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INTRODUCTION

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2015 likely to bring cheer to the Indian steel and iron ore industry

2015 is likely to bring some cheer to the Indian steel and iron ore industry. The "Make in India" concept envisioned by the new government guided by its supporting policies is expected to provide immense potential to the markets in the New Year. The optimism owing to an expected resolution of issues around the mining industry and the addition of new steel making capacities has held the hopes very high for New Year. The healthy optimism is led by the expected reopening of the mining industry in the coming months. Goa and Karnataka are likely to see some activity beginning by mid-2015, if not early. Green and brown field steel expansion plans are right on track and will give a boost to production growth by nearly 5-6%. Issues surrounding cheaper and inferior steel imports may resolve due to higher taxes and anti-dumping duties. Export duties and restrictions on iron ore may ease as the government has planned and introduction of GST would help in easier and faster movement of finished goods within the country. Raw material situation is definitely going to give advantage to the steel makers. Even if the steel majors would like to import or buy domestically, the markets will offer good opportunities 2015. Global iron ore and coal prices will remain low due to surplus availability while domestically, the situation will open up after the restrictions are pulled down by the state governments & apex court. Orissa and Jharkhand are likely to come back full force around mid-2015 and with the state government signing up MoUs with steel producers for supply of raw materials, the situation is soon going to give support to the steel parties.

Coming to production and demand of Indian steel, the country is on track with production but the demand growth is still dependent on the policies being implemented. While production has grown at a pace faster than the global average for a significant part of 2014, demand has been very slow and unsteady with the sector looking for a boost from the new government's stated emphasis on manufacturing and infrastructure sectors. The "Make in India" campaign is the best hope for the steel producers who are also looking to expand their capacities and provide nearly 125 million tons of crude steel strength to the country in the next fiscal. The campaign is likely to boost the country's steel consumption potential as well in the coming years. India's per capita consumption is around one-fourth of the international average sitting close to 60 kgs and this keeps the hopes renewed for further enhancement and betterment for the country. The potential is quite strong by the government's policies would build the path towards harnessing it.

Meanwhile, the industry's major hurdle is its steel import reliance which has been giving problems to the domestic producers and consumers. Stepping into 2015, India's reliance on steel imports is likely to remain steady which is another good sign as the same had come down between 2012-13 versus 2013-14. The major issues the government wants to resolve to ease the import situation is the unwillingness of steel plants to put up certain facilities when domestic demand for a grade is low even though the companies are technically capable of producing the same & lower prices in the inter-national markets encouraging imports as compared to self-production. Automobile companies are looking at better sales in 2015 after the launch of many varied models in 2014. Tax reliefs have already been proposed for hybrid and fuel efficient vehicles. All this points to the fact that the emphasis in 2015 would be on increasing the sales rather than launching new vehicles. The real-estate is watching the markets closely as major land reforms are likely to come up enabling a more wider opening in this sector. Hence, after the worst possible fears coming true and spoiling the spirits in 2014, the entire industry is now pinning its hopes on 2015. The worst is over and so is 2014. The expectations are very high from the coming year and so could be the results as well.

Source: Ore Team

Govt should take steps to protect local steel players: JSPL

Ravi Uppal, MD & CEO, Jindal Steel & Power Limited (JSPL) in an interview to CNBC-TV18's Latha Venkatesh and Sonia Shenoy spoke about the outlook for steel prices for the company and the industry. According to him the steel prices will continue to remain under pressure on back significant imports from China. Chinese steel is cheap compared to domestic steel because the Chinese manufactures get lot of subsidies and help from their government

whereas for Indian steel manufacturers. Indian steel producers face threat from their Chinese counterparts because there is no level playing field. Chinese manufacturers can afford cheaper steel on back of aid in terms of subsidies from their government, says Uppal. Moreover the steel demand too has been weak in FY15, he adds. According to him the government of India needs to take steps to protect the domestic steel producers. He thinks with the coal e-auction the landscape for coal production is likely to change in the coming 12 months and India will then have adequate coal in the next 1-2 years. Indian steel producers are very competent but need enable conditions to hike up the capacity from 100 million tonne to 300 million tonne in the coming 12-15 years, says Uppal. Talking about expansion plans, he says the money raised from Kotak Mahindra Bank via NCDs will be used for expansions as well as coal auction.

Hundreds of businessmen have succeeded without an MBA degree, but none without common sense

Below is the transcript of Ravi Uppal's interview with Latha Venkatesh and Sonia Shenoy on CNBC-TV18.

Latha: What is the trend you are seeing? Is there a greater pressure on Indian steel company margins with the general fall in commodity prices?

A: Certainly the prices of steel are under pressure not for any other reason mainly because of the imports from China have increased dramatically. If you look at the first eight months report card, the imports are up by 55 percent. The total imports that we have done already in the eight months are more than the total imports that we did last year. Moreover, there is no level playing field when it comes to competing with Chinese players. They get a huge kind of incentives and subsidies from their government, so the Indian producers on their own cannot fight out the Chinese producers as long as there is a level playing field. The bottomline is that the prices of steel at this moment are under tremendous pressure as we have to fight out the prices offered by the Chinese at this point of time.

Sonia: How do you expect the prices of steel to pan out going ahead say in the next three to six months, where is it currently and how much more pressure do you foresee and what do you think could be the solution to the huge imports that are coming in from the Chinese market?

A: There are two aspects, number one the domestic demand hasn't risen as much was expected. In the first eight months the demand is up just by 1 percent. If you look at the total consumption the imports are up by nearly 2.4 million tonnes. The domestic demand is up by nearly 0.4 million tonne compared to last year. So, this basically means additional 2 million tonnes have been taken by imports from the domestic manufacturers. I am hoping that the multiple steps taken by the government will show some results but not immediately. From the first quarter of next year we can see some green shoots coming and the demand should start looking up. Government has initiated lot of infrastructure projects; they are also trying to see that the infrastructure projects which were stuck for some reasons they also get moving. I think a positive result in demand will be seen from the first quarter of next year.

As far as the competition from Chinese is concerned, government should sort of take measures so that we have a level playing field. There is so much campaign today for Make in India and Make for India; there we have to take ground level measures. For example things like if the Chinese are giving 13-16 percent of incentive or subsidy we must have some kind of duty protection against that. The Indian producers are very competent and can match up to Chinese but since the Indian steel industry also needs to hike up its capacity from 100 million tonne to 300 million tonnes in the next 12-15 years' time, there is a need to create enabling conditions. If you look at China even during the years of bumper growth they used to have something called 'Buy China' or 'Buy Chinese'. Americans have done the same in the past. So, we should not feel reluctant to take the necessary measures to build up of our manufacturing sector because that is going to hold the key to the growth of 8 percent plus in future.

Latha: You raised money through NCDs from Kotak Mahindra Bank. What was the purpose of that loan?

A: As the business is growing for us and we also have some projects which are in the pipeline, we are close to completion so we had some kind of needs and one way to meet for us was to go through the NCD route.

Latha: Was some of that at least raised for both the penalty and to pay for the mines. Is there any indication you can give on how much for which?

A: We don't have this kind of delineation. We have a cumulative need to meet the needs of the project, plus we are going to bid for some of the projects in the very near future including the auction. Therefore we have an estimated total requirement of funds. So, this is a part of that.

Sonia: Can you just give us your plan to procure coal going forward, what is the agenda, will you import coal, will you source form the e-auction and is it still feasible for JSPL to bid for Utkal B-1?

A: As of now some of the coal we were getting out of the mines that we had, some of it was being imported. Most of imports have been the coking coal from our own mines in Mozambique and Australia. Special grades of coal like coal bricks, Anthracite we import from South Africa. So, there is a combination, we are sourcing coal from domestic sources as well as taking it from imports. We are going to participate in the auction which is going to be held soon and depending as to how much of success we have, we will decide how much to import and how much to continue to source from domestic sources.

Latha: Chances are since Utkal B-1 has been set aside for power you will have to import more, what is the plan since that was suppose to feed into Angul. What will be the plan since that is not available now?

A: We have to see on a wider canvas the coal situation. The government wants to auction the coal mines schedule 2, schedule 3 to start with. Later on the schedule 1 mines will also be offered on auction. I feel that the whole landscape of coal production is going to set to change in the next 6-12 months' time. I don't think that the virgin mines will start producing within the 12 month timeframe because it takes you certain time to make them productive. However, at least those which are under

schedule 2 and schedule 3, they will start producing coal in the next 12 months' time. So, I think we have so far got so used to living in a regime of shortages of coal that we are not able to envisage a situation where we will have surplus coal. I do feel that in a time from 12-24 months' time that we are going to have plenty of coal and there won't be so much of clamour to get coal as we experience today.

Source: www.moneycontrol.com

Interview of Chairman SAIL with Financial Express

Steel Authority of India has been battling weak steel demand for the past few years to maintain its bottom line in the face of a broader slowdown in the economy. However, things now seem to be looking up for the steel industry as the Narendra Modi government reportedly prepares to unleash more reforms to stimulate economic revival. Not surprisingly, the SAIL management sounds quite bullish. In an interview to FE's Noor Mohammad, SAIL chairman CS Verma shares the PSU's business plans. Excerpts:

❖ **How is the current business environment for the steel sector? Which sectors are driving growth—infrastructure, construction or automobiles?**

The market is expected to take an upturn in India, in the near future. All the key steel consuming sectors—construction, infrastructure or automobiles are likely to see healthy growth, thus, raising steel consumption. The initiatives taken by the new government, especially in the field of infrastructure, augur well for the steel industry. The Make in India campaign, FDI in defence, railways, etc., diesel price decontrol are such moves which will give a push to industry. However, globally the current business environment for the steel industry is challenging. The growth in production in China, the largest steel producer in the world, has seen a slowdown.

❖ **What is the medium-term outlook on steel demand in India?**

We are bullish about the prospects of Indian steel industry over the medium term. We expect the manufacturing sector will see a high growth phase, which would, in turn, stimulate higher steel consumption. Moreover, the plan for infrastructure development, smart cities, freight corridors, ports, etc should lead to sustained demand for steel in the next five years. Even a modest recovery in overall GDP growth of 6% to 7% will increase the finished steel consumption of India close to a level between 175 and 200 million tonnes in the next ten years, which would be an addition of more than 100 million tonnes from the current consumption level of around 74 million tonnes.

❖ **What are your expectations from the next Union budget?**

We look forward to a supportive and enabling framework for manufacturing and mining sectors through interventions in the Union Budget or before that.

❖ **How is the global market faring?**

Chinese steel exports reached a record high of 9.72 million tonnes in Nov'14, surging by 94% over Nov'13. Cumulative exports of steel from China during the first 11 months at 83.6 million tonnes recorded a 47% growth over the same period last year. The impact of this increase in Chinese exports is visible in major steel consuming economies, with steel production remaining almost flat on an aggregate basis this year.

❖ **What is your capex target for this fiscal? Do you expect to meet the target?**

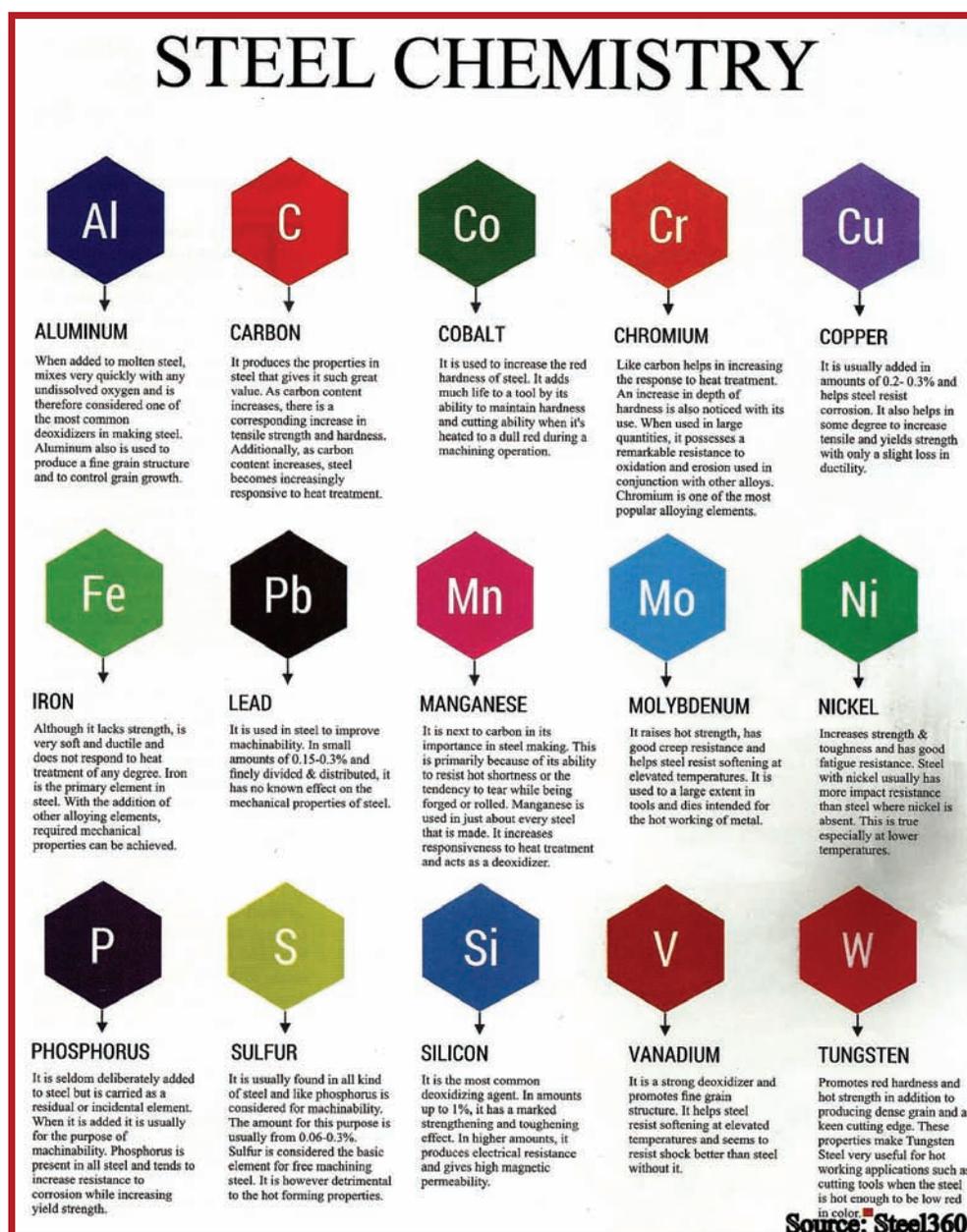
SAIL is currently undertaking modernisation and expansion activities in all its major plants/units in order to enhance its hot metal production capacity to 23.5 million tonne, from the existing level of 14 million tonne with an investment of over Rs. 72,000 crore. In the last five years, a capital expenditure of over Rs. 10,000 crore per annum has been made and the projected capex target for this fiscal is Rs. 9,000 crore. Till now, SAIL has operationalized projects/facilities worth Rs. 31,800 crore. After the lighting up of the largest blast furnace of 4,160 cubic meters at ISP, Burnpur, the integrated operations of 2.5 mtpa new steel plant at this location have

commenced. This would be the second such large-volume blast furnace in Sail, after the first one operationalised in the Rourkela Steel Plant in August, 2013. The integrated process route of 2.5 mtpa hot metal at the Rourkela Steel Plant has been operationalised and production is being ramped up from these facilities. Thus, the going has been good this year with the targets of integrated commissioning, as envisaged, completed.

❖ **Are you satisfied with the company's financial performance?**

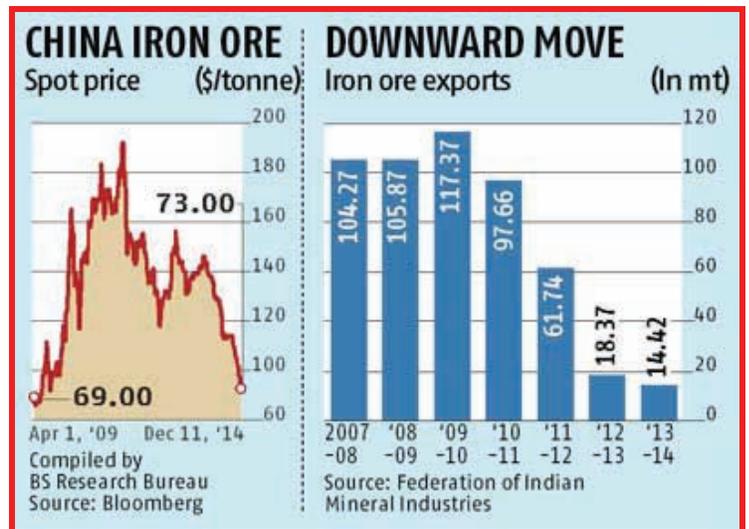
Sail registered an Ebitda of Rs. 1,498 crore for the July-Sept'14 quarter, which is 58% higher than the corresponding period last year. During 2013-14, we achieved a PAT of Rs. 2,616 crore, which was 21% higher compared to 2012-13. It is satisfactory, considering the challenging environment. The capacity addition of Sail is fructifying at a time when the country is witnessing improved economic sentiments and a renewed thrust on infrastructure building, which will lead to an increased demand for steel. With production at Sail being ramped up, we hope to be able to improve sales and financial performance in the coming quarters.

Source: The Financial Express



Iron ore prices at 5-year low on excess supply

Iron ore prices have declined to a five-year low on falling prices demand from China and more of oversupply from the world's two largest miners, BHP Billiton and Rio Tinto. After a high of \$163 a tonne in 2011, ore started falling as China, the world's largest consumer, ordered closure of small and non-viable steel mills. Ore is currently traded at \$73 a tonne in the spot Chinese market, a level not seen since September 2009. The price decline has been 39 per cent in 2014. Analysts forecast a further decline to \$63-64 a tonne on excavation in new mines. The falling prices will directly benefit steel mills in India and abroad. "The world market is expected to face an oversupply of around 70 million tonnes in calendar year (CY) 2014, as compared to almost negligible supply excess in 2013. BHP Billiton and Rio Tinto have intensified excavation on existing mines and new mines have added their output. New origins like Iran and South Africa have also started supplying ore to Chinese steel mills," said Prakash Duvvuri, an analyst with Ore Team, a Delhi-based research house.



JPMorgan has forecast the price to extend its decline. The bank lowered its forecast from the earlier estimates by 24 per cent to average \$67 a tonne in 2014 and 23 per cent lower than earlier estimates at \$65 a tonne in 2016. HSBC Holdings, reports said, forecast global seaborne iron ore supply to exceed demand by 100 mt in CY 2014 as compared to a mere 16 mt in CY 2013. The bank forecast the average iron ore price at \$99 a tonne in 2014 and \$85 a tonne in 2015. While mining activities have been very slow in India, a 30 per cent export duty has made shipment of ore unviable. Barring a small quantity exported from Odisha, there is no shipment at present from the country including from Goa, which until a few years earlier was producing 90 mt annually of low-grade ore for export to China. "There has been no iron ore export from October onwards, as falling prices make Indian exports with 30 per cent duty unviable," said R K Sharma, secretary general, Federation of Indian Mineral Industries. Exports were 14.4 mt in 2013-14, a fall of 21.5 per cent from the 18.4 mt in 2012-13.

Source: Business Standard

Steel & Mines Ministry urges NMDC to aim for 75 million tonne production by 2018-19

Union steel & mines minister Narendra Singh Tomar has urged National Mineral Development Corporation to aim for production of 75 million tonne of iron ore by 2018-19 and 100 million tonnes by 2020-21, to increase iron ore availability in the country. The target was assigned in a review meeting with NMDC officials held in New Delhi recently. NMDC, the country's largest producer of iron ore currently produced 30 mt of iron ore in 2013-14. It has been planning to raise production to 65 mt by 2018-19 and to 100 mt by 2025. NMDC will have to pre-pone its production targets to meet the ministry's directive. At a meeting between company executives and ministry officials it was decided to incorporate this target in the MoU that NMDC signs with the government. The minister has directed NMDC to use all resources in its command, to achieve this ambitious target since raw material availability at reasonable prices is essential for economic development of the country, a statement issued by the ministry said. NMDC will have to pre-pone its production targets to achieve it. The minister remarked that achieving the target will be the most important criterion while assessing the PSU's performance. The move is aimed at enhancing availability of domestic iron ore and provide the steel industry access to iron ore at reasonable prices. The government has set a target to raise annual steel production to 300 million tonne by 2025, which will necessitate production of 500 million tonnes of iron ore annually.

Source: Metaljunction

Rare Earth Metals Industry: Indian Scenario

During the Indian Prime Minister's recent Japan visit, a pact was signed between India and Japan to jointly produce mixed rare earth, with Japan set to start importing from India in 2015 as it tries to wean itself to its reliance on China. Indian Rare Earths Ltd and Japanese Trading House Toyota Tsusho signed a contract on joint production as early as September 2014. IREL will make mixed rare earth materials from uranium and thorium ores, which Toyota will use to produce neodymium for electric and hybrid cars as well as lanthanum, cerium and praseodymium. The annual production will be about 2,000-2,300 tonnes, equal to around 15% of Japan's demand and roughly 2,000 tonnes a year could be exported to Japan starting as early as February 2015.

Rare Earths are characterized by high density, high melting point, high conductivity and high thermal conductance. These unique properties make them indispensable for a variety of emerging and critical technology applications relevant to energy security i.e. clean energy technology, defence and civilian applications. Rare earths are not rare in the sense of their abundance, but have earned this descriptive because they are rarely concentrated enough for an easy recovery from their ores. There is large amount of reserves of rare earths minerals in the world. China's reserve of rare earths is 36 mt, but it contributes with 97% of global production. India has 3.1 million tonnes (mt) of rare earths reserves and currently has a little over 2% share of global output of rare earths, but that still leaves it the second largest producer after China. In India, monazite is the principal source of rare earths, Kerala, Orissa and Tamil Nadu account for nearly 95% of the country's production of rare earths.

One of the biggest roadblocks for mining companies is obtaining environmental clearances for rare earths production. Mining rare earths has raised green hackles because of the mildly radioactive slurry tailings, a result of the presence of thorium and uranium in rare earths ores. The toxic acid used in the refining rare earths is another area of concern. The recovery of rare earth elements from monazite has been restricted due to its thorium content. There is a need for concerted efforts to explore other primary sources of rare earth elements.

India has two major advantages in the RE industry. It has a large resource base in RE raw materials. It also has a large domestic market for both civilian and military products that gives it significant leverage, if used wisely. India also has a reasonable R&D base especially within the mission organisations of the country. However, the major inadequacies in converting indigenously available knowledge and technology into commercially viable products and services need to be rectified. For a national level strategy to be successful India needs to understand in much greater detail the technology – product – market links in the various key industries likely to be affected by RE shortages. This industry level analysis using a dynamic life cycle approach should also study in detail the various material and technology alternatives for dealing with RE bottlenecks and to set priorities.

Source: Metal News

Essar Commissions 6 MTPA pellet plant, yet another milestone

Essar Steel has commissioned recently an integrated pellet complex in Odisha comprising of iron ore beneficiation facility at Dabuna (Keonjhar), 6 MTPA pellet plant at Paradeep (Jagatsinghpur) and 253 kms long slurry pipeline with 12 MTPA carrying capacity connecting the beneficiation facility and pellet plant. Essar has invested around Rs. 6000 crore in setting up this integrated complex. The beneficiation facility is designed to use low grade iron ore fines. The slurry pipeline is the most cost effective and fastest mode of transportation that eases significant pressure on rail and road network, with reduced carbon footprint and minimal environmental impact.

Remember no one makes it alone.
Have a grateful heart and be quick to
acknowledge those who help you.

With the commissioning of this integrated complex, Essar Steel has become the largest pellet

producer in the country with an annual pellet production capacity of 14 MTPA – 8 MTPA at Vizag complex and 6 MTPA at Odisha complex.

A further 6 MTPA pellet plant at Paradeep is scheduled to be commissioned shortly including the corresponding upscaling of the beneficiation plant, taking the annual pellet production capacity of Odisha Complex to 12 MTPA.

While dedicating the facility to the nation, Chairman of Essar Steel, Mr. Shashi Ruia said, “Essar has always put a lot of emphasis on sustainable development. The way this state of the art complex has been designed puts maximum emphasis on achieving our goals in the State of Odisha. It is a matter of pride that Indian engineers have delivered this challenging project keeping the balance between growth and sustainability.”

Captive infrastructure

The Odisha pellet complex is backed by infrastructure that includes a 120 MW power plant by Essar Power and a captive berth at Paradeep Port set up by Essar Ports. The pellet plant is connected by a 9.5 kms conveyor belt to the fully mechanized berth at Paradeep port owned and operated by Essar Ports. This enables seamless transportation and loading of pellets from the plant into the ship.

Mr. Firdose Vandrevala, Executive Vice Chairman, Essar Steel India said, “It is our policy to make a meaningful contribution in the development of the State and the communities we operate in. With the commissioning of this integrated facility, we will be putting this policy into practice. We are committed to a long, sustainable and fruitful partnership for the growth and prosperity of the State.”

Why Odisha

Odisha possesses the largest reserves of iron ore and has been the largest producer of iron ore in the country. A large part of this production is in the form of fines which can be used in iron making only after converting into pellets. Paradeep is endowed with a deep draft all-weather port and is strategically located with access to both eastern and western markets.

Essar Steel's integrated pellet complex was executed by Essar Projects India Ltd and reflects its expertise in putting up such mega and challenging projects.

Odisha has emerged as one of the most investor friendly states for mineral based industries in India.

Rajendra Mittal, CEO, Odisha, Essar Steel, said “We are happy that we have commissioned the pellet facility, capable of using low grade iron ore fines to produce value added product, a critical input for iron/steel making. This has been possible only with persistent support and industry friendly policies of government of Odisha. We thank Government of Odisha for the same”.

Essar Steel's global standing

Essar companies with a pellet capacity of 27 MTPA shall be amongst the world's top three pellet producers once its 7 MTPA pellet plant in Minnesota USA becomes operational by the second half of next year.

Pellets

Pellets are a critical and reliable raw material for iron making and find usage across all iron making processes including Blast Furnace, Corex and DRI. Iron ore fines cannot be generally used directly in their physical form and the only way to use the fines is to convert them into pellets.

Producer	Capacity (MTPA)
Vale Brazil	54
Samarco, Brazil	30
Essar	27*
LKAB, Sweden	27
IOC, Canada	13
GIIC, Bahrain	11
(*8 MTPA – Vizag, 12 MTPA – Odisha, 7 MTPA – Minnesota)**	

Source: MMR

HYDROCYCLONES: An overview

(An efficient and cost effective classification tool in a mineral processing plant)

By O.P. Gupta,* Executive Committee Member,

IIM Delhi Chapter



A hydrocyclone is a sizing & classifying device used in a mineral processing (including desliming & dewatering) plant for separating particles by density/ size using mainly centrifugal force. Hydrocycloning is one of the old methods and is still widely used competitively for concentrating minerals.

A. Type of Hydrocyclones

There are mainly three types in which these hydrocyclones function, namely:-

1. Solid – liquid hydrocyclones
2. Liquid – liquid hydrocyclones
3. Dense media hydrocyclones

These are further elaborated as below:-

Solid – liquid hydrocyclones

These types of hydrocyclones are designed and used to separate solids in liquid suspension where solids have a higher specific gravity than the liquid. In these, water is generally the main transport medium. The slurry containing solids & liquid is introduced/pumped, under pressure tangentially in to the upper, cylindrical section of the hydrocyclone. This causes the slurry to spin inside the hydrocyclone, imparting centrifugal force on the suspended particles. The velocity at which the water flows through the hydrocyclone determines the efficiency at which the particles are separated from the water. Coarser particles with sufficient mass migrate toward the wall of the hydrocyclone. The particles then spiral downward, and the larger particles are transported down to the spigot of the hydrocyclone and are discharged out the bottom with a portion of the liquid. This stream is called “underflow”.

As the slurry moves downward through the narrowing cone section of the hydrocyclone, a large portion of the liquid turns inward and upward in a central vortex that discharges out the top of the hydrocyclone. Finer particles with insufficient mass to make it to the wall move to the inner section of the hydrocyclone, are entrained in this upward flow and discharge out the top. This stream is called the “overflow”.

The mass split of solids between the underflow and overflow, for the same feed size distribution, can be altered by changing external operational conditions such as feed concentration solids, or internally by changing the vortex finder diameter or hydrocyclone configuration. An easy way to monitor a solid-liquid hydrocyclone's performance is to install a pressure gauge to ensure the unit operates at the correct pressure.

The most common application for solid-liquid hydrocyclones in the mining industry's mineral beneficiation plant is to classify the ball mill discharge slurry in the closed circuit grinding system before it is sent for flotation & minerals separation. In this, the cyclone underflow is recycled back to the ball mill and the overflow moves down to the flotation circuit as flotation feed.

Liquid-liquid hydrocyclones

Liquid-liquid hydrocyclones separate immiscible liquids. As in solid-liquid hydrocyclones, feed enters tangentially near the top and a density difference is required between the two liquid phases to be



A Single Unit of Hydrocyclone

separated. Since one liquid will float on top of the other, the lower density liquid will report to the hydrocyclone overflow, while the higher density liquid reports to the hydrocyclone underflow.

The factors that influence the performance of this type of hydrocyclones are:

1. The viscosity of the liquid
2. The level of solubility of the liquids within each other.
3. Slurry temperature
4. Degree of density difference between the two liquid types.

Between the two liquid phases, the density difference is usually quite small, and therefore, small diameter hydrocyclones with special tail piece extensions are sufficient to impart enough centrifugal force to drive the aqueous phase outward & down as underflow, while coalescing light-phase droplets and sending them inward and upward through a so-called "reject" orifice as overflow.

Unlike solid-liquid hydrocyclones, the bulk of the flow in liquid-liquid hydrocyclones reports to the underflow as cleaner, dense aqueous phase, while only a small portion of the incoming flow reports to the overflow as concentrated, less dense, organic phase.

The most common application for liquid-liquid hydrocyclones in the mining industry is to separate organic from electrolyte in the solvent extraction & electrowinning (SX/EW) process for copper recovery.

Dense media hydrocyclones

Dense media hydrocyclones are used to produce a separation between solid particles of different densities using a mechanism such as relative density difference between valuable coal/minerals and waste gangue minerals. The solids to be separated are mixed into a media that has a density higher than water and pumped (or gravity fed) into a hydrocyclone. The density of the media is adjusted to the point where one or more solid species will float and one or more solid species will sink.

Selection of dense media depends on the application. For example, for coal – the generally used media consists of a mixture of water & magnetite while ferrosilicon & water mixture media is used for higher density separation applications such as diamond, iron ore, platinum and base metals.

Since the separation in a dense media hydrocyclone is primarily governed by the density of the media, large diameter, high capacity hydrocyclones are after used in these applications. In very large installations globally, individual hydrocyclones of sizes upto 1500 mm diameter are now used in dense media separation.

Dense media hydrocyclone are commonly used in the coal industry to wash raw coal and in diamond mining to beneficiate/concentrate diamonds.

B. Applications of hydrocyclones

Hydrocyclones can be divided into three major application categories, namely: Classification, desliming and dewatering.

Classification hydrocyclones

This category of hydrocyclone generally separates or classify on particle size, and the classification range is based on what size particle needs to be removed from the flow. Depending on the application, classification normally applies to cut sizes ranging from 20 µm to 250 µm.

These hydrocyclones are used for classification in mill circuits, where a stream needs to be separated



A Cluster of Hydrocyclones

into two distinct size ranges suitable for the downstream equipment. The single largest application of SAG (Semi-autogenous grinding)/ ball mill discharge in the closed circuit grinding process to liberate minerals from ore. In the ball mill grinding circuit, hydrocyclone classify ball mill discharge sending the finer material out the overflow to flotation and the coarse material out underflow and back to the primary ball mill.

Hydrocyclones used in backfill applications and in construction of tailing dams are also seen as classification hydrocyclones.

Desliming hydrocyclones

These are used where slimes need to be removed from a slurry stream before being processed further. The design is slightly different from classification hydrocyclones in terms of operating pressure and length of the unit.

The definition of slimes depends on the industry the unit is used in – for example, in the coal industry, slimes are defined as particles having a size smaller than 106 μm , while in the heavy minerals industry, slimes are defined as particles having a size smaller than 45 μm .

Dewatering hydrocyclones

Dewatering hydrocyclones are used where the prime objective is the removal of water with as little loss of solids as possible to the overflow. Thus, 100% (or as much as possible) of the solids should report to the overflow. The solids split to underflow, as well as the water split to overflow, is dictated by the particle size distribution. Therefore, the selection of dewatering hydrocyclones must where possible be based on correct feed size distribution.

Dewatering hydrocyclones are used on heavy mineral product stockpiles, chrome product stockpiles, mill circuits and sand washing plants.

C. Selecting factors

The single biggest factor affecting separation/classification in a hydrocyclone is its diameter. Hydrocyclones are sized based on the separation size requested in the process. There is a relationship between hydrocyclone diameter and cut point, as larger hydrocyclones cut coarser than smaller diameter hydrocyclones.

Separation requirements in a grinding circuit are normally expressed in terms of a P80. The P80 is the micron size that 80% of the overflow solids will pass through. For example, a P80 of 75 μm means that 80% of the solids in the hydrocyclone overflow are smaller than 75 μm . Typically, there is a minimum (or specific) solids concentration required of the hydrocyclones overflow before it can be sent to flotation or other downstream process.

Knowing the required P80 and overflow concentration (% solids), as well as the recirculating load in a grinding circuit or tonnage of underflow solids returning to the mill divided by the new feed tonnage to the circuit – hydrocyclones can be selected to produce the desired overflow product.

Recirculating load is mainly a function of the mill's capacity to grind and must be estimated and provided by the mill manufacturer in order to properly size a hydrocyclone cluster.

The preference for a single hydrocyclone or multiple small-diameter units housed in a distributor arrangement should also be determined. A single unit minimises the cost, while multiple small units maximise the efficiency under varying conditions as hydrocyclones can be opened or closed. Hence, with projects becoming more price – sensitive the trade-off between fewer hydrocyclones of larger diameter verses multiple hydrocyclones of smaller diameter remains a contentious point. Also, with safety becoming more paramount, the use of larger-diameter hydrocyclones may not find favour with some mines due to the difficulty in maintaining and replacing these sizes of units. Cluster units allow for standby units to be incorporated, which increases availability and maintenance is generally easier since these units are smaller in diameter and therefore lighter.

However, new projects being investigated call for ever-increasing tonnages and volumetric flow rates and the use of larger-diameter hydrocyclones for these types of process may be more suitable compared with cluster units, mainly due to the sheer volumes that need to be processed.

D. Advantages and disadvantages of hydrocyclones

Advantages

Hydrocyclones have some advantages over alternative classification equipment such as screens including their low capital cost & small footprint. They require relatively less space than other equipment, usually use less water and have a higher output. Since there is no vibration, the support structures for hydrocyclones are also cheaper compared with equipment that includes vibration.

They are easy to operate and maintain with no moving parts. They are also efficient with no head loss build-up or clogging during separation. As they have no moving parts, hydrocyclones are maintenance friendly and provide high plant availability & low costs to maintain.

Unlike screens, hydrocyclone systems typically have spare hydrocyclone capacity built into a multi-cyclone cluster, allowing for continuous operation by valving out a malfunctioning hydrocyclone for maintenance and valving in a spare hydrocyclone.

Disadvantages

However, hydrocyclones have disadvantages as well. They are not perfect separators – a small amount of coarse material can get misplaced to the overflow, while a portion of the fine material reports with the coarse material to the underflow. But, well performing hydrocyclones overcome this problem and can reduce the quantity of misplaced particles significantly.

E. Hydrocyclone Manufacturers

Following are some of the key hydrocyclones "makes" / manufacturers, globally:

- FL Smidth Krebs hydrocyclones
- GIW hydrocyclones
- Multotec hydrocyclones
- Netafim makes hydrocyclones
- Weir Minerals hydrocyclones

F. Conclusion

The paper has reviewed various types of hydrocyclones and technologies available for classification. Use of hydrocyclones has advantages over other types of classification equipment for considerations of separation efficiency, ease of operation & maintenance and plant availability, operational flexibility, space requirement and capital cost. Even today, it is the best option available, unless or otherwise for other specified considerations. The demand of these hydrocyclones is met in India by local manufacturing with technology support/ collaboration from overseas manufacturers and also through import, mainly for Krebs & Multotec makes.

*Formerly with Hindustan Zinc Ltd; Zambia Consolidated Copper Mines Ltd, Zambia and Kenya Fluorspar Company Ltd, Kenya and carries a very rich experience in mineral processing & Beneficiation.

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Presentation by M/s Inductotherm (India) Pvt. Ltd. on “Necessity of Induction Furnace for Investment Casting & Precious metal melting applications”

IIM Delhi Chapter organised a technical talk/presentation at its premises on 20th December 2014 on a very interesting & innovative subject titled “Necessity of Induction Furnace for Investment Casting & Precious Metal Melting Applications”. This talk was delivered by its technology space setters, M/s Inductotherm (India) Pvt. Ltd., Ghaziabad's senior representatives, (Mr. Ajit Chaturvedi, Regional Sales Head (Furnace) and Mr. B R Garg, Area Sales Head) who are Indian subsidiary of their 1 Billion parental Inductotherm Group of USA.

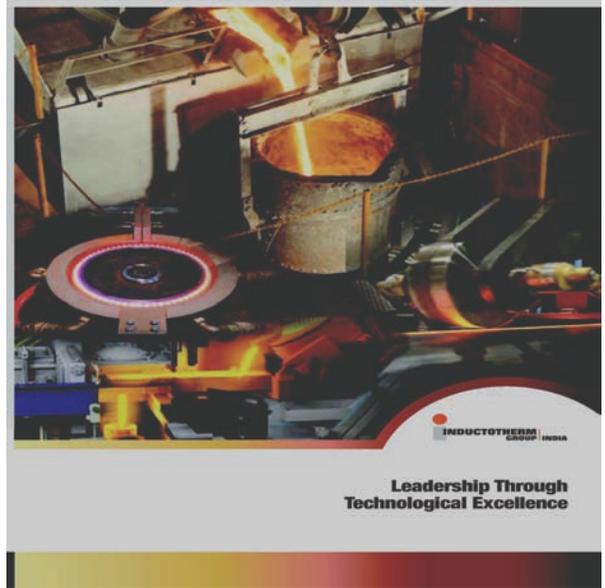
The talk was attended by 25 members of IIM Delhi Chapter. There was a lot of enthusiasm shown by the audience on this subject with a good interaction between the audience and the talk presenters.

A brief about the presenter company and its activities is as below:-

Inductotherm (India) Pvt. Ltd, an Inductotherm Group Company, an international Group of 60 Companies operating in 17 countries employing over 3200 people world-wide with an annual sales in excess of US. 1 Billion, was established in India in the year 1982. It has since consolidated its position as the market leader in Induction technology for heating, melting, welding, vacuum melting and vacuum heating. Presently, the company employing 435 persons with its annual turnover in excess of 80 million US\$ has been a trend – setter in offering state-of-the widely and is regarded as the best choice for induction heating & melting.

Their manufacturing plant in India is spread across an area of 85,000 sq. mts and is fully equipped with the latest state-of-the-art machines to achieve global quality norms. The company provides the equipment and services for the metals & materials Industry services both in ferrous & non-ferrous metal producers, mining & smelting operations, diecasters, recycling companies, investment casters and precious metal manufacturers etc in following areas:

1. Melting, Holding & Pouring
2. Specially engineered fully automated induction melting systems, that include induction power supplies, coreless induction furnaces, charging & pre-heating and pouring systems. The power supplies are in medium frequency from 15 kw to 25,000 kw and furnaces from as low as 1.5 kg to massive 50,000 kg capacities. The company has installed more than



3500 induction melting systems throughout the country for various applications in steel & alloy steel melting, Grey & Ductile Iron Melting, Non-ferrous metals melting including Copper & Copper Alloys, Aluminium, Zinc etc; Precious Metals Melting (Gold, Silver, Platinum); metal powder manufacturing and Investment castings. It has supplied to MMTC for gold coins & souvenirs manufacturing and to steel grinding media balls manufacturing companies. In investment casting technology, moulds made out of wax are used. After their first use, this wax can be re-used for subsequent moulds making. Further, these wax moulds provide smoother finish castings which are much superior to castings produced by conventional mould materials.



3. Heating & Heat Treating Technologies

Offering custom engineered automated induction heating system for heat treating for selective case hardening, forging, pipe heating, tempering, annealing, bonding & brazing, serving variety of industries including automotive, aerospace, industrial, mining, oil & gas, marine, railways, power generation etc.



The company has installed more than 1500 induction heating systems throughout the country.

4. Induction welding systems

Supplying large solid-state HF wide range welders for most challenging and complex tube and pipe welding applications. The welders in power ratings from 50 KW to 2,000 KW in welding frequencies ranging from 120 KHZ to 800 KHZ. The company has installed more than 200 induction welding systems throughout the country, applications in manufacturers of low & medium carbon steel, alloy steel, stainless steel, aluminium, copper & brass tubing.



5. Vacuum & Controlled atmosphere induction melting furnaces(VCAP)

This innovated technology is from M/s Consare Engineering Ltd., UK. The VCAP furnace is designed for melting of a solid charge in an air atmosphere or vacuum, with final degassing stage under vacuum. The final pouring of the metal is performed in air or under protective atmosphere of inert gas. The company manufactures a wide range of furnaces (in capacities of 3 ton & above) for specialised engineering applications, such as:



- Vacuum Induction Melting
- Vacuum Degassing
- Vacuum Precision Investment Casting

- Electro Slag Remelt
- Vacuum Arc Remelt
- Vacuum Heat Treatment
- Vacuum Aluminium Brazing, etc.

At the end of session, vote of thanks was proposed by Mr. S C Suri, Chairman, IIM DC and mementos were also presented to both the speakers.

The talk ended with a lunch.

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India's platinum demand to rise 25% in 2015

Platinum demand in India is likely to rise 25 per cent in 2014 on the back of growing consumers' interest in bridal jewellery and other innovative collections. In its latest quarterly analysis, London-based World Platinum Investment Council (WPIC) has pegged India's platinum demand at 125,000 ounce (oz) in 2015, compared with 100,000 oz in 2014. "There has been a growing focus on emission norms in India. With this, there is a great upside in platinum use as a catalyst in diesel cars going forward. We estimate India's platinum demand from automotive sector to rise to 165,000 oz in 2014," said Paul Wilson, CEO, WPIC. Platinum demand is steadily rising in India with the introduction of innovative designs of jewellery and wedding sets. The Gem & Jewellery Export Promotion Council (GJEPC) estimates India's platinum import during April-October 2014 at \$11.99 million against \$6.81 million imported in the year-ago period. WPIC in its analysis reported a 50 per cent decline in above-the-ground stocks to 2.56 million oz in 2014 from 4.14 million oz in 2012. Also, the global platinum market is expected to remain in a deficit with 885,000 oz for 2014 - 27 per cent more than the shortfall of 695,000 oz in 2013. Meanwhile, reduced supply owing to unprecedented closure of South African mines is likely to keep platinum prices up next year. Data compiled by Kitco.com showed average platinum price at \$1,208.85 an oz in November, a sharp decline from \$1,259.78 in October and \$1,362.36 an oz in September. In August, however, average platinum price was hovering at \$1,492.65 an oz.

It's always been and always will be the same in the world. The horse does the work and the coachman is tipped.

"One of our key objectives is to introduce greater transparency to the market. Today's report shows the fundamentals of the industry have become tighter. Demand has exceeded supply in each of the last three years. As a result, above-ground stocks have declined significantly. The markedly different profile in the 2014 third quarter analysis highlights the value of more frequent scrutiny of actual performance, and reflects seasonality as well as some investment outflows," said Wilson. Total global supply of platinum is expected to be 7.1 million oz in 2014, nine per cent lower than the previous year owing to disruption on unprecedented South African mining strike. Total global annual supply from mining is expected to be 13 per cent below 2013 levels by year-end 2014, largely attributable to the five-month mining strike in South Africa. Global platinum supply from recycling in 2014 is estimated to be two per cent higher or 40,000 oz more than in 2013. Global platinum demand is expected to be six per cent lower this year at eight million oz, as a decline in investment demand offsets growth in automotive and jewellery demand. The two largest sources of demand are both forecast to grow in 2014. In 2014, demand from the automotive industry is expected to expand by five per cent or 145,000 oz, as platinum is already benefiting from Euro VI-compliant vehicles being manufactured. Global jewellery demand in 2014 is expected to continue to grow, with an additional 115,000 oz of demand forecast - an increase of four per cent. Overall purchasing in China remains robust and platinum continues to make important inroads into the newer, Indian market.

Source: Business Standard

Odisha Mining Corp commits iron ore as steel players weigh import option

At a time when the operational steel mills in Odisha are starving of iron ore and a few steel players are mulling to import the ore, state controlled miner Odisha Mining Corporation (OMC) has agreed to

supply 2.5 million tonne of iron ore to the units that have signed MoUs (memorandum of understanding) with the state government. OMC will offer the iron ore as long-term linkage to the MoU signed steel players. A majority of such units have not been allotted captive mines and are operating without ore linkages. The committed quantity would be supplied to 18 steel units before the end of this fiscal. Steel industries that would benefit from the move are Bhushan Steel Ltd, Bhushan Power & Steel Ltd, Jindal Steel & Power Ltd (JSPL), Visa Steel and Nilachal Ispat Nigam Ltd (NINL). "As per a decision of the State Cabinet, 50 per cent of OMC's iron ore output would be reserved for state based steel industries while the rest 50 per cent would be put to e-auction. Before the end of this fiscal, OMC is in a position to offer 2.5 million tonne iron ore to state based units. We have a long-term plan to ramp up OMC's iron ore production to 20 million tonne in the next three years. As OMC's output goes up, it will be in a position to supply more amount of iron ore," said Pradipta K Mohapatra, chairman of OMC.

Though 31 out of 48 MoU signed steel units have commenced partial or full scale production, they are struggling to keep their operations afloat due to raw material scarcity. A few days back JSPL chairman Naveen Jindal during his visit to Odisha had hinted at the possibility of iron ore imports. Tata Steel was also staring at imports after two of its big mines in Odisha- Joda east and Katamati, that contribute nearly two-thirds of its ore output, went under suspension for expiry of statutory clearances. Out of the agreed quantum of 2.5 million tonne of iron ore, 60 per cent would be allotted for steel made through the blast furnace route and the rest 40 per cent via DRI (direct reduced iron) route. The agreed quantum is 50 per cent of OMC's iron ore output expected to be five million tonne this fiscal. Of all the applicants, three companies having iron ore leases have applied for the long-term linkage- Essar Steel, JSPL and Adhunik Metaliks Ltd. Government data showed Essar Steel is having a lease outside the state whose consent to operate, mining scheme and environmental clearance are not valid. Though JSPL has a lease called TRB mines, it is not meant for captive use and hence production from this mine has not been deducted from the company's iron ore requirement. Adhunik Metaliks has a mining lease with a capacity of 120,000 tonne per annum with valid consent to operate, mining scheme and environmental clearance. This quantity has been deducted while computing the steel company's iron ore requirement.

Source: Metaljunction

Steel Ministry looking at merging small PSU units with bigger ones

With eight companies under its administrative control, Steel Ministry has started discussions on merging smaller units with the bigger PSUs, including MSTC with Ferro Scrap Nigam Ltd (FSNL). "Our secretary has directed to study the feasibility of merger of MSTC and FSNL. A discussion is going on in Ministry regarding smaller units," the ministry informed the Standing Committee on Coal and Steel. The committee, which tabled its report in the Lok Sabha recently, said the issue of merger of small units came up for discussions during oral evidence. "In a post evidence reply, the Ministry have informed the Committee that feasibility of merger of smaller PSUs would be examined taking into account the desirability, shareholding pattern, functions and other aspects of the larger entities," the report said. Steel Ministry has eight companies -- SAILBSE 0.06 %, RINL, NMDC, MoilBSE 0.42 %, KIOCL, HSCL, MECON and MSTC -- under its administrative control. FSNL's 100 per cent equity is with MSTC. SAIL, RINL and NMDCBSE 0.82 % are the major PSUs. "The Secretary, Ministry of Steel, was candid enough to admit during evidence that a study has been conducted to look into the matter of repositioning of MSTC and FSNL," the report said. MSTC is the holding company of FSNL. While FSNL is into selling of scrap; MSTC is in the business of e-commerce. The Committee recommended that an extensive study should be undertaken regarding other PSUs under the administrative control of the Steel Ministry within the next three months. Stating that it was concerned to observe that "at times the issue regarding chances of survival of smaller companies crops up", the Committee felt that "due to smaller units, a lot of expenditure is incurred under the non-plan head..."

Source: The Economic Times

India's steel production grows by 4.8% in November

India's steel production grew by 4.8 per cent against the world average of 0.1 per cent expansion in

November. India produced 6.89 million tonnes (MT) steel in November compared to 6.57 MT in the same month of last year. During the month, world's steel output was at 130.52 MT against 130.42 MT a year earlier. The subdued growth in the world average is mainly due to lower production by China, the largest producer and consumer of steel in the world. Steel production in China declined by 0.2 per cent to 63.30 MT in the month. Notwithstanding the growth in production, India might end up as the world's fourth largest steelmaker in 2014, like in the past four years. China, Japan and the US produce more steel than India does. With 76.19 MT production during January-November period of current year, India's position in the world order of steel production has not changed. China remains the top producer of the metal during the period at 748.67 MT. Japan also maintains second position with a production of 101.66 MT and the US at the third slot with 80.95 MT during the first 11 months of current year. The sequence remains same for the last four years as well. During November, Japan produced 9.17 MT steel, the US 7.2 MT, South Korea 5.91 MT and Russia 5.84 MT.

Source: www.hellenicshippingnews.com

India's resurgent economy drive demand for steel

The steel sector is one of the most crucial sectors in the development of a country's economy. The level of per capita consumption of steel is an important determinant of the socio-economic development of a nation. The Indian steel industry has entered a new development stage since 2007-08 and is riding on the resurgent economy and the growing demand for steel. India's 33 percent growth in steel production in the last five years was second only to China among the top five steel producing nations, according to data by World Steel Association (WSA). Between FY2008 and FY2013, India's steel production has grown at a compound annual growth rate (CAGR) of about 7 percent.

India is the fourth largest producer of crude steel and the largest producer of soft iron in the world. Presently, the per capita consumption in 2013 stood at around 60 kg against the world average of approximately 225 kgs. However, these figures are expected to rise with increased industrialisation throughout the country.

Challenging global environment

Steel companies globally, have been operating in a challenging environment of rising input costs and limited pricing power, leading to steady erosion in margins. In response, steel makers have been integrating upstream facilities to secure supplies of iron ore and coking coal.

The global scenario has been a prologue to the Indian market where after a decade of exponential revenue and profit growth, the steel players are entering a down-cycle. Historically, high asset utilizations, benign global pricing, consolidated industry structure and a local demand-supply environment have enabled Indian players to generate better realizations compared to their global counterparts.

Recently, however, the Indian steel industry has started witnessing the signs of down-cycle leading to margin compression despite strong volume growth. This is primarily due to high input costs and a weak macroeconomic environment, both globally and domestically.

Declining margins, coupled with sluggish demand growth, has made investors cautious about steel companies. As a result, enterprise value for the Indian steel industry has declined almost 30 percent since FY2010.

This situation is further complicated by key trends in the global and domestic steel industry that have far-reaching impact on Indian steel players and customer markets.

However, with the new government at the Centre under Narendra Modi and having just completed a comprehensive round of ministerial and bureaucratic changes, the government is set to embark on a series of economic reforms aimed at putting the country on track for 8% growth in the intermediate term and an even faster pace beyond that.

All these positive steps will change the scenario on the Indian horizon.

Key demand drivers

India's per capita steel consumption of 60 kg as against the world average of approximately 225-kgs offers large scope for development of the steel sector. The rural India constituting approximately 65-70% of Indian households has an extremely low per capita steel consumption at 10-kgs reflecting the large potential for the commodity. Steel to cement ratio of India at 0.29 as against that of developed countries in excess of 1.0 reflects immense scope in steel intensive construction. The government's has earmarked over 1 trillion dollar investments deployment in project related to infrastructure and construction, which will trigger stupendous demand for steel. Further, sectors in the industrial, manufacturing & capital goods duly stimulated by automotive & consumer durable segments are showing a turnaround in demand cycle.

The government's emphasis on "Make-in-India" and the recent announcements on various infrastructure projects like 100 smart cities, Sagar Mala for improved port connectivity, Diamond Quadrilateral (high speed bullet trains), Agri-Freight corridor, 200 low cost airports, housing for all by 2022 and over US\$90 billion investment by Japan, China & USA, are sure to boost the demand for steel.

Government initiatives

Envisaging the spiralling demand for steel given the unprecedented thrust on infrastructure development and construction, India plans to set up a steel plant under SAIL at Bayyaram in Khamman District of Telangana, according to Mr Narendra Singh Tomar, Union Minister of Steel and Mines. A feasibility study is already underway and soon after its completion, a site would be selected for plant and funds allocation.

Some of the other recent government initiatives in this sector are as follows:

- After the approval of the new mining law by the Parliament of India, the SAIL-led Afghan Iron and Steel Consortium (A F I S C O) will soon recommence negotiations with the Afghanistan government to set up a plant with a capacity of 1.5 MTPA.
- The Ministry of Steel has proposed to set up special purpose vehicles (SPVs) with State governments to revive investment in the steel sector. The role of the SPVs will be to acquire land and obtain all necessary environmental and forest clearances, while NMDC Ltd will be the company creating these SPVs.
- The Ministry of Steel has also proposed Special Mining Zones, where regions with mineral resources will be identified as strategic resources and one nodal authority will arrange necessary green clearances for mining projects in such areas.

In addition, the Government of India has picked up pace in giving several projects environmental clearances, as it seeks to reboot the investment flow in the country. The clearances were given for key projects such as coal mining at Chhatrasal for Sasan Power and Mahanadi for Coal India. This move will significantly help in enhancing the Indian steel sector.

Road ahead

The recently released Union Budget 2014-15 has paved the way for the development of the Indian steel sector with proposals for the construction of 100 smart cities and changes in the MMRD Act. Also, India's ranking in the global list for production of crude steel is all set improve with increasing demand for domestic consumption in the years to follow. As per Tata Steel, India's steel sector is anticipated to witness investment of about Rs 2 trillion (US\$32.68 billion) in the coming years.

Source: MMR

Arcelor Mittal Shows interest in acquiring a sick steel unit in Italy

The Italian government is intervening in the management of Europe's biggest steel plant, in an attempt to reform the beleaguered business. A commissioner will be appointed to manage the site in Taranto and could have the task of preparing its sale. Ilva, which is a major employer in the southern

Italy, has faced criticisms over its environmental record. Toxic emissions from the Ilva plant have been blamed for unusually high rates of cancer in the area. The privately-owned plant, Europe's biggest in terms of output capacity, employs at least 14,000 people. Ilva has been making a loss for years and was placed in special administration last year. Italy's Prime Minister Matteo Renzi also committed the government to clearing up the polluted areas surrounding the plant, in order to protect children in Taranto, the coastal town in which Ilva is based. The European Commission said in October that the Tamburi area of the town in particular was contaminated and urged the government to take action. Mr Renzi said that the government would consider nationalising the plant and selling it on, if a buyer could be found who promised to protect jobs. "I forecast maximum state intervention of 36 months to clean up Ilva and relaunch it," he told reporters. The international steel giant ArcelorMittal has reportedly expressed an interest in acquiring Ilva. The plant, owned by the Riva family, was partially closed in 2012 because of the high levels of pollution.

Worrying is a function of idle mind. It often gives a small thing a big shadow.

Source: Steelgroup.co.in

More investments may help steel industry grow - Mr Sushim Banerjee

Mr Sushim Banerjee DG of INSDAG wrote in Financial Express reported that the Indian economy in July to September quarter has performed comparatively worse than Q1. But let us look at the positives. The mining sector grew by 1.9%, lower than Q1, but much higher than zero growth in Q2 of last year. The electricity, gas and water supply sectors had experienced a growth of 8.7% which is higher than previous year, but lower than last quarter. The construction sector also grew at a higher rate than last year. The maximum growth was experienced by community, social and personal services sector, which even exceeds last quarter's level. GDP growth in Q2 exceeds both the quarters' rates of last year. As steel intensity in electricity, gas and water supply and construction is higher than other sectors, it may be concluded that steel consumption growth by 0.5% during H1 of the current fiscal is the outcome of this positive growth. One significant factor constraining steel consumption relates to poor performance in manufacturing whose value addition to GDP was lower by INR 3,011 crore in Q2 over Q1. The current state of manufacturing in the country is directly linked with consistently downward trend in Gross Fixed Capital Formation at current prices whose share in GDP at market prices has dropped from 29.9% in Q2 of last year to 28.3% in the second quarter of this fiscal.

It is also seen that both private final consumption expenditure and government final consumption expenditure at current prices as a percentage of GDP at market prices have dropped in Q2 compared to Q1. As no mega investment has taken place other than the ongoing projects, a large part of them belongs to steel plants' brownfield expansion. But one must sound a note of caution if one believes that brownfield expansion would continue unhindered in Q3 and Q4 also. The weak link in this regard is assurance of supply of coking coal and iron ore. No fresh investment is planned for iron ore sourcing other than beneficiation, pellet plants which do not enhance availability, only facilitate quality supply. Slurry pipelines from port to plant is another area of investment which would facilitate movement of cheaper iron ore from abroad and reduce freight cost. But it would not enhance domestic supply. Investment in coking coal is likely to be withheld for another 3-4 months to coincide with finalisation of e-auctioning and allotment of coal blocks. Another major area of concern is the dwindling interest in power plants. The IPPs are too eager to get out of the market but the buyers' interests are not there. If the situation continues, the thermal coal linkages from the new allotted coal mines by priority allocation would lose its charm.

Source: Steel Guru

SAIL wins National Energy Conservation Award

Bhilai Steel Plant, the flagship unit of Maharatna SAIL has won an award in the National Energy Conservation Award 2014, in the Integrated Steel sector, on the basis of the improvement in its energy performance over the previous year, 2012-13 in an award function on 14th December, 2014. Energy conservation initiatives at SAIL's Bhilai Steel Plant have led to a saving of INR 364 crore during

the financial year 2013-14. Bhilai Steel Plant has won this award for achieving a 5% saving in thermal energy consumption and savings of 2% in electrical energy consumption over the previous year. This has been possible due to concerted efforts by all departments of BSP to reduce energy consumption by undertaking energy saving schemes as well as minimizing wastage and judicious distribution of available fuel resources to various departments by the Plant's Energy Management Department, so as to maximize consumption of by-product gases that are generated in-house. Steps were simultaneously taken to reduce consumption of purchased fuels like boiler coal, furnace oil, etc. Chairman, SAIL Mr. C.S. Verma, complimented Bhilai Steel Plant on being adjudged the Best Integrated Steel plant in the National Energy Conservation Award 2014. He lauded the plant's efforts for achieving energy efficiency in various areas of operation and urged the plant collective to continuously improve this performance in the future. Instituted by the Government of India, the National Energy Conservation Award is a prestigious award given every year to give national recognition to the selected Industrial units who have made systematic and serious efforts for efficient utilization and conservation of energy and reduction in energy consumption on year to year basis.

Source: Steel Guru

Konecranes meets steel industry's challenges with intelligent lifting solutions

Lifting equipment in the steel industry is subjected to roughest conditions, especially extremely high and variable ambient temperatures, difficult and heavy loads, as well as ever-changing and gruelling operations. Konecranes provides a wide range of reliable and versatile crane systems and other material handling solutions specially designed to operate under such extreme conditions.

Konecranes' solutions offer high levels of flexibility, performance, and safety. They have been developed to meet the needs of the steel industry – from the raw material handling to the steelmaking, rolling and refining processes. No matter what type of steel should be managed, including slabs, coils, blooms, or tubes, Konecranes supplies all types of cranes, such as ladle, charging, billet, slab, coil, bar or plate handling, and scrap yard. Design conforms to the requirements of international and national standards; these cranes operate efficiently and safety in continuous use, without interruption.

Konecranes continually invests in research and development to ensure we offer the most effective and environmentally conscious lifting equipment for the steel industry in the market. We also design customized, customer-specific equipment to meet our customers' unique requirements. Furthermore, our cranes can be equipped with automation function options, which, according to Subhas Baxi, Country Manager, WMI Konecranes India, enables safety and also lead to better productivity.

Intensive performance

Because of a higher risk level in transporting molten metal, special safety features are designed for the Ladle and Charging Cranes from Konecranes.

The main hoist mechanism of Konecranes Ladle Cranes includes redundant rope reeving, double service brakes on primary shafts, and backup brake acting on the rope drum. Rope equalizer beams are provided with a dampening unit to slow down equalizer beam tilting in case of wire rope failure. An upper emergency stop limit switch is also used in the main hoist. In addition, overload protection, main hoist over speed supervision, and end limit switches are automatically standard features of the equipment.

Safely is also a key issue for the Konecranes Charging Cranes, together with a redundant control system and load-precise control. Advanced crane control features executed with modern automation technology help guide the operator in precise placement and safe transport of the load along its path. Charging Cranes are shielded from the flames and are designed to operate in high ambient temperature. Charging Cranes are applicable to include a higher lifting capacity for infrequent maintenance tasks such as lifting the furnace shell. Konecranes' goal is zero unplanned downtime of these critical cranes.

Taking care of safety issues without reducing productivity: Konecranes Billet and Slab cranes feed the

rolling mill and are, therefore, critical to its operation. Sometimes they incorporate a rotating trolley or a rotating loading device in order to position the product correctly in relationship to the conveyor. Slab and billet handling cranes must be able to handle radiant heat from the product. These are high production cranes with high speed requirements. Konecranes Sway Control is used for smooth, accurate positioning of the load and assists the operator in maximizing throughput.

The Billet Crane can be equipped with lifting magnets or with a billet tong in a case when billets are extremely hot. Furthermore, the Slab Cranes designed by Konecranes can be equipped with a mechanical or hydraulic tong for single or multi-slab handling.

Combining operating efficiency and protection of the coil: Konecranes Coil, Bar and Plate Handling cranes are used to perform material handling in rolling mills, finishing mills, and storage. Sometimes these cranes incorporate a rotating trolley or rotating loading device in order to position the product correctly in relation to the plant layout. Easily moving large amounts of scrap steel: Konecranes Scrap Yard cranes can be equipped with lifting magnets, hydraulic grab or both together to move scrap steel from one place to another. To keep productivity at a high level, the traveling speed of the scrap yard cranes can go up to 140 m/min, and lifting capacity can be up to 40 metric tons with a loading device.

Dependable crane service

Konecranes maintains more cranes worldwide than any other company. As a global leader in overhead lifting equipment, Konecranes offers service on all makes and models of overhead cranes for diverse industry sector, including the steel industry. Its service is focused on lowering costs through preventive maintenance and improving performance through better technology. The Konecranes service commitment includes a comprehensive offering for all makes and models of heavy-lifting equipment, including inspections, maintenance programmes, modernizations, consulting and training, spare parts services, operator training, Crane Reliability Surveys, and 24-hour response, among others. In addition, Konecranes offers sophisticated TRUCONNECT Remote Services for on-line reporting and troubleshooting.

Source: MMR

Industry BUZZ

Industry Performance Snapshot – November 2014



CBEC likely to mandate BIS for Chinese Bar & Rod

Looking at the rising imports from China, CBEC has decided to mandate BIS norms for imported Bars & Rods. ISRA, AIIFA and various steelmakers from Maharashtra & Chennai have already raised their voices against it. The board has examined the matter and found that it contains over 0.008% Boron, which categorized under CTH 7228 that does not match the BIS standard. According to recent data released by Steel Ministry, import of Bar & Rod has increased by 43% in Sep.'14 to about 154,990 MT against 23% in previous month.

Chandrababu Government eyes NMDC

The Chandrababu Naidu government is now eyeing on NMDC to shift its 3 MnT pa proposed Steel plant from Ballari to Seemandhra. As per industry sources, the neighboring state is making attempts to influence the Union Government to quit this plan. On 7 May'14, the Karnataka government issued a final notification to acquire 3,000 acres of land for NMDC. Presently, the company is in process

through KIADB, which is expected to cost nearly INR 180 billion to setup. The company has deposited INR 1.59 billion as tentative cost of land including service charges and also received vital approvals for water & power supply from the state government. However, it did not succeed to find partner with expertise in steelmaking for Ballari project.

China abrogates 3% Coking Coal Import Duty under FTA

On 17 Nov'14, China and Australia signed a Free Trade Agreement (FTA) and removed import duty on Australian Coking coal. China had earlier imposed 6% import duty on Thermal coal and 3% on Coking & Anthracite to support domestic miners, who have been struggling with rising costs and falling prices. "The tariffs on coking coal will be removed on day one, with the tariff on thermal coal phasing out over two years". Australian Prime Minister Tony Abbott said in a statement.

CIL achieves Production Target for the First Time

CIL have hit its coal production target for the 1st time in FY15, in Oct'14. The company produced about 40.2 MnT coal while the target was about 39.7 MnT. In Q2 FY15, its production has increased by nearly 5% in comparison to Q2 FY14. In October, CIL's subsidiary ECL produced around 25% more than its target i.e. about 3.2 MnT coal. However, it missed its off-take by 1.83 MnT in October.

Indian Government to consider Domestic Coal Prices as Benchmark

Post cancellation of coal blocks, the government has decided to auction 74 coal blocks to resolve raw material scarcity in the country. To evaluate Net Present Value (NPV) and future earning of these blocks, the government is likely to consider the current domestic coal pricing model as a benchmark. However, the proposal is currently waiting for approval.

Indian Iron Ore Exports fall by 56% M-o-M

Iron ore exports have been consistently falling from India on the grounds of lower realizations, higher freight cost and export duty. It fell by 56% in October compared to September. India's total Iron ore export in FY14 stood about 14.4 MnT against 18.2 MnT in FY13. In FY15, NMDC remains the largest exporter with 0.07 MnT ore followed by Bagadiya Brothers (0.04 MnT). Merely, two shipments have taken place through Vizag Port (68,000 MT) followed by Mormugao Port (25,000 MT). Also, Spot Iron ore prices have declined to the lowest level in more than five years as China ordered few steel mills to reduce production, resulting in less demand for raw material in the world's largest consumer.

Indian Rebar Importers file Stay Petition against CBEC order

Recent notification issued by the Indian Finance Ministry on 7 Nov'14 against rising import of non-BIS Rebar from China, has induced Indian importers to file a stay petition in Mumbai High Court. Sources reported that about 20,000 MT cargo from China has been held at Mumbai customs. Indian steel manufacturers say that imports from China are rising on the backdrop of export benefit given by the Chinese government.

JSPL shelves USD 10 billion Project post Coal Blocks Cancellation

After cancellation of Ramchandi Mine, JSPL has shelved its USD 10 billion Coal-to-Liquid (CTL) project at Angul (Odisha). This project was likely to produce 80,000 barrels per day of crude using German firm – Lurgi's technology. This project would've enhanced energy security by reducing dependency on imported crude.

JSW Steel waiting for response on Lucchini Bid

JSW Steel is waiting to hear from Lucchini Piombino, Italy's 2nd largest steel producer, after it submitted final bid on 20 Nov'14. Special Commissioner, Piero Nardi analyzed the bids and submitted its initial report on 21 Nov'14 to the Supervisory Committee. The company has already submitted an offer of nearly USD 100 million for these assets in Piombino but was asked to lift offer in October. Lucchini Spv has the capacity of producing 2.5 MnT of Steel in a year.

Odisha Government to send Lease Cancellation Notice to 18 Merchant Mines

Odisha government is to send cancellation notice to 18 major mines, operating under 2nd deemed renewal after the Supreme Court asked them to reply within a month, on why their lease renewal

application should not be rejected? These mines include major names such as KJS Ahluwalia, Rungta, Tata Steel, Mesco, AMTC, KN Ram, Kalinga Mining Corp etc. Iron ore production from these closed mines in last fiscal was about 18-19 MnT. The state government has allowed Iron ore product at 8 of the closed 26 Mines on 29 May, 2014 through an express order, it is sitting over applications of rest of the mines.

Odisha grants 3 months more to Mining Lease Renewal

The Green Bench of the Supreme Court has granted 3 months of more time to take a decision on lease renewal of 26 mines running under 2nd or subsequent renewal. Last May, the apex court shutdown 26 mines and directed the state government to take a decision on fate of mines within 6 months ending 15, Nov'14. Out of the 26 mines, the government allowed 6 captive mines operated by Tata Steel, SAIL and one standalone OMC mine to operate through express orders. Rest of the 18

Government likely to auction 49 Coal Blocks

Post cancellation of coal blocks, the government is likely to put 49 cancelled coal blocks under hammer, which will be conducted by MSTC. It is expected that 24 blocks will be reserved for steel manufacturers and 17 for power producers. A sub-committee formed by the government to evaluate coal block auction to private companies as well as block allocation to government companies, has recommended to reserve 8 blocks for domestic cement plants.

High Court to re-start SAIL Jharkhand Iron Ore Mines

Ranchi High Court has ordered the state government to allow SAIL's operations on its Gua mines. On 22 Feb 1949, the company was granted mining lease for Durgaburu Mining Lease of Gua Iron ore mines for 30 years and then, it was renewed for a period of next 30 years, which expired on 21 Feb'09. It submitted its application for renewal on 8 Feb'08 seeking 2nd renewal along with all necessary statutory clearances. Waiting permission to start.

Tata Steel consistently sourcing Iron Pellets from Domestic Market

Tata Steel is bound to source Iron ore/Pellets from merchant manufacturers at market price. The company has sourced about 74,000 MT Iron pellets in November (till 25 Nov'14) against about 97,000 MT in the previous month. Tata Steel has sourced 14 rakes of Iron pellets from BRPL and 5 rakes from JSPL in which, each rake carries roughly 3,900 MT.

Source: Steel 360

Iron ore mines denial will crimp investment in steel

In the halcyon years from 2005-06 to 2011-12, demand for Indian steel grew at an annual rate of 10 per cent and production at 7.8 per cent. The rise in demand was so strong that the country, instead of achieving the "strategic goal" of exporting "23 per cent of production", became net steel importer since 2007-08. The good time for steel was due to annual gross domestic product (GDP) growth ranging from 8.59 per cent to 9.57 per cent, except in 2008-09 when as a result of the global financial crisis, it fell to 6.72 per cent. The economy's strong steel use intensity was principally derived from good performance of manufacturing and construction sectors. But all this is in the past. According to the Joint Plant Committee (JPC), in the first seven months of 2014-15, year-on-year steel demand growth was a small 0.5 per cent to 43.12 million tonnes (mt). What is particularly disturbing is a 1.3 per cent demand slide in October to 6.53 million tonnes. The numbers are reflective of the "lingering effect of economic slowdown." Steel demand situation will also remain grave through 2015 in China. Metallurgical Industry Planning & Research Institute of China says steel consumption, in line with a slowing economy, will grow 2.5 per cent to 710 mt in 2014. Demand growth in the world's largest producer and user of steel will further recede to 1.4 per cent to 720 mt in 2015.

Slump in demand China and India stands as vindication of India Steel Association president Chandra Shekhar Verma's thesis that the metal use intensity of 1.1 to 1.2 vis a vis GDP holds good only when the economy grows beyond a certain level and focus steadfastly remains on infrastructure development. No wonder, at steel capacity of over 100 mt, its use here has remained at around 82 per cent, which though is better than world average of 78 per cent. Essar Steel vice chairman Firdose

Vandrevala said at the recent Global Steel conference that even while it is unlikely that "Chinese boom years" would return again, growth in demand would lead to reduction in present world overcapacity of 360 mt to 180 mt by 2020. But the caveat is steel groups in China remain engaged in creating new capacity parallel to phasing out of uneconomic and polluting units. A question mark too remains on world demand growth. Euro zone is perilously close to deflation with growth stuck below one per cent. Japan continues to slide. Knock-on effects of Chinese slowdown on global economy are proving hard.

It remains a big question as to how much of the Indian 2025 targeted capacity of 300 mt will be achievable. Vandrevala says if the country remains committed to increasing the share of manufacturing in GDP to 25 per cent from the stagnating 15 per cent in stages and urbanisation and infrastructure development gains in pace, then steel demand could rise up to 255 mt by 2025. Projects in the pipeline, according to him, will lift our steel capacity to only 150 mt by 2018. That raises the grim prospect of our becoming solely import dependent for the metal in the not too distant future. Vandrevala sounds the warning that we are already late in "meeting our 2020 steel requirements." If "Make in India" campaign is going to be based on imported steel then our "current account deficit will be \$40 billion by 2025," he says. The problem is building a new steel mill in India takes nothing less than "10 years against five years in China" as investors have to contend with infrastructure deficit, logistical constraints and uncertainty about iron ore deposit allocation. No wonder ArcelorMittal has virtually beaten a retreat from India and Posco's Odisha venture remains good on paper ten years on. Quoting from a McKinsey report, Vandrevala says in steel profit pool, share of the metal is 26 per cent, coking coal 32 per cent and iron ore 42 per cent. India has iron ore reserves of 30 billion tonnes. Like in Australia and Brazil, ore reserves here will rise substantially if exploration and prospecting are stepped up. The country's mining sector is in a state of flux. But in the crisis besetting the sector Vandrevala sees a "great opportunity to redraw the mining landscape." Investment in steel will dry up if mills are denied captive mines. Rise in India's import vulnerability will bring cheer to the surplus ridden Chinese steel industry, which must export more and more to compensate for tardy growth in domestic demand.

Source: Metaljunction

India rules out banning, limiting iron ore exports

India will not ban or limit exports of iron ore but will adopt "appropriate fiscal measures" to conserve the steelmaking raw material, the junior steel and mines minister said recently. Action against illegal mining has sharply cut production of iron ore in the country at a time when international prices have halved, prompting Indian companies such as JSW Steel (JSTL.NS) to import heavily. Steel companies have regularly urged the government to either ban the export of high-quality iron ore or increase the export duty from the current 30 percent to discourage overseas sales. But minister Vishnu Deo Sai ruled out any ban on overseas sales from what used to be the third-largest iron ore exporter. "The government has decided that although conservation of iron ore resources is of paramount importance, the same may not be achieved by banning or capping export of iron ore but by taking recourse to appropriate fiscal measures," Sai said in a statement.

Source: Metaljunction

SAIL awarded Good Corporate Citizen Award 2014 by PHD Chamber

Steel Authority of India Limited was awarded the PHD Chamber Good Corporate Citizen Award 2014. Chairman, SAIL, Mr CS Verma received the award from Hon'ble Union Minister of Road Transport, Highways and Shipping Mr Niitn Gadkari in a glittering award ceremony. Instituted in 1997, PHD Chamber Annual Awards for Excellence are given in recognition of outstanding achievements or contributions in selected areas and for promoting corporate and individual initiatives in economic, social, educational and cultural areas to Indian businesses, entrepreneurs and individuals. Mr Verma after receiving the award thanked the jury and said, "SAIL is committed to continuously improving its social responsibilities, environment and economic practices to make a positive impact on society." SAIL has been making conscious and well thought efforts towards nurturing a culture that supports flexibility, learning and has been working in the direction of sustainable growth. Along with setting

new bench marks in production, technology and growth, the company undertakes large number of corporate social responsibility initiatives regularly. SAIL recognizes the direct and indirect impact of its business activities on society and strives to integrate its business values and operations in such a way that facilitates comprehensive growth for all. SAIL CSR activities are carried in and out of its steel townships, mines and far flung areas across the country. Providing medical and healthcare, education, access to water facilities, construction of roads, sanitation, development of model steel villages, women empowerment etc have always found top slot in the CSR initiatives. The company takes several initiatives for energy conservation, water conservation, recycle/reuse, reduction in hazardous emissions, safe disposal of hazardous materials and solid waste management. SAIL believes in building continuous good relations with all its stake holders and in making a meaningful difference in people's lives.

Source: Steel Guru...21.12.2014

To Finish The Race, Stay On The Track

Opportunity is all around you. What matters is where you put your focus? Ask yourself this question every day: "Where should my focus be?" Where you focus your attention, you create strength and momentum.

These are the characteristic of momentum: it is single-minded; it is unwavering in the pursuit of a goal; it has passion which knows no limits; it demands a concentrated intensity and a definite sense of destiny; and most of all, it has a boundless vision and commitment to excellence.

Concentration is the key that opens the door to accomplishment. "The first law of success ... is concentration—to bend all the energies to one point, and to go directly to that point, looking neither to the right nor to the left"

The most successful people have always been those of concentration, who have struck their blows in one place until they have accomplished their purpose. They are of one specific idea, one steady aim, a single and concentration purpose. Become an authority on something.

There is a great distance between most people's dreams and the results they achieve. It is due to the difference in their commitment to bring together all the options of their ability and to focus them upon one point.

There are two quick ways to disaster: taking nobody's advice and taking everybody's advice. Learn to say no to the good so you can say yes to the best. In order to succeed, you must know three things: "(1) what to eliminate; (2) what to preserve; (3) when to say no, for developing the power to say no gives us the capacity to say yes."

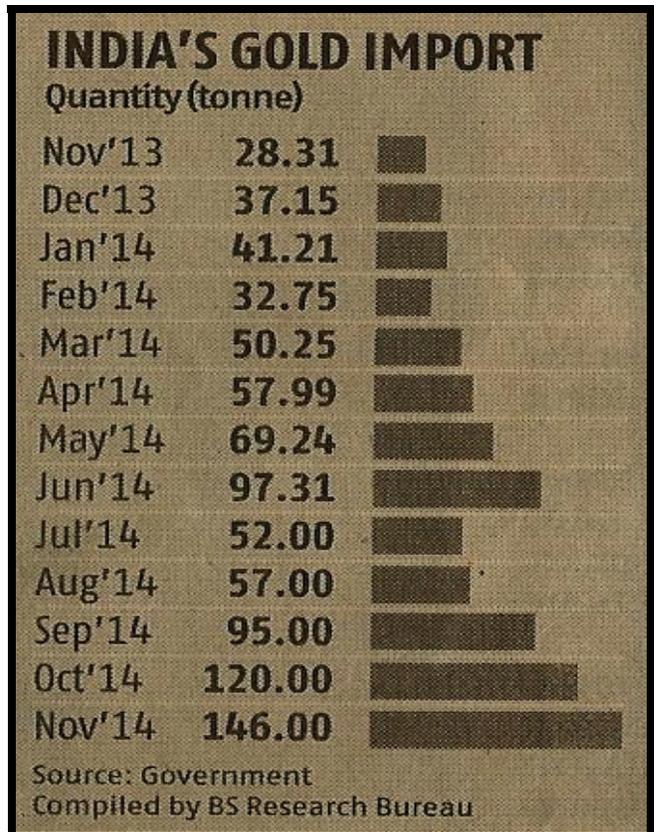
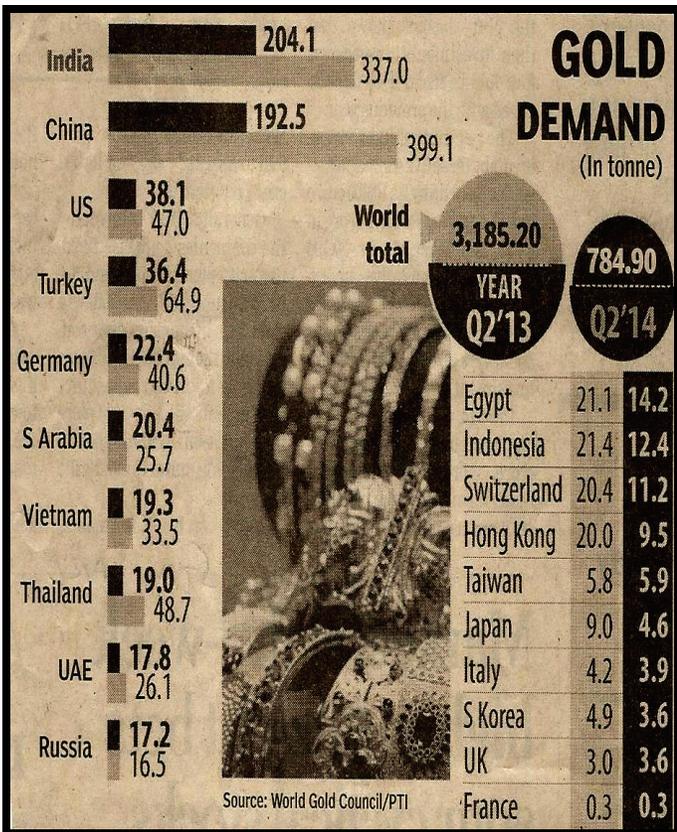
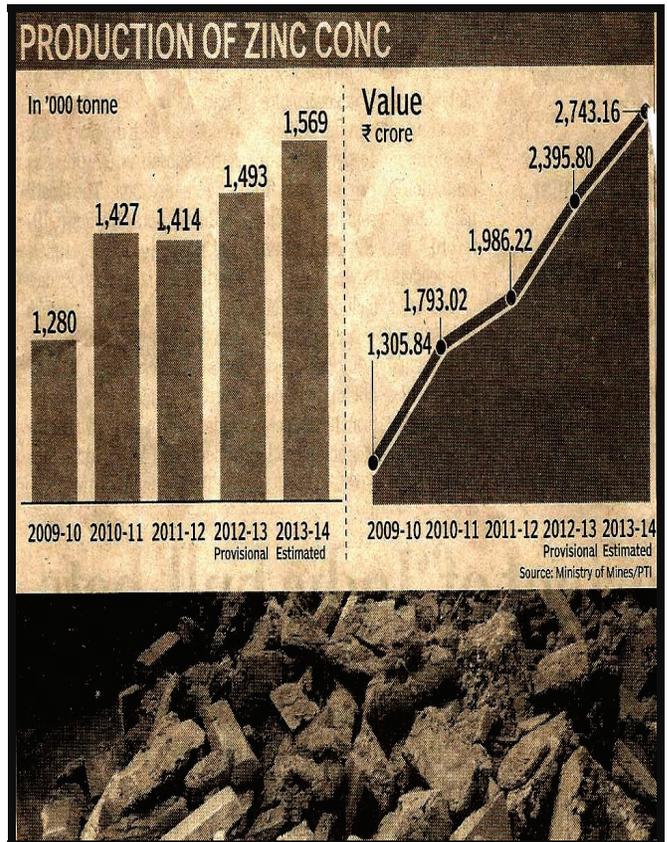
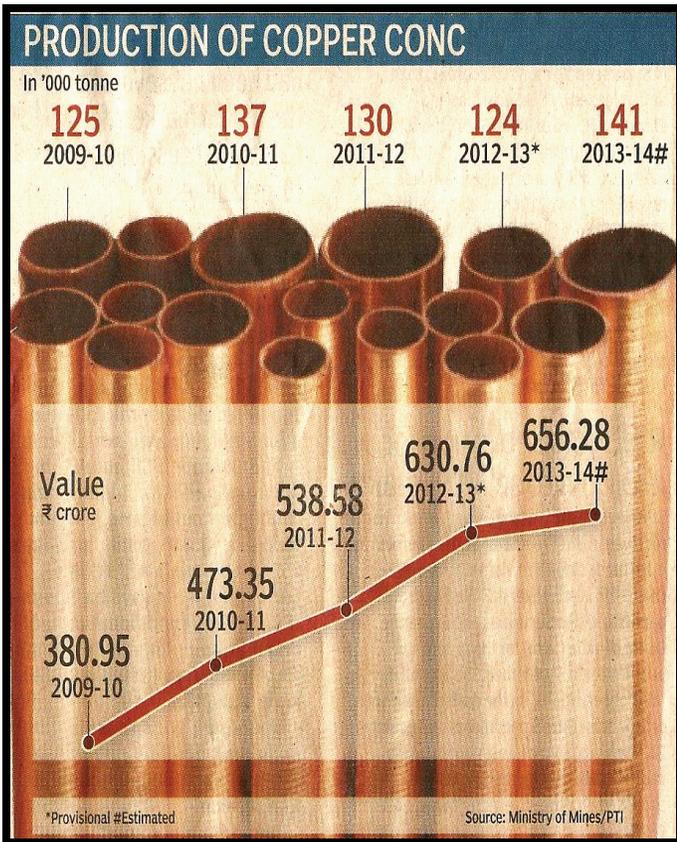
We accomplish things by directing our desires, not by ignoring them. What an immense power you will have over your life when you possess distinct aims. Your words, the tone of your voice, your dress, your very motions change and improve when you begin to live for a reason.

Don't be a person who is uncertain about the future and hazy about the present. Stay in the groove without making it a rut. Make something your specialty. You cannot find until you define. To finish the race, stay on the track.

I am astonished at the aimlessness of most people's lives. As a result of a lack of focus, they delegate the direction of their lives to others. Don't live your life like that. Instead, "learn to define yourself, to content yourself with some specific thing and some definite work; dare to be what you really are, and to learn to accept with good grace all that you are not" (Anonymous).

This is the seventh of series of "Nuggets of truth" which are our sound food for soul. Get ready to blow the lid off our limited Thinking & create your recipe for happiness & success.

Compiled by Shri K L Mehrotra
Vice Chairman – IIM-DC & Former, CMD – MOIL



Steely strategies to accelerate growth



India's largest operational Blast Furnace at SAIL Rourkela



▲ Loading system at SAIL Bolani Mines



▲ Wire rods at SAIL Bumpur



▲ Torpedo ladle at SAIL Rourkela

Maintaining its dominant position in the Indian steel market, SAIL is continually improving to reach new heights of world - class product portfolio with enhanced capacities, backed by sustainable processes & practices.



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