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In The Issue

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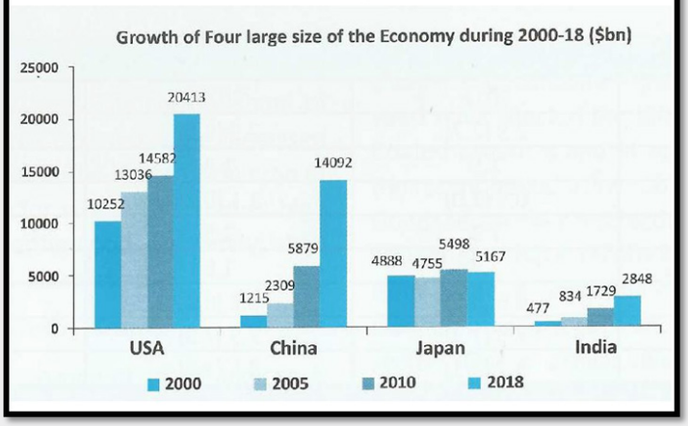
Economic parameters driving steel industry

Preface

Indian economy has been performing reasonably better compared to other major economies of USA, China, Japan, Germany and others. The basic index of economic performance measured by growth in GDP for the last 18 years (2000-2018) shows (without correcting for inflation) that the size of Indian economy has grown from $477 bn to $2848 bn at an annual average rate of 10.4 percent, while Chinese economy grew from $1215 bn to $14092 bn during the period at an annual average rate of 14.6 percent. Meanwhile, US economy has grown larger from $10252 bn to $20413 bn at an average annual growth of 3.9 percent. It is generally true that rate of growth of big numbers is generally lower compared to growth rate with a small base and therefore it may not be fair to use the growth rate alone for comparison of economic growth purposes. The size of the economy is, however, a critical factor from the global perspective. India currently with a size of $2848 bn is seventh largest economy after US, China, Japan, Germany, UK and France and Indian economy is shortly going to surpass UK and France. Chart-1 summarises the growth of 4 largest economies (USA, China, Japan and India) in the last 18 years. Views have been expressed if GDP growth can be taken as a perfect measure of well being and concepts like Gross Happiness Index have come out, however, GDP as an overall measure of all domestic economic activities is still accepted as the most comprehensive indicator of the economic performance of a country.

Chart 1: Movement of size of Four Major Economies during 2000-2018



It is the universal acceptance of GDP to measure economic growth that it is taken to be intricably linked with the behaviour and health of the commodity sector. Thus GDP for ages has been accepted as the crucial independent variable to influence the movement of the commodity in question, be it steel, cement, coal, aluminium and a host of others. As GDP growth fuels the succour, it is felt that the commodity in question cannot grow in the absence of growth in GDP. The related fact is that the projections of GDP and for that matter the future estimates of the commodity in question hinges on the in-built elasticity of the two variables over a reasonably long period. During 2004-05 and 2018-19 the GDP Elasticity of steel consumption in India has been of the order of 0.71. Indian economy is projected to grow at the fastest rate among the major economies in 2019 and beyond. The fundamentals of Indian economy are strong as indicated by the major economic parameters.

Composition of GDP

However, it is the shifting pattern of composition of GDP that is more relevant to explain the movement of GDP elasticity coefficient over the years. Chart-2 shows the relative share of Agriculture, Industry and Service (Tertiary) sectors in India during the last 14 years (2004-05 to 2018-19).

It is seen that decline in share of Agriculture (8.2 percent) has been largely taken up by the Service sector (7.2 percent), while Industry sector (steel intensive) has also enhanced its share by only 1.0 percent. The planned thrust on Heavy industry in late sixties and seventies paved ways for emergence of Mega steel plants under Public Sector followed by partial opening of Indian economy in 1980s and full decontrol in post' 91 ushered in the emergence of the major private sectors in steel industry. Import tariffs were rationalised and Indian steel industry became a world player at the beginning of 21st century. But the poor growth in industry sector put a major roadblock for quantum growth in the sector.

Manufacturing sector

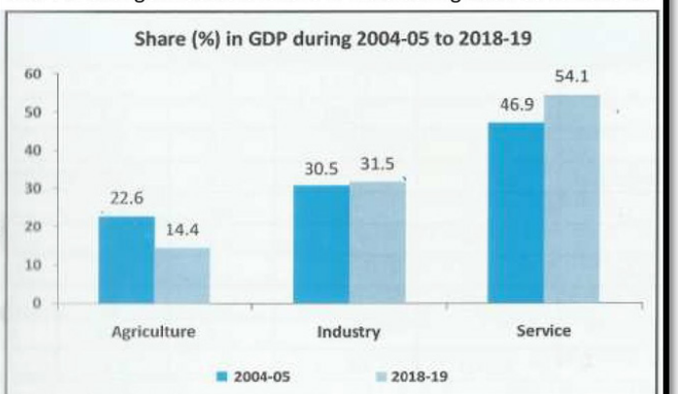
All along the manufacturing sector operated on a much limited pace and its share in GDP was lower compared to what the other major steel producing countries achieved. Table-1 below shows the comparative share of manufacturing sector in GDP in some of the major steel producing nations.

Table-1: GDP Projection for Major Economies : 2018-2020			
Country	2018	2019	2020
USA	2.9 (2.7)	2.5 (2.5)	1.8 (2.0)
Germany	1.5	1.3	1.6
Japan	0.9 (1.0)	1.1 (0.8)	0.5 (0.5)
Brazil	1.3	2.5	2.2
Russia	1.7	1.6	1.7
China	6.6 (6.5)	6.2 (6.3)	6.2 (6.2)
India	7.3 (7.3)	7.5 (7.5)	7.7 (7.5)
World	3.7 (3.1)	3.5 (3.0)	3.6 (2.9)
Source: IMF, Figures within brackets are projections by ADB			

Table 1 tabulates the GDP projection for major economies of the world.

It is observed that against 18 percent share of manufacturing in GDP in India, it is exceeding 29 percent in China, 28 percent in South Korea. It is worth mentioning that in the early phase of industry and manufacturing, the major steel producers all had given more thrusts to development of manufacturing sector. For instance, the share of manufacturing in GDP in Germany was 25 percent in 1991 and the same was 23.4 percent for Japan in 1994, the years when these two countries were among the top steel producers. The current share of 18 percent by India is slated to be increased to 25 percent by 2022. The high contribution of manufacturing sector is also reflected in high exports of engineering goods containing steel as China has firmly established.

Chart 2: Change in Sectoral Share in India during 2004-05 to 2018-19



Composition of Industry Sector

The month wise movement of IIP indices is another important indicator that captures the fluctuating trend of steel consumption. The IIP can be broken down in the form of different segments like Electricity Generation, Capital Goods, Infrastructure and Construction, Intermediate goods and consumer durables to monitor the steel flows in these segments. Table-2: summarises the trend of movement of these segments in the last three years and nine months.

Table - 2: Countrywise Share of Manufacturing in GDP:2017				
China	Russia	India	South Korea	Turkey
29.3	11.9	18.1	27.6	17.6

The wide fluctuations observed in Capital Goods and consumer durables in the past years have affected the sales of HR, Plates, CR, Coated products and Structurals. However, in the recent period a few sub segments of capital Goods sector like construction and earthmoving equipments have received boost in demand from rise in investment and consequent increase in capacity utilisation in manufacturing sector. On a similar analysis, a few sub segments in consumer durables sector like ACs, refrigerators and furniture are exhibiting stable growth pattern. It is satisfying for steel industry that infrastructure and construction sectors are on a reasonable growth path since FY18.

Table-3 : Percentage Growth of Steel Intensive use based Segments						
Segments	Use-based weights (%)	Sectoral Weights (%)	2015-16	2016-17	2017-18	April-Dec'19
Mining		14.37	4.3	5.3	2.3	3.1
Electricity		7.99	5.7	5.8	5.4	6.4
Capital Goods	8.22		3.0	3.2	4.0	7.1
Infrastructure/Construction	12.34		2.8	3.9	5.6	8.5
Intermediate Goods	17.22		1.5	3.3	2.3	0.3
Consumer Durables	12.84		3.4	2.9	0.8	7.5
Consumer Non-durables	15.33		2.6	7.9	10.6	4.1
Primary Goods	34.05		5.0	4.9	3.7	4.1
Manufacturing		77.63	2.8	4.4	4.6	4.7
Overall IIP	100.0	100.0	3.3	4.6	4.4	4.6
Source: CSO						

As manufacturing sector comprises of a few steel intensive segments like Manufacturing of Basic metals, Fabricated structures, Machinery and Equipments, Electrical equipments, manufacture of vehicles and trailers, other transport and furniture, it is worthwhile to monitor the performance of these segments as well to determine in which segment the shortfall is responsible to pull down the growth in manufacturing. Table-3 summarises the performance of these segments in last 3 years.

Table-4 : Growth of Manufacturing Segments during Fy16 to April-Dec'19					
Segments	Weights (%) in Manufacturing	2015-16	2016-17	2017-18	April-Dec'19
Basic Metals	12.8	0.6	5.1	5.7	3.3
Fabricated Structurals	2.65	(-) 2.4	2.0	2.3	2.9
Machinery & Equip.	4.76	3.2	7.7	5.6	6.7
Electrical Equipments	2.99	5.2	(-) 4.5	(-) 12.4	3.4
Motor Vehicles and Trailers	4.86	(-) 1.5	0.6	12.6	11.8
Other Transport equipment	1.78	2.3	4.4	14.0	13.9
Furniture	0.13	41.8	7.5	11.6	17.1
Total Manufacturing	77.63	2.8	4.4	4.6	4.7
Source: CSO					

From Table-4 we can firmly conclude that most steel intensive segments in manufacturing totalling nearly 30 percent weights are the dominant segments having a strong bearing on the health of Indian steel industry. Machinery, equipments and engineering goods together take care of around 22 percent of the total steel consumption in the country. It is seen that fabricated Structurals and Electrical Equipments segments have been performing much less than potential due to poor demand and high imports of these items during the period. The trend and growth of manufacturing sector as a whole and in particular the movement of the various sub-segments of manufacturing as enumerated above, are the critical determining factors for steel demand in the country.

Investment and Consumption

It has been roughly assessed that around 62 percent of steel flow in Indian economy is accounted for by Construction and Infrastructure sector and the underlying factor influencing the growth of this sector relates to total investment, both Public and Private including the household sector. In many infrastructure sectors like Roadways, Railways, Airports, Ports and Shipyards, Irrigation, Urban Infrastructure, Defence, Rural development, Oil and Gas etc., it is the public investment that would dominate the fund flow on account of externalities and private investment in the form of PPP module is the latest phenomenon that would be required at the time of project implementation in all these areas. Much progress has been accomplished in improving the road infrastructure in the country in the last few years. Road connectivity through construction/ expansion of National Highways, Rural roads have made a significant contribution to urbanisation and improvement in the quality of life of the rural areas by making a paradigm shift in the connectivity leading to improved banking, educational and business activities.

Although Indian Roads do not use much of steel unlike in other countries where CRCP (Concrete Reinforced Continuous Pavement) roads and use of wire mesh under the road surface are much in use, the road infrastructure can use significant volume of steel in the form of Crash Barriers (CB), Hand Rails, Tubular fencing, road signage made of steel structurals. The use of steel concrete composite Road bridges (following IRC-22 Code, drafted by INSDAG and other experts) is much in use. There has been a provision that CB is mandatory in both sides of the roads where the depth of both sides from the surface of the road is 3 meters or more. Similarly in all hilly regions, the use of steel CB (semi-rigid) is to be made mandatory to prevent fatal accidents. There are also provisions to set up petrol pump within every stretch of 500 meters and each petrol pump station would be accompanied by washroom, eatery (steel based) and first aid facilities. For Railways, one of the biggest steel users, the projects involving Track renewal, doubling of lines, 100 new world class platforms would require rails of 90lbs, 60 kg, rolling stocks (wagons, coaches, EMUs), construction of new rail bridges or up gradation of existing ones would also contribute to steel consumption. Steel use in flyovers is generally confined to steel made obligatory spans but can also be made of steel as some of the prestigious stretch of flyovers bear testimony to the claim.

Bharatmala, the prestigious roadways project of connecting India, has already earmarked substantial investment Railways are favouring high performance light gauge steel for their rolling stocks as well as stainless steel for better corrosion resistance. The construction of Dedicated Freight Corridor throughout the busy routes in the country has already added to steel demand in the country. Sagarmala project, the port led development already envisages steel and auto hubs to be created to meet the massive demand for steel. Next, the Affordable Housing scheme as a part of Housing for all has been thrown open to private builders to meet the housing shortage in the country and would pave more use of steel in the real estate. The low cost housing scheme (under Pradhan

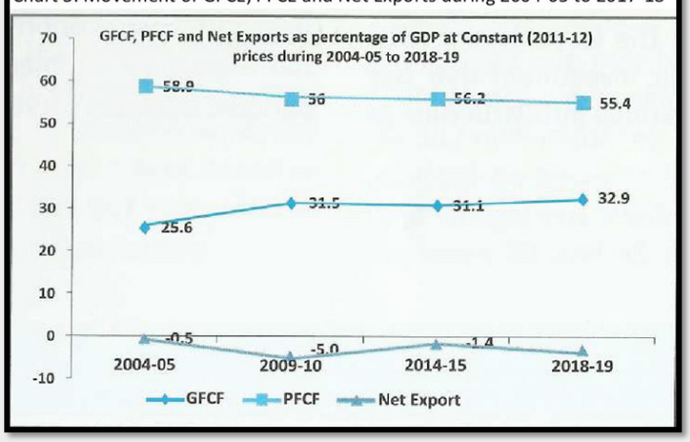
Mantri Awas Yojana-Grammen) has made good progress. The steel composite design of INSDAG (Steel along with Ferro cement) for low cost housing is making some initial progress and can be made more popular with appropriate marketing efforts. The airport modernisation in the mega cities and creation and up gradation of minor airports (most use of Hollow and tubular structures) require good amount of steel.

The completion of these mega projects is crucially dependent on public investment. On the other hand, the growth of passenger car and two wheeler segments in the auto sector rests primarily on household expenditure and the sale of commercial vehicles on the back of rise in Retail and logistic sectors as well as on government consumption. It is seen that personal loans by the scheduled commercial banks which supports household expenditure is rising significantly in the current period. Roughly around 10 percent of total steel consumption is accounted for by the Auto sector.

This suggests a strong linkage of Gross Fixed Capital Formation (GFCF) as a percentage of GDP as a proxy for investment and the primary determining factor for the health of all construction and infrastructure projects, ongoing and incoming. It has been acknowledged that FAI (Fixed Asset Investment) in GDP that combines both public and private investment is the single most important element in deciding the course of steel industry in the next decade. No longer it is true that only emerging and developing countries need massive investment in infrastructure building. In reality, countries like USA, Japan, China are adopting a series of stimulus measure to push up steel demand. A good number of old Railway bridges are either upgraded or new bridges are coming in their place in USA. China is building massive road networking and investing in other countries as well under Belt Road Initiative (BRI) and even investing in developing logistics in the interiors. China is also making wide ranging reforms to attract private capital in the real estate complexes. India has recently simplified the PPP model incorporating changes towards reducing the risks of investment by the private partner. The Affordable Housing and Smart City projects are the areas identified for the developers to participate under PPP module. The success of these two mega projects would largely hinge on the amount of investment made. Steel intensity in GDP is largely accounted for by higher share of GFCF in GDP.

Chart-3 below provides details of movement of GFCF as a percentage of GDP (real GDP at 2011-12=100 series) in the last 14 years. The same chart also indicates the movement of Private Final Consumption Expenditure (PFCE) as a

Chart 3: Movement of GFCE, PFCE and Net Exports during 2004-05 to 2017-18



percentage of GDP during the same period which shows that currently around 55.4 percent of GDP is accounted by PFCE and only 32.9 percent of GDP by GFCF. The corresponding percentage for China is 41.2 percent for GFCF and 42.3 percent for PFCE. This is the true nature of a developing country. Unfortunately for India, Secondary sector and especially manufacturing sector over the last 7 decades could receive a much lower percentage of investment that has indeed inhibited the growth of infrastructure in the country and in the process the country could not enjoy the substantial benefits of the multiplier impact of that investment contributing to the growth of other sectors in the economy. The third element in GDP equation is held by net exports (export over import) which are generally negative for a developing economy as the import needs remain higher in the developing stage of economic growth. For China this factor is a large positive. This factor may be taken as equivalent to Current Account Deficit.

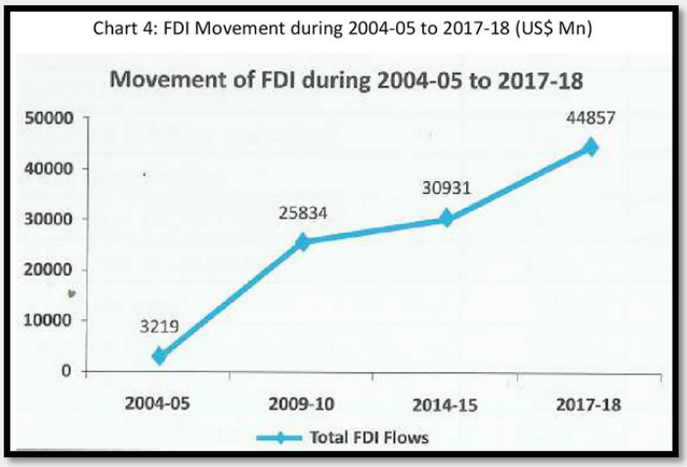
It is important for achieving a smooth rise in investment in steel intensive sectors that the new project initiation is accompanied by revival of stalled projects also. Indian scheduled

commercial Banks have suffered a major constraint in the recent period through rising level of Non-performing Assets (NPAs) which has reached nearly 10.9 percent of the total deposits by the end of March'18 and this has made the Banks much wary of extending credit to the sector. A close monitoring is needed to revive the stalled projects and find out ways and means to recover the unpaid loans. The IBC (insolvency and bankruptcy code) process is likely to achieve major success in the current ongoing negotiations.

FDI

It is customary to fund the investment through saving in the economy and any shortfall in the saving investment gap is made up by Foreign Direct Investment (FDI). Chart-4 plots the movement of FDI (in $bn) in the last 18 years.

Chart 4: FDI Movement during 2004-05 to 2017-18 (US$ Mn)



In the context of Make in India programme and the thrust on developing India as a manufacturing hub in automobile, defence equipments, Metro coaches, mining and textile equipments, the flows of FDI in equities must be enhanced in the coming years.

Conclusion

Summing up, the major economic parameters in income, production, consumption and investment in Indian economy behave quite interestingly. Currently, the data on major macro variables has not been made available for the period prior to 2004-05 officially by CSO. For further projections of steel demand, it is imperative that longer time series is available.

The primary concern of the Government is to expand the size of public investment that can be made available for various infrastructure as well as for the social sectors (Health, Education) and simultaneously keep Deficit financing within a manageable level to avoid the scourge of inflation. The debt to GDP ratio in Indian economy is already exceeding the prudent level. The business reforms (doing business in India) in various functional areas are to be carried on to facilitate private corporate investment that can supplement Government funding for infrastructure projects. A close watch on the movement of these major economic variables throws interesting insights into the growth pattern of steel in the next decade and beyond. It is possible to set up statistical (econometrics) model involving the relations between steel and these economic indicators. The results can always be supplemented by undertaking periodic business surveys.

Source: JPC Bulletin

Courtesy Shri Sushim Banerjee, Director General

Institute for Steel Development & Growth (INSDAG)

6-7% STEEL CONSUMPTION GROWTH SHOULD BE SUSTAINABLE IN INDIA: ICRA

The infrastructure and construction sector is seeing traction in certain segments like roads, irrigation, urban infrastructure and railways and this is likely to fuel steel consumption, going forward. In fact, the steel sector is holding up in terms of demand growth, at 7.5-8 percent, which quite good, Jayanta Roy, Senior Vice President, Group Head, Corporate Sector Rating, ICRA, and Ritabrata Ghosh, Assistant Vice President, Associate Head, Corporate Sector Ratings, ICRA, tell Madhumita Mookerji, Excerpts from a free-wheeling interview:

Q. Two years back, the infrastructure and construction companies were highly over-leveraged, there were cost and time overruns, land issues etc. How has the scenario changed today?

A. Ritabrata Ghosh: Specific to the infrastructure sector, if you see the balance sheets of some of the big companies handling large projects, there is some traction in the order book cycle. But this traction is coming

from a few concentrated areas. These are mainly roads, and others like irrigation, urban infrastructure, airport, and railways. A special mention should go towards low-cost housing, metro rails and water supply and sewerage. While not much traction has been seen in terms of projects in Smart Cities, water transportation infrastructure in 500 AMRUT cities will boost steel consumption. Thus, these areas would help to keep steel demand buoyant.

Jayanta Roy: The overall leveraging has come down, especially in the roads sector, where some assets have been sold by sponsors and also some equity has been raised. Nevertheless, some companies continue to have stressed balance sheets.

Q. How has project awarding been in the last two years?

A. Ghosh: In terms of road project execution, last year, the average rate has been around 28 km per day, which is quite an increase from the levels of around 12 km per day achieved in 2013-14.

Roy: It has picked up, but it is still short of the target of 40 km per day fixed by the government a few years back.

Q. If such be the case with regard to infrastructure, what are the implications for steel?

A. Roy: Infrastructure and construction account for a majority of steel demand in India. Steel was doing rather badly a couple of year ago. But India's steel consumption is growing at an impressive rate of 7-8 percent of late, and one of the major drivers has been a pick-up in construction activities. The country has become the second largest steel producer in the world with production of 106.5 million tons, overtaking Japan, with a growth rate of 4.9 percent year-on-year in 2018. The growth in steel production is supported by fast-growing steel demand. According to Worldsteel Association, it is likely that India will also pip the United States to become second in steel use by the end of 2019 as its steel demand is expected to clock 102.3 million tons, a growth of around 7.5 percent year-on-year.

The steel sector is holding up in terms of both demand and price. In the third quarter (Q3) of 2018-19, there was a fear that the way Chinese export prices were dropping, India would also be hit. But that has not really happened. Prices came down. There was almost a $90-$100 per ton correction in Chinese HRC export offers, but these have again gone up to an extent in 2019.

And, along with that, the local demand strength is actually aiding the domestic steel companies. Their overall contribution level would have suffered from Q1 or Q2 of financial year 2018-19 when prices were high. There has been some amount of correction in terms of prices from those levels. Additionally, coking coal prices have stubbornly remained at elevated levels. Coking coal is one of the major cost items for the blast furnace players. So, their (domestic BF players') contribution margin, on a per ton basis, has come off from the peak. But at an absolute level, it remains healthy, even now.

Going forward, given the government's thrust seen towards the infrastructure sector, we expect that when the full year Budget numbers come in (what the government had placed earlier in the year was a vote-on-account), the new government will continue on its investment path, in the areas mentioned earlier. Auto is a dampener as of now, along with appliances, with both holding a combined 18-20 percent of steel consumption's share in India. Thus, a weak trend there would limit consumption growth.

Q. In that case, with auto and the white goods sector showing a weak consumption trend, but with the other sectors slated to show an uptrend in terms of steel usage, what sort of a growth in steel consumption can be expected?

A. Roy: Our internal view is that a 6-7 percent growth in steel consumption should be sustainable in India, going forward.

Q. Looking into the future, is there a possibility

of further consolidation in the steel space?

A. Roy: There could be a possibility, especially through the insolvency route. But the bigger assets with raw materials linkages and locational advantages have either already changed hands or are in the process of changing hands, if I talk about the first 5-6 large steel assets identified by the RBI earlier. Future such transactions would depend upon which assets would be on offer and what value proposition it would have to a potential buyer.

Q. Coming back to infrastructure, have land issues become less of a challenge compared to two years back?

A. Ghosh: Land acquisition remains a challenge even today, even though the process has become somewhat smoother. And that is one of the reasons why we are not seeing many greenfield projects in steel at present.

Roy: There are reasons why acquisitions through the NCLT process were attracting buyers. First, all the challenges associated with setting up of a greenfield steel plant, which takes at least 3-4 years. Secondly, the steel market trend has been strong and so companies wanted to acquire operational assets which could be put to use immediately. All the plants acquired through NCLT were in running condition. So, the new owners could start production immediately and benefit from favourable market conditions.

Q. A lot of people have said there will be a slowdown in the construction and infra space because of liquidity issues?

A. Roy: Liquidity conditions have remained tight in most of 2018-19, but at the same time we have seen that the RBI has tried to address the issue through various actions, including open market operations. We have also seen a $5 billion swap conducted in March. RBI has also announced a second tranche of $5 billion in April. Right now, liquidity may be slightly tight because of payment of advance tax, GST etc. but these monies would come back into the system shortly. Overall, liquidity in the system would also depend upon the trends in credit and bank deposit growths in the current year, besides FPI flows.

Ghosh: We expect funding to sectors like roads and airports to be less of an issue. During the last fiscal, the lending trend to the infrastructure sector was up. As per the latest RBI data, between March 30, 2018 and February 15, 2019, gross bank credit to the infrastructure sector grew by over 10 percent.

Source: Steel Insights

India would be largest growth market for coal by 2040: report

Asia would be playing the key role in enhancing global energy demand by making it increase around a third by 2040, driven by improvement in living standards, led by India and China. Moreover, by that time renewable energy would play the pivotal role in global energy mix with 30 percent share, dethroning traditional fossil fuels like oil and coal, says the BP Energy Outlook 2019.

Coal: India emerging as largest growth market

The report pointed out that growth in coal consumption would slow sharply relative to the past, although this would mask contrasting patterns across countries and regions. Global coal consumption would broadly stagnate around current levels, in sharp contrast to the past 20 years or so when coal was the largest source of energy growth. The global market for coal would continue to be dominated by China, where coal consumption would fall as the economy would adjusts to a more balanced, sustainable pattern of growth.

The weakness in global coal consumption would be compounded by significant falls in the Organisation for Economic Co-operation and Development (OECD), as countries switch to cleaner and lower-carbon fuels. In contrast, coal demand within India and other emerging Asian economies would increase. India would be the largest growth market for coal, with its share of global coal consumption more than doubling to around a quarter in 2040. The

majority of the increase in coal consumption in India and other developing Asian countries would be used to meet robust growth in power demand as these economies grow and prosperity increase.

However, "China's transition to a more sustainable pattern of economic growth means that by the mid-2020s India surpasses China as the world's largest growth market, accounting for over a quarter of the growth in global energy demand over the Outlook. Even so, China remains the largest market for energy: roughly double the size of India in 2040," the report said.

Renewable emerging as main source of energy with 30% share

The report stated that as the world would continue to electrify, with power consumption growing strongly, around three quarters of the entire growth in primary energy would be used for power generation, while around half of all primary energy would be absorbed by the power sector by 2040.

Almost all of the growth in power demand would stem from developing economies, led by China and India. Demand growth in the OECD would be much smaller, reflecting both slower economic growth and a weaker responsiveness of power demand to economic growth in more mature, developed economies.

The report predicted that the mix of fuels in global power generation would shift materially, with renewables gaining share at the expense of coal, nuclear and hydro. The share of natural gas would be broadly flat at around 20 percent. Renewables would account for around two-thirds of the increase in power generation, with their share in the global power sector increasing to around 30 percent. In contrast, the share of coal would decline significantly, such that by 2040 it would be surpassed by renewables as the primary source of energy.

Industrial energy demand: China's pivotal role

Analysing the global industrial energy demand, the report pointed out that key role would be played by China. It stated that industrial energy demand would be dominated by the changing energy needs of China. After tripling over the past 20 years, Chinese industrial energy demand would have peaks in the mid-2020s and would gradually decline thereafter. Some of this decline would stem from policy efforts to improve the efficiency of existing industries. In addition, it would reflect the continuing transition of the Chinese economy away from energy-intensive industrial sectors towards less-intensive service and consumer-facing sectors.

The transition in the Chinese economy would mean much of the growth in industrial production would be located outside of China, with India, Other Asia and Africa accounting for around two-thirds of the increase in industrial energy demand. All of the net growth in industrial demand would be met by natural gas and electricity, with these fuels accounting for around two-thirds of the energy used in industry by 2040. Coal consumption within industry would decline as China, the EU and North America would switch to cleaner, lower-carbon fuels, partially offset by growth in India and Other Asia.

Macro energy picture

The report further stated that world GDP would be more than doubled by 2040, driven by increasing prosperity in fast-growing developing economies.

The report stated that energy consumed by industry and buildings would account for around 75 percent of the increase in overall energy demand, while growth in energy demand from transport slows sharply relative to the past as gains in vehicle efficiency accelerate.

The report further stated that power sector would use around 75 percent of the increase in primary energy and 85 percent of the growth in energy supply would be generated through renewable energy and natural gas, with renewables becoming the largest sources of global power generation by 2040.

"The pace at which renewable energy penetrates the global energy system is faster than for any fuel in history. Demand for oil grows before gradually plateauing, while global coal consumption remains broadly flat," said the report.

According to the outlook, significant levels of continued investment in new oil will be required to meet oil demand in 2040. Also, global carbon emissions will continue to rise, signalling

the need for a comprehensive set of policy measures to achieve a substantial reduction in carbon emissions.

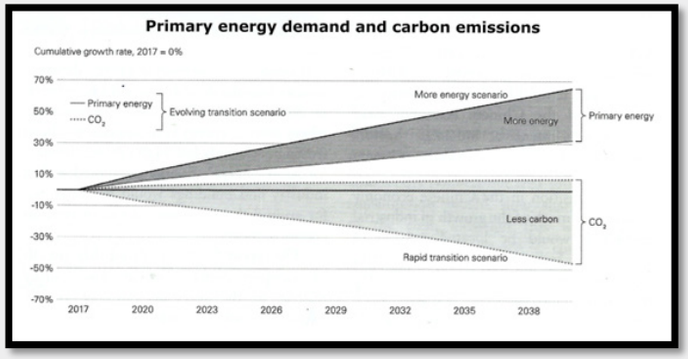
But the report painted rather gloomy side of the macro picture. It went on saying that despite this increase in energy demand, around two-thirds of the world's population in 2040 would still be living in countries where average energy consumption per head would be relatively low, highlighting the need for 'more energy'. Energy consumed within industry and buildings would be accounted for around three-quarters of the increase in energy demand.

The report further analysed that growth in transport demand would slow sharply relative to the past, as gains in vehicle efficiency would accelerate.

The share of passenger vehicle kilometers powered by electricity would increase to around 25 percent by 2040, supported by the growing importance of fully-autonomous cars and shared-mobility services.

The report said that the world would continue to electrify, with around three-quarters of the increase in primary energy absorbed by the power sector.

Renewable energy would be the fastest growing source of energy, contributing half of the growth in global energy supplies and becoming the largest source of power by 2040.



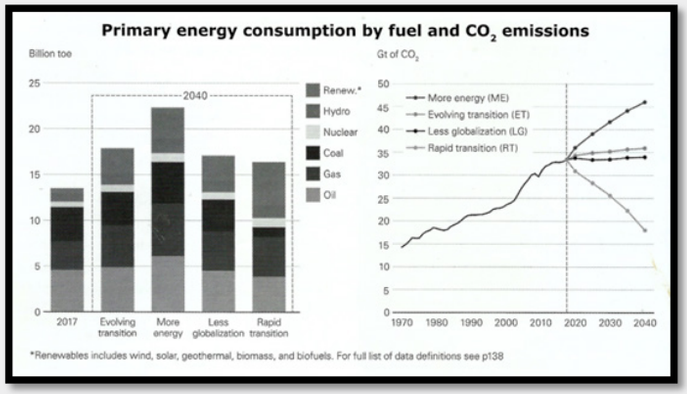
Regarding the trend of energy, the report went on saying that demand for oil and other liquid fuels would grow. The increase in liquids product would initially be dominated by US tight oil, but OPEC production subsequently would increase as US tight oil would decline. On the other hand natural gas would grow robustly, supported by broad-based demand and the increasing availability of gas, aided by the continuing expansion of liquefied natural gas (LNG).

Speaking specifically on coal, the report stated that global coal consumption would broadly be flat, with falls in Chinese and OECD consumption offset by increase in Indian and other Asian countries.

In the climate sector the report predicted that carbon emissions would continue to rise, signalling the need for a comprehensive set of policy measures to achieve 'less carbon'.

Analysing the present situation, the global energy outlook went on saying that the world economy would continue to grow, driven by increasing prosperity in the developing world. The global GDP would grow around 31/4 percent per annum (on a Purchasing Power Parity basis) – a little weaker than average growth over the past 20 years or so.

The report pointed out that global output would be partly supported by population growth, with the world population increasing by around 1.7 billion to reach nearly 9.2 billion people in 2040. But the vast majority of world growth would be driven by increasing productivity (i.e. GDP per head), which accounts for almost 80 percent of the global expansion and would lift more than 21/2 billion people from low incomes. The emergence of a large and growing middle class in the developing world would be an increasingly important force shaping global economic and energy trends. Developing economies would account for over 80 percent of the expansion in world output, with China and India accounting for around half of that growth.



Meanwhile, Africa would continue to be weighed down by weak productivity, accounting for almost half of the increase in

global population, but less than 10 percent of world GDP growth. The report further said that expansion in global output and prosperity would drive growth in global energy demand.

Detailing with energy sector, the report stated that energy consumption would be increased by around a third. As with GDP growth, the vast majority of this increase would stem from increasing prosperity, as billions of people would move from low to middle incomes, allowing them to increase substantially their energy consumption per head. The report analysed that the overall growth in energy demand would be materially offset by decline in energy intensity (energy used per unit of GDP) as the world increasingly would learn to produce more with less: global GDP would more than double, but energy consumption would be increasing by only a third. Meanwhile global energy would grow at an average rate of 1.2 percent p.a., down from over 2 percent p.a. in the previous 20 years or so. This weaker growth actually would reflect both slower population growth and faster improvements in energy intensity.

But the report cautioned that despite significant growth in prosperity and energy consumption over the next 20 years, a substantial proportion of the world's population would still consume relatively low levels of energy in 2040. The need for the world to produce 'more energy' as well as 'less carbon' emission.

Source: Steel Insights

Govt. geared up to make some amendments in MMDR Act

The Indian iron ore industry is expected to see some major changes in 2019-20. As of now, the auction process is mandated in law due to an amendment to the Mines and Minerals (Development and Regulation) Act also known as MMDR Act enforced by the government. MMDR Amendment Act, 2015 has laid out the guidelines for lease extension of non-captive mines till 31 Mar'2020 following which the leases shall be put up for auction for competitive bidding.

Odisha – India's largest iron ore producing state which also accounts for nearly 50% of share in country's iron ore production is expected to be

impacted the most. Around EC limit of 75-80 mnt pa will be at stake which is currently under possession of Odisha's merchant miners.

Recently, in an official letter by the Raw Material Division of Ministry of Steel (Government of India) has expressed that certain provisions and rules of MMDR act 1957 have become constraining to the interest of Steel Public Sector Units (PSU's and led to unsolicited court litigations.

To overcome such constrains, Ministry of Steel requested inputs/ suggestions/ comments for amendment in MMRD act 1957 and other rules derived from the act.

History of MMDR Act

The Mines and Minerals (Regulation and Development) Act (1957) (an Act of the Parliament of India) is enacted to regulate the mining sector in India. This act forms the basic

framework of mining regulation in India.

This act is applicable to all mineral except coal, minor minerals and atomic minerals. It details the process and conditions for acquiring a mining or prospecting license in India. The act was amended in 2015 and 2016.

To bring transparency to the allocation of mining licence process by auctions, the act was amended by The Mines and Minerals (Development and Regulation) Amendment Act, 2015.

In March 2016, the Union Cabinet of India approved amendments that will allow transfer of captive mining leases not granted through auction. Transfer of captive mining leases, granted otherwise than through auction, would allow mergers and acquisitions of companies and facilitate ease of doing business for companies to improve profitability and decrease costs of the companies' dependent on supply of mineral ore from captive leases. The transfer provisions will also facilitate banks and financial institutions to liquidate stressed assets where a company or its captive mining lease is mortgaged.

Government seeking suggestions

According to All Odisha Steel Federation (AOSF), the Government of India is contemplating some changes in the MMDR Act and the government has asked the AOSF to give suggestions for the same. To expedite the process, the President of AOSF, PL Kandoi urged all the members of AOSF to share their suggestions for amendments in the MMDR Act. This will help in smoothing the running operations of plants and improve the availability of iron ore at comfortable rates.

In this sequence, the President of Chhattisgarh Sponge Iron Manufacturing Association Vijay Jhanwar in an official letter to the Secretary of Ministry of Steel, New Delhi suggested equal premium for captive miners to ensure level playing field along with other suggestions for the amendments required in Mines And Minerals (Development And Regulation) (MMRD) Act 1957 and the mining auction rules. This comes after the Government of India sought suggestions from industry stalwarts on MMDR Act.

The letter by Jhanwar seeks swift decision making by government in resolving the various issues of mine development and production agreement, and mining auction rules, along with some suggestion for major changes to be made in Section 8A, Section 9 and Section 10A2C of MMDR Act 1957.

In future such suggestions from major associations will help in smoothing the running operations of plants and improve the availability of iron ore at comfortable rates.

Details of Suggestions given by Chhattisgarh Sponge Iron Manufacturing Association

Section: 8A

There should be no further extension of the mining leases expiring on 31st March 2020. 18A (4) states that "on the expiry of the lease period the lease should be put up for auction as per the procedure specified in the act"

Suggestions -"That the lease should be auctioned prior to the expiry of the lease and if the lease is not auctioned prior to six months of the expiry then it should be extended for a further period of 6 months. This should be continued till the lease is auctioned"

Any holder of Mining lease whose lease continues beyond 2020 for captive use should also be asked to pay additional premium as decided by Central Government from time-to-time to maintain a level playing field between the domestic industry.

Section: 9

Any mines allotted through actions should not be required to pay royalty. Royalty is a share of the mineral value which is being paid since the mines were allotted through a non-bidding process. But now since the auction premium goes directly to State Government, so it is already getting a much higher share in the value of the mineral.

Section: 10A2C

If the lease has been granted, but not executed for want of statutory clearances, should not be terminated and the applicant should be allowed to process the statutory clearances and the lease should be executed after all the approvals.

The current Act says that the lease should be granted within 2 years from the date of the

Amendment Act. But the act nowhere says that the lease had to be executed within 2 years. So it needs clarification and all the applicants who have done prospecting and have been accorded the approval of central government for the grant of mining lease should not lapse and it should also be not time barring for execution of the lease for want of the statutory clearances. They should have the first right of the lease for execution.

Mine Development and Production Agreement

All the leaseholders irrespective of when the lease is granted should sign an MDPA and the cut-off limit should be 80% for minimum production and below which penalties may be imposed. This will prevent form mining companies forming cartels and operate the lease at lesser capacity.

To give a fair chance to the smaller industries the consortium of industries should be allowed to bid.

- The end user should be restricted to Iron (either through Sponge Iron or Blast Furnace) and Steelmaking only.
- Pellet plant may be treated as end-use but not for making pellets and exporting the same.
- The maximum area which any applicant or any of his group company can secure in auctions in any State should be restricted to 200 Hectares or 1 mine in case the individual lease area is above 200 hectares so that there is no hoarding of mineral by large companies or individuals.

This rule may be relaxed only after 2025 when the major operating mines are auctioned.

Source: Steel 360

Indian Steel Plants

SAIL's best ever Crude Steel Production in FY'19

Steel Authority of India Limited (SAIL) has shown much improved performance in the last financial year 2018-19 in terms of production, techno-economies, sales, etc.

SAIL produced 16.3 Mt crude steel in FY'19, registering a growth of 8% over CPLY and clocking the best ever saleable steel production during the year. The production from new mills of SAIL plants has recorded marked improvement in FY'19, giving an enriched product basket. Total steel despatch from SAIL was the highest ever at 14.86 Mt during FY'19 due to a dedicated logistics set-up created by SAIL recently.

The FY'19 ended with a robust performance during Q4 with a growth of 10%, 8%, 14% and 13% in respect of production of Hot Metal, Crude Steel, Saleable Steel and Sales respectively. In FY'19, SAIL had the highest ever production of 9.85 lakh tonnes of UTS 90 Rail. The production of Rails got momentum in the second half of FY'19 with around 5.66 lakh tonnes of production and 35% higher than H1 figure.

In line with this improved performance, the Company has managed to improve its turnover by 16%, which now stands at Rs. 66,100 crore.

Tata Steel posts Highest ever Output in FY 2018-19

Tata Steel reported its highest ever output during the financial year 2018-19 on the back of its acquisition of Bhushan Steel in 2018. Going by the production figures reported by the Company for the past 12 months, it became the biggest steel producer in India during the past fiscal.

The production of Tata Steel India for FY'19 rise 34.5% on an annual basis to 16.79 Mt, as compared to 12.48 Mt tonnes reported in FY'18. Acquisition of Bhushan Steel helped add 4.2 Mt to its output. Tata Steel India reported an increase of almost 34% its sales figure, which went up to 16.27 Mt from 12.15 Mt during the previous financial year.

The production level presented by Tata Steel is marginally higher than 16.69 Mt achieved by JSW Steel for the financial year that ended on March 31. SAIL reported a record production of 16.3 Mt.

Tata Steel, however, saw its Europe and South-east Asia production and sales figures slip in the past fiscal. Tata Steel Europe reported production during FY'19 at 10.30 Mt, down almost 4% from 10.69 Mt seen during FY'18. Tata Steel South-east Asia saw production decline to 2.08 Mt during FY 2018-19, as opposed to 2.23 Mt in FY 2017-18.

Production and Sales Performance (All Figures are in million tonnes (Mt))

	Items	Q4 FY'19 (P)	Q3 FY'19 (Actual)	Q4 FY'18 (Actual)	FY'19 (Provisional)	FY'18 (Actual)
Tata Steel-India	Production	4.47	4.38	3.07	16.79	12.48
Sales		4.73	3.89	3.03	16.27	12.15
Tata Steel Europe	Production	2.73	2.34	2.63	10.30	10.69
Sales		2.55	2.35	2.55	9.61	9.99
Tata Steel South - East Asia	Production	0.50	0.52	0.56	2.08	2.23
Sales		0.59	0.57	0.62	2.41	2.51

Notes: 1. Figures for Tata Steel India includes Tata Steel Standalone and Tata Steel BSL from May 18, 2018 without eliminating intercompany transactions.

2. Production Numbers: India - Crude Steel Production; Europe - Liquid Steel Production; South-East Asia - Saleable Steel Production

Tata Steel BSL's marked Improved Performance in FY 2018-19

Tata Steel BSL has reported its first annual results after the acquisition. The marked improvement in sales and profitability is worth noting particularly in the light of its impact on Tata Steel's consolidated performance. The company has been putting a lot of efforts in ramping up the production and increasing utilisations. A 20% Y-o-Y increase in sales during the quarter ended in March 2019 and a 19% YoY growth in annual sales are clear indications of higher production. During the financial year 2019, Tata Steel BSL produced 4.2 Mt of steel, which is a growth of 9.37% as against an annual production of 3.8 Mt in the financial year 2018.

What is interesting is the improvement in the profitability. During the year ended in FY'19, the company's EBIDTA worked out to close to Rs 9,044 per tonne as against Rs 5,742 per tonne in the fiscal 2018. This is a huge improvement and reflects benefits of scale and cost-saving measures undertaken by Tata Steel.

Tata Steel won PM's Trophy for the Best Integrated Steel Plant in India

Tata Steel has won the prestigious Prime Minister's Trophy for the 'Best Integrated Steel Plant in India' for the performance year 2016-17. This makes it the fourth consecutive year for Tata Steel being honoured with this coveted award. Since the inception of this award in 1992-93, Tata Steel has been recognised as the best integrated steel plant 13 times; having won the PM's Trophy (PMT) 11 times and received the Certificate for Excellence twice.

As a pioneer and innovation leader in the sector, Tata Steel has set industry benchmarks in terms of technological innovations. Tata Steel's efforts towards creation of strong systems, building steadily on a robust foundation with an eye on sustainable future were appreciated by the panel of judges. Achieving global levels in terms of costs, production, techno-economics, demonstrating best practices on several fronts, including HR and IR were some of the areas identified as hallmarks of Tata Steel.

Tata steel bags Global Slag Company of the Year Award

Tata Steel bagged the 'Global Slag Company of the Year' Award at the 14th Global Slag Conference and Exhibition 2019, which was held in Aachen, Germany, on 26 and 27 March 2019. This is one of the largest global annual slag events, attended by major steelmakers, steel mill service providers and associated companies.

The award has been presented to Tata Steel for its innovative practices in development of new applications for Steel by-products (Slag). The award demonstrates global recognition of Tata Steel's commitment towards sustainability & circular economy principles. Tata Steel has secured this award among other nominated global companies like ArcelorMittal, CHC Resources Corporation, Contrasteel, Ecocem, Harsco Metals & Minerals, Koryo Slag Cement Co. Ltd., Metallo Belgium N.V., etc.

JSW Steel's Crude Steel output grew 3% to 16.69 Mt in FY'19

JSW Steel's crude steel output grew 3% to 16.69 Mt during financial year 2018-19. The Company had produced 16.27 Mt of crude steel in the 2017-18 fiscal.

During FY 2018-19, JSW Steel's output of flat rolled products stood at 11.74 Mt, up 3% from 11.44 Mt in the previous fiscal. The production of long rolled products rose by 9% to 3.87 Mt from 3.56 Mt in 2017-18.

During the fourth quarter (Q4) of FY 2018-19, the crude steel output went down by 3% to 4.17 Mt from 4.31 Mt in same quarter in FY2017-18. The output of flat rolled products in Q4 went up by 1% to 3.01 Mt as against 2.98 Mt in the year ago quarter. The production of long products declined by 8% to 0.99 Mt from 1.07 Mt in the

same quarter of FY 2017-18.

JSW Steel won PM's Trophy

JSW Steel, Vijayanagar, has proven its mettle yet again by winning the coveted Prime Minister's Trophy 2016-17 for being the 2nd best integrated steel plant in the country.

The Company received a certificate, a stunning trophy and a cheque of Rs 1 crore for their exemplary approach, impeccable strategy and hard work.

The Trophy was received by Dr. Vinod Nowal, Deputy Managing Director, JSW Steel Ltd. and Rajashekhar Pattanasetty, President, JSW Steel Vijayanagar Works, in New Delhi. Union Minister of Steel, Choudhary Birender Singh, have away the award to the winners. The ceremony was attended by a plethora of dignitaries from the Ministry of Steel and the corporate world.

JSW Steel Limited, Dolvi Works, was given a Certificate of Appreciation for maximum incremental improvement for the best improvement in overall performance.

JSW Group inks MoU with AP Govt. to set up a Slurry Pipeline

The JSW Group inked a Memorandum of Understanding (MoU) with the Andhra Pradesh Economic Development Board (APEDB).

JSW Group plans to invest Rs. 1,000 crores to establish a jetty at Ramayapatnam port in Prakasam district. It also plans to set up a slurry pipeline with an investment of Rs 3,500 crores for the group's plant in Bellary district of Karnataka. The slurry pipeline will build synergies and linkages to Prakasam district.

The Andhra Pradesh government has formed a Special Purpose Vehicle (SPV), the AP Maritime Infrastructure Development Corporation, to develop the Ramayapatnam port at a cost of Rs 4,240 crores (Phase-1) with eight berths.

The port is proposed to be developed on 3,092 acres and will have a capacity of 40 million tonnes per annum.

NINL posted 126% growth in FY 2018-19

Neelachal Ispat Nigam Limited (NINL) posted a net sales turnover of Rs 2,100 crores in the FY 2018-19, registering a growth of 126% over the FY 2017-18, highest ever net sales turnover achieved since inception of NINL, a joint venture between MMTC Ltd. and State Government PSUs.

With the addition of high value-added billets, TMT, wire rods, structural through conversion agents, NINL's top-line is expected to reach about Rs 4,000 crores in the FY 2019-20.

With raw materials from captive mines, the Company is expected to further boost its bottom line in FY 2019-20.

NIN L operates an integrated iron and steel plant at Kalinganagar, Duburi, in Odisha's Jajpur district.

Source: Steel Tech

Steel Demand in India Expected to Grow Above 7% WSA

According to the World Steel Association, Steel demand in India is expected to grow above 7% in the current as well as next year. The global steel body's report, Short Range Outlook April 2019, estimated that global steel demand may reach 1,735 million tonne (mnt) in 2019, a rise of 1.3 percent over 2018. In 2020, the demand is projected to grow 1 percent to 1,752 mnt, it added.

The Brussels-based WSA, which counts 85% of world steel producers as its members, also said that" the Indian economy is expected to achieve faster growth in the second half of 2019 post general elections having overcome the shocks of demonetisation and Goods & Services Tax (GST)k implementation."

For developing economies (excluding China), the global steel body presented a positive but mixed picture

Steel demand in the emerging economies excluding China is expected to grow by 2.9% and 4.6% in 2019 and 2020 respectively.

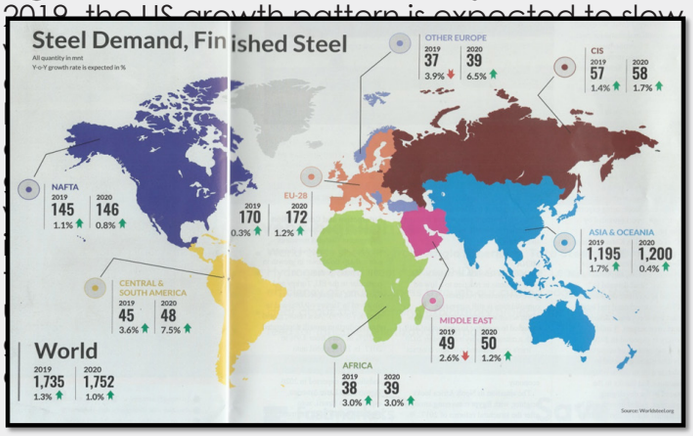
Particularly for India it said 'Having overcome the shocks of demonetisation and the Goods & Services Tax (GST) implementation, the Indian economy is now expected to achieve faster growth starting in the second half of 2019 after election. While the fiscal deficit might weigh on public investment to an extent, the wide range of continuing infrastructure projects is likely to support growth in steel demand above 7% in both 2019 and 2020.'

Steel demand in developing Asia excluding

China is expected to grow by 6.5% and 6.4% in 2019 and 2020 respectively, making it the fastest growing region in the global steel industry. In the ASEAN region, infrastructure development supports demand for steel.

Steel demand in the developed world reacts to a weaker trade environment

"In developed economies, steel demand grew by 1.8 percent in 2018 following a resilient 3.1 percent growth in 2017. We expect demand to further decelerate to 0.3 percent in 2019 and 0.7 percent in 2020, reflecting a deteriorating trade environment," the body said in its report. In 2017-18, steel demand in the US benefitted from the strong growth of the economy driven by government-led fiscal stimulus, leading to high confidence and a robust job market. In 2019, the US growth pattern is expected to slow



dependent) in 2019. Steel demand growth is expected to improve in 2020, dependent on a reduction in trade tensions.

Japan recorded growth in steel demand in 2018, supported by a favourable investment environment and continued construction activities as well as a boost in consumer spending prior to the consumption tax increase. In 2019 and 2020, steel demand is likely to contract slightly due to a moderation of construction activities and decelerating exports despite the support provided by public projects.

Steel demand in Korea has been contracting since 2017 due to reduced demand from two major steel using sectors, shipbuilding and automotive. Steel demand is expected to continue declining in 2019 due to toughened real estate market measures and a deteriorating export environment. A mild recovery is expected in 2020.

The momentum of construction activities is also expected to moderate a bit in the developed economies, but thanks to the rebound in the developing economies, global growth will be maintained at a 3% level in 2019-20. However, in China, Turkey, South Korea and Argentina, construction activities are expected to continue to contract in 2019. With weakening investment and a worsening trade environment, the global machinery sector is expected to show a steady deceleration that will last till 2020, which will be more pronounced in major production hubs such as Germany, Japan and China.

MENA

Economic diversification efforts in the GCC continue in reaction to a low oil price environment but fiscal consolidation is still supressing construction activities. Steel demand is expected to continue to contract in 2019, with a minor recovery expected in 2020. Iran's steel demand will also contract in 2019 as the reinstatement of US sanctions causes a recession in the economy. The situation in North Africa looks brighter, with Egypt recovering strongly after the structural reforms of 2017.

Investment in energy and a recovery in the real estate market are expected to drive Egyptian steel demand. Other North African economies are also expected to show resilient growth in steel demand backed by strong investment activities.

Automotive and Construction

As pent-up demand and government stimulus measures subsided, the automotive industry saw a sharp slowdown in growth in 2018 in many countries, in particular in the EU, Turkey and China. The largest decline was observed in Turkey (-9.0%) and in the UK (-5.5%). As a result, global auto production growth decelerated to 2.2% in 2018 from 4.9% in 2017. In 2019, global auto production will continue to decelerate to 1% growth with stabilisation expected in 2020. However, in Latin America, especially in Brazil, auto production will buck the trend and continue to show a steady rebound.

Source: Steel 360

CONGRATULATIONS

The Delhi Chapter conveys its heartiest congratulations to Dr Sanak Mishra on assuming the charge as President of the Indian Academy of Engineering (INAE). The Chapter also congratulates him on being elected as a Member of the Board of the Council of the Academies of Engineering and Technological Sciences (CAETS) which is an international body.

The INAE is an autonomous institution affiliated and funded by the Department of Science and Technology, Government of India.The former Presidents of Indian National Academy of Engineering (INAE) included Dr Abdul Kalam, Dr Arunachalam, Dr Kasturirangan , Dr Kakodkar and Prof P Rama Rao. It is a matter of pride for The Indian Institute of Metals that Dr Sanak Mishra's name finds place in the galaxy of Dr Abdul Kalam, Former President of India, Dr Arunachalam, former Scientific Advisor to Defence Minister, Dr Kasturirangan, Former Chairman Space, Dr Kakodkar, Former Chairman Atomic Energy and Prof P Rama Rao, Former Secretary, Department of Science & Technology.

The Chapter wishes Dr Sanak Mishra all the best in discharging his responsibilities in INAE and also as a Member of the Council of Academies of Engineering and Technological Sciences

SAIL CRUDE STEEL PRODUCTION UP 8%

The Steel Authority of India Ltd (SAIL) said its crude steel output grew by over 8 percent to 16.3 million ton (mt) during the financial year ended March 31.

The state-owned steel maker had produced 15.02 mt of crude steel in 2017-18, the company said in a statement.

"The country's largest public sector steel producer has shown much improved performance in 2018-19 in terms of production, techno-economies, sales etc. SAIL produced 16.3 mt crude steel in 2018-19, registering a growth of 8 percent over corresponding period last year," it said.

The total steel dispatch from SAIL was at 14.86 mt during 2018-19. "2018-19 was a remarkable year for SAIL with marked turnaround in various parameters like production, techno-economies, cost of production, higher production of value added products, apart from ramping up of production from new mills and sales," SAIL Chairman Anil Kumar Chaudhary said.

The company said it produced 9.85 lakh ton of rails in 2018-19. "The production of rails got momentum in the second half of 2018-19 with around 5.66 lakh ton of production and 35 percent higher than H1 (April-September) figure," it said.

SAIL, which is under the administrative control of Ministry of Steel, is the largest steel-making company in India.

JSPL restarts 1.8 mtpa sponge plant at Angul

Jindal Steel and Power Limited (JSPL) has re-started its 1.8 million ton per annum (mtpa) Direct Reduced Iron (DRI) plant at its six mtpa integrated steel complex at Angul, Odisha, buoyed by robust domestic demand. In a statement, the company said it is targeting production run-rate of one million tons of crude steel in FY20 through DRI route, through existing coal linkages, and aims to procure the balance requirements for optimum capacity utilization through e-auctions. JSPL is aiming to produce 6.5 mt in of steel in India in FY20. JSPL's DRI Plant Angul – one of the largest of its kind globally- is powered by the country' largest Coal Gasification Plant that converts high-ash coal to synthetic gas.

"Going forward with the production of both the Blast Furnace and DRI plants at Angul, we look forward to further accelerate our debt reduction roadmap under which we have successful reduced our consolidated net debt by over Rs 6,000 crore from peak levels", N A Ansari, joint MD of JSPL said.

The turnaround of JSPL, powered by its 50,000 strong workforce for last four years, has been evident in all operational and financial indicators during the course of this fiscal, he added. With a further ramp-up of its 4554 cubic metre Blast Furnace along with the DRI plant going on-stream again, JSPL said it is optimistic of scaling up its capacity utilization significantly. Direct Reduced Iron (DRI), also called sponge iron, is produced from the direct reduction of iron ore (in the form of lumps, pellets, or fines) to iron by a reducing gas or elemental carbon produced from natural gas or coal. The company is set to accrue gains on account of various factors, following an improvement in outlook for steel prices. While the higher steel prices will translate to better margins and earnings, capacity expansions in the firm's steel business will further boost its financials.

S&P revises Tata Steel's outlook

S&P Global Rating said it has revised its outlook on Tata Steel Ltd. to 'Positive' from 'Stable'.

The diminishing prospect of Bhushan Power and Steel Ltd.'s acquisition and the sustained high steel prices in India are the key factors for the revision in outlook for the steelmaker, S&P said in a statement. "The positive outlook reflects our view that stable prices and improvement in earnings, combined with our expectation that the acquisition of BPSL would not happen, are likely to improve Tata Steel's credit ratios in the next 12 months," it said. The U.S. – based rating agency also said Tata Steel will continue to support its 100 percent subsidiary Tata Steel U.K. Holdings when needed. "In line with the rating action on Tata Steel and in view of stable operating performance in Tata Steel U.K. Holdings, we are revising our outlook on Tata Steel U.K. Holdings to 'Positive'," said. Besides, the agency said it expects Tata Steel to

successfully divest its European business housed under Tata Steel U.K. Holdings in the next two to three months.

JSW Steel reports 12.57 lakh ton production

Feb'19 crude steel production

Production	Feb 2019	Feb 2018	Growth
Crude Steel (lakh tons)	12.57	13.33	-6%
Rolled Products: Flat (lakh tons)	9.20	9.12	1%
Rolled Products: Long (lakh tons)	3.08	3.41	-10%

JSW Steel has reported 12.57 lakh tons of crude steel production in February 2019, compared to 13.33 lakh tons in January 2018, recording a decrease of 6 percent, the company said in a BSE filing. Production of flat rolled products increased 1 percent to 9.12 lakh tons in February 2019 over the corresponding period of previous year. Production of long rolled products decreased 10 percent to 3.41 lakh tons in February 2019 over the corresponding period of previous year.

Source: Steel Insights

RINL-VSP achieves record turnover in FY19

RINL has registered a strong performance by recording the highest sales turnover of Rs 20,844 crore during the just concluded 2018-19 financial year, representing an impressive growth of 25 percent over Rs 16,625 crore achieved in corresponding period last year, P K Rath, Chairman and Managing Director, RINL, said.

Addressing senior officers of the company in Ukkunagaram, Rath highlighted the overall improvement in the performance of the company and mentioned that RINL achieved 5.77 million tons (mt) of hot metal, 5.52 mt of liquid steel and 5 mt of saleable steel, representing a growth of 12 percent, 11 percent and 11 percent respectively. The company also achieved a growth of 13 percent in total power generation and 8 percent in labour productivity.

Rath said that RINL achieved a gross margin of Rs 1700 crores during the year, a growth of 400 percent over corresponding period last year.

He called upon the employees for further ramping up of production and increase in Pulverized Coal Injection (PCI) in all the blast furnaces to reduce the cost of production.

He said that the Coke Oven Battery-5, Forged Wheel Plant at Rae Bareli, Twin ladle Furnace are ready for early commissioning in the first half of the current year. Rath expressed confidence that RINL collective would achieve a very good performance to regain the past glory during 2019-20.

P Raychaudhury, Director (Commercial), K C Das, Director (Personnel),V V Venugopal Rao, Director (Finance), P J Vijayakar, CVO and other senior officers were present on the occasion.

In growth trajectory

On the commercial front, RINL achieved a 22 percent growth in high end value added steel, development of niche products, 22 mm Spring Steel for Railways and Spring Steel flats for automobiles.

RINL also commenced international operations at Colombo.

Vizag Steel products are continued to be used in national projects like Polavaram, Statue of Unity, Rohtang Tunnel, Metro Rail Projects and construction of AP capital – Amaravati etc.

Outlook for 2019-20

RINL is projected to achieve a production of 6.5 mt of hot metal, 6.4 mt of liquid steel and 5.8 million tons of saleable steel and a turnover of about Rs 25,000 crores during FY 2019-20.

RINL CMD inaugurates central dispatch yard

RINL-VSP has inaugurated the Central Dispatch Yard (CDY), a unique project, built at a cost of Rs 320 crore in a sprawling 200 acres inside the plant premises. The project was inaugurated by Rath. The state of the art project facilitates

improvement in logistics and smooth dispatch of VSP products through road and rail to various customers and marketing stockyards of RINL spread across the country from a single location.

Rath said that logistics play a vital role in strengthening the marketing network of RINL-VSP as the volumes increased due to completion of expansion and modernization of the plant. He said that it is a dream project of RINL and congratulated the agencies involved and commercial wing for early completion of the project. The new yard would facilitate improvement in logistics in a smooth manner at a single location with rake retention time coming down significantly.

On the occasion, Rath flagged off the road dispatch of various products of RINL. Rath also released dispatch orders to various customers to mark the occasion. Earlier, R Nagarajan, ED (Projects) I/C highlighted the salient features of the project.

The yard is equipped with state of the art facilities like unloading area, stacking area, traffic and marketing building, 4 numbers of static rail weigh bridges and road weigh bridges and signalling systems, loading and dispatch yard with loading platforms with track length of 3.76 kms.

Source: Steel Insights

Demand for higher steel grades to fuel imports in 2019

India's import of steel is expected to rise by 2.5 to 3-5 percent in 2019-20, fuelled by demand for special and higher grades, says CARE Ratings.

Its report says domestic consumption of steel is projected to rise between 5.5 and 7.5 percent. "We believe consumption of long steel products will grow at a faster pace, compared to flat steel products, mainly on account of the government's focus on infrastructure. For FY19, the government's revised capital expenditure was higher by 20.3 percent to Rs 3.2 trillion on a year-on-year basis and funds of Rs 3.4 trillion have been allocated for FY20," it adds.

Finished steel production is tipped to grow by 6-8 percent during FY20, backed by demand from user industries such as construction and infrastructure, automobiles and consumer durables.

In FY17 and FY18, India was a net exporter of steel. This had altered in the April-November period of FY19 (first eight months of the financial year), with finished steel import toppling export by 0.7 million tonne.

According to data from the Centre for Monitoring Indian Economy, the former rose 2.2 percent to 5.9 mt, while the latter fell 35 percent to 5.2 mt.

Higher import from South Korea was one reason. In March 2018, the American government imposed protectionist levies of 25 percent and 10 percent on steel import; this led to diversion here of Korean shipments.

Hot Rolled coil, galvanised sheets and some grades of alloy steel are the bulk of our export. On an average, nine percent of the country's production is exported, while 11 percent of the demand was met from import in the past five years.

The CARE report says domestic prices of steel products have been firm. Between April and December 2018, these rose by 18-33 percent over a year before, on the back of a robust demand.

Consumption in the comparable period grew 7.9 percent to 71.6 mt. Prices are expected to weaken by five percent in FY20, taking cues from those in China. A rise in domestic consumption will arrest any sharper fall, the report believes.

Source: MMR

Let's rethink our steel policy

In our policymaking circles there have recently been recurrent calls to increase infrastructure investment. This could go a long way in solving some pressing challenges that the Indian economy faces – a central tenet of the Keynesian school of economic thought. Industrial sectors that have the strongest backward and forward linkages are the real engines of industrial economic growth.

Building blocks

Linkages with railways, airports and metro rail are prime examples where supply chain: is

typically long term due to recurring need of maintenance; is sustainable due to its relevance in a growing economy; and comprises products that cannot be imported into the country with ease. Most industrialised nations rely on iron and steel to feed aircraft, shipbuilding, railway, physical infrastructure and motor vehicle industries. But the steel industry is susceptible to many factors. Sustained investment in infrastructure will bolster demand for steel in India for at least the next two years, subject to how the markets respond post-general elections. India has now become the second largest steel producer in the world, overtaking Japan for the second month in a row. But India is not insulated from exogenous shocks.

The performance of our leading industries is in some ways linked to how China performs and how bilateral trade policies evolve amid global economic slowdown. As the maker of half the world's steel, China's infrastructure expansion has been unprecented. However, domestic demand for steel in China is expected to decelerate in light of fiscal rebalancing and stringency of environment regulations. So, the fear of large-scale dumping of Chinese steel at reduced prices in the Indian market is ever present. In fact, this has happened in the past. Posco in South Korea and ArcelorMittal in Luxembourg had to bear the brunt of dumping that resulted in erosion of competitiveness and massive job losses. So, US and Europe have hiked or imposed anti-dumping duties on imported steel. Given the importance of steel in realising our infrastructure and development dreams, it is important to take a careful look at trade policy and imports that have a long-lasting impact. We are dependent on import of the most essential raw material in making steel and it puts the industry in jeopardy.

Iron strategy

It also spells uncertainty to the nation's infrastructure plans which include building affordable housing, expansion of the network of roads and highways, and building smart cities.

Unfortunately, launching heavy-investment projects in India has always been nerve-racking for companies. Several demand- and supply-side factors play a role, including uncertainty about supply of raw material, price of end products (such as electricity), income linked with monsoon, construction/ purchase of houses, devaluation of the rupee, the price of imported raw material and fluctuations in crude oil prices.

So, even the more stable and robust Indian companies and investors are vulnerable to unpredictable fluctuations in India and abroad. Technology advancements have disrupted almost all industries. The belief that the steel industry is somehow shielded from the forces of creative destruction can prove fatal. The industry will have to quickly reorient itself towards low carbon production processes, pumping more investment in research and development (R&D) for new grades of environment-friendly products, aiming for zero-waste, accelerated use and recycling of scrap. Innovation through focused R&D be it technological, product- or process-oriented, has historically been the Achilles' heel of the Indian steel industry.

Coal's dark future

India implemented its National Steel Policy, 2017 to encourage the industry to reach global benchmarks. To boost sectoral R&D efforts, a dedicated Steel Research and Technology Mission of India (SRTMI) was recently created.

In line with the UN Sustainable Development Goals, the steel industry must slowly revamp its manufacturing process to reduce emission of toxic greenhouse gases. Sweden's largest heat and electricity producer Vattenfall, steelmaker SSAB and mining company Luossavaara-Kiirunavaara AB (LKAB) have joined forces to create HYBRIT – an initiative to replace coking coal (a traditional input in steel-making) with hydrogen to make what could be the world's first fossil-free steel-making technology. However, the nature of the problem seems to be more structural and foundational. India is still heavily dependent on imported coking coal. With coal-fired power plants getting hamstrung with input shortages, imports from other nations are expected to increase in the future.

The Indian government must intervene at the earliest. Making state-business relations more effective to promote economic growth and the larger national interest could be a good start. Policies must be clear and coherent, backed

by credible commitments and certainty, and should be an outcome of close consultation with stakeholders. This '6C' approach can make a big difference.

Source: Mail today

(Courtesy: Shri L Pugazhenthy)

Country needs best alternative for safe, sustainable civic infra: ISSDA Chief

The tragic Mumbai CST foot-over-bridge collapse has once again brought country's aging civic infrastructure to light. Indian Stainless Steel Development Association (ISSDA), India's apex stainless steel body, has reiterated the importance of choosing the best alternative for strengthening country's social infrastructure. "There is a need for choosing the best materialfor a safe and maintenance-free infrastructure in the country. We appeal to the local civic authorities, and other concerned departments to adopt stainless steel in all infrastructural projects, as it would enhance the life cycle and durability. The Indian Railways is already relying on stainless steel for its upcoming infrastructure along with other utilities", asserted President, ISSDA, Mr. K K Pahuja. A case-in-point is the proposed stainless steel foot-over-bridge at Bhayandar station in Mumbai by the Indian Railways. ISSDA is ready to provide all support in form of technical know-how and hand-holding to the government and civic authorities in this matter.

As per industry data, around 1,35,000 rail bridges exist in India, of which nearly 25% are over 100 years old and need immediate replacement. Though more than 1,000 bridge are rehabilitated every year, there is a huge backlog in rebuilding these bridges. Also, India has a coastline of 7,500 km which mandates the need for a stainless steel infrastructure. Given the high air-borne salts in marine environments, bridges in these areas are exposed to rapid corrosion and are vulnerable to collapsing.

Infrastructure in the current ecosystem requires easy design and fabrication, reduced life cycle cost, resistance to corrosion and fire, high strength-to-weight ratio, and quick turnaround time for project completion. All these properties are inherent to stainless steel, making it the optimum choice for the nation's infrastructure.

Indian Stainless Steel Development Association is the unifying point for the growth and development of stainless steel usage in India. Founded in 1989 by leading stainless steel producers, it was formed with the explicit objective of diversifying the applications of stainless steel in India and increasing usage volumes in the country. At the point of formation of ISSDA, the main visible applications in daily life was essentially household kitchenware. It currently has a membership of over 145 companies engaged in the stainless steel business.

Source: MMR

India wants to move towards cleaner energy sources but cost and other factors make its reliance on coal too strong to break, at least in the foreseeable future

Coal is dirty. Really dirty. There is no getting around that fact.

It is responsible for 40% of carbon dioxide emissions from fossil fuels. Mining coal wreaks havoc on the environment and on the people who live there. Besides CO2, burning coal produces pollutants like mercury, sulfur dioxide, which is linked to acid rain, and particulate matter, which causes respiratory illnesses.

Tackling climate change is impossible without reducing our dependence on fossil fuels, especially coal. The problem is, coal is cheap and developing economies like India prefer low-cost fuel sources. Coal is the largest source of electricity in the world. Coal-fired plants generate 72% of India's electricity. This, combined with the growth of coal-consuming industrial sectors like steel, is why the solid fuel source will continue to be integral to India's economy in the next couple of decades. This is despite the government's ambitious plans to increase generation of renewable energy.

According to BP Energy Outlook 2019, coal's

share in India's primary energy consumption will decline from 56% in 2017 to 48% in 2040. But that is still nearly half of the total energy mix and way ahead of any other source of energy. Oil's share, the second largest, will decline from 29% to 23%, and the contribution of renewables will rise fivefold to 16%. Even the NITI Aayog, which replaced the Planning Commission, in a 2017 report estimated the share of coal in the energy mix in 2040 to be at least 44%.

"There are scenarios where the share of coal can even increase," says Rahul Tongia, a fellow with Brookings India, a think tank. One such scenario is if India falls well short of its ambitious targets in renewable energy. India wants to increase its installed renewable energy capacity from 78 GW to 175 GW (1 GW = 1,000 MW) by March 2022. Of that 175 GW, 100 GW is supposed to be solar power. Moreover, India wants to nearly double the share of renewable power in its total installed capacity to 40% by 2030.

However, issues related to land acquisition, funding and policy continue to come in the way of these plans. Experts have said that it was unlikely that India would achieve these targets. Hence, the reliance on coal is not going to go down soon.

India was the world's second largest producer of coal in 2017, the latest year for which data is available, according to the International Energy Agency (IEA). The country produced a tenth of the world's coal, while China topped the list with 45% of global production. India was also the second largest coal importer, with a 16% share. China accounts for nearly half of global coal consumption, with India's share at 13%. Electricity generation is responsible for two-thirds of India's coal consumption, steel and washery industries 7% and cement 1%, according to data from the ministry of coal. While the power sector uses non-coking or thermal coal, steel manufacturers use coking or metallurgical coal in the iron ore smelting process. Non-coking coal is also used by cement manufacturers as an energy source.

Around 87% of India's proven coal reserves of nearly 150 billion tonnes is non-coking coal. That means India has to turn to imports to meet four-fifths of its coking coal requirements. Seshagiri Rao, joint managing director of JSW Steel, says with India's coking coal requirement more than tripling to 180 million tonnes (MT) by 2030, our reliance on imports will continue. Indian coking coal is of poorer quality than the imported variety, forcing certain industries to import a better quality of the commodity.

Even a fifth of our thermal coal requirement is imported. Union government owned Coal India, the world's largest coal miner, accounted for 84% of India's coal production of 675 MT in 2017-18. Coal demand outstrips domestic supply and will continue to do so, though the share of imports is expected to decline, according to rating agency CRISIL. Coal India aims to have an annual production of 1 billion tonnes in five years, a target it was originally expected to meet in 2019-20. This would be a key step to pare down our import dependence. But land acquisition, environmental and forest clearances stand in the way of reaching that milestone.

Questions sent to Coal India went unanswered. Coal-fired plants generated 72% of India's electricity in 2018-19, according to the Central Electricity Authority. The thermal power sector, which includes coal- and gas-based plants, has had a difficult few years, especially in the private sector.

Lack of assured fuel supply and agreements to sell the power they generate, among other reasons, plunged the sector into a seemingly insurmountable crisis.

The Union government last year identified 34 "stressed" coal-based projects with a total capacity of over 40 GW (India's installed coal-fired capacity is 194 GW). These projects had outstanding loans of Rs 1.7 lakh crore. Less than half the capacity has power purchase agreements and three-fourths have coal linkages. The government is looking to resolve the issues in the projects to keep the loans from turning bad. It has its task cut out. This mess has made industry wary of the sector as a whole. Rahul Prithiani, director at CRISIL, says most of the capacity addition in thermal power will be in the public sector.

A spokesperson at state-owned National Thermal Power Corporation, India's largest thermal power producer, says while coal

will remain the mainstay of the power sector for at least a decade, the focus will be on "competitive, environmentally complanit and flexible power generation from coal plants."

There is an effort to make coal-fired plants more efficient by bringing down the amount of coal required to generate 1 MW and to make old coal-fired plants compliant with environment norms. JSW's Rao says the company's requirement of coking coal will not go up in proportion to the increase in steel production capacity due to the use of bigger and more efficient blast furnaces.

Aluminum is another sector that uses coal for its energy needs; 40% of its production cost goes into generating power. Rahul Sharma, CEO of Vedanta's alumina business, says aluminium manufacturers should ideally be able to meet half their coal needs with captive coal blocks, with the rest being assured through linkages. Currently, the group has just one captive coal block with a capacity of 1.6 MT per annum, while its requirement is 25 MT. The block was awarded to Balco, a subsidiary of Vedanta.

CRISIL expects the plant load factor (PLF) of thermal power plants to increase from 61% in 2017-18 to 72% in 2022-2023 in response to demand for electricity growing at around 6.5% annually. PLF is the actual average power produced as a percentage of the maximum power that could have been generated in that period. India's per capita electricity demand of 1,150 kilowatt hours is only a third of the global average. India's peak electricity demand in 2018-19 (up to February) was 177 GW, most of which was met. India's peak deficit has declined from 12.7% in 2009-10 to 0.8% in 2018-19.

Till battery technologies to store solar power improve and become cost-effective, the country's peak electricity demand will have to be met by thermal power, especially as the outlook for hydel and nuclear power is not all that rosy. Ashok Khurana, director general of the Association of Power Producers, says if the government has to provide 24X7 power for all, around 25 GW of capacity will have to be added.

One of the key reasons for the woes of the thermal power sector was the Supreme Court's 2014 decision to cancel 204 coal blocks allocated since 1993, calling the allocations illegal and arbitrary. In 2015, the Union government passed a bill to award these blocks through auctions and allotments. The government has so far awarded 85 coal mines, including 24 captive blocks to the private sector, under the Coal Mines (Special Provision) Act, 2015. But CRISIL's Prithiani sounds a note of caution: "For private companies that have won mines in auctions, their weak financial position and lack of PPAs is a bigger challenge than environmental issues."

In February 2018, the government decided to end the monopoly of Coal India.

Private companies could now bid for mines not just for their use, but also to sell the coal to others, which only Coal India could do till now. This was the biggest step in freeing up the sector since coal mines were nationalised in the early 1970s. Though it has been more than a year since the announcement, there has been no auction yet for commercial mining and the terms of the auction are not yet clear. "For commercial mining to work, there should be no cap on prices. If there is a cap, there will be less competition," says Vinay Prakash Goel, CEO for coal and mining businesses at Adani Enterprises, which operates nine coal blocks given to PSUs under the mining developer and operator model.

A Coal India official, requesting anonymity as he is not authorised to speak to the media, says commercial mining by the private sector will make the miner more competitive. "But we have seen what has happened with mines auctioned to the private sector. Getting things moving on the ground is very difficult."

Even with its continued reliance on coal, India is expected to meet its commitment made under the Paris Agreement on climate change to cut emissions relative to the GDP by a third by 2030 from 2005 levels. India is the third largest CO2 emitter among countries but per capita, its emissions are only 40% of the global average, according to the IEA.

If the Indian economy is to continue to grow at 7%, the rise in electricity demand from industry and households cannot be met by wishing away coal-fired power, especially not till renewable energy becomes a reliable and

affordable alternative to thermal power.

Source: The Economic Times

(Courtesy: Shri L Pugazhenthy)

Technical Talk on "Iron & Steel Slags : Characteristics and Utilisation"

A talk on "**Iron & Steel Slags : Characteristics and Utilisation**" was organised at Delhi Chapter on 23 March 2019.

At the outset, Shri B D Jethra, Chairman IIM Delhi Chapter welcomed the Speaker - Mr Rajesh Vijayavergia, Consultant – Steel Research & Technology Mission of India, N.Delhi and others present in the gathering. He gave brief details about the activities of Indian Institute of Metals Delhi Chapter.

Mr. S C Suri, Past President and Incharge Technical Activities in IIM Delhi Chapter, introduced the speaker, as a veteran in RDCIS & Operation Directorates in SAIL and Adviser (R & D) in NMDC. His present assignment is as a Consultant in Steel Research & Technology Mission of India.

After introductory reference, the floor was handed over to Mr Vijayavergia.

Mr. Rajesh Vijayavergia, during his detailed presentation highlighted different types of slags in iron & steelmaking process, viz. BF, BOF, EAF, IF, Secondary refining, desulfurisation, stainless steel making etc. During early days of steel production in India there was a tendency to dump the slag as a waste product, with the result that huge quantities of accumulated slag is available in Indian steel plants. In addition, with enhanced steel making capacities, the quantity of slag generation has significantly increased, necessitating finding suitable avenues of its gainful utilisation. As a broad indication, ~ 42 million tonnes of slags were produced during 2017-18 (with ~ 67% from blast furnaces only).

Wet granulation of Blast Furnace slag commenced in Indian Steel Plants during late 70s and early 80s. Today such plants are an integral part of almost all new blast furnaces as well as rebuilt blast furnaces. Granulated slag, after drying, is the feed material for cement making. However this process requires a significant amount of water for drying purposes. Efforts are required to utilise the sensible heat available in molten slag. Global efforts are also being made to develop dry slag granulation processes

Due to presence of free lime (and its swelling characteristics), safe utilization of steelmaking slag has not been established in applications such as a replacement for natural aggregates in road construction, in construction industry, as rail track ballast etc. However usage is being intensively explored in agriculture (for supplementing soil nutrients as well as soil remediation of acidic soil). Owing to extensive usage of fertilisers, top soil in most parts of India is acidic in nature resulting in limited crops production. Steelmaking slag can be used for amending acidic soils for soil neutralization and as a source of growing agents. Significant R & D activities in various academic as well as industrial institutes are being undertaken in this direction.

Significant regulatory inputs too are required for utilization of slags to avoid environmental hazards.

In conclusion, the author opined that

- Blast Furnace slag utilization need to focus on Civil Engg. Applications (cement manufacture, road making, land filling etc.). With plans for enhancing higher cement manufacturing capacity utilization, 100% utilization of BF slag generated can be easily achieved in future

- BOF steel slag aggregates exhibit a number of favorable mechanical properties. If properly selected, processed, aged and tested, steel slag can be used as granular base for roads
- Volume stability is the key aspect for using steel slag as a construction material. Accelerated ageing of BOF need to be adopted in Indian plants. Studies are required for establishing its usage as aggregates in road construction
- BOF slag may be useful for plant growth, and also useful for acidic soils. R&D programs need be identified and jointly carried out by steel industry and agriculture research institutes for optimum utilization of steel slag in agriculture in India
- Slag generation by EAF and IF based steel making units is close to 3 mt each in the country. Detailed information about their characteristics, quantity generated and stock available need be generated to plan their efficient and economic utilization

- Studies need be initiated for optimum utilization of EAF Steel Slag, IF Steel making Slag, Secondary Steel Making Slag and Desulphurization Slag.

The presentation which was supported by suitable visuals evoked a lively interaction amongst the audience. There were a number of queries during the Presentation

The talk was attended by ~ 20 IIM DC members. The audience found the programme very interesting and informative.

Chairman, proposed a vote of thanks to Mr. Vijayavergia. As a token of appreciation, a memento was presented to Mr Vijayavergia by Chairman.

The programme concluded with lunch.

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Plant Visit to Star Wire India Ltd, Ballabgarh

The Indian Institute of Metals – Delhi Chapter regularly organizes visits to eminent industries in and around NCR, for benefit of its members.

In this series, a team of IIM-DC members visited Star Wire India Ltd (SWIL) at its location on Mathura Road Ballabgarh on 06 April 2019, on personal initiative taken by Mr. S K Bhatnagar, Dy. Industrial Adviser, Ministry of Steel and Mr. A C R Das, formerly in Ministry of Steel.

Mr. M K Pundir Jt.GM (Marketing-Foundary) made a presentation to IIM-DC members. He showed a brief video highlighting the activities of SWIL. The Company has its Registered Office in Lajpat Nagar, N.Delhi. ~ 1,600 employees are engaged in manufacture of various types of Special steels in 3 Units of The Company (1st and oldest at Mathura Road, Ballabhgarh on 17 acre plot, 2nd at Village Chhainsa, Mohana Road Ballabhgarh ~ 19 kms away with additional modern facilities spread over an area of 70 acres and 3rd in Sector 58, Faridabad). Dr. S K Goel, Executive Director of Company joined the Presentation and had interesting interactions with IIM-DC members. During his interaction with IIM DC members, Dr. S K Goel talked about possibility of indigenous manufacture of some steel grades which are presently being imported by India. He mentioned that he can give a list of some steel grades which can be produced in India but the same are presently being imported. He traced the History of Company, which was founded in 1959 and went under liquidation in 1977. In 1981, present Management took over and has expanded the original plant to 3 venues. It is basically a Family owned Company.

SWIL, one of the leading Mini Steel Plants, is engaged in the manufacturing of Alloy Steels, Stainless Steel and Special Steels for diversified engineering applications in shape of castings, forging and rolled products. The plant is fully equipped with modern equipment and testing facilities which have created confidence and ability for manufacturing various sophisticated grades of steel conforming to international and National standards. Various kinds of Special steels cater to requirements of Indian consumers, and the products are also exported to ~ 20 countries. SWIL has its own research and development centre to facilitate the manufacturing activities and is also catering to engineering and manufacturing industries for failure analysis and other analytical activities.

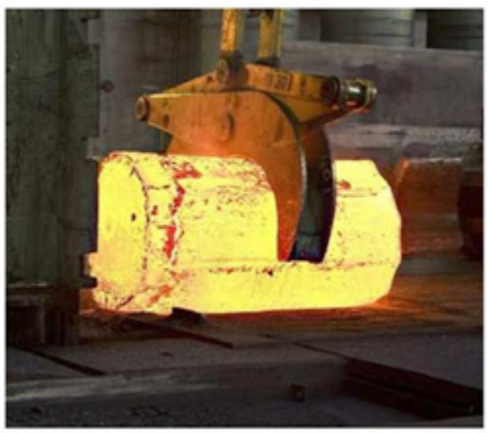
MANUFACTURING PROCESSES

The major Manufacturing facilities at different units/locations are:

- Steel Melting, Refining and Casting Ingots using Electric Arc Furnaces, Induction Furnaces, Ladle Refining Furnaces, AOD Convertor, VD/ VOD processes for Heat Sizes which can go up to 25/ 28 MT
- Electro Slag Refining Process using State of the Art Technology from ALD, Germany to produce ESR Ingots for very special applications.
- Casting Liquid Steel into Heavy Castings (Foundry Operations) weighing up to 100 MT single piece, for Power Sector & other Engineering Applications.
- Hot Forging of High Quality Ingots into Forged products, Semis through a 2000 MT Press as well as a pneumatic Hammer.
- Hot Rolling of Ingots/ Semis on various Mills: 20 Inch Mill, 18 + 14 + 10 Inches Mills, and 18 + 12 Inch Mills.
- Extensive facilities for Ingot/ Forged Product/ Rolled Product Conditioning & Finishing are available, e.g. Swing frame grinders for Surface Conditioning, Hydraulic Presses for Straightening, Roller Straightening Machines, High Speed Band Saw machines for Cutting using HSS & Carbide blades, etc.
- Heat Treatment of Forged and Rolled Products (hardening, tempering, solutionising, annealing, spherodising etc.) in Batch type Bogey Hearth furnaces to do heat treatment of 10 meter long rolled product, as well as Continuous Hardening and Tempering Operations.
- Bright bar finishing operations including Straightening, Centreless Grinding, Peeling (more than 100 Centreless Grinders and Peeling machines) to produce Engine Valve Steels and other Bright Bar Grades of steel

Advanced Research & Development facilities where Steels and Materials can be tested for Mechanical, Physical, Chemical and Metallurgical properties. The laboratory is NABL approved.

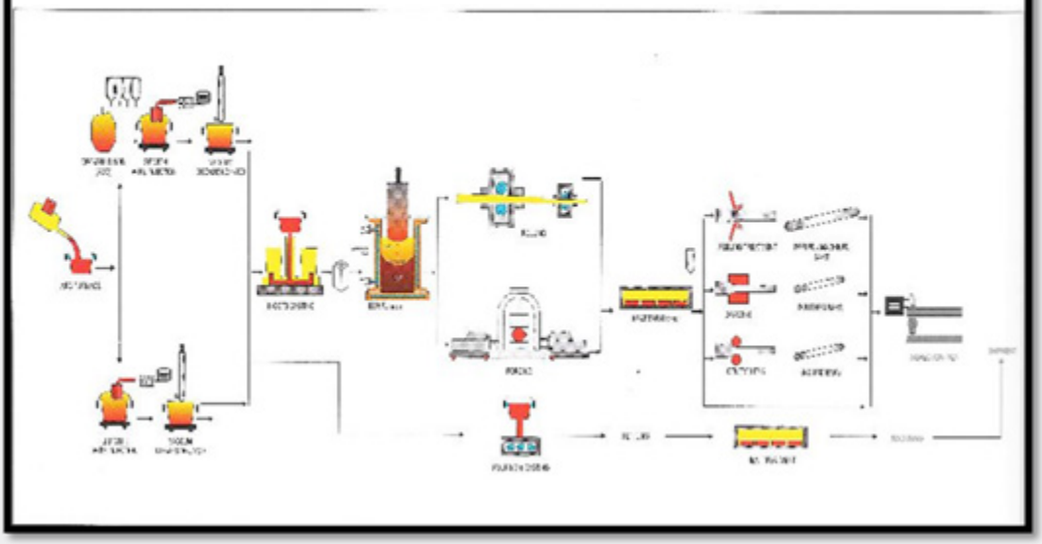
Plant has extensive facilities for handling large ingots as shown below:



Boiler Quality Ingot

Boiler Quality Ingot

PROCESS FLOW CHART at SWIL



PRODUCTS

Products manufactured by SWIL cater to the demands of a wide spectrum of industries viz. Automobile Industries, Power Equipment Manufactures, General Engineering Industries, Steel Plants, Cement Industry, Sugar Industry, Mining & Mineral Industries, Petro-Chemical Industry, Thermal Power Stations, Engine valve manufacturers, Railways, Ordnance factories, Defence, Aerospace, Para Military Forces and other Engineering Industries.

Product Segments are

Energy Sector Steels

- Complex Alloys for extreme applications such as
  - Super & Ultra Super Critical Parameter stream & Gas Turbines
  - High Corrosion & wear conditions for Hydro turbines (Nitonic Steel)
  - Low temperature (cryogenic) conditions for valves
- Steel Castings for Power Sector (upto 65 MT

single piece)

- Steam turbine castings & valves for sub & super critical parameter applications
- Hydro turbine & pump castings for medium & large projects

- Blade Steel & Rolled/Forged materials (ESR & non-ESR process)

Special Steels for Defence Nuclear & Aerospace

- PINAKA Pre-forms
- End Fitting Billets
- Critical Forgings for Nuclear power projects
- Weld consumables
- Forgings for fuel handling machines
- Plates & Sheets
- Bulb bars for Navy

High Speed Steels

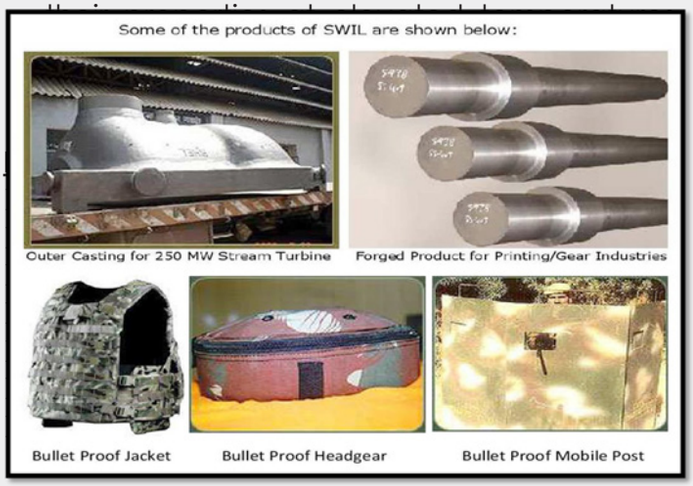
- AISI Specs. M2 for Milling Cutters, drills, reamers, taps, broaches etc.
- AISI Specs. M3-2 for Dies, punches, hacksaws, taps etc.
- AISI Specs. M35 for Hobs, Milling cutters, hacksaws, broaches, reamers, etc.
- AISI Specs. M42 for Bi-metallic bandsaw blades, milling cutters, drills etc.
- AISI Specs. T1 for Knives, taps, drills, cutters, wood quality tools etc.

Die Steels

- AISI Specs. D2 for Cutting, punching stamping tools; Shear blades, thread rolling dies, etc.
- AISI Specs. H11 for Punches, Mandrels, Die Inserts, Hot shear blades, Moulds for plastic materials, etc.
- AISI Specs. H12 for Die casting dies, Forgings dies, hot shear blades, extrusion tooling, etc.
- AISI Specs. H13 for Mandrels, pressure pads, bolsters, die cases, die holders and adaptor rings, etc.
- AISI Specs. L6 for Rams, bolsters, mandrels, plunger sleeves, chipping beds, press & hammer dies, etc.
- AISI Specs. P20 for Die holders, zinc die casting dies, backers, bolsters and injection moulds, etc.
- AISI Specs. P20S for Die holders, zinc die casting dies, bolsters and injection moulds, etc.

Engine Valve Steels

- These high Alloyed (Mn-Ni-Cr-Mo-N) magnetic and non-magnetic steels are used for Inlet & Exhaust Valves for IC engines, which work under extreme conditions of severe heat & corrosion stress. These steels retain



Some of domestic clients of SWIL are – Valve Steel (Rane Engine Valve; Sriram Piston Rings; Eaton Industrial Systems; Varroc Engineering; AVR valves; Automotive Valves; SSV valves; Toshiba; Nextech Engineering; etc.), Forged Quality Ingots (Bay Forge; Bharat Forge; Rajkumar Forge; Choudhry Hammer; Eschjay Forgings, Pushpman Forgings; Achme Forgings; etc.), Forged products (Manugraph India; Printer House; Triveni Engineering; Fender; Eleon etc.)

Some of Global Customers of SWIL are – FM Global, Technostar SRL Italy, Mahle Global; Eaton Global; Shinhan Valves, Supar Supap Ve Parca Sanayi Ticaret A.S., Turkey; Federal Mogul Valves (Pty) Ltd, South Africa; Supsan Motor, Turkey; Siemens Germany, Alstom Germany, Skoda Czech Republic, Technistar S.r.l.Italy, Ivam S.r.l.Italy, Paradowsay AMP S.J.Poland, Goons Motor; Nittan Italy etc.

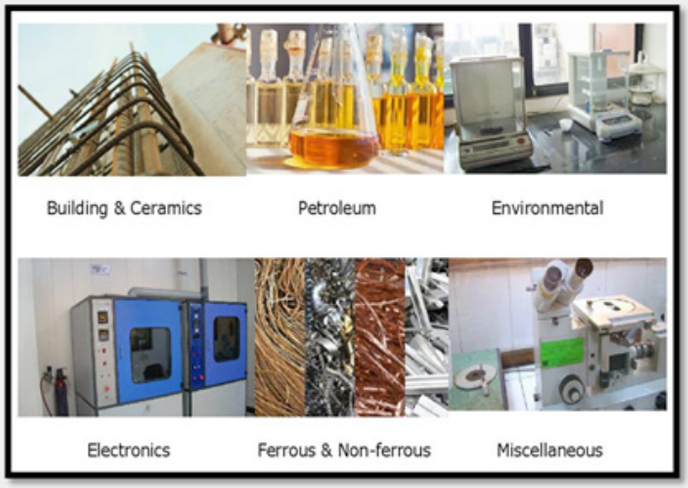
Total Productive Maintenance (TPM)

SWIL has extensively adopted TPM practices to adhere to strict process/product quality of International standards. An Interactive presentation on TPM was made to IIM-DC members by Mr S K Sinha, Advisor (TPM) focussing on various related activities.

Testing Division

SWIL Testing Division was established in the year 1994 to undertake testing the quality in

the fields of Ferrous & Non-ferrous Alloys, Water and Building materials. Over the decades, it has expanded into further fields such as Air, Oil and other testings. "Quality Centered" team approach accompanied by NABL Accreditation ensures testing of the finest



quality. Keeping in mind the growing markets, they have now expanded into Electronic Testing which is NABL and BIS Certified. A number of Outside agencies avail the facilities of Testing Division. Some of the equipment available are shown below:

The Visiting Team went around modern facilities of the Unit and had extensive deliberations with the senior officials.

INTERACTIONS WITH SENIOR OFFICIALS

Activities of IIM Delhi Chapter were discussed with Dr. S K Goel. Copies of IIM-DC Monthly Newsletter and IIM-DC Brochure were handed over. They were requested to participate regularly in all activities of IIM Delhi Chapter as well as in the **MMMM 2020 exhibition**, planned in Pragati Maidan during Aug.2020

The visit to Star Wire Industries, Ballabhgarh, ended with thanks to their senior officials for facilitating this visit as well as excellent hospitality.

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Talk on "The Nature and Role of Research & Development in Defence Preparedness" by Dr. Arvind Bharti

A talk on "Nature and Role of R & D in Defence Preparedness" was organised at Delhi Chapter on 29 April 2019.

At the outset Shri B D Jethra, Chairman, IIM Delhi Chapter welcomed Dr. Arvind Bharti and all present to the technical talk. Shri Nirmal Kakkar, Hony. Secretary, IIM Delhi Chapter, introduced Dr Arvind Bharti, formerly in DRDO HQ, Ministry of Defence. He gave a brief about academic and professional achievements of Dr. Bharti. Shri S C Suri, formerly Chairman and Head Technical Committee IIM Delhi Chapter also spoke about association of Dr. Bharti with IIM Delhi Chapter. After introductory references, the floor was handed over to Dr Arvind Bharti.

Dr Arvind Bharti outlined Global Perspective in `Technological Leadership' emphasising that any sovereign nation need be independent in its technological needs. In order to prevent economic exploitation by leveraging technology by powers that be, focus has to be on development of industrial capacities and in-house expertise by systematic enhancing the potentialities of R & D Institutes and Academic Institutions. This issue becomes much more critical in Defence sector.

In our country Defence Services prepare a 15 Years strategic plan LTIPP (Long Term Integrated Perspective Plan) approach - the present one covering the period 2012-27- based on Threat Perception, Operational directives and Global visibility of Systems as reported by International Defence Journals. DRDO's LTTPP (Long Term Technology Perspective Plan) is in consonance with the Services LTIPP, for maximizing inductions of DRDO (Defence Research & Development Organisation) developed products. Defence strategic process comprises Concept – R & D – Technology Demonstration - Production approach along with all related Stakeholders (Armed Forces, CAPFs, Academia, R&D Institutions, Industries, etc.) till Induction Stage. Generally `Mission Mode' Project Approach is taken. Dr. Bharti highlighted various steps in converting Scientific Knowledge to Production and subsequent Induction in Services.

Dr. Bharti described in brief Department of DRDO. He highlighted DRDO as the largest R & D Organisation in the country (59 years old), mandated to strengthen our Armed Services, aligned to National Defence Strategy and having strong partnership with ~ 150 National Academic Institutes, 15 National S&T Agencies, 8 DPSUs, OFBs & PSUs and ~ 800 Private Sector enterprises. All activities are spread evenly all over the country. Presently DRDO has 52 laboratories with ~ 7229 Scientists. Its Technology Spectrum comprises:

- Electronics & Computer Sciences
- Missile & Strategic Systems
- Aeronautical Systems
- Armaments, Combat Vehicles & Engineering
- Naval Systems & Materials
- Micro Electronics & Computational Systems
- Life Sciences

New Technology initiatives have also been taken in Cyber Security, Space Security, Directed Energy Weapons and LIC Technologies.

Dr. Bharti traced the history of DRDO, since its inception in 1958 and gave various examples of products, developed from Concept to Production stage, which have been inducted in the Armed Forces.

Dr. Bharti described in brief the overall Technology Management concept that DRDO is trying to establish in the country:

- with Academia and Research Institutes [Directed Research through Research Boards, Extra Mural Research and CARS (Contract for Acquisition of Research services), etc.]
- with Industry under `Make in India' thrust [TDF (Technology Development Fund), IMPRINT (Impacting Research Innovation & technology) and UAY (Uchhatar Avishkar Yojna), etc]

Dr. Bharti mentioned a few Key Technologies developed in:

- Aeronautics (Flight Control Laws for Unstable Aircraft, Fly by Wire Digital Flight Control System, Open Architecture Mission Avionics, Composite Structure, State of Art avionics for Combat Aircraft, etc.)

- Missiles (Re-entry Vehicle Structure, Twin engine liquid propulsion, Pre-fragmented

and Submunition war head), Stabilisation and launch from moving platform, autonomous navigation, Three loop Digital Auto Pilot, etc.)

- Electronic Systems (High Accuracy Direction finding, High power jamming, High Accuracy Multi-Channel Receivers, Network centric information fusion, Multi beam and Slotted Wave guide Antenna, Digital Receivers & High power transmitters, T/R modules for S/L bands etc.)
- Combat Vehicles & Armaments (Composite Armour, Autofrettaged Gun barrels, Flow formed rocket motors, Mobile Launchers, Hydro-Gas Suspension, Integrated Fire Control Systems, FRP Launch tube, Composite Propellant, etc.)
- Naval Systems (Transducer Array, State of art Signal processing techniques for target classification, MEMS based Hydrophones, Torpedo Propulsion Battery, State of Art Homing System, On-Board Computers & FCS, Mechanical Systems/Platform Interface & Integrated Test Systems etc.)

In Conclusion, Dr. Bharti highlighted the proposed gradual shift of present Top Down Approach for LTIPP requirement to Bottoms Up Approach likely beyond 2027.

The presentation which was supported by visuals and videos evoked a lively response amongst the audience. There were questions and subsequent discussions during/after the Presentation

The talk was attended by ~ 20 IIM DC members.

The audience found the programme very interesting and informative.

Shri Pankaj Bajaj Vice-Chairman, IIM DC, proposed a vote of thanks to Dr Arvind Bharti and all the participants.

As a token of appreciation, a Memento was presented to Dr Bharti by Chairman.

The programme concluded with lunch.

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Copper exports plunge 69% in FY19 on Sterlite unit closure: Exporters' body

The export of copper and copper products in March 2019 declined sharply by 60.8% to $127.43 million as compared to the same month in 2018.

Cumulatively for FY19, the export of the metal and its products dropped by whopping 69.4% to $1.065 billion, against the previous fiscal due to the shutdown of Sterlite Copper smelter plant at Tuticorin in Tamil Nadu, said Engineering Export Promotion Council (EEPC) recently.

Stressing the marked drop in exports and the need to prevent import of inferior/hazardous quality of copper scraps into India, the Council has urged the Union government to bring in a copper scrap policy immediately.

"In order to prevent the import of inferior quality and hazardous copper scrap, we would like to suggest that the government should develop internationally compatible standards and may bring a copper scrap policy like that of steel scrap," the apex engineering exporters' organisation has said.

India's domestic refined copper production had fallen significantly during the first half of 2018-19 mainly due to the shutdown of the 400-MT Tuticorin smelter of Sterlite which accounted for 40% of the country's copper smelting capacity.

Recently, the Supreme Court refused to allow Vedanta to reopen Sterlite Copper's Tuticorin plant. Therefore, in this context, EEPC India feels that the declining trend in the exports of copper would continue.

Domestic industry relies heavily on imports of copper concentrate from far-off countries, particularly from South Africa, in a big way. This really increases the cost of production. The duty on the copper concentrate is currently 2.5% while the finished goods coming at zero duty. Thus, there is a situation of inverted duty structure. The Union government should consider removal of this duty to help the industry becoming globally competitive," EEPC India chairman

Ravi Sehgal said. Another source of copper concentrate was Indonesia which, according to industry, has imposed an export tax. This in turn is making our imports expensive. Indonesia is a FTA partner of India under the ASEAN agreement and the government should take up this issue at government-to-government level, he said, adding that import of inferior quality/hazardous copper scrap should be curbed.

The EEPC India chief, while expressing concern over the recent announcement by the US president Donald Trump to withdraw India's name from the Generalised System of Preferences (GSP) programme recently, said: "Withdrawal of GSP will definitely have adverse impact on the products (833 engineering products out of 1,900 total products) exported from India which are mostly manufactured by Indian MSMEs."

It said the Indian engineering export had been going through a tough time because of high input cost, issues with GST, lack of finance for MSMEs and sluggish global economies. In this context, the sudden withdrawal of GSP by the US will be detrimental for Indian exporting community. The government should provide some fiscal support for affected products especially for the labour intensive MSME sector, the council chairman said.

Source: Financial Express

(Courtesy: Shri L Pugazhenthy)

Gold Imports Rise 54% to $3.97 Billion

Gold imports increased 54% to $3.97 billion in April, widening the country's trade deficit and fuelling worries about the current account deficit (CAD). Imports of the precious metal stood at $2.58 billion in April 2018, according to data from the Commerce Ministry.

Increase in gold imports pushed the country's trade deficit to a five-month high of $15.33 billion in April.

The country's current account deficit (CAD) widened to 2.5% of GDP in the third quarter of the last financial year from 2.1% a year ago, primarily on account of a higher trade deficit, though the foreign exchange reserves continued to soar.

After recording a negative growth in imports in February, gold imports started registering double-digit growth. In March, it grew 31% to $3.27 billion.

Source: www.tribuneindia.com:

Courtesy: Mr. L Pugazhenthy

Ferro alloys and steel two sides of a coin

Steel is the most versatile material, which has made the progress in every aspect of manufacturing and engineering. There are hundreds of varieties of steel because for each application it has to be made with specific properties to get the most optimum usage. Though the basic constituent of steel is iron, it is the proportion of other elements in it, which gives each type of steel certain specific properties. These elements are added in liquid iron in the form of ferro alloys to get the desired composition and properties. Thus, ferro alloys are important additives in the production of steel and ferro alloys industry is vitally linked for its growth and development to that of the steel industry.

Ferro alloys impart special properties to steel. The alloys provide increased resistance to corrosion, improves hardness and tensile strength at high temperature, gives wear and abrasion resistance and increases creep strength, etc. The growth of ferro alloys industry is, thus, linked with the development of the iron and steel industry, foundry industry and to some extent electrode industry. The principal ferro alloys are chromium, manganese and silicon. The product series consists mainly of ferro-manganese, silico manganese, ferro-silicon and ferro-chrome.

Ferro-alloys are classified into two main categories, viz, bulk ferro alloys and noble ferro alloys. Owing to high cost of power, the ferro alloys industry has not been operating to its full capacity in India. The industry spends 40 to 70% production cost on power consumption. The power consumption per tonne of ferro alloys production in the country varies from 3,000 to 12,000 kWh. At present, major portion of the ferro alloys produced is exported.

Indian ferro alloy units have incorporated the latest technology in order to use non-metallurgical grade ores, both lumps and fines, after necessary beneficiation and agglomeration. The units have also incorporated an effective pollution control measures in the form of gas cleaning, deoxidising and

waste heat recovery. As per Indian Ferro-Alloys Producers' Association (IFAPA), the total installed capacity of bulk ferro alloys industry in India is estimated at 5.10 million tonne per annum and for noble ferro alloys it is 50,000 tonne per annum. The industry is reported to be working at about 25-30% capacity utilisation mainly because of weak exports.

The ferro-alloys industry was established as an ancillary industry to cater to the growing needs of the domestic steel industry and is spread all over the country. Most of the ferro alloys units have been set up in Andhra Pradesh, Chhattisgarh, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha and West Bengal because of availability of the raw material as well as un-interrupted electricity supply.

Environmental aspects

Studies reveal that depending on the ferro alloys manufactured, waste generation per day in 35 tpd and 50 tpd ferro silicon and ferro chrome plants may be in the following range: Silica fines: 7 to 8 tonne/day, Fe-Cr slag (fined boulder): 40 tonne/day, charcoal & coke fines: 7 to 8 tonne/day. To utilise the waste from ferro alloys industries, a typical Fe-Si or Fe-Cr manufacturing unit can provide material for 10 small scale units for manufacturing bricks and each unit can produce 2,400 bricks per day.

The implementation of the Kyoto Protocol by the European Union provides significant opportunities for ferro alloys industry in India to implement CO2 reduction technologies, which could be traded in terms of carbon credits. Installation of an electricity generation facility driven by CO rich furnace gas is an obvious means by which CO2 saving could be achieved.

Indian industry hurt by cheap China imports

At a time when Indian ferro alloys producers have slowly expanded their installed capacity over the years to meet the expected rising demand from steel industry, cheap import from China is steadily grabbing the domestic market share.

According to the Indian Ferro Alloy Producers' Association, the advantages of the demand are muted. Mr. T S Sundaresan secretary general of IFAPA said that this is because of escalating import from China and thereby, an imminent reduction in the capacity utilization.

Apparently, Chinese products are widely accepted by Indian steel makers due to competitive price. Since, the quality of imported goods is almost at par with the product of domestic origin, steel mills prefer the Chinese ferro alloys in order to keep higher margins. Mr. Sundaresan said that rising import was a major cause of concern for the domestic ferro alloys industry.

He added that "Hence, we have recommended the government to raise import duty to 7.5% to protect the domestic industry from cheap imports."

Power tariff in the country is high compared to other ferro alloy producing countries. Non-captive producers are at a disadvantage due to cross subsidy in power. The power cost is very high compared to other countries. The power cost on average is Rs 5-6 per kilo watt in India as compared to Rs 2 per kilo watt elsewhere in the world, he added. Another challenge facing producers in India is the non-availability of low phos coke.

The anti-dumping duty on Chinese coke has also put an upward pressure on cost of production. Non availability of high grade manganese ore also affects the industry, Sundara Ramam, Chiarman, Indian Ferro Alloy Producers' Association (IFAPA) said.

Govt. assures support to the industry

The government has assured domestic ferro alloy producers of taking steps to address their concern.

Speaking at '2018 International Ferro Alloy Conference', Steel Minister Chaudhary Birender Singh said measures will be taken to resolve these issues.

Ferro alloy producers are grappling with raw material shortage and high prices of power, said Manish Sarda, Chairman, Indian Ferro Alloy Producers Association (IFAPA). He urged the steel minister to ensure availability of manganese ore and address the issue of high cost of power, which contributes 50 percent to the total production cost.

"Ferro alloy is an additive to finished steel to provide strength, hardness, anti-corrosive properties etc. Raw materials for its are manganese ore, chrome ore and coke, said Manish Mishra, Marketing Head, Sarda Energy and Minerals.

IFAPA Chairman further said the country does not have raw materials for ferro alloy and the players are importing it from countries like Australia and South Africa at higher prices.

"Sadly, there is (also) a 2.5 percent import duty on manganese ore and chrome ore and an anti-dumping duty of USD 25 a tonne on coke.

All these things are making it very difficult for ferro alloy producers to maintain India's global position," Sarda warned.

Future outlook

Depending on the process of steel making and the type of steel being manufactured, the requirement of different ferro alloys varies widely. According to IFAPA, on an average about 30 to 40% of ferro-alloys produced is exported. The industry output has always been surplus and meeting the demand of the domestic steel industry. India has also established itself as one of the regular and leading exporters of ferrochrome and silico-manganese in the world.

The ferro-alloy industry in India has a capacity of 5.15 million tonne and is accounted for nearly 10% of the world's ferro alloys production. It is among 10 largest producers of the material in the world. At present, industry is facing few issues related to high input prices of manganese and chrome ore, coal, coke and high energy tariff. On the other hand, the ferro alloy producers are also facing the problem of price inadequacy and instability on their production.

However, India is expected to show strong growth in usage of steel in the coming years because of its robust economy, massive infrastructure needs and expansion of industrial production. India is expected to become one of the leading steel consuming nations in the next decade. In this scenario, the ferro alloy industry estimates that the consumption of ferro alloys will increase domestically and internationally in the coming years. Some of the ferro alloy producers have already gone for expansion and some new units are coming up.

Indian ferro alloys industry has immense potential and capability to compete in the international market. There is a need to encourage the Indian ferro alloys industry for setting up captive power plants and also allocate coal linkages for the same. The prospects for the industry are bright provided innovations are made in the process technology & plant equipment design, and new cost-effective product mix is frequented at.

Source: MMR

MOIL'S EXPANSION PLAN ON TRACK

The state-run Manganese Ore India Ltd (MOIL), India's largest manganese producer, has embarked on an expansion and diversification plan that would generate around 1,000 direct and indirect jobs in the near future. Recently, Union Minister Nitin Gadkari performed the e-bhoomipuja for a new opencast mine to be started at Parsoda, besides increasing Gumgaon mine's capacity with a high speed shaft. The diversification will involve starting of a Rs 155 crore ferro-alloys plant at Gumgaon. Foundation stone was also laid for a school at Mansar with 1,000 seats capacity.

Gadkari, in his hectic pre-election schedule, hopped from Katol to Gumgaon by helicopter to attend the launch ceremony organised by MOIL. In a brief speech, he told the public-sector manganese company's management to recruit only local youths in the expansion-cum-diversification since agrarian crisis in the area had led to large-scale unemployment. He also exhorted officials to provide skill development and to engage in green projects like planting trees and switching over to solar power.

Mukund Chaudhary, MOIL chairman-cum-managing director, said production would be doubled in next six to seven years and modernisation efforts had led to a 30% increase in output last year. The production target for next year is 15 lakh tonne, an increase of 50% compared to year 2016-17. A 25,000 MTPA ferro alloy plant is envisaged at Gumgaon, 35 km from Nagpur, as a value addition and forward-integration project. The plant is expected to be commissioned by 2021. This will be MOIL's second ferro-alloy plant with one at Balaghat operational at 10,000 MTPA capacity.

Installing a new high speed shaft of 6.5 m. diameter and 330 mtrs depth at Gumgaon mines at an estimated capital cost of Rs 194 crores would be achieved by 2021. A total ore reserve of around 4.2 million tonne is available at the mine. With annual production of 2.5 lakh tonne, life of this mine is more than 20 years. This project will generate additional direct and indirect employment of 400. The company was granted mining lease of Parsoda, 46 kms from Nagpur in 2016. The lease extends over an area of 53.75 ha for 50 years. Environmental clearance for the mine for production of 40,000 TPA has been obtained along with other statutory approvals. Project cost is estimated at Rs 19.54 crore. Production will start in current financial year. It will generate around 200 jobs. Under its CSR, a new school is proposed at Mansar at a cost of Rs 10 crore. It will be managed by Dayanand Arya Vidyalaya group and provide quality CBSE pattern education. MOIL plans to start the school from 2021-22 academic session. In addition, MOIL will be spending Rs 2 crore/annum on the school to meet operational expenses.

Source: MMR