption growth was a modest 3% during FY17, much lower than the earlier expectation of 6-7% growth. Steel demand growth remained low at 3.4% in April and 1% in May. In the absence of a recovery in domestic steel demand, selling incremental production would be a challenge in the near term since avenues for further increasing exports would be limited and import substitution has largely played out.

Source: Metaljunction

Steel ministry pins hopes on spurt in infrastructure spending

Steel ministry is pinning its hopes on a spurt in infrastructure spending to provide a much needed boost to domestic steel demand. It expects at least a tenth of the proposed Rs 4 lakh crore spending on infrastructure as per the Budget this year — or roughly around Rs 40,000 crore — will be on steel, thus boosting domestic demand. It expects at least a tenth of the proposed Rs 4 lakh crore spending on infrastructure as per the Budget this year — or roughly around Rs 40,000 crore — will be on steel. "The budget this year has made a provision of Rs 4 lakh crore on infrastructure. If a component of 10% of that amount is spent on steel we will see Rs 40,000 crore worth of steel demand being generated," Chaudhary Birender Singh, union steel minister said in Kolkata recently. He was speaking after a function to mark the foundation stone laying ceremony of the new corporate headquarters of MSTC Ltd.

Responding to a specific query on steps being taken up raise steel demand in step with its ambitious New Steel Policy 2017 that targets a production of 300 million tonne by 2030-31, the minister said: "We are targeting a consumption of 160 kg of steel per person up from around 64 kgs at present. This is likely to multiply steel demand across the country." In particular, he mentioned he massive thrust being given to increase use of steel in housing under the Prime Minister Awas Yojana. "We have prepared a prototype that will help boost steel consumption in constructing shelters and some five crore houses are likely to be built under the housing programme. Out of this, two crore will come up in urban areas and the remaining three crier in rural areas," Singh added.

On raw material security, he said the steel ministry has requested Coal India to set up more coal washeries to reduce imports of coking coal by 25-30%. At present coking coal is mostly imported from Australia. He also added that steel firms, led by major PSUs like Steel Authority of India Ltd (SAIL) and RINL have been urged

to focus on using pellets and make use of iron ore fines and ensure judicious consumption of domestic ore reserves.

Source: The Economics Times

India's top 5 iron ore producers in FY17

Significant improvement in iron ore production from states of Odisha, Chhattisgarh and Goa resulted in sharp increase in India's iron ore production in FY17. Country's iron ore production is anticipated to have touched 190 mnt in FY17 against 155.9 mnt in FY16. Thus last fiscal witnessed a growth of 22% Y-o-Y in nations' iron ore output.

1. **National Mineral Development Corporation (NMDC)**

   Iron ore production by India's single largest iron ore producer-National Mineral Development Corporation was recorded at 34.03 mnt in FY17 against 28.58 mnt in FY16. On yearly premises, production figure has moved up by 19%. Output from its Chhattisgarh mines increased considerably from 16.6 mnt in FY16 to 22.03 mnt in FY17. Iron ore production from Karnataka mines remained mostly stable on yearly premises and stood at 12 mnt in FY17.

2. **Steel Authority of India Limited (SAIL)**

Aiming at security of raw material supplies from captive mines, SAIL targeted highest ever iron ore output last fiscal. SAIL has its captive mines in Odisha, Jharkhand and Chhattisgarh. The capacity of existing mines at Barsuan, Kalta, Kiriburu, Meghahatuburu, Bolani & Gua are being ramped up to meet the requirement of iron ore for post ongoing phase of expansion. Captive iron ore production from SAIL's Odisha mines increased marginally from 6.45 mnt in FY16 to 6.96 mnt in FY17.

3. **Tata Steel**

   Tata Steel produced 16.43 mnt iron ore from its captive mines located in Jharkhand and Odisha in FY16. Steel maker's iron ore output increased from its Odisha mines in FY17. It's production from Odisha mines increased by 28% Y-o-Y from 9.29 mnt in FY16 to 11.85 mnt in FY17. Thus as per Steel 360 analysis, the steel maker must have witnessed growth of 16% Y-o-Y in its iron ore output in FY17.

4. **Rungta**

   Odisha's largest merchant iron ore producer – Rungta Mines recorded an increase of 30% Y-o-Y in its yearly iron ore production from Odisha. It produced 22.8 mnt iron ore from its Odisha mines in FY17 compared to 17.58 mnt in FY16. State government's push to raise production to match up with the laid limits resulted in increased outputs. Also sharp hike in exports boosted miner's output in last fiscal. Miner's exports moved up from nil in FY16 to 2.51 mnt in FY17.

5. **Serajuddin & Co.**

   Serajuddin and Co. – Odisha's 2nd largest merchant iron ore miner produced 10.89 mnt iron ore from its Balda Block iron ore mines in FY17 compared to 10.15 mnt in FY16.

Source: Steel 36

Coal production and consumption fell in 2016 while renewables saw growth, analysis from BP shows

Worldwide coal consumption fell by 1.7 percent last year while production dropped by 6.2 percent, or 231 million tons of oil equivalent (mtoe), according to the 2017 edition of the BP Statistical Review of World Energy. The production figure represents the largest decline on record and was driven by China and the U.S., which recorded drops of 7.9 percent and 19 percent respectively. In terms of consumption, the U.S. saw an 8.8 percent drop – equivalent to 33 mtoe – while China recorded a 1.6 percent drop. In the U.K., coal consumption fell by 52.5 percent, with BP stating that consumption there has now dropped to "levels last seen at the start of the Industrial Revolution around 200 years ago."

"The fortunes of coal appear to have taken a decisive break from the past," Spencer Dale,

group chief economist at BP, said in his analysis of the figures.

"This shift largely reflects structural factors: the increasing availability and competitiveness of natural gas and renewables, combined with government and societal pressure to shift towards cleaner, lower carbon fuels." By contrast renewable power – excluding hydro – grew by 14.1 percent last year, with wind and solar making significant contributions. In perhaps a sign of things to come, China overtook the U.S. as the largest single producer of renewables, while Europe and Eurasia were overtaken by Asia Pacific as the world's largest renewable power producing region. While renewable power still represented only 3.2 percent of the share in primary energy, Dale noted that its growth meant it "accounted for over 30 percent of the increase in primary energy."

Source: Coaljunction

Domestic markets need to be protected from unfair competition: Syedain Abbasi, Ministry of Steel

With call for protectionism growing across the globe, domestic markets are also required to be protected against unfair trade practices, a senior steel ministry official said a few days back. "When big and established economies are protecting their industries, we need to be clear that our domestic markets are also required to be protected against unfair trade practices," said Syedain Abbasi, Joint Secretary, Ministry of Steel. He said the steel ministry has gone the extra mile to protect the domestic players from cheap imports.

"Steel industry is very clear about it which is why after the issue of MIP...antidumping duties, what we have in place is a policy for providing preference to domestically manufactured iron and steel products," he said. On May 3, the government approved the National Steel Policy that aims to achieve steel making capacity of 300 million tonnes by 2030 with an additional investment of Rs 10 lakh crore. The Cabinet has also approved a policy for use of domestic steel products in government organisations.

Abbasi said that the budget for infrastructure has also gone up this year. Huge investments will be made in oil & gas, slurry pipelines, ports shipping, airports etc. However, these are also the areas affected by unfair foreign competition. For the protection of domestic players, the government has imposed antidumping duties on certain steel products so cheap items cannot enter the country, he said.

"Steel industry is poised...the only country which is showing growth in terms of market growth is India. Two years back we were fourth largest steel producer, now we have become second largest, overtaking Japan," the official said. Indian steel sector is growing at a rate of 6-7 per cent per annum in terms of production.

Source: The Economic Times

Government halves import duty on some steel grades

The government has halved import duty on certain grades of steel to 5 per cent with a view to cut cost of raw material for domestic industry. The Central Board of Excise and Customs (CBEC) in a notification said customs duty on import of "hot rolled coils, cold-rolled Magnesium Oxide (MgO) coated and annealed steel, hot rolled annealed and pickled coils and cold rolled full hard (used) for the manufacture of cold rolled grain oriented steel (CRGO) steel" has been cut to 5 per cent with immediate effect. CRGO are electrical steel grades used for stampings and cores of electrical transformers and other electrical appliances. They are principally used for motors, generators, alternators, ballasts, small transformers and a variety of other electromagnetic applications.

While India imposes anti-dumping duties on several flat- steel products, it is short in CRGO steel and has to import it. In May 2017, the government imposed definitive anti- dumping duties on hot-rolled (HR) and cold-rolled (CR) flat- steel products (excluding certain value-added steels such as stainless steel) from several countries including China, Japan and South Korea. Flat products constitute the bulk

of Indian steel imports over the last few years.

Source: The Economic Times

India on track to become top global steel producer: Report

India as a steel bright spot is highly encouraging and is on track to become a top global producer, says an industry body. According to the latest report from BMI Research, demand from construction, automotive and infrastructure industries continues to accelerate. The report has put down the sector's success to the government's push to raise capacity in order to meet demand from construction, automotive and infra sectors, said the Steel Users Federation of India (SUFI) in a statement recently. SUFI President Nikunj Turakhia said, "In recent years, the Indian steel industry has showcased a progressive output trend y-o-y." Being recognised as a "bright spot" is highly encouraging as well as a large responsibility at the same time, he said, adding that with the introduction new steel and anti-dumping policies, India is on the path to become one of the top steel producers. The report highlighted that Indian steel giant such as Steel Authority of India Ltd (SAIL) and Tata Steel as the major drivers of such growth.

BMI Research has forecast India's steel output to clock an average annual growth of 8.9 per cent during 2017-21, higher than 2.9 per cent in 2012-16. India's steel output would grow to 128.6 mt by 2021 from 88.4 million tonnes (mt) in 2017 and the country's share of global steel production will accelerate to 7.7 per cent in 2021 from 5.4 per cent in 2017, it added. Ahead of the GST Council meeting, Turakhia expressed concern over the headwinds faced by the sector. He has also urged the government to relax imposition of GST penalties and prosecution. SUFI was part of the delegation that recently presented its case on GST to Maharashtra Finance Minister Sudhir Mungantiwar in Mumbai.

Source: The Economic Times

India 'bright spot' for global steel output growth: report

India is seen as a "bright spot" for the global steel production growth on account of the government's push to augment capacity and demand from the construction, automotive and infra sectors, says a report. Firms like Steel Authority of India Ltd (SAIL) and Tata Steel Ltd are expected to drive the steel output growth, according to the report by BMI Research, a Fitch group company. "The government has been spearheading the push towards the boost in steel production capacity, with upgrades being made to existing steel mills and state-owned companies stepping in to build new steel plants," it said. "India will be the global steel production growth bright spot as demand from the construction, automotive and infrastructure industries continues to accelerate," it added. Key companies, it said, that will drive growth are SAIL and Tata Steel, the latter which aims to boost sales in the automotive segment with the migration of production towards higher-end steel products. For instance, according to the World Bureau of Metal Statistics, in 2016, India's steel output grew by 7.4% y-o-y. "We forecast India's steel output to average annual growth of 8.9% during 2017-2021, higher than 2.9% during 2012-2016," the report said. India's steel output will grow from 88.4 million tons (MT) in 2017 to 128.6 MT by 2021, it added. The country's share of global steel production will accelerate from 5.4% in 2017 to 7.7% in 2021, it added.

Source: Metaljunction

Indian steel companies set to get a boost from GAIL's local sourcing policy

Prime Minister Narendra Modi's Make in India mission received a big boost when state-owned GAIL India issued a tender for a Rs 3,000 crore pipeline project giving preference to domestic steel companies, which have been badly hit by cheap imports from China, said a report. The move will pave the way for domestic steel companies to get contracts

worth billions of dollars from the government, helping them deleverage their balance sheets and help banks improve their recovery. Steel Minister, Chaudhary Birender Singh was quoted as saying that all tenders from central and state governments along with state firms will give preference to domestic firms in projects worth more than Rs 50 crore. The decision is aimed at achieving the twin objectives of creating local employment opportunities and providing a level playing field for domestic players. Companies wanting to invest in India are welcome and the government would invite anyone who is willing to share and transfer technology, the minister said. Gail India will start with orders worth Rs 1,000 crore initially.

Source: Metaljunction

Light steel redefining auto engineering

The automotive industry today stands at the cusp of a phenomenal transformation in structural design, the likes of which has not been witnessed in decades. At the forefront of this change is the usage of light steel which has proved to be instrumental in making the modern day automotive lighter, safer and more fuel efficient. Path-breaking innovations in steel processing to forge high tensile steel has disrupted traditional techniques of structural engineering, opening the doors to an all new era of transportation.

Automobiles in rear view!

Speak to an auto sports enthusiast or a Formula One fan and one would be told that lighter the vehicle faster it goes; And understandably so. Does that mean after years of technical advancements in automotive engineering the present day automobiles are lighter than those a few decades back? As startling as it may sound; the answer would be no. On the contrary, automobiles weigh almost twice as much as they weighed four decades back. The initial models of world's most successful vehicles, which are zipping across city streets today, were between 40-45 percent lighter than the present day models. To bring this fact into perspective, the latest edition of the Toyota Corolla, the model E140, weighs at around 1300 Kg, 43 percent heavier than its 1970 predecessor Corolla E20 which had a curb weight of just 730 kg. Similarly, released in 1959 the Mini mark I weighed 630 kgs while the latest edition of the marque brand the Mini F55 has a curb weight of around 1,182 kg almost 47 percent heavier. With time car manufactures have been on a relentless pursuit to add safety and comfort to transportation thus adding additional features which make vehicles heavier than they have been ever before.

The way ahead: Lighter, safe more fuel efficient automobiles

The industry has seen more advancements in terms of structural design in the past three to four years than it has seen in almost four decades. From 1960s until 2012-13 mild steel has been the main component in automotive manufacturing and has contributed between 40 to 60 percent of a vehicle's curb weight. And thanks to ductility and strength of mild steel it proved to be the material of choice for sturdy and affordable vehicles. But following strong public support for fuel efficiency and pollution control the tides have begun to change in the recent past. Environmental experts have blamed automotives for contributing significantly to environmental degradation and an increase in pollution levels, compelling countries world over to tighten the noose on carbon emissions and strengthening environmental clearances.

These developments posed a mammoth challenge before automobile manufacturers to reduce the weight of vehicles to attain better fuel efficiency and at the same time to keep vehicles affordable and safe. At an average, different types and grades of steel contribute about 62 percent of the weight of a present day production car. The solution to the problem of trimming weight was clear; go for the component that contributes the most to total vehicle weight, steel. The options available included aluminium alloys which are almost 60 percent lighter than steel but twice as expensive. Carbon fiber reinforced polymer (CFRP) was also seen as an alternative to steel and a key determining factor in weight reduction of a vehicle. CFRP is stronger lighter and more formable than steel or aluminium but is almost 8 times more costly, rendering it unsuitable for production vehicles, even the

ones with a hefty price tag.

The steel industry also did not wish to lose a major chunk of the automotive pie to other materials manufacturers, as the auto sector contributes to almost 12 percent of total steel consumption globally. Bearing in mind the needs of the automotive industry, major global steel manufacturers including National giants such as Tata Steel and JSW along with other global steel producers, developed a variety of high strength steel (HSS) and advanced high strength steel (AHSS) grades using several different alloying elements.

Light Steel paving the way

Different variants of Light steel, within the past three years, have made their way into several recently developed vehicles both nationally and globally. From the Maruti's recently unveiled model of Swift Dzire to Motorcycle giant KTM's sports bikes competing the MotoGP are all reinforced with the strength of light steel. Even cars built by Tesla, which have been called the safest cars ever built, use an AHSS variant created with Boron.

From skyscrapers to aviation

HSS and AHSS have begun to play defining role in almost every sphere of engineering from shaping the frames of skyscrapers to forming vital components of aircrafts. Light and ultra-high strength steel has also been gaining popularity in critical applications such as aerospace and rocket science. Features such as resistance from corrosion, durability, strength and weight have once again made steel a preferred mettle to work with for designers around the world.

Source: Steel 360

Nalco readies Rs 25,000-crore investment for expansion

National Aluminium Company (Nalco), a central government-owned entity, is set to join the club of million tonne producers in the segment by 2020. It has readied about Rs 25,000 crore of investment to expand its aluminium, alumina and power capacities. In the country, Hindalco and Vedanta have metal capacities of over one million tonnes (mt) a year. Nalco's smelter at Angul can now producer up to 0.46 mt annually. "A fifth pot line with capacity to produce 0.6 mt will added to the existing four. The cost of the project is Rs 12,000 crore. Normally, such work would take 3.5-4 years to complete; we are trying to complete it within three years," said a top official.

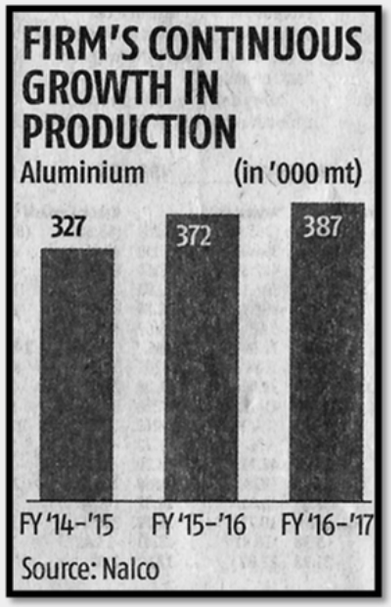
It has also initiated steps to augment its power generation and aluminium production, to support the metal capacity expansion. An agreement has been signed with NTPC for a 1,400-Mw thermal power plant at Gajamara in Dhenkanal district, close to its Angul smelter, for Rs 14,000 crore (a 50:50 joint venture). Power is a key input for aluminium making.

It has also got approval of the Union environment ministry to increase the capacity of its alumina refinery at Damanjodi in Koraput district by one mt. The project would cost Rs 5,600 crore. After feeding the new aluminium smelting capacity, the excess alumina would be exported, at an expected Rs 200 crore net profit. After the expansion of aluminium, alumina and power capacities, the company's post-tax profit is estimated to go up by Rs 1,000 crore annually. Bauxite mining and alumina refinery facilities, in forested areas having a strong presence of armed Left-wing groups posted sterling performance in 2016-17. Nalco's mines in the Panchpatmali hills, target of a Naxalite attack a few years earlier, produced a record 6.825 mt of bauxite, equalling the rated capacity. And, the alumina refinery at Damanjodi operated at 100 percent capacity for the first time since inception, producing 2.1 mt. The company is in the process of opening a new bauxite deposit in the south block of Panchpatmali; it is awaiting allotment of the Patangi mines, reserved for it. "The allotment has been delayed due to bureaucratic hurdles. This mine is crucial for our alumina and aluminium capacity expansions," said the official.

Source: Business Standard

Metal Recycling Policy

A demand and an idea that elevated more than a year back in Jan'2016 with an apex trade body MRAI (Metal Recycling Association of India) requesting the then union steel secretary Aruna Sundararajan and Balvinder



Kumar, Union Mines Secretary to resolve the industry concern is about to see the day's light in the coming months. The announcement of forming 'A Metal Recycling Policy' comes at such a time when the National Green Tribunal's (NGT) Sudden strong presence is felt and there are more than few number of steps have already been taken in the form of Supreme Court orders like the ban on diesel and petrol vehicles that are 15 years old and above in the National Capital Region (NCR) and also the ban on sales of BS-III vehicles in the country effective from 1 April 2017.

Recycling in itself is a huge industry that process used cars, appliances, even old buildings, bridges, stadiums, the ships. The recyclable material is remanufactured to reuse. It is manufactured into commodities by the metal recycling industry and is used as feeder or raw material for plant and factories. Niti Aayog and Steel Ministry jointly stated that, "We have a huge wealth in the form of metal scrap… We are working on Metal Recycling Policy. Vijay Kumar Saraswat, member, Niti Aayog said that, "we want to look at scrap management in an organized manner. Why can't we set up multiple scrap centers in every part of the country where people can deposit old cars, old fridges, and washing machines and get the right price?"

According to the scientific research a high level of positive impact is observed from recycling on the environment that includes

1. **Scrap recycling reduces greenhouse gas emissions**

   Energy saved using recycled materials is up to:

   - 92% for aluminium 90% for copper 87% for plastic
   - 68% for paper 56% for steel 34% for glass

2. **Scrap recycling conserves natural resources**

   - Recycling one ton of:
   - Steel conserves 2,500 lbs. of iron ore, 1,400 lbs. Of coal and 120 lbs of limestone.
   - Aluminium conserves more than 4 metric tons of bauxite ore

3. **Cleaner air and water result from safely removing potentially hazardous materials and keeping them out of landfills**

   - Mercury switches removed from older automobiles
   - Lead recovered from computer monitors

The total estimated reduction in CO_2 emissions from scrap recycling globally is approximately 410 MnT per year.

India imported 5.4 mnt scrap in CY16. The Metal Recycling Industry is expected to grow with much faster rate citing the development plans by state and central governments. Scrap recycling industry employ large number of people make it one of the important job providing sector.

The metal recycling industry's advantages of keeping environment safer, energy savings and emission controls are remarkable, that will flourish and take momentum if favourable policies are formed to organize and reshape the currently unorganized sector. In India we do not have any formal organized Metals Recycling industry structure. If we have laws and regulations in place, it will sure fuel the growth of this seemingly marginal sector. Hope the center keeps several parameters in mind while forming the new policy for this environmental friendly sector that promotes the concept of bringing out the best out of waste.

Source: Steel 360