THE INDIAN INSTITUTE OF METALS - DELHI CHAPTER

"MET-INFO" INHOUSE PUBLICATION
IIM DELHI CHAPTER

ISSUE NO. 2 **July 2017**

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

FOR MEMBERS' USE ONLY

In The Issue

HRD HALL OF DELHI CHAPTER

VIEW OF AUDITORIUM OF DELHI CHAPTER

Published By
Shri S C Suri, Editor-in-Chief (IIM-DC Newsletter), on behalf of
"The Indian Institute of Metals – Delhi Chapter", 'Jawahar Dhatu Bhawan'
39 Tughlakabad Institutional Area, M B Road, Near Batra Hospital, New Delhi-110 062
E-mail: iim.delhi@gmail.com, Phone (011) 29956738, Telefax: (011) 29955084,
Website: www.iim-delhi.com

Printed at Om Art Press, C-15, Wazirpur Industrial Area, Delhi-110 052, Phone (011) 27377211,
E-mail: actsindia@hotmail.com

Office Bearers of Delhi Chapter of IIM

Chairman

Mr. K L Mehrotra

Vice Chairman

Mr. P K Bajaj

Hon. Secretary

Mr. Manoranjan Ram

Hon. Jt. Secretary

Mr. N Vijayan

Hon. Treasurer

Mr. N K Kakkar

Hon. Jt. Treasurer

Mr. Ram Gopal

Members

Mr. S C Suri
Mr. P N Shali
Mr. B R Thukral
Mr. P K Chatterjee
Mr. R K Vijayavergia
Mr. K K Mehrotra
Mr. G I S Chauhan
Mr. B D Jethra
Mr. Deepak Jain
Mr. A C R Das
Mr. Gautam Bhatia

Invitee

Dr. Ramen Datta

EDITORIAL BOARD

Mr. S C Suri – Editor-in-Chief

EDITORIAL BOARD

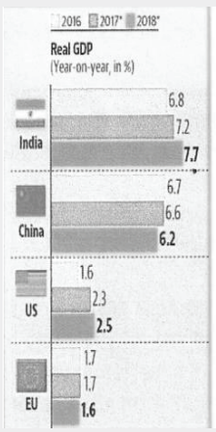
Mr. K L Mehrotra
Mr. Gautam Bhatia
Mr. N K Kakkar
Mr. B D Jethra
Mr. K K Mehrotra
Mr. A C R Das
Mr. Manoranajan Ram
Mr. R K Vijayavergia
Mr. G I S Chauhan

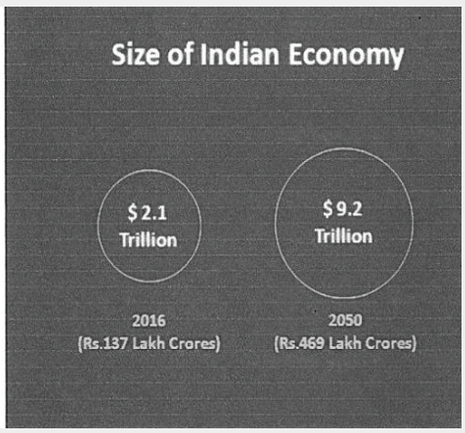
LEAD & ITS MARKETS IN INDIA – CURRENT & EMERGING SCENARIOS

L.Pugazhenthy,
Executive Director, India Lead Zinc Dev.Assn &
Past President, The Indian Institute of Metals

Introduction

For the last few years, India has been one of the fastest growing economies in the world, the other being China. In terms of GDP, both countries have been competing closely; in fact, recently India has overtaken China and this is likely to continue in 2018 also. Of late Chinese growth has slowed down, while India is steaming ahead, sometimes aiming for a double digit growth even.





It is predicted that India, a $ 2Trillion nation now, will become a staggering $9.2 Trillion economy by the year 2050. As the economy grows, with an aspirational population for improved standards of living, an enhanced buying power and steep increase in demand for many services as well as massive investments in the infrastructural sectors, the lead demand is bound to gallop in India. This trend will continue for the next decade and thereafter too.

Lead-Sectoral Consumption

In the case of Lead, out of the total consumption, about 75% gets used in lead batteries and the remainder goes for the manufacture of alloys, chemicals, semis, shots etc., (Fig-1)

If one looks at the raw materials, cost-wise lead & lead alloys accounts for 80%, the balance being polypropylene/ polyethylene and others like acids, additives etc., (Fig-2)

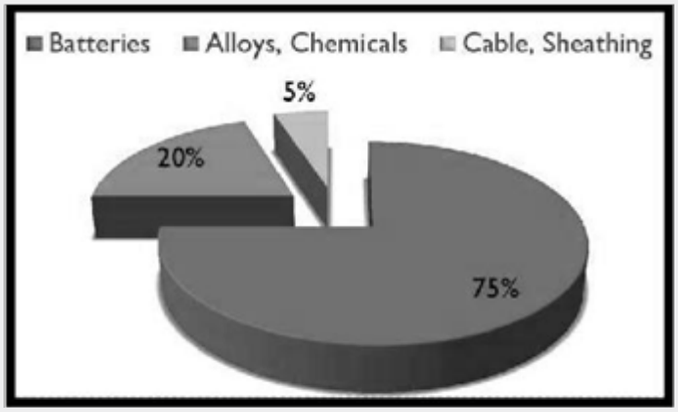


Figure 1

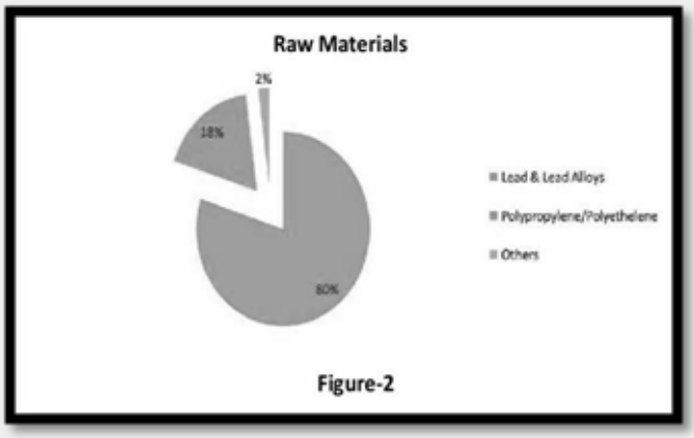


Figure 2

Though Lead has been gradually displaced in petrol, paints, solders etc., in India, due to the inherent toxic characteristics, the lead battery has witnessed a steady growth, as it touches our lives (Fig-3).

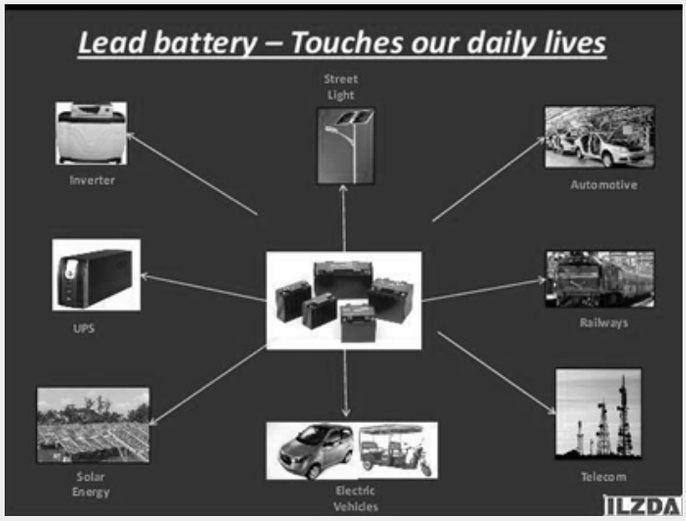


Figure 3

Lead batteries are largely used in automobiles (for starting, lighting and igniting), UPS for computers, power inverters, telephone exchanges, power plants, railways etc., Lead is also used in wheel balancing weights in automobiles, shots, pipes, sheets, wires, lining of chemical vessels etc., Lead bricks are used in the atomic reactors, X-ray rooms etc., for radiation shielding.

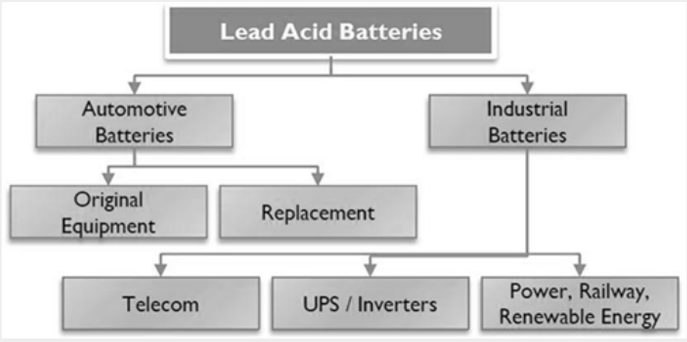


Figure 4

As per the industry estimates, Lead consumption in India should be around 1.20 million tonnes per annum (about 85% coming from recycling sector and the balance from primary lead by Hindustan Zinc Ltd) with some limited imports.

The structure and market size of the lead battery industry are shown in Figs 4 & 5.

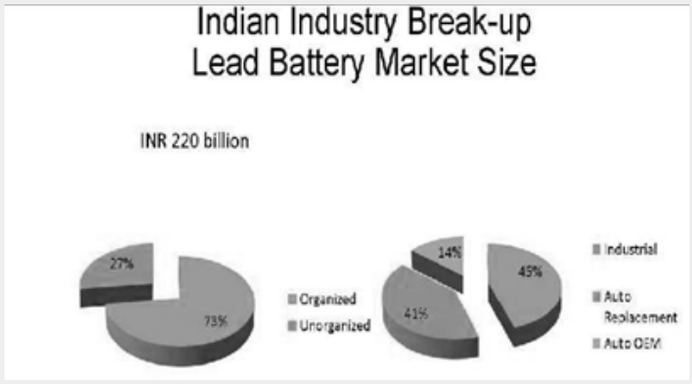


Figure 5

In the case of Lead, the key drivers are automobile production, power demand-supply gaps, growth in the computer industry as well as the telecom sector. Here again, in view of the continued growth in the usage of lead batteries in automobiles, inverters, UPS and telecom during the last few years, more and more used lead batteries are available for lead recycling after every 2 to 3 years. The Ministry of Environment & Forests has enacted "**Battery (Management & Handling) Rules 2001**" for one-to-one collection of used lead batteries, for a close-loop recycling (Fig-6). It is interesting to note that more and more rotary furnaces have been put up replacing the so called traditional "mandir bhattis"

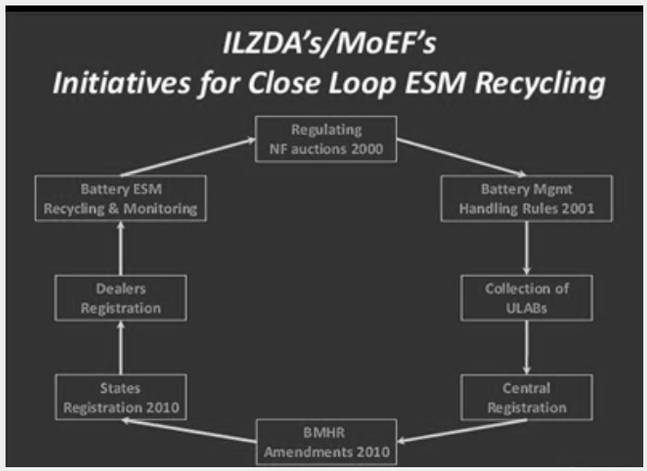


Figure 6

Lead availability is not a constraint in India, as the lead production, both primary as well as secondary have been continuously increasing. India's primary lead production during 2016-17 was 137,000 tonnes, while secondary lead

production as per industry estimates may be around 1.0 million tonnes, both from organized as well as unorganized sectors. Lead imports have come down over the years while imports of lead scrap, used batteries, remelted lead etc., are increasing gradually.

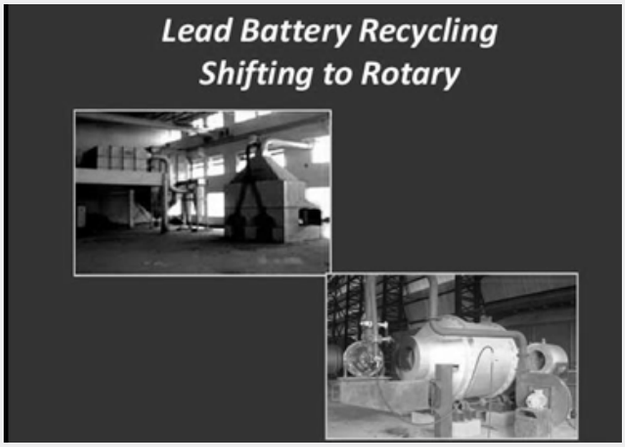


Figure 7

Infrastructural Investments

During the 11th Five Year Plan (2007-12), India's investments in infrastructure (power, telecom, renewable energy, highways, ports, airports, railways etc.,) amounted to US$500 billion; the same was doubled to US$1000 billion for the 12th Five Year Plan (2012-2017). These sectoral investments augur well for lead as well as lead batteries, as the latter finds wide application in transport, telecom, power, renewable energy, railways, defence, communication, IT industry etc.,

In the coming years, more lead batteries would find application in electric vehicles, e–rickshaws, electric scooters etc., Recently, the Govt of India has announced a series of supportive measures, incentives etc., under FAME (Faster Adoption & Manufacturing of Hybrid & Electric Vehicles) Mission as a result of which electric vehicles particularly two wheelers & three wheelers will see a steady growth in the coming years in the country with some growth in electric cars, electric buses also. More charging facilities have to be created across the country. Similarly, the massive investments under the Jawahar Lal Nehru Solar Energy Mission would result in increased demand for storage of energy where lead batteries are the natural choice. Both electric vehicles as well as renewable energy will look for advanced lead batteries, lead carbon batteries etc., for long life and assured performance.

Conclusion

The huge investments in infrastructure, vehicular production, growth in services, improved living standards as well as the high economic growths in the country leading to an increased buying power present an ideal, conducive atmosphere for the continued growth in the markets for Lead. On its part, the lead & its downstream industry need to offer durable, quality products and improved batteries with assured performance and delivery at competitive prices. The global outlook predicts that by 2030, of all the battery systems, 94% of them will continue to be lead batteries (Fig-8).

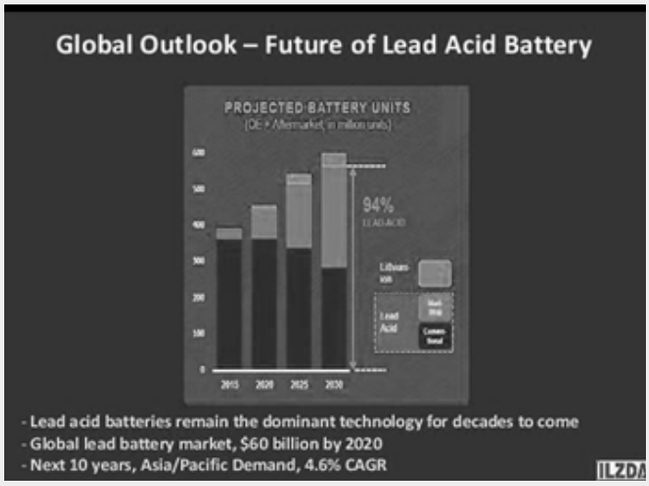


Figure 8

While the growth in the lead battery sector is laudable, the immediate challenge is to put our house in order so as to collect the old batteries in an organized way, recycle them in an eco–friendly manner and use the lead metal in new batteries manufactured, in the true spirit of "Sustainable Development". This calls for voluntary action by everyone namely battery industry, citizens, regulators etc., 'SAFE LEAD' should be the ultimate mantra, for the country.

xxxxxxxxxxxxxxxxxx

Steps on to achieve 300 MT steel output: Steel minister

After bringing in two policies to boost the domestic steel sector, a slew of steps are on to achieve the target of 300 million tons (mt) of output, Steel Ministry Choudhary Birender Singh said. Urging steel producers to come forward to achieve the ambitious target, the minister also said he has asked Coal India to ensure sufficient supply of the fuel. The Cabinet, in May, approved two policies, including the National Steel Policy 2017 that envisages Rs 10 lakh crore investment to take capacity to 300 million tons by 2030-31, to give a boost to the domestic steel sector. The country's steel output is about 100 million tons at present.

"National Steel Policy 2005 fell short of expectations to meet the developments in the Indian steel sector. The National Steel Policy 2017 comes with an aim to make India self-sufficient… to meet demand for high grade steel, electrical steel, special steel and alloys, an area where support from all steel producers is crucial," Singh said. Addressing a workshop on National Steel Policy 2017 and policy for providing preference to domestically manufactured iron and steel products (DMI&SP) in government procurement, he said, "value addition, research and development, raw material security are some of important points in our steel policy".

With this vision, "We had meeting with Coal Ministry to take quick decisions pertaining to thrust areas. Coal India Ltd and Bharat Coking Coal Ltd have agreed to set up 12 new coking coal washeries by 2019-20. "For this I have asked that they should give a road-map as to how many would be in place for function… Not all

should take three years to be functional." Sigh said Coal India Ltd is also working on acquiring coking coal assets, increasing domestic production and minimising diversion of coking coal to thermal plants.

He expressed hope that coking coal imports will be reduced by 20-25 percent due to the measures. The government's focus is also on reducing dependence on imports for raw materials required for steel making and reduce the input cost. Coal, a key material used in producing steel, was put in the lowest tax bracket of 5 percent under the new GST regime. To boost domestic steel consumption, the government in May also approved a policy providing preference to domestic iron and steel products in government procurement. The minister said that a standing committee for DMI&SP chaired by the steel secretary will address issues faced by manufacturers.

"In the last meeting itself there were about a dozen queries" from Indian Railways, ONCG, Indian Pipe Manufacturers Association (IPMA) and Seamless Tubes Manufacturers' Association of India (STMAI) etc. that have been addressed, he said. Steel Secretary Aruna Sharma said any project of worth Rs50 crore will come under the DMI&SP policy. DMI&SP policy provides a minimum value addition of 15 percent in notified steel products which are covered under preferential procurement.

In order to provide flexibility, the Ministry of Steel may review specified steel products and the minimum value addition criterion. Asserting that quality would be ensured in steel products, Singh said, "Thirty-three steel products have already been certified under mandatory quality certification BIS 75 percent of the total steel products are now covered under BIS regime".

Steel Ministry asks PSUs to use palletization to maximum

"We have asked steel-producing PSUs to use palletisation to the maximum. Private players have been doing it for quite some time. So with this, we are hopeful of reducing import costs," the steel minister said. According to the Minister, the Centre's focus on 'housing for all' and increased movement of infrastructure projects are expected to create an additional demand of around Rs 40,000 crore worth of steel in the country. "Funds worth Rs 4 lakh crore have been provided for the infrastructure sector in this year's Budget. Even if just 10 percent of the components used is steel, we will be selling Rs 40,000 crore worth of steel. This is how I hope consumption would grow.

India to ensure no steel import in guise of finished products

The Centre said it will ensure that steel products are not imported in the guise of utensils or finished products. "We are keeping an eye on that (import of steel in guise of finished products). We will not allow such kind of practice even in trade," Singh said. Stating that India has been successful in reducing import of steel by 37 percent during 2016-17, Singh said the reduction of imported steel was mostly from China.

This had happened because of India's anti-dumping measures and also due to withdrawal of Minimum Import Price (MIP), he said. "But, one thing which I want to make clear is, can we talk of anti-dumping duty? There is still some steel products, in the guides of utensils or in the guise of finished products, those can find way to our country," Singh said. Stating that the steel sector has been growing at a steady Compound Annual Growth Rate (CAGR) of about 7 percent he said the country's steel export registered a 102 percent growth from 4.08 mt in 2015-16 to 8.20 mt in 2016-17.

However, India's per capita steel consumption remained at only 64 kg, which needs to be increased to 160 kg as the country is planning to produce 300 million tons of steel by 2013-31, the Union Minister said. The Railways alone have plans to spend Rs 1.32 lakh crore in its expansion. "We can make maximum use of steel in different infrastructure projects like rail, road, bridge, urban and rural housing, toilets under Swachha Bharat scheme etc." he said.

The Minister, however, stressed on the

production of high-end steel, which he termed as the future of steel industry. "We have to convert crude steel and semi-finished steel products to high-end steel products. This value addition and diversification will give us better margin and increase our competitiveness," Singh said. Once the country produce high-ended and better steel, the demand for Indian steel will increase in Vietnam, Cambodia and other African countries, he said adding, the Indian steel sector has evolved as the third largest steel producer in the world and is poised to become the second largest producer putting Indian steel prominently on the global industry map.

Asked about employment provided by the steel sector in the last three years, the Union Minister said the steel sector was passing through a bad phase for the last two years, but the situation has improved in the last 6-8 months. "When planning to produce 300 mt of steel by 2030-31, we expect Odisha's Kalinganagar to become a steel hub and produce 20 percent of the total steel manufactured in India," he said.

Source: Steel Insights

Steel ministry to produce electrical steels in India

The steel ministry is spearheading a Rs 500-crore public-private research and development project for indigenous technology to produce high value cold rolled grain oriented (CRGO), or electrical steels in India. Electrical steels, used in manufacturing static motors such as transformers, are priced at nearly Rs 1.5 lakh per tonne —five times the value of hot rolled coils (HRC) that are used to make cars and consumer durables. Globally, only a clutch of companies have the capability to produce CRGO and the technology is not easily available for assimilation. The Indian project will involve the Department of Scientific Industrial Research — National Metallurgical Laboratory (DSIR- NML), the ministry, Tata Steel and Rashtriya Ispat Nigam.

If successful, it would be a significant breakthrough since CRGO grade steels will be produced in India for the first time. Currently, all requirements are met through imports. The venture would also mark a significant leap for the steel industry's technology prowess. In the last couple of years, the country has emerged as the third-largest steel producer in the world and is in line to reach the no. 2 spot. A pilot plant will be set up at NML premises in Jamshedpur after a detailed engineering and project management report. A detailed project report has already been prepared and submitted by engineering consultancy Mecon. Depending on its success, stakeholders are likely to adopt the technology for producing CRGO. All key aspects relating to licensing and IPR have been covered under a master agreement, a source close to the initiative told ET.

"Mecon has, in collaboration with a knowledge partner, developed a 'process route' for the CRGO, which is completely indigenous and does not infringe on existing technology," said a source in the government. This was after NML conducted fundamental research to find the white spaces for developing the technology without any infringement issues. While efforts to develop CRGO were taken up by Steel Authority of India's Rourkela Steel Plant a couple of decades earlier, it proved elusive. At that time it was Armco, also the first developers of this grade of steel, which was providing the main technology. Currently, Rourkela Steel Plant is the largest producer of cold rolled non-oriented steels in India. More recently, JSW Steel in cooperation with JFE Corp of Japan, was also in talks to develop CRGO steels in India.

Source: The Economic Times

Tata Steel's Kalinganagar unit to focus on import-substitute auto alloys

Tata Steel's greenfield steel complex at Kalinganagar (Odisha) would focus on high-strength automotive alloys that can act as import substitutes. Such alloys used by

the automobile industry are predominantly imported and the Kalinganagar plant would help cut dependence on imports. "The range of automotive alloys produced by our Jamshedpur plant is limited. This is because the hot stripping mill there is old and has its limitations. At Kalinganagar, we can roll out high strength alloys with dimensions of up to 1100 Megapascal", said a company source.

Tata Steel is keen to position its Kalinganagar plant as one of the biggest suppliers of high strength alloys to the automobile industry, especially alloys for car wheels. The steel maker has commissioned the first phase capacity of three million tonnes per annum (mtpa) at Kalinganagar and this is entirely devoted to manufacturing flat steel products that find applications in automobiles and white goods.

The steel company's Jamshedpur unit is already one of the leading suppliers to car makers like Maruti Suzuki and Toyota. Of the total nameplate capacity of 10 mtpa at Jamshedpur, 7 mtpa is for flat steel products and the rest 3 mtpa for long products. Going ahead, the Kalinganagar plant would diversify to customised steel products for oil pipelines business. The plant in the future would cater exclusively to the needs of the domestic market. Presently, the steel plant there is exporting some products as it has some obligations under the Export Promotion Credit Guarantee (EPCG) scheme.

"We are exporting products like Tata Ferroshots to South East Asian nations. This product has been received very well. But, we would be gradually shifting our focus to the domestic markets once our export obligations are over", the official said. In the last financial year, Tata Steel's Kalinganagar plant exported one million tonnes of steel products. Besides Tata Ferroshots, hot rolled coils were also shipped. For domestic markets, Tata Steel is tapping both B2C (business to customer) and B2B (business to business) channels. "Under the B2C channel, the buyer is an individual customer and this category includes products like LPG cylinders.

On the B2B platform, we are supplying to construction equipment companies like L&T, JCB and Komatsu", he said. Presently, Tata Steel is running its Kalinganagar operations at a production rate of 2.7 mtpa. The plant engages around 3,500 people directly and 10,000 others are employed indirectly.

Source: Business Standard

JSW Steel proposes slurry pipeline to transport iron ore, coal

The Board of Directors of JSW Steel Ltd has given an approval to set up a slurry pipeline to transport iron ore from coastal Karnataka to the Vijayanagar works.

The decision was taken as the availability of iron ore at a fair price within Karnataka is of paramount importance for long term sustainability of the company, JSW said in a statement.

This slurry pipeline can be set up within 24 months at an estimated cost of Rs 2,100 crores. This will facilitate transporting iron ore through slurry pipeline at a very competitive 15 percent cost of alternate means of transport.

This strategic project will enable the company to source almost 50 percent of the current requirement of iron ore at Vijayanagar works from outside Karnataka either from imports or from Odisha / eastern sector at prices lower than the prevailing prices in Karnataka.

"The only way to check this arbitrary pricing of

iron ore in Karnataka is to increase the supplies from alternate sources," the company said in a statement.

JSW Steel will work towards establishing the slurry pipeline in a time bound manner. Simultaneously, the company is also exploring the feasibility to set up slurry pipelines for transporting coal from coastal Karnataka to Vijayanagar works.

JSW Steel Limited has been operating its 12 mtpa integrated steel plant at Vijayanagar works in the State of Karnataka. The plant has been set up with substantial investments relying upon consistent supply of iron ore at a fair price.

As the demand for iron ore is far in excess of supply, the mining companies have started charging differential price for the iron ore produced and sold in Karnataka relative to the prices prevailing in Odisha / Chhattisgarh, contrary to the intent of making available legally mined ore at competitive price, JSW said.

For instance, the price of 63 percent grade iron ore loaded into wagon (including royalty) in the state of Odisha is Rs 1,575 per ton. The base price for a similar grade in the state of Karnataka on comparable basis is Rs 3,050 per ton. In addition to this differential price of Rs 1,475 per ton, the Government of Karnataka charges Forest Development Tax / Fees (Currently under litigation) of 12 percent.

"Taking advantage of the scarcity of iron ore in Karnataka and inability of the user industry to source iron ore from outside Karnataka due to prohibitive freight cost, the mining companies are squeezing the iron and steel industry which is already under severe margin pressure," JSW said.

Transportation of iron ore through slurry pipeline is an environmentally friendly initiative and globally this shift towards pipeline transportation is evident. Accordingly, the proposed slurry pipeline not only contribute to alternate sourcing of iron ore from outside Karnataka at competitive price but is also highly environment friendly with no pollution.

The Supreme Court of India, in the backdrop of measures undertaken to curb illegal mining in this region, imposed several restrictions which inter-alia includes a cap of mining 30 mtpa of iron ore per annum within the state of Karnataka. Even after a lapse of over 4 years, the current rate of iron ore production in Karnataka is still around 27 mtpa, far lower than the demand by the user industries, JSW said.

The objective of these restrictions imposed by the Supreme Court is to curb illegal mining, facilitate sale of iron ore in a transparent manner and to make available adequate amount of iron ore to the user industry. The apex court has also given a special dispensation to the state owned mining entities viz. National Mining Development Corporation and Mysore Minerals Limited to produce in excess of their statutorily permitted quantities within the overall ceiling of 30 mtpa. As the demand for iron ore is far in excess of supply, the mining companies have started charging differential price for the iron ore produced and sold in Karnataka relative to the prices prevailing in Odisha / Chhattisgarh, contrary to the intent of making available legally mined ore at competitive price.

Taking advantage of the scarcity of iron ore in Karnataka and inability of the user industry to source iron ore from outside Karnataka due to prohibitive freight cost, the mining companies are squeezing the iron and steel industry which is already under severe margin pressure, the company said.

Transportation of iron ore through Slurry Pipeline is an environmentally friendly initiative and globally this shift towards pipeline transportation is evident. Accordingly, the proposed Slurry Pipeline not only contribute to alternate sourcing of iron ore from outside Karnataka at competitive price but is also highly environment friendly with no pollution.

Source: Steel Insights

NSP, a pathbreaking opportunity for Indian steel industry

It is a matter of great satisfaction that National Steel Policy 2017 prepared by steel ministry has been approved by the government for implementation. The earlier policy drafted in 2005 needed revision in view of the sweeping changes happening in the global and national economy impacting the demand and supply perspectives of the material, pricing and availability of raw inputs, technological breakthroughs in user segments necessitating changes in the technology of steel making and emergence of new high value added steel. The capacity targets envisaged in the document has clearly set out the availability of principal raw materials required for production by 2030-31.

The emergence of new technology in the field of non-conventional energy like solar power, more availability of natural gas for energy as well as for steel making, more beneficiation and use of pellets in the BFs may result in a paradigm shift in the current norm of consumption and change the pattern of coking coal and iron ore demand in the next 5-7 years. This is good news as it would somewhat ease the logistic pressure on movement of raw materials and reduce the cost of production. The long term plans for Railways, Coal India may have to be reworked based on these technological interventions. The capacity augmentation plan in NSP is crucially dependent on how Indian economy shapes up in the next decade to generate adequate demand for steel. From the various development planning schemes being undertaken by the government in areas of rural and urban development, affordable housing, smart cities, defence procurement, Make in India, dedicated freight corridors, metro rail network, Sagarmala and port led growth programmes, it is apparent that apart from requirements for standard grades of steel, there would be enormous scope for high performance low weight steel to influence the buying pattern by these sectors desirous of their end products/structures look innovative, sleek and in tandem with the state-of-the-art technology.

Needless to mention that these changes in the specific buyers' perspectives may be sweeping, thanks to globalisation, policy supports for technology transfer and penchant for value added steel by our architects and structural engineers. The codal provisions in Euro, British or American codes for designs are aggressively pursued by our engineers to cater to the buyers' needs. They need not wait for development of corresponding Indian codes.

For instance, the delayed release of code for cold formed structural (IS-801) for pre-engineered or pre-fabricated structures is a dampener but definitely not a severe constraint for use of these type of structures in the country. The use of cold formed structural as well as hollow and tubular steel reduces the weight of the structures and enhances the inherent properties of the structures in terms of load bearing capacities, corrosion resistance and durability.

It would therefore imply that capacities that are going to be created either via brown field or green field expansions in expectation of the emerging demand need to emphasise the value added component of the steel product profiles that the emerging market would demand. Keeping in view the inordinate delays that characterise our project completion schedules encountering numerous clearances in land, environment, raw material securities and availability of capital related issues, the envisaged demand in grades, sizes and profiles in the DPR are found to be falling short of the emerging market needs at the time of commercial commencement of the projects resulting in the project continuing to suffer from lower realisation and inability to repay the debts incurred for installing capacities and creation of other commensurate plant facilities. The thrust on R&D by the steel producers that has a special mention in the NSP would only enable

them to meet the emerging demand for value added steel by reorienting the product mix.

The NSP projects the finished steel demand to grow from the current level of 83.6 MT to 230 MT by 2030-31 at a CAGR of 7.5% per annum. This is against the CAGR of 6.4% per annum growth envisaged for crude steel capacity expansion in the country. The incorporation of the concept of value added steel is likely to have a bearing on the steel intensity of GDP in the coming years and may lead to bringing down both steel demand and supply projections in terms of volume. This, however, excludes the impact analysis of Industry 4.0 that speaks of robotics, artificial intelligence and increasing digitisation requiring new skills, revised manpower and job contents, innovative production and marketing strategies. It would be a much better implementation strategy of NSP if suitable proactive steps in each of the vital areas start getting activated.

Source: Metaljunction

Steel ministry to focus on R&D for value-added steel

The Centre aims to focus on intensifying research and development efforts for production of value-added and special steels, including auto grade steel, cold-rolled grain-oriented steel (CRGO), cold-rolled non-oriented (CRNO) by 2019-20, said Minister of Steel Chaudhary Birender Singh during the National Steel Consumer's Council meeting, organised by the steel ministry in Bhubaneswar. "This would make India self-reliant in sectors like automobiles and defence for which we currently have to depend on imports. When we can substitute our entire requirements for any kind and quality of steel being used in our industries it will truly translate into Make in Steel for Make in India," Singh said.

Singh also elaborated on giving preference to domestically manufactured iron and steel products which will cause increase in the consumption of domestic steel and help the Indian steel-makers. Further, the Union minister said, "to enhance steel consumption, the steel ministry has identified construction and manufacturing sectors like rural development, urban infrastructure, roads and highways, railways to be the key focus areas." The minister added that India being one of the fastest growing economies in the world, and steel finding its extensive application in areas like construction, infrastructure, power, aerospace, industrial machinery and consumer products, the sector is of strategic importance to the country.

He mentioned that owing to the significance of the sector and dynamic scenario in the steel sector, the government came up with the National Steel Policy (NSP), 2017. With the roll-out of the New Steel Policy, it is envisaged that the industry will be steered with appropriate policy support in creating an environment for promoting domestic steel and thereby ensuring that production meets the anticipated pace of growth in demand. On the National Steel Policy (NSP), Singh said, "the NSP would focus on ensuring raw material security, import substitution, enhancing steel consumption, R&D of value-added steel, increasing energy efficiency and sustainability, establishing India as a cost-effective and quality steel destination, and reducing the carbon footprint of the industry. "At present, the Indian steel sector has evolved as the third-largest steel producer in world and is poised to become the second-largest producer, putting Indian steel prominently on the map of the global industry," the minister added. Singh also mentioned about early formalisation of the Arcelor Mittal and SAIL joint venture. He also indicated reasonableness of raw material price of iron ore and coal.

Centre halves import duty on select steel grades

The government has halved the import duty on certain grades of steel to 5 percent with a view to cutting the costs of raw material for the domestic industry. The Central Board of Excise and Customs (CBEC), in a notification, said customs duty on import of "hot rolled coils, cold-rolled magnesium oxide (MgO) coated and annealed steel, hot rolled annealed and pickled coils and cold rolled full hard (used) for

the manufacture of cold rolled grain oriented steel (CRGO) steel" has been cut to 5 percent with immediate effect.

CRGO are electrical steel grades used for stampings and cores of electrical transformers and other electrical appliances. They are principally used for motors, generators, alternators, ballasts, small transformers and a variety of other electromagnetic applications. While India imposes anti-dumping duties on several flat steel products, it is short in CRGO steel and has to import it. Last month, the government imposed definitive anti-dumping duties on hot-rolled (HR) and cold-rolled (CR) flat-steel products (excluding certain value-added steels such as stainless steel) from several countries, including China, Japan and South Korea. Flat products constitute the bulk of Indian steel imports over the last few years. Finished steel demand growth in India was relatively weak at 3 percent in 2016-17.

Source: Steel Insights

Steel companies stay away from coal block auctions

The fifth round of coal block auctions that was set to start shortly is in doldrums, having received tepid interest from steel makers. Bad financial position of most steel companies is being seen as the reason behind the lukewarm response. Some of the coal blocks offered have not received even the minimum number of three bids required for reverse e-auction, sources said. A senior coal ministry official said the fifth tranche of mine auctions was carried at the steel ministry's insistence. The coal ministry had last year annulled the fourth round of coal mine auctions due to lack of adequate number of bidders. The coal ministry had in April this year offered six blocks — five in Jharkhand and one in Madhya Pradesh — for production of iron and steel. The blocks include Rohne OCP with estimated reserves of 8 million tons and Rabodih with 2.5 million tons of coal. Sources said in all 4-5 firms including JSW Steel and Tata Steel have evinced interest in the fifth round of coal auctions. Interest is discouraging even for lucrative mines like Rohne, Rabodih and Urtan North coal block in Madhya Pradesh.

The Central Bureau of Investigation has filed a charge sheet against Naveen Jindal-led Jindal Steel & Power Ltd, alleging cheating and criminal conspiracy by misrepresenting facts for securing the Urtan North mine in the earlier screening committee route of allocations. Steel companies dominate the list of 12 most stressed loan cases being pursued under the insolvency and bankruptcy code. The list includes five steel companies, including Essar Steel, Bhushan Steel, Bhushan Power & Steel, Monnet Ispat and Electrosteel Steels. Most of these five companies have been referred by the lenders to the National Company Law Tribunal. JSPL, a prominent player with most number of captive coal blocks before the Supreme Court de-allocated 204 mine leases, did not bid for coal blocks in the fifth auction tranche. The last date for technical bid submission for the latest round of auctions was May 22. The coal ministry is examining the technical bids and is expected to take a final call in a few days.

Source: Metaljunction

Stressed assets of steel sector and their recovery

One of the major irritants in the growth journey of Indian steel industry seeking an augmentation of steel capacity to cater to the emerging demand from various end using sectors has been the poor record of repayment of loans taken from the banks and other financial institutions. Out of the total loans to the industry, the steel sector has a share of 10.24% (Rs 3.1 lakh crore). It is reported that the stressed assets of steel sector out of the gross NPAs comprise around 29.38% and stands at Rs 1.5 lakh crore. In China the financial liabilities of the banks and financial institutions to the steel sector consisting of SOEs and SMEs are also enormous. In fact many of the provincial governments in China have already converted a part of the loans into equity of the enterprises which are mostly SOEs.

The financial liabilities of SMEs are a major worry as a large number of them are served notices for violation of environment norms and therefore need to be closed their operations. Under the current subdued market conditions and the continuing economic restructuring that is taking place in China, the demand for conventional standard grades of steel is on the wane and the suppliers of these grades of steel from induction furnaces and other SMEs that are environment polluting would be facing a huge problem of survival.

After a series of financial restructuring schemes such as 5/25 schemes, strategic debt restructuring schemes, conversion of loans by the lender groups into equity, the issue of stressed assets and NPAs became the sole indicator of the banks' ability to extend loans to steel sector in the country not only for capacity expansion but even for meeting the working capital requirements and participation costs in the bidding process of acquiring fresh mines of coking coal and iron ore.

Apart from forming an oversight committee on bad loans, RBI has now come out with a list of 12 major defaulters in steel, infrastructure, auto component sectors to take appropriate steps. Already the four major creditors in the steel sector, namely, two Bhusan groups, Electrosteels, Essar steel with a combined debts of Rs 1.29 lakh crore have been referred for insolvency proceedings under the Insolvency and Bankruptcy Code to National Committee for Law Tribunal by SBI, the lead lender for three cases and PNB for one (Bhusan Steel and Power).

As per the norm, if three-fourths of the lenders are convinced of a revival plan, the deadline of six months can be extended by another three months, else an automatic process of liquidation would commence. Indian steel industry had passed through an agonising period in FY15 and FY16 when the government lent a helping hand to the ailing industry suffering maximum losses including fall in profitability and drop in market share from cheap and dumped imports from China, Korea, Japan and Russia by imposing MIP, Safeguard and AD duties.

Fortunately, the global finished steel prices also improved on the back of a surge in coking coal and iron ore prices in the following years. The profitability indices improved for steel sector in FY17 and are continuing. It should provide some relief for the other beleaguered steel producers. Essar steel has ramped up its steel production from 3.8MT to 5.6MT in FY17, a 47% growth over last year against a capacity of 10MT. It has been able to create a niche market for special grade Plates in the defence sector and increasing supplies of high grade CR for the auto sector.

Its Pellet plant is enhancing the production and the supplies of natural gas to the plant are slowly getting restored. It had proposed fresh equity provision of around Rs 2,500 crore along with conversion of a part of bank loans to equity to reduce promoters' stake. A lot depends on convincing the lenders of a sound and robust revival plan. Like in other countries, the latest development may rekindle the consolidation and merger process in Indian steel sector, including the infusion of foreign capital.

Earlier, we had witnessed the mega ticket investment plans of Arcelor Mittal and POSCO not materialised due to land acquisition and raw material sourcing issues. The market potential for Indian steel industry is indeed bright with gradual increase in global prices and therefore the loan restructuring process by the banks would unleash abundant opportunities for the investors, both in the country and abroad.

Source: Metaljunction

Stainless steel meets the exacting demands of aerospace industry

The aviation industry of today demands the most innovative and high-quality metals and alloys. Whether carrying commercial passengers, cargo, aerospace products must adhere to the highest standards or performance and quality under hostile conditions. Alloys used

in aerospace applications must withstand exposure to extreme temperatures and meet high mechanical demands. Type 321 stainless steel, an austenitic alloy, is stabilized with titanium, making it resistant to intergranular attack caused by chromium carbide precipitation. When exposed to temperatures in the chromium carbide precipitation range (800 to 1500oF), type 321 stainless steel maintains its stability.

Additional 321 stainless steel properties include enhanced creep and stress rupture resistance and excellent machinability. Type 321 stainless steel will not lose its structural integrity from the high temperatures and extreme conditions that are standard for aerospace engines, nor will durability be compromised as a result of corrosion. Comparable to Alloy 304, this stainless steel grade is not subject to intergranular attack or thermal fatigue. Thus, type 321 stainless steels, as a result, is an ideal material of construction for aerospace components, such as piston engine exhaust manifolds, jet engine parts, exhaust ducts and flanges. Materials for aerospace applications are required to maintain the integrity of the structure (i.e. to be sufficiently robust to withstand their service environment) and to be inert (i.e. corrosion resistant). Stainless steels are used in aerospace applications because they are resistant to corrosion and high temperature oxidation and maintain their mechanical properties in varying temperature ranges.

In aerospace applications materials for each application are selected on the basis of their resistance to corrosion or high temperature oxidation and mechanical properties in a specific service environment. The following examples may serve to indicate the considerations made in selecting a suitable grade of stainless steel for aerospace applications.

High strength stainless steels and age-hard enable super alloys are rapidly gaining favour with designers in the aerospace, military and other industries who are challenged to meet higher performance expectations and stringent regulatory requirements at lowest life cycle cost.

These specialty alloys are largely upgrades of conventional stainless steels and high strength alloy steels that are no longer able to meet the more demanding requirements of critical applications that keep growing in number and variety.

Resistance to corrosion is of paramount concern since the costs of corrosion, with its material degradation, continue to escalate more than most realize.

Conventional stainless steels can provide the corrosion resistance needed for many demanding applications, but increasingly they lack the combination of high strength, toughness, and damage tolerance. Standard high-strength low-alloy steels (HSLA) may offer the high strength needed for some difficult applications but lack the corrosion resistance.

Efforts to improve the corrosion resistance of high strength alloy steels with cadmium plating or other means of surface protection seems to be losing its preference. This may be due to the growing, widespread objections to cadmium plating for environmental reasons, and the high costs of plating bath disposal. Furthermore, many recognize that surface treatment is not a viable, long-term solution to providing corrosion resistance nor achieving lowest possible life cycle costs.

Source: MMR

India to overtake Japan in steel production in 2 years: Tata Steel official

India would overtake the world's second largest steel producer Japan in the next couple of years and the country has targeted to produce 300 million ton of steel by 2025-30, a senior Tata Steel official said here today. India is currently producing 90 to 95 million ton of steel per annum against the world no.2 steel producer Japan, which produces around 103 million ton, said Dr T Venugopalan, Technical Advisor to

Tata Steel Managing Director.

"India is all set to overtake Japan in next couple of years... The country has (also) targeted to produce 300 million tons of steel by 2025-30," he said. Venugopalan was addressing participants at the Grand Finale of Mind Over Matter, an annual innovation challenge programme of the private steel major. Stating that the steel sector has started improving, he said the sector contribute to one to 1.5 per cent in the country's GDP.

Venugopalan, however, said good quality coal was drying out in the country and some process was needed to improve low quality coal. On iron-ore deposits in the country, he said it would last for 30 to 35 years, if it is used in the country. Earlier, Tata Steel announced the season-4 winners of Mind over Matter. The six-month-long programme culminated in the grand finale held today, where five teams presented their innovative ideas before the jury.

Source: Metaljunction

Limited PSU role in steel revival

State-run steel majors such as SAIL or RINL could lend expert teams or take on management contracts to run sick entities such as Bhushan and Essar Steel that are set to be taken over by banks under new RBI recovery norms. "We can consider lending expert teams to run steel firms taken over by banks or some other way to run them ... but SAIL and RINL have too much on their plates, they cannot take over sick steel units," steel minister Chaudhary Birender Singh said in an interview to The Telegraph. The RBI has already identified 12 extremely stressed assets which banks are trying to take over and these include Essar Steel, Electrosteel, Bhushan Steel and Monnet Ispat. Essar had tried to stall the move, but without success.

Banks and the finance ministry had earlier wanted SAIL and other steel sector PSUs to take over the stressed assets. However, SAIL declined to play ball, and the steel ministry supported the decision as this could deplete the PSU's major's cash reserves at a time it was just turning the corner - from making cash losses to cash profits. "At a time when we are telling PSUs that they are not holy cows and they have to improve their performance to stave off privatisation, we can hardly saddle them with sick private players," Singh said.

Officials said these PSUs could be asked to run "sick" steel firms taken over by banks "on behalf of the banks".

Debt mountain

The 12 companies identified by the RBI for immediate action have a total unpaid debt of Rs 2.22 lakh crore. Steel companies accounted for Rs 1.06 lakh crore of the loans, with Bhushan Steel leading the list with an unpaid debt of Rs 44,885 crore, followed by Essar with a bill of Rs 37,284 crore. Monnet Ispat has a bad debt problem of Rs 12,919 crore and Electrosteel Steels, another 11,304 crore. "Due to a combination of factors, including the international market conditions, some Rs 3.1 lakh crore of stressed assets with banks are in the steel sector, that is 28 per cent of all stressed assets with banks. "However, we have been reviewing the measures which bankers and steel firms have undertaken to reduce this and we feel the scenario is improving despite the fact that 3-4 large firms are right now in the focus for insolvency," said Singh.

"One positive factor is that 57 per cent of our steel production is in the secondary steel sector and this sector is more or less safe from the malaise with a very low rate of bad loans," the minister added. The minister, who had recently been to Canada to scout for coking coal, said the sudden fluctuations of global prices and India's over-reliance on one or two suppliers were "holding the country hostage". "One morning the price of coking coal is $70 a ton and next it's $300 a ton, we need other sources," said Singh. Prices had shot up following the disruption of supplies from Australian mines, hit by cyclone Debbie in April.

Source: Metaljunction

Bhilai Steel Plant, a symbol of modern India, is running out of iron ore

For the last 50 years, Bhilai Steel Plant, which is India's largest integrated steel plant, has got its supply of iron ore from Dalli Rajhara's mines. Dalli Rajhara, a municipality that is also an industrial city, is located 90 km south of Durg in Chhattisgarh. It is a part of the Rajhara group of mines. Iron ore mined in this area is of two types—hematite and magnetite. Other mines in the neighbourhood contain varieties such as dolomite, lime, and other raw materials that are integral for the production of steel. I doubt if the residents of the area would've even dreamed that it would've come to this. A long time ago, this town had an immense amount of natural resources and deep, dense forests but things have changed in the last 50 years.

Industrialisation and urbanisation have led to the entire area being surrounded by iron ore dust instead of lush green forests. This has resulted in water shortage for neighbouring villages. Wells numbering in the hundreds have disappeared, therefore lowering the water table in the area, and common bird species like the sparrow, crow, and parrot have drastically decreased.

Realising the impact of mining activities, the Chhattisgarh government decided to tap into a neighbouring mine in Rowghat to increase supply. A railway line is now being extended, but this has its own issues of pollution and emission of air contaminants. In 2001, an independent assessment of World Bank-sponsored mining projects in India concluded that 'people living close to the mines have suffered most and benefited the least'. Acute respiratory illness and malaria were common among people living close to mines such as the Dalli Rajhara. Mining has far-reaching effects not only on climate change and natural resources but also on society. Going forward, industrial planning and development strategies must factor in all these aspects to ensure the longevity of our resources.

Source: Metaljunction

Panel set up to revive SAIL: Minister of State for Steel

India has set up a panel to turn around loss-making Steel Authority of India Ltd (SAIL) and help the state-owned company increase production, Minister of State for Steel Vishnu Deo Sai said in the lower house of Parliament a few days back. Reuters reported in March that an expert panel was set up to revive SAIL after a government review found the company to be far less efficient than its rivals despite spending more than Rs 6.44 lakh crore in the past eight years. "The terms of reference of the committee include chalking out a plan with focus on increasing production, sales and improving financial health of SAIL," the minister told lawmakers in a written reply, adding that the panel would also look at specific measures to improve SAIL's units. Due to steps taken by the government in 2016-17, SAIL could increase its domestic sales by 4 per cent to 12.4 million tonnes in 2016/17, the minister said.

Source: Metaljunction

Steelmakers are worth the most in nearly 6 years

Steel stocks are trading at the highest since 2011 and it's mostly thanks the industry's biggest menace in recent years: China. Demand in China, which produces half the world's steel, has been surprisingly strong this year and the country closed some plants to ease a glut that had spread across the globe. That's led to a steep drop in exports, helping steel prices extend a recovery and pushing a Bloomberg gauge of global steel stocks up 45 percent in the past year. That's triple the advance in the Bloomberg World Mining Index. China has been blamed by politicians including US President Donald Trump and top producers in recent years for causing a price rout and forcing European and American plants out of business. That's prompted nations from the U.S. to Ukraine to now have more than

100 trade restrictions on imports from China to protect their own industries from cheap steel.

At the same time, more Chinese infrastructure spending has boosted local demand, just as the government shuttered millions of tons of overcapacity. Those factors helped China's exports plunge 28 percent in the first half. It's been over a year and a half since Chinese steelmaking fundamentals bottomed, but they still seem to be surprising to the upside," said Lee McMillan, an analyst at Clarksons Platou Securities in New York. "Robust steelmaking margins have encouraged ever-higher levels of production, yet pricing has remained robust -- albeit volatile -- thanks to very strong Chinese steel demand." The Bloomberg gauge of 41 global steel producers reached the highest since August 2011. Less supply coming out of China has helped prices in Europe and the U.S. jump about 75 percent in the past 18 months. The rebound has also been driven by resilient demand, and top producer ArcelorMittal expects U.S. consumption to grow as much as 4 percent this year. European industry association Eurofer this month raised its forecast for demand growth in the region to 1.9 percent.

There are also hopes that the U.S. Commerce Department's Section 232 probe into steel imports may prompt other nations to further restrict shipments from China. While only a small amount of American imports come directly from the country, the U.S. probably still ends up buying Chinese steel that has flowed via other places, such as Southeast Asia. "If that pressure flows upstream, it will lead to less appetite for Chinese exports, which will put pressure on China to close more capacity," said Seth Rosenfeld, an analyst at Jefferies International. "That's the dream scenario. The smarter management teams are saying, let's use this threat of 232 as a global rallying call to isolate Chinese steel."

Source: Metaljunction

Tata Steel mulling new downstream steel unit at Gopalpur

Tata Steel is in talks with a Russia-based firm to put up a facility for downstream steel products at its Gopalpur Industrial Park in Odisha. The steel company is the anchor tenant for the park spreading over 2,900 acres of land, where around 1,235 acres of land has been notified as a Special Economic Zone (SEZ). "Discussions are on with a Russia based company for a steel downstream plant. We have exchanged data. We are inviting investments in priority sectors identified by the Odisha government", said Arun Misra, managing director, Tata Steel SEZ Ltd and vice president, Project Gopalpur.

In its capacity as the anchor tenant, Tata Steel has invested around Rs 500 crore on a ferro-chrome plant with an annual production rate of 55,000 tonnes. The park has 12 investment intents in the pipeline- a mix of overseas and domestic proposals across sectors like steel downstream, auto components manufacturing, logistics, metals and wellness products. The steel maker is negotiating with an auto components manufacturer for a possible assembly line at Gopalpur. "The company that we are talking to has a universal platform for battery driven cars. They have shown interest. But, the talks are still very preliminary", said Misra.

Efforts are on to tap investments in the services space which in the long run has greater employment potential than the manufacturing sector. An overseas investor has evinced interest to set up an ecosystem for tourism. This envisages grooming multi-skilled hospitality professionals at an institute. Skill development would be at the core of investment strategy. In the pharmaceutical sector, there is a proposal for the development of wellness products. Tata Steel also has a proposal in logistics sector, where the developer intends to import material, repackage it and redistribute the cargo.

The fate of this string of investment proposals is still mired in uncertainty due to labour protests

at Tata Steel's Gopalpur plant. Agitating locals, demanding jobs and compensation, have forcibly shut down the operations of Tata Steel's ferro-chrome plant since May 20 this year. The steel company is pinning hopes on the local administration to resolve the deadlock. "We cannot provide jobs to all the affected people unless the investors come. We are already conducting a rehabilitation and resettlement exercise worth Rs 360 crore. At the end of the day, we are a listed company and we are responsible to our shareholders", said Misra.

The company said it has expanded the list of claimants seeking compensation from 946 to 1,800. While the original claimants were disbursed a compensation package of Rs 7 lakh per acre, the additional claimants are being paid at the rate of Rs 5 lakh per acre. Undeterred by the stir, Tata Steel is going ahead with its marketing and promotional activities for the SEZ. It is setting its eyes on the mega industrial expo at Xiamen (China) that is likely to take place in September or October this year. In the first phase, Tata Steel is aiming to firm up investments for 500 acres of land. "If there is peace on the ground, I can start work on infrastructure at the site", said Mishra.

Source: Business Standard

Tata Steel crude steel production up 16% in Q1

Production of crude steel at Tata Steel's Jamshedpur and Kalinganagar plants rose by over 16 percent to 2.94 million tons (mt) in the first quarter of the current fiscal. The company's two major plants had produced 2.52 million tons of crude steel in the year-ago quarter, Tata Steel said in a statement. The plants have produced 2.95 mt of saleable steel in April-June quarter as compared to 2.34 mt in the corresponding quarter of the last fiscal. The figures for the first quarter of 2017-18 fiscal are provisional. Tata Steel Group is among the top global steel companies with an annual crude capacity of 27.5 mtpa as on March 31, 2017. It is the world's second-most geographically-diversified steel producer, with operations in 26 countries and a commercial presence in over 50 countries.

Jamshedpur

The company's Blast Furnace achieved best-ever hot metal production of 2.73 million tons in Q1 FY18 (Previous best 2.67 million tons in Q1 FY17) (q-o-q). Blast furnaces achieved best-ever lowest coke rate of 348 Kg/thm in Q1 FY18 (Previous best 359 Kg/thm in Q1 FY17) & best-ever highest coal rate of 189 Kg/thm in Q1 FY18 (Previous best 181 Kg/thm in Q1 FY17) (q-o-q). Tata Steel's pellet plant achieved best-ever 1.70 million tons of production in Q1 FY18 (Previous best 1.67 million tons in Q1 FY17) (q-o-q).

LD#1 achieved best-ever 0.86 million tons of production in Q1 FY18 (Previous best 0.85 million tons in Q4 FY17), while merchant mill achieved best-ever 0.121 million tons of production in Q1 FY18 (Previous best 0.118 million tons in Q4 FY17). Tata Steel Kalinganagar achieved successful ramp-up of Pulverised Coal Injection system for Blast Furnace.

Sales Highlights

The company's sales in Q1 FY18 registered a volume growth of 28 percent over same period of last year (largely due to Kalinganagar ramp-up). In Automotive segment, hi-end products sales volume grew by 16 percent (y-o-y), while in Q1 FY18 exports volume grew 17 times over Q1 FY17. The company launched a first-of-its-kind retail outlet "Tata Steel Sampoorna', wherein all the retail brands will be available to serve rural consumers. The company also witnessed a growth of 46 percent in sales volume (y-o-y) (primarily in hot rolled products) in small and medium enterprises segment.

Tata Steel to support TCFD recommendations on climate change

Tata Steel has extended its support to the recommendations of the global task force on climate-related financial disclosures. The task force, established by the Financial Stability Board (FSB) in 2015, has recommended a framework to help businesses and investors

evaluate potential risks and opportunities of a transition to a lower carbon economy.

The recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) are also aimed at bringing future nature of issues into the present through scenario planning which will in turn ensure tighter investors engagement and meet stakeholder' expectations. "T V Narendran MD Tata Steel India & SEA (South East Asian Operations) joined over 100 other business leaders and companies to publicly commit their support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)," Tata Steel said in a statement. The TCFD released its final report recommendations of the task force on climate-related financial disclosures and supporting materials – on June 29, 2017.

Tata Steel Group as an institution is committed to supporting the TCFD's voluntary recommendations as these disclosures are an important step forward in enabling market forces to drive efficient allocation of capital and support a smooth transition to a low-carbon economy, the statement said. "As a growing number of investors demand more information around how companies are addressing the effects of climate change, it is imperative to recognise the importance of disclosing climate-related risks and opportunities," said.

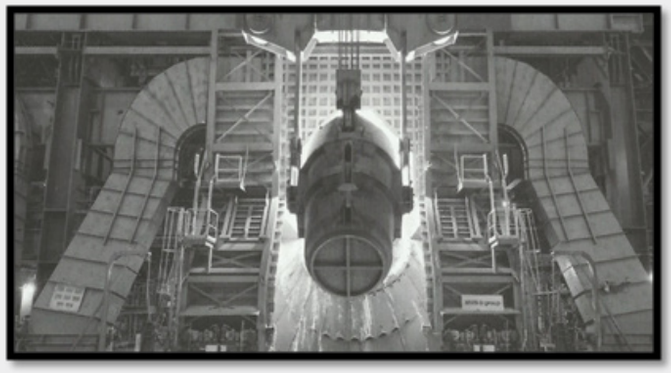
Adopting the TCFD recommendations is an important step forward in enabling market forces to drive efficient allocation of capital and support a smooth transition to a low-carbon economy, it added. Koushik Chatterjee, Group Executive Director (Finance, Corporate & Europe), Tata Steel and Member of TCFD said, "Developing a sustainable strategy has become the core purpose of companies across the world as they get future ready to embrace disruption in technology, supply chain and business models. One of the princippal foundations of a sustainable strategy is recognition of climate change related risks and opportunities."

It is incumbent to evaluate the risks and opportunities of climate change to enable us to think, plan and act on specific goals to future proof our businesses. "Tangible actions like reducing our carbon footprints and water intake, switching to renewables to the extent possible, and embracing circular economy will all help in tackling this universal challenge of climate change," Chatterjee said. He said it is important to have a climate change related framework that brings environment, social and governance to the front and centre of the Board agenda and mainstream corporate reporting. The statement said the task force's recommendations are structured around four thematic areas that represent core elements of how companies operate: governance, strategy, risk management and metrics and targets.

Source: Steel Insights

JSW Steel outlines capex program to expand capacity

JSW Steel has outlined capex program of Rs 26,800 crores to expand overall steelmaking capacity to 23 mtpa by March 2020 and increase downstream flat steel capacity to 7 mtpa by September 2019, along with a few other strategic projects, JSW Steel Chairman and Managing Director Sajjan Jindal told shareholders at the company's annual general meeting.



"These key projects will be set-up at a very competitive capital cost and will improve our return ratios further," Jindal said.

"We are also working to operationalize all the 5 iron ore mines, which we won in Karnataka in October 2016. We aim, with these mines, to

meet approximately 20 percent of the total iron ore requirement at Vijayanagar. We are also striving to commence mining at the Moitra coking coal mine which we bagged in auction in the State of Jharkhand at the earliest, while we continue to bid for more mines, both iron ore and coal," the top official said.

"We are also working towards operationalizing our US coal mines in the current year. Moreover, with better prospects for infrastructure spending in the US, and hence demand for key end markets for plates and pipes, we expect a turnaround at our US Plate & Pipe Mill facility in the current year," Jindal said.

The company is investing in people and sustainable practices to remain among the world's best run steel companies. "To make ourselves future proof, we have recently embarked on a digitalization journey, to do a full digital makeover plan and improve efficiency in the manufacturing processes and reduce costs.

All these projects have been outlined to achieve backward and forward integration, capacity expansion and cost reduction. We remain committed to maintain our net debt to EBITDA of 3.75x and net debt to equity of 1.75x while these capex programs are executed over the next three years," he said.

"We are looking to deliver a 4 percent growth in crude steel production volume to 16.5 million tons and 5 percent growth in sales volume to 15.5 million tons in FY 2017-18. We will continue to focus on increasing the share of the value-added products basket in our overall top line. We will continue to scout for organic and inorganic growth opportunities to expand its footprint," he said.

Indian steel industry's prospects

JSW expects Indian steel industry to grow at 5-6 percent over the medium term. The current fiscal's budgetary allocation of Rs 4 trillion by the government for infrastructure, water and gas pipelines, renewable energy and road sector should fuel enhanced economic activity, and as a result, steel demand. Together with this, a normal monsoon in the current year also augurs well for the economy.

"The implementation and roll-out of GST in India is a transformative reform – which will simplify and rationalize the current tax regime, enhance efficiencies and boost competitiveness, and put the Indian economy on a high growth trajectory over the medium term. This will be supportive for higher demand for steel," he said.

"India with its stable government, strong reforms, rising infrastructure spend and robust consumption demand will provide a platform to reach per capita steel consumption of 160 kg and total steel capacity of 300 million tons by 2030 as envisaged by the National Steel Policy 2017," Jindal said.

"With a strategic intent to retain our current market share of about 15 percent (on a 130 mt capacity base), we will continue to evaluate organic (through brownfield and greenfield expansions) as well as inorganic growth opportunities going ahead," Jindal said.

The Government has already put in place a transparent mechanism for allocation of mineral resources through auction. Also trade remedial measures taken by the Government of India will provide level playing field to this strategic industry to revive investment cycle and create employment opportunities, he said.

An all-time high performance

In FY 2016-17, the company has achieved highest ever production, sales, consolidated EBITDA and profit after tax. "We have delivered a 14.8 percent Return on Capital Employed (ROCE), which is amongst the top 5 steel companies globally. Our performance has also helped us strengthen our balance sheet with significant improvement in our key gearing ratios," he added.

JSW Steel is also evaluating stressed steel assets for acquisitions and has secured shareholders' approval to create a US$ 1 billion war chest for the same, Jindal said.

"We will look at all those assets which are stressed from an opportunity point of view and as long as they are value-accretive to shareholders," Jindal told reporters on the sidelines of the company's annual general meeting.

Jindal said the company received shareholders' approval for an enabling resolution to raise $1 billion in foreign currency convertible bonds or through ADR/GDR.

Source: Steel Insights

Steel

The sector remains buoyant on pick up in local demand, restrictions on Chinese imports

Global steel prices remained subdued during the month of June rising marginally by 1.1% MoM to US$440/tn largely due to China's construction sector showing resilient trends. The activity in the country's property markets remained steady but is expected to ease. However, that is offset by robust demand from the infrastructure sector, with projects initiated last year by local and central governments being executed now.

While looking at domestic steel prices, the buoyant domestic steel demand and restrictions on steel imports from China has opened up new opportunities for Indian steel companies. Besides, government's increased spending in social and infrastructure projects also pulled up the steel sector faster than expected.

The prices of iron ore, the steelmaking raw material, surged by more than 10% after hitting one year lows during June 2017 as the high margins after China's effort to eliminate low-grade steel are enticing mills to produce more steel, which increases the need for iron ore. Market analyst expect iron ore prices to remain stable over the next three months, helped by continuing strong demand for steel from China's property and infrastructure sectors. The coking coal prices in post cyclone, as expected, remained range-bound and grew by 0.2% to US$150/tonne and not expecting significant change in coking coal prices at least till H1FY18.

Global steel overcapacity will continue to be a hot topic at the ensuing G20 leaders meeting in Germany as President Donald Trump is waiting to place tariffs on foreign steel companies. Towards the last week of June 2017, Trump launched an investigation into the matter in a move that diplomats and trade experts say risks undermining the global rule-based trading system and sparking retaliatory action around the world in products beyond steel.

The US Department of Commerce's Section 232 steel and stainless steel investigation appears to be under the watchful eye of European leaders. In that manner, newly released Chinese data has not gone unnoticed. The Trump administration's concerns focus mainly on Chinese overcapacity and market distortions. Europe claims to share these concerns and is currently evaluating the possible effect that the Section 232 investigation will have. Due to the previous anti-dumping measures imposed on the steel industry, China will not suffer the imposed steel tariffs by the Trump administration under the Section 232 investigation – but Europe will because its product exports to the US will also be harmed.

China's crackdown on low-end steel production has been in focus during the month of June and as a result mills were forced to shut induction furnaces that produce rebars used for construction purpose. As a result, investors bet on tighter supplies from government – enforced cutbacks, offsetting concerns about slow demand and rising inventories in the world's top steelmaker. At the same time, activity in China's steel industry data showed, with a rise in new orders giving mills in the world's top producer incentive to further ramp up output. However, risks in the market are growing as prices hit historic highs, the China Federation of logistics & Purchasing (CFLP) said.

On the domestic steel market front, the government has set a target of achieving capacity of 300 mt by 2030. The Union Steel Minister Chaudhary Birender Singh said that Steel PSU's companies need to be more competitive by increasing efficiency and quality of steel. He has instructed the PSUs to produce quality steel products which are in demand for exports. The government has welcomed foreign investors with modern technology to set up steel plants in India SAIL and ArcelorMittal have already inked a pact to set up a Rs 5,000-crores auto-grade steel plant.

Looking at domestic steel production, India produced 16.391 million tonne (MT) of crude steel in the first two months of the current fiscal, up 4.5 percent year-on-year. It had produced 15.683 MT in the same period of last fiscal. Output in May was 8.163 MT, up 2.2%, from 7.989 MT a year ago, as per the latest Joint Plant Committee (JPC) report. However, on month-on-month SAIL, RINL, TSL, Essar, JSWL and JSPL together produced 9.292 MT during April-May 2017 with an 8 percent growth over same period of last year. India has been doing good in terms of exports and maintained the momentum during the second consecutive month of the ongoing fiscal. The firms like SAIL and Tata Steel are expected to drive the steel output growth, according to the report by BMI Research, a Fitch group company.

So overall, the government has been boosting steel production capacity, with upgrades being made to existing steel mills and state-owned companies stepping in to build new steel plants. India will be the bright spot for global steel production growth as demand from the construction, automotive and infrastructure industries continues to accelerate.

Under the existing support mechanisms of the domestic steel industry, the Centre provides a minimum value addition of 15 percent on the notified steel products to boost domestic steel consumption. The government has also continued with anti-dumping provisions to check import of cheaper Chinese steel. The ministry of steel is closely monitoring the price movement in the domestic market. The government may re-evaluate its support to domestic steel manufacturers if they do not price products 'responsibly. Syedain Abbasi, Joint Secretary at Ministry of Steel clarified that the government is willing to give protection to the steel industry if it prices its products responsibly. He cautioned the industry to be responsible, otherwise charges of cartelisation will be very difficult to fend off as prices start rising dramatically. Abbasi said double taxation has largely been phased out under the Goods and Services Tax (GST) regime and it will be marginally beneficial for the steel sector as the duty on raw material will be lowered by 1 to 1.5 percent.

Source: MMR

Iron Ore Exports to Cease by March 2019

Exports of iron ore will be halted by the end of the next fiscal year (March 20, 2019), a deputy minister of industries, mining and trade announced.

"Considering the incomplete steel production chain in Iran, currently only about 67% of the country's iron ore production is used to manufacture steel. We expect to end iron ore exports by the end of next year by establishing and finalizing concentrate, pellet and direct-reduction plants," Mehdi Karbasian, who is also the president of state-owned Iranian Mines and Mining Industries Development and Renovation Organization–Iran's largest holding in the mining sector, was also quoted as saying by Mehr News Agency. He noted that iron ore exports can be permissible if they lead to further investment in mines and imports of processing machinery, pointing to Chadormalu and Golgohar mines as notable examples of ore exporters who turned into concentrate, pellet and steel ingot producers.

However, most of Iran's iron ore deposits are low-content hematite reserves that require an advanced and costly beneficiation process before they are suitable for steelmaking. Hence, it makes more sense for the smaller, cash-strapped miners to ship their products abroad. "This type of iron ore (hematite) is predominantly exported due to limitations and underdevelopment of steel production chain," the official said. Karbasian's remarks come at a time when rising global steel and iron ore prices have buoyed Iranian products, creating the optimal condition for a boost in exports. Foreign quotes for Iranian iron ore in China more than doubled last month. Hematite fines with 55-56% content rose 105% to $25 FOB during June 20-July 20. China's Port Tianjin inventories of 62% Iranian hematite fines and 61% magnetite are depleting, bringing prices to $66-68 WMT.

With improved prospects for exports, the announced deadline might fail to put a stop to exports. The same scenario unfolded last year, as Karbasian pointed to March 2017 as the ministry's target for halting mineral ore exports.

According to the Islamic Republic of Iran Customs Administration's data, Iran exported 20.19 million tons of more than 40% content granulated hematite ore valued at $791.76 million in the last fiscal year (March 2016-17). Iran seeks to become the world's sixth largest steelmaker by the end of 2025. The country will require a steady feedstock of iron ore to reach the envisioned 55-million-ton annual output capacity target. According to studies conducted by Foolad Technic International Engineering Company, Iran will require 168 million tons of iron ore, 86 million tons of concentrate, 87 million tons of pellet and 57 million tons of DRI to materialize the 2025 steel target. Shortages of all the materials still loom large.

Source: Metaljunction

JSW Steel wins five iron mines in Karnataka, coal mine in Jharkhand

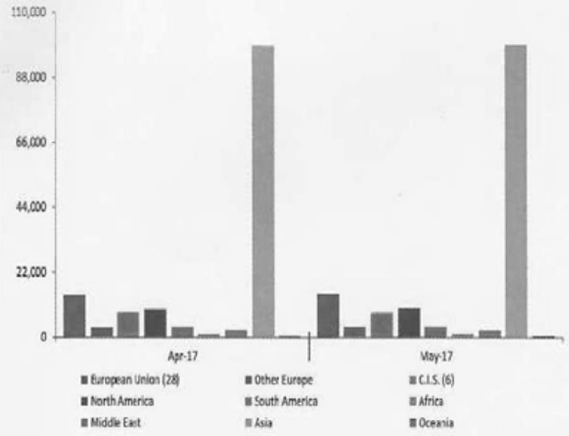
JSW Steel has won five iron ore mines in Karnataka with an estimated reserve of 111 million tons. The steel major has also secured Moitra coking coal mine through an auction in Jharkhand. The mine has total extractable coal reserve of around 30 MT. "The company has won five mines in the auctions of C-category iron ore mines in Karnataka. Two mines (0.71metric tons per annum (MTPA) capacity) will be operational by first half of 2017-18 and the remaining three will be operational by the end of the fiscal. All five mines are expected to produce approximately 4.7 MTPA iron ore," JSW Steel said in its Annual Report 2016-17. It is in the process of seeking all statutory clearances for commencement of mining operations. The company believes this will enhance its raw material security.

JSW Steel CMD Sajjan Jindal said: "The government has put in place a transparent mechanism for allocation of mineral resources through auction. We participated in auctions of iron ore mines in Karnataka and won five mines in October 2016, which have estimated reserves of 111 million tons, that meets approximately 20% of the total requirement at Vijayanagar." The company is also striving to commence mining at the earliest, while continuing to bid for more iron ore and coal mines, he said. It continues to focus on backward integration by investing in its resource base to secure critical raw materials, the statement said. "The new MMDR Act passed in 2016 has called for a level playing field for industry players with a transparent allocation process of raw materials through competitive bidding. During the year, the firm focused on this opportunity to enhance its raw material security and won five mines in the auctions... in Karnataka," it added.

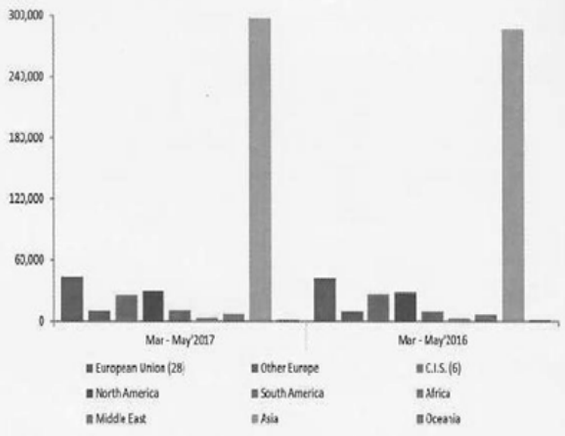
Source: Metaljunction

World & Indian Steel Production Data

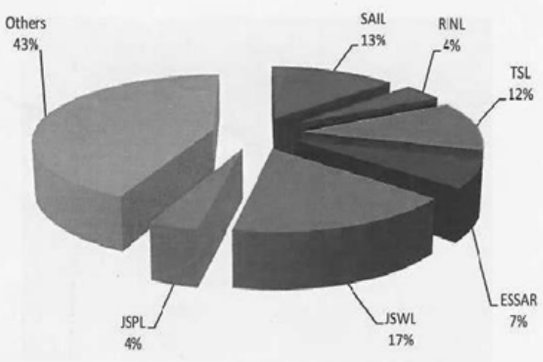
World crude steel production per region, April'17 vs May'17



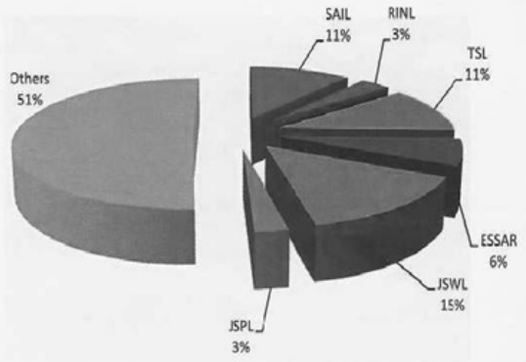
World crude steel production per region, cumulative 2017 vs 2016



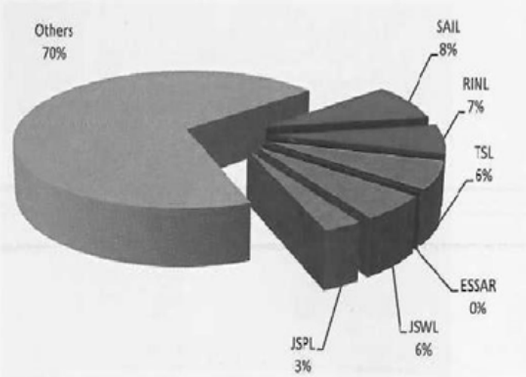
Crude Steel Production



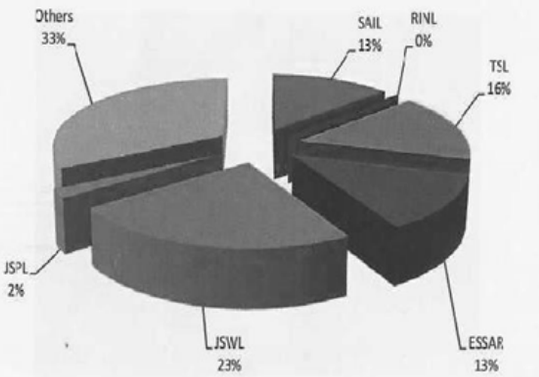
Finished Steel for Sale (Non - Alloy & Alloy)



Non - Flat Production for Sale (Non - Alloy & Alloy)



Flat Production for Sale (Non - Alloy & Alloy)



Zinc

Demand for the metal continues to outstrip supply

Zinc prices rallied sharply having found strong buying interest near the support levels at $2400. Markets opened on a flat note and maintained bearish stance initially before staging sharp recovery from the support zone towards the month end, eventually ending up with handsome gains.

World Refined Zinc Supply and Usage 2012 - 2017

000 tonnes	2012	2013	2014	2015	2016	2016	2017	2017			
								Jan	Feb	Mar	Apr
Mine Production	12892	13045	13499	13581	12837	3978	4269	1085.0	1044.5	1064.4	1075.0
Metal Production	12607	13004	13485	13651	13711	4423	4494	1158.7	1092.2	1129.5	1113.5
Metal Usage	12378	13160	13735	13462	13856	4443	4606	1159.4	1038.2	1202.2	1205.9

The numbers published by International Lead and Zinc Study Group (ILZSG) point towards demand continuing to outstrip supply both at the mine level as well as refined metal. While mine output has increased in the last two months and also when compared to the first four month of 2016, the demand for the metal too has seen a considerable increase when compared to the same period in 2016. The trend is expected to continue in the near future. The crackdown in China, on environmental concerns, is only adding to reduced mine supply as only 40% of the mines in Fujian province are said to be operating at present, with many failing to meet the environmental regulations and thus remaining shut.

However, with many smelters coming out of maintenance the supply of refined zinc seems to be getting back gradually. The sharp rise in imports of zinc ore in the month of May, while imports of refined metal declined YoY, suggest that the demand for ore is higher in China due to closure of mines on environmental concerns. Imports of ores increased by 91% YoY to 217,968 tonnes in May, numbers released by General Administration of Customs, China, Show. There are reports of some zinc smelters in China increasing TC's (Treatment Charges), indicating that the availability of ore has improved in China, though the same cannot be said for rest of the world. The spot zinc premiums turning to discounts in major markets in China only strengthen the view further.

LME stock levels in LME continue to decline as has been the general case for almost last 5 years. It's not just the drop in stock levels, but also the ratio of cancelled warrants to the overall inventories, that is suggesting uptake in the metal. Cancelled warrants in LME, as on 30th June 2017, stood at 220,950 tonne while the overall inventories were 291,300 tonne i.e. cancelled warrants are almost 75% of inventory levels, which points to strong spot consumption demand for the metal and may continue to support prices.

Technical picture

As suggested in our previous report, markets did find strong supports around the Fibonacci retracement levels around $2390, which is 38.2% retracement for the recent swings. While markets didn't test those levels exactly, they did find strong buying sentiment near those levels. While we expected possibility of an extension to the correction beyond 38.2% levels, if markets close below $2400, the fact that markets didn't even close below the strong trend line support around $2600, which are the swing highs of 2009 and 2010, suggest the overall bullishness in the markets.

The strong close points towards the resumption of bullish trend and a close above $3000 can trigger another wave of sharp rallies, probably taking prices towards $3400 levels. For now,

we expect markets to maintain bullish stance and suggest buying on dips, with $2650-$2600 looking ideal levels to buy. While a close below $2600 can change the entire scenario, for now the possibility of such event looks less likely.

Source: MMR

The future market trend for general galvanizing of steel products

Hot dip galvanizing is the oldest method for prevention of corrosion of iron and steel products. The process involves dipping well-cleaned steel products in a bath of molten zinc, whereby a reaction takes place between steel and zinc, resulting in an adherent, metallurgically-bonded zinc coating on the steel products. The zinc coating gives a long, maintenance-free life to such coated products.

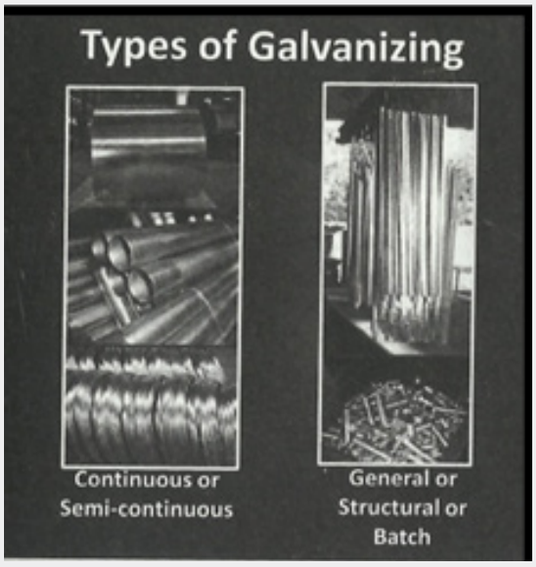


Figure 1

Zinc markets

During 2016-17, India's zinc production stood at 670000 metric tonne. Appropriately 75% zinc gets used in the hot dip galvanizing sector. Zinc die casting, dry cell batteries, alloys, chemicals, zinc wire etc., consume the balance 25%. Steel sheets, structurals, pipes, wires, fasteners, lamp poles, cable trays, buckets, reinforcement rods etc., are normally galvanized. Steel sheets, wires & pipes are usually galvanized in a continuous or a semi-continuous process while fabricated steel structures, fasteners, guard rails, lamp poles, cable trays etc., are galvanized in batches and hence this method is known as batch or general galvanizing (Figure 1). At time, in India it is also called "structural galvanizing". General galvanizing has a huge, untapped market potential in India, in the coming years. The traditional, well-established markets for general galvanizing are power, telecom and railway electrification (Figure 2).

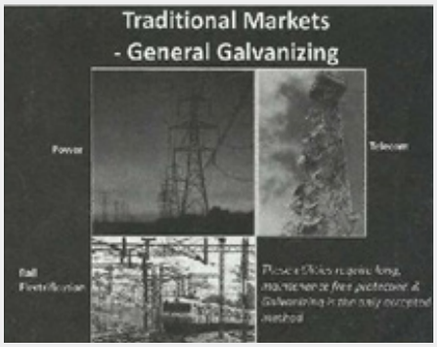


Figure 2

Key Drivers

The key drivers for zinc demand are the intensity of steel usage, infrastructural growths as well as building & construction sectors, and the severity of corrosion in the specific region concerned. One can have a look at the "Corrosion Map of India". India loses 4-5% of its GDP due to corrosion every year. Fortunately, in India the zinc production has been increasing all these years and hence domestic zinc availability is no issue at all. HZL has been continuously expanding their production capacities, keeping in view the expanding domestic demand scenario.

Infrastructural Investments

During the 11th Five Year Plan (2007-12), India's investments in infrastructure (power, telecom, renewable energy, highways, ports, aviation, railways etc.) amounted to US$ 500 billion; the same was doubled to US$1000 billion for the 12th Five Year Plan (2012-2017). This naturally leads to an increased usage of steel in all the above mentioned infrastructural sectors. Indian steel demand rose by 4.2% during April-May 2017. Hence, the demand for more zinc for protecting the steel products from corrosion.

Emerging Markets

The huge investments in highways and smart cities project would lead to more and more usage of galvanized guard rails/ crash barriers (Figure 3), street lamp poles, high mast lighting columns, railings, road signages etc., similarly, the increasing penetration of mobile phones in tier-II cities and rural area,

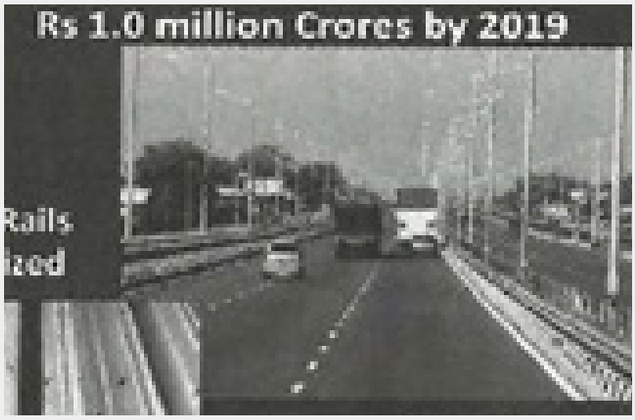


Figure 3

after its successful acceptance in metro cities, has resulted in more demand for galvanized telecom towers in rural areas. Currently, the tele density in India is about 75%. The investments in increased power generation have resulted in more power transmission line networks across the country. The new railway stations and terminal buildings in various airports as well as upgradation of existing airports, require more galvanized steel sheets or zincalume sheets for roofing for hangers, air conditioning ducting etc., the increasing investment in power & telecom sectors also require more galvanized cable trays. There is also an increased activity in solar & wind energy generation capacity in the country; the support structures for solar panels (Figure 4) and wind mill tower members are usually galvanized, to obtain a long, maintenance-free service life.

In our country, the concrete cracking or spalling due to steel reinforcement corrosion is very common and a proven method for corrosion prevention in RCC structures is through the use of hot dip galvanized reinforcement bars (Figure 5). Zinc coating weights for galvanized rebars are mentioned in IS 12594: Hot dip zinc

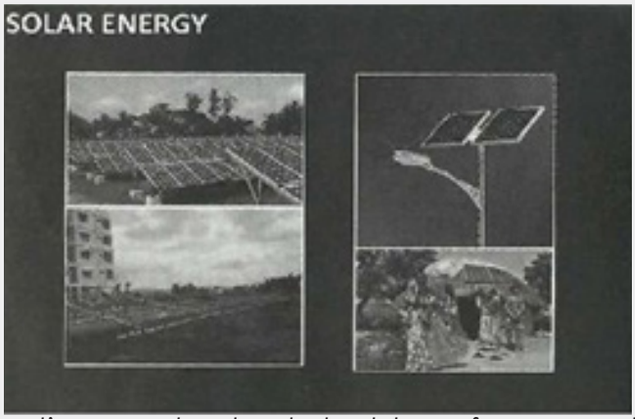


Figure 4

coating on structural steel bars for concrete reinforcement. Galvanized rebars should be used in RCC structures particularly in coastal area, bridge ducks, petrochemical complexes as well as water-retaining structures, dams, immersed columns etc., An interesting application for galvanized rebars is the "Chandrodaya Mandir" at Vrindavan, Mathura near Delhi. This will be the world's tallest temple for Lord Krishna (210 metres high), almost three times the height of Eiffel Tower.

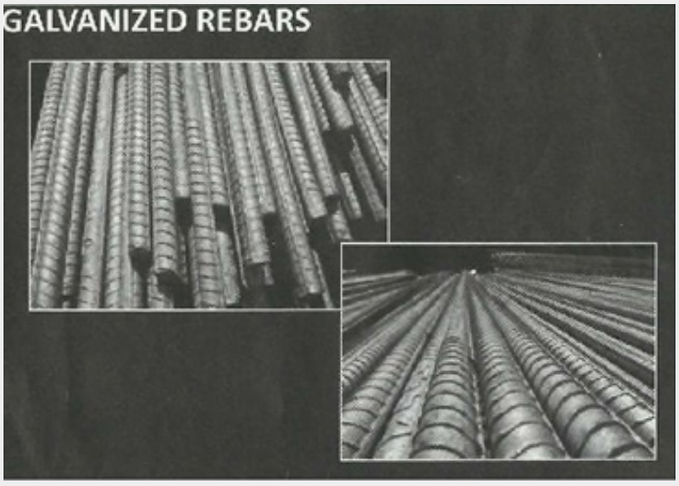


Figure 5

The huge investments in infrastructure, building & construction, automobile production as well as the high GDP growths in the country present an ideal, conducive atmosphere for continued growth in the markets for zinc. On its part, the zinc downstream industry needs to offer durable, quality products, with assured performance and delivery at competitive prices.

Source: MMR

IIM DC Quiz Contest "Metallica 2017"

A Quiz Contest "**Metallica 2017**" for senior school students was organized at *The Indian Institute of Metals – Delhi Chapter* on 15th July 20-17. The prime objective of the Quiz Contest was to motivate and encourage senior level school students for associating themselves in future growth in the fields of Metallurgy & Material Science related disciplines.

A team of two students each of the following eleven schools from Delhi and NCR region participated in the Quiz Contest:

1	Amity International School	Gurgaon
2	Andhra Education Society	Karol Bagh, New Delhi
3	Cambridge Foundation School	Rajouri Garden, New Delhi
4	Delhi Public School	Mathura Road, New Delhi
5	Delhi Public School	Sushant Lok, Gurgaon
6	N C Jindal Public School	West Punjabi Bagh, New Delhi
7	R D Rajpal School	Dwarka, New Delhi
8	Rukmini Devi Public School	Pitampura, Delhi
9	St. George's School	Alak Nanda, New Delhi
10	The Srijan School	Model Town, Delhi
11	The Indian School	Sadiq Nagar, New Delhi

At the outset, Shri K L Mehrotra, Chairman, Delhi Chapter of IIM, welcomed the teachers and the students of schools who were participating in the Quiz Contest. He briefly described the activities being undertaken by the IIM fraternity. He also spoke about the importance of metallurgy in the industrial activity of our country.

Mr. S C Suri, Former Chairman, IIM DC informed the students that there is a shortage of metallurgists in the country. He also indicated that there is a difference in perception in whatever they read in metallurgical text books and see physically the working of the metallurgical industry.

Mr. K K Mehrotra, member IIM Delhi Chapter, coordinated effectively the preparatory activities culminating in successful completion of the contest. Mr. K K Mehrotra announced the modus operandi of the operation of the contest. Mr. R K Vijayavergia, Dr. Ramen Datta and Mr. G I S Chauhan of IIM DC facilitated the process of conducting the quiz.

The Quiz was divided into two phases. First phase was *Elimination round* where all eleven teams were administered a objective test of 50

questions of 35 minutes duration. Based on the marks scored by all 11 teams after evaluation, the following five teams as per the ranking were qualified for the main round.

1 The Srijan School, Model Town, Delhi
2 Cambridge Foundation School, Rajouri Garden, New Delhi
3 Amity International School, Gurgaon
4 D P S Sushant Lok, Gurgaon
5 Rukmini Devi Public School, Pitampura, Delhi

To make the quiz more interesting both for the participants and audience, the main round having more than 150 questions were sub divided into followings:

- Warm –up round
- Audio- Visual Round
- Teaser Round
- Rapid Fire Round
- Buzzer Round

Shri K.K.Mehrotra, who was conducting the quiz explained the rules for various rounds to the participating teams. Live score sheet was displayed on the screen based on the answer provided by each team during the 5 rounds.

The questions, where the participants of the five teams were not able to provide the correct answers, were thrown up to the audience. An amount of Rs. 100/- was given to each of the audience who gave the correct answers. Few questions were directly thrown to the audience.

After adding up the marks scored by each team in five rounds, the students ***Nikhil Sharma and DevumPruthi*** from ***Cambridge Foundation School*** were adjudged the ***Winner Team***. The team consisting of ***A.VarshaAnugraha and Shatakshi Aggarwl*** from ***The Srijan School*** was declared the *Runner-up team*.

The winning team was given a trophy and a cash prize of Rs. 5000/-. A trophy and a prize of Rs. 3000/- was given to Runner-up team. Rs. 1000/- each was given as consolation prize to the remaining three participating teams in the *Final Round* viz. Rukmini Devi Public School, Delhi Public School-Sushant Lok, and Amity International School.

All individual students from eleven participating schools, were given Certificates of participation. In addition, teachers of all the participating schools were handed over suitable mementoes for retaining in their schools on behalf of IIM Delhi Chapter.

The quiz event was suitably photographed.

The winning team consisting of ***Nikhil Sharma and Devum Pruthi*** from **Cambridge Foundation School** along with an accompanying teacher to be nominated by the school will be sponsored for Prof. Brahm Prakash Memorial Materials Quiz to be held at Kalpakkam on 8th/ 9thSeptember 2017. To and fro travel expenses (limited to AC 2 Tier train fare) of the team & the accompanying teacher will be borne by IIM, Delhi Chapter. IIM, Kalpakkam Chapter would take care of local hospitality.

Several members of the IIM DC and the Executive Committee members participated in the event. About 60 persons participated in the Event.

The programme ended with a lunch.

xxxx 0000 xxxx

Technical Talk on "Industry 4.0"

A talk on "***Industry 4.0 – The Vision for Advanced Manufacturing***" was organised at Delhi Chapter on 29 July2017.

At the outset Shri P K Bajaj, Vice Chairman IIM Delhi Chapter welcomed the Speaker - Dr Ratnakar Gedam, *Former Advisor Planning Commission* and others present in the gathering. He gave brief details about the activities of Indian Institute of Metals at national level as well as at Delhi Chapter level.

He introduced the speaker, Dr Gedam. After introductory reference, the floor was handed over to Dr Gedam for presentation.

Dr Ratnakar Gedam, during his detailed presentation traced the different phases of Industrial progress commencing in 1782 with advent of Steam Engines. The different stages of Industrialisation may be broadly classified as follows:

- First Industrial Revolution in 1782 based on introduction of mechanical production driven by water and Steam Power in Great Britain
- ✓ Driven by Quality of Life and Engineering Sciences
  - ✓ Resulting in Power Generation and Mechanical Automation
- Second Industrial Revolution in 1870's with Conveyor Belt production concepts in USA

- ✓ Driven by Mobility
- ✓ Resulting in Rapid Industrialisation by mass production

❖ Third Industrial Revolution in 1970's with Large Scale usage of Computers/NC/PLC etc. Microelectronics in Europe/USA

- ✓ Driven by Microelectronics
- ✓ Resulting in Intelligent Infrastructure and Rapid Industrialisation

❖ Fourth Industrial Revolution (4.0) in 2015 with Cyber Physical Systems concepts in EU

- ✓ Driven by Integrated Systems Approach
- ✓ Resulting in Smart Automation

Dr. Ratnakar traced gradual evolution of Industry 4.0 concept in EU counties with German BMBF (The Federal Ministry of Education & Research at Bonn) initiating in 2010 the Science Union to identify future High Tech Trends with high impact on society; Submission of BMBF-Report in 2013 on "Securing the future of German manufacturing Industry"; Recommendations for implementing the strategic initiative ***Industry 4.0*** and gradual laying the Foundation of the Platform ***Industry 4.0*** by Industry Associations.

Dr. Ratnakar described a Smart Factory which is designed for Sustainable and service oriented business. Such a Smart Factory is characterised by cyber-physical systems, providing sufficient real-time quality, time, resource & cost advantage in comparison with classic production systems. Intelligent operations are through self-optimisation, self-configuration, self-diagnosis, cognition and intelligent support of workers. The ultimate aim of ***Industry 4.0*** would be to establish a system with adaptability, resource efficiency and ergonomics as well as integration of customers and supply chain partners in business & value process. Technological basis are cyber-physical systems and Internet of Things. Dr. Ratnakar strongly advocated initiation of activities under Industry 4.0 in Indian Industries in order to remain globally competitive.

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

The talk was attended by IIM DC members.

The audience found the programme very interesting and informative.

Shri S C Suri, Immediate Past Chairman, proposed a vote of thanks to Dr Ratnakar Gedam.

As a token of appreciation, a memento was presented to Dr Gedam by Chairman.

The programme concluded with lunch.

xxxxxxxxxxxxxxx

Jakson to invest Rs 700 crore to set up new solar plant

The Noida-based company's new plant in Gujarat will have a capacity of 1,000 MW of solar modules & 250 MW of solar cells in three years and take on Chinese imports.

At a time when most domestic solar manufacturers are struggling with idle capacity in the face of cheap solar cells and modules being imported from China, Noida-based Jakson Group is setting up a green-field solar plant in a seemingly contrarian decision.

It is investing Rs 650-700 crore in a new plant in Gujarat that will have a capacity of 1,000 MW of solar modules and 250 MW of solar cells in

three years, Jakson Group CMD Sameer Gupta said. "We've identified the plots where the plant will be based and expect to have 500 MW of module manufacturing capacity up and running by June 2018, reaching our full capacity by mid-2020," he told ET.

The firm, which has a small 70 MW manufacturing plant in Greater Noida at present, is confident about competing with Chinese imports. "The cost difference between the modules we make at Jakson and Chinese ones is not more than 2%," Gupta said.

Prices of Chinese solar cells and modules have dropped steeply in the last two years, but Gupta does not think they will do so any further. "Prices fell because of overproduction in China, but now Chinese demand is picking up," he said.

"China has shut down $350 billion worth of coal-fired power plants and is investing in renewable energy, so demand in China is bound to keep rising, which in turn will raise prices of solar equipment too," Gupta said. "Already, in the last three months, the cost of Chinese modules has gone up from around 28-29 cents per watt to 31-32 cents."

But even if Chinese equipment gets cheaper, it will not spell disaster for Jakson. "We've done extensive research, getting PwC to prepare a report for us. Even in the worst case scenario of Chinese module prices falling to 25-26 cents per watt, we will not be in the danger zone though obviously profitability will be affected," said Gupta.

He said Jakson is funding the project through internal accruals and debt in the ratio of about 30:70.

"We chose to locate in Gujarat as there will be ports close by, since we expect to export a good part of our production, especially to African countries," Gupta said.

India's domestic module manufacturing capacity is currently around 8,113 MW, out of which 5,286 MW are operational. However, actual manufacturing in 2016-17 was barely 1,000-1,500 MW, according to Mercom Capital Group that tracks the segment. That is because there is little demand for domestic products because Chinese imports are substantially cheaper.

Around 90% of the modules used in Indian solar projects are imported, mostly from China. India solar manufacturers have even petitioned the ministry of commerce to impose anti-dumping duty on imported solar cells and modules in a desperate effort to stay afloat.

But Gupta is unfazed. "In our case, it will be backward integration," he said. "We are solar developers ourselves and also major EPC players in the solar business. Our own projects will consume about 500 MW, or half our production capacity."

One of the oldest of India's power companies, Jakson Group, started in 1947, has ventured heavily into solar in the last few years, running 60 MW of ground mounted solar projects and 6.5 MW of solar rooftop. It will have put up around 450 MW of EPC solar projects by end 2017.

Source: The Economic Times

Copper price surges to 2-year high

Copper futures trading on the Comex market in New York raced higher a few days back on renewed optimism about demand from top consumer China and indications of tighter global mine supply. Copper for delivery in September jumped to a high of 2.8540 a pound ($6,292 tonne) in early afternoon trade. Copper's 2017 year to date gains in percentage terms now top 13% and the red metal is trading 28% higher than this time last year.

While Chinese imports of refined copper dropped in June and is down 18% over the first half of 2017 to 2.23m tonnes, shipments of copper concentrate continue to strengthen jumping 23% in June from the month before to 1.41m tonnes. Another sign that primary copper supply is tightening treatment and refining charges levied by smelters for concentrate are declining. TC/RCs paid by mining companies

are a good indication of conditions in the spot market and rates have now fallen by 10% from the start of the year to around $80 a tonne and are well below the price floor set by China's major refiners for the third quarter. Supply disruptions at some of the world's biggest mines including BHP's Escondida mine in Chile earlier this year and ongoing strike action at Freeport McMoRan's Grasberg operations in Indonesia are also boosting the price.

Workers at Grasberg extended their strike a few days back for a fourth month to end August. Freeport's temporary exporting licence is coming up for renewal in October, a bargaining chip used by Jakarta as it negotiates with the Phoenix-based company about divesting a majority stake in its Indonesian subsidiary. Shares in Freeport jumped more than 15% to a 16-month high recently after the $21.5 billion company announced revenues that topped estimates and progress on talks with the Indonesian government. Grasberg was forecast to produce 680,000 tonnes of copper this year making it the world›s second largest copper mine after Escondida.

Copper mining companies were trading higher across the board recently with world number three producer Glencore rising 4% in London trading. Diversified giants BHP gained 3.7% in New York trading and Rio Tinto received a 5% bump. Gains were more modest for Southern Copper Corp, Anglo American units trading in New York jumped 5.8% and Poland's KGHM jumped 4.4%.

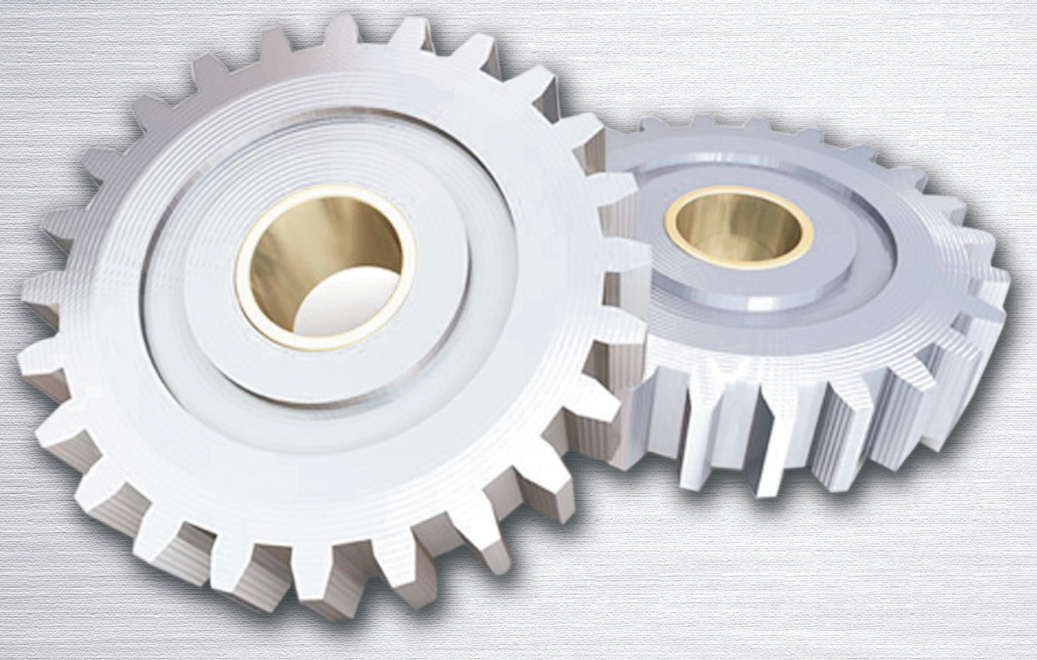
Beijing boost

The economy of China, responsible for nearly half the world's consumption of copper, expanded at an annual rate of 6.9% in the second quarter against expectations of a slight decline and at a quicker pace than Beijing's own target of 6.5% growth for 2017. In seasonally-adjusted quarter on quarter terms, growth was even more significant, picking up from 1.3% to 1.7%. If the trend continues, this year would be the first time since 2010 that the Chinese economy grew faster than the year before.

Industrial production data for June released also pointed to a significant improvement. Growth in industrial output picked up from 6.5% year on year to 7.6% led by greater electricity and steel production. Bloomberg consensus forecasts pointed to no acceleration for Chinese industrial output. Despite Beijing's tightening of lending and other measures to cool the property market, construction starts surged by more than 14% in June, providing further support for commodity-intensive sectors which continue to expand at a faster rate than the broader measure of industrial production. The copper price is seen as a bellwether for metals markets and industry as a whole thanks to its widespread use in construction, the power sector, manufacturing and transportation.

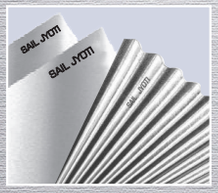
Source: www.mining.com

SAIL Steel
Sarvottam Steel



Steel Authority of India Limited - The Largest Producer of Steel in India.
SAIL has taken a big leap with its cutting edge technology contributing to projects of national importance in key sectors like:

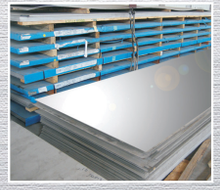
• Railways • Defence • Engineering • Automobiles • Space Exploration
• Energy • Infrastructure • Construction • Transportation



SAIL GP/GC


SAIL HR/CR Coil


SAIL TMT


SAIL Plates

स्टील अथॉरिटी ऑफ इण्डिया लिमिटेड
STEEL AUTHORITY OF INDIA LIMITED

There's a little bit of SAIL in everybody's life

www.sail.co.in

https://www.facebook.com/SAILsteelofficial/ www.twitter.com/SAILSteel www.instagram.com/steelauthority