

# STEELWORLD

Devoted to Iron & Steel Industry

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■ Indian Metal Industry  
to adopt new  
technology and process  
upgradation  
to remain competitive

Prof. Amol A. Gokhale

■ Anticipating the new pathway in  
Steel Industry

■ Prices of Alloy and Ore to play a vital role  
in the Indian Ferro Alloys industry



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**D. A. Chandekar**  
**Editor**

*Dear Readers,*

**T**he world is slowly coming out of Covid fear. Finally the livelihood proved more important than life and thus professional activities have been re-started and are gearing up all over the world. Mind well, the corona pandemic has not subsided nor we have found the vaccine but still the industry has gradually started operating. Infact in many places, there has been surge in cases but fortunately the death rate has come down and recovery rate has improved substantially.

Iron & steel industry too has been improving on it's production figures and by now it has achieved almost 75 % of pre-covid production level. Of course I am talking about the main, integrated and big steel mills. They are comparatively better placed to handle the situation. Many big plants are far away from the main cities and have their own staff and worker's colony. Thus depending on the

market demand, they can enhance their production level in a short time. Of course, there are instances where the pandemic has spread in these colonies too. Smaller rolling mills and processing units will obviously take a longer time to stabilise their production, processing and selling. For these smaller units, the problems are numerous. They have to first look for re-employing the migrated labour. If they have not come back, then getting their replacement is a big issue as it is very difficult to get matching skill set instantly. Secondly, they have to digest the losses of last six months and then raise the new capital. Which bank or financial institution will finance a loss making unit ? Further, the supply chain has been disrupted in many places and restoring it is not an easy task. Also regaining the customer support is very important and will be decided by your past interaction and relations with them. All in all, it is going to be quite an uphill task for smaller units in iron & steel sector. Let's see how they take on this challenge !

This unforeseen, unprecedented situation has taught all of us a lot of new things. It has really changed the way we think. Naturally, our industry too has lot of takeaways from this situation. Many old business models are collapsing where as a lot of new models are emerging. One has to access the viability of his business model in the light of this new environment. May be there is a need to change, alter or even scrap the old model (as well as the thinking) and come out with an altogether new concept. Innovation was always welcome but in this extraordinary situation it has become the 'Mantra' for survival. Face the new world with courage and a smile on the face. Innovate, innovate and ..... innovate ! I promise you will be the winner ! ■

**Write your comments : <https://steelworldblog.wordpress.com/>**

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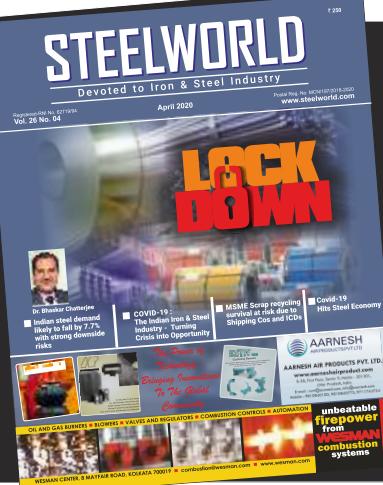
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Reference of Yuxing Top Fired Stove for BF with volume 40-50% of China's steel capacity since 2017 to April

Sr. No	Client	BF no	Blast volume Nm <sup>3</sup> /min
1	Hebei Zongtie Steel	1	7800
2	Hebei Zongtie Steel	2	7800
3	Hebei Zongtie Steel	3	7800
4	Hebei Zongheng Steel	3	8400
5	Hebei Zongheng Steel	4	8400
6	HBIS LaoTing	1	9700
7	HBIS LaoTing	2	9700
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9	Tangshan RuiFeng Steel	4	8000
10	Tangshan JinXi Steel		6300
11	Tangshan JinXi Steel		6300

Notes: China accounts for 50% of the world's steel capacity, and Hebei Since 2017 to the present moment, Yuxing top fired stove adoption rate Total reference nos of Yuxing top fired: 550.



Yuxing top fired stove with a catenary dome achieved monthly mean HBT of 1314.7 oC

Low nox emission - temperature difference between dome than 83mg (international standard less than 150 mg) from 83.5-88.9% (9-10% greater than that for other top Long life span - Application practice has proven that the years (the lifetime of the catenary dome combustion High HBT - Monthly mean HBT of 1314.7 oC delivered than that by other stove under same conditions) combustion technology, the lower the better concept is



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International Leading Technology Level Stove project reference nos up to 550, highest monthly mean HBT of 1314.7 deg C achieved in China  
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Conventional 3-section top fired stoves for 3x2500m<sup>3</sup> BFs converted into Yuxing 4-section top fired by cutting the top portion of the existing stove shell over 2000m<sup>3</sup> at Hebei Province which accounts for 2019, adoption rate of Yuxing top fired up to 84.6%.

Stove type	Blast time mins	HBT oC
Yuxing 4-section	45	1250
Yuxing 4-section	45	1250
Yuxing 4-section	45	1250
Yuxing Catenary	45	1250
Yuxing Catenary	45	1250
Yuxing 4-section	45	1250

province accounts for 40-50% of China's steel capacity. for BFs with volume over 2000m<sup>3</sup> in Hebei reaches to 84.6%.

and HB at 30 oC approximately, nox emission less  
Higher thermal efficiency - Thermal efficiency ranging (top fired stove)  
lifetimes of catenary dome have been in excess of 44 chamber of Yuxing stove over 30 years)  
(HBT delivered by Yuxing stove is 15-20 oC higher  
Lower air excess - 1.05-1.06 (Associated with not always right)



3x3580m<sup>3</sup> BFs configured with Yuxing 4-section top fired stoves



Internal combustion chamber stoves for 1497m<sup>3</sup> BF at JianLong Steel converted into Yuxing top fired with a catenary dome

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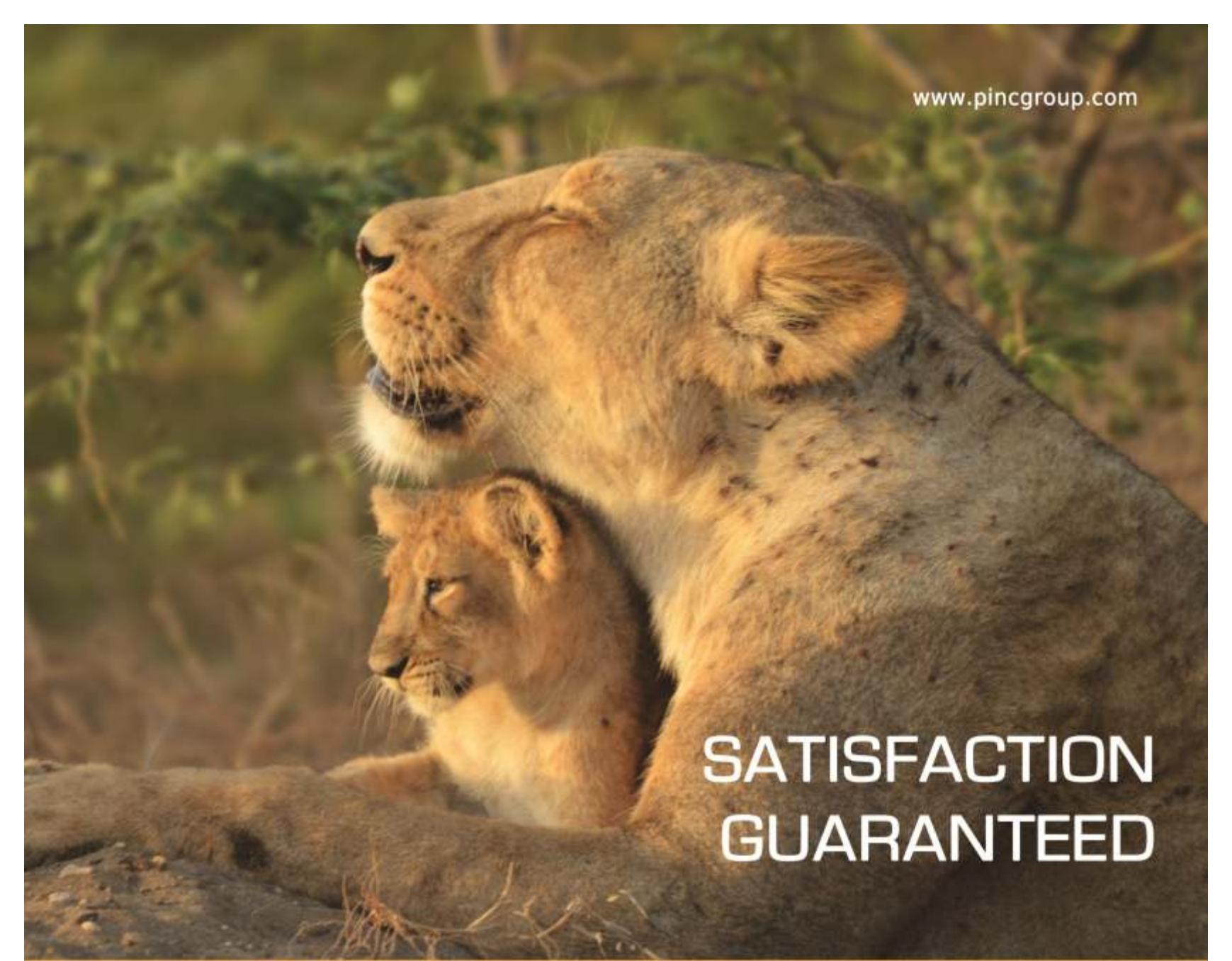
RSP posts 19.2pc growth in saleable steel production

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# Indian Metal Industry to adopt new technology and process upgradation to remain competitive



**Prof. Amol A. Gokhale**

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**Dr Amol is a Professor,  
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**Dr Gokhale did his B Tech in  
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1985, respectively. He served  
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as Distinguished Scientist and  
Director, Defence Metallurgical  
Research Laboratory,  
Hyderabad in July 2015.**

**Shri Dnyanesh Chandekar, CEO  
& Editor, Metalworld had an  
interaction with Prof. Amol A  
Gokhale, President of Indian  
Institute of Metals.**

### What is the present situation in the Indian metals industry, specially post Covid-19?

The production had lowered during the pre-covid-19 period due to economic slowdown. For example, we know that the automobile production had been reduced, so naturally less steel was sold and so on. Post Covid-19, the production levels reduced drastically in the initial period (say April 2020) due to uncertainties in the availability of labour and due to disrupted logistics. Here, the companies which had their residential complexes could manage production levels to as high as 80-90% of their normal production levels. However, as the demand reduced due to the stoppage of construction and other manufacturing for which the industries

were located in more urban areas where disruptions in labour and logistics were common, the production of primary metals dropped heavily. Subsequently, the pandemic entered remote areas and the production of primary metals further lowered. The MSMEs suffered from liquidity crisis over and above labour and logistics issues, hence suffering the most. Overall, I can say that the production levels varied between 30% to 90% of the normal during the last four months since April.

### **What process and technology upgradation should be adopted by the Indian Industry in order to be viable and competitive in the global marketplace?**

It's a very important issue. Unless Indian technologies are viable and competitive, they cannot sustain in the global value chain. Typically, the large industrial houses use advanced equipment and expert systems, which give them the quality and reliability advantage, making their mill products economically competitive and also accelerate the delivery schedules. But many small industries use obsolete technologies and equipment, largely due to the uncertainties of the market, low demand and the attendant risks involved in large investments. So, the solution lies in allocating part of the revenues to continuous technology upgradation, re-skilling the manpower and looking for inexpensive IT based innovations which can help in improving product quality.

A simple example would serve to explain the point. Many metal casters do not use liquid metal temperature measurement thermocouples. They go by experience, which introduces a wide variation in gas entrapment, meltoxidation and reduce the product yield. The prices of dip stick thermometers have dropped substantially over the years. This one

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## Face to Face

simple instrument can help in bringing consistency in the product quality. Similarly, inexpensive software packages have been developed within the country to help design castings, which can reduce time-to-deliver and increase yield. But foundries need to raise their quality consciousness by implementing stringent product quality standards to meet global demands and adopt new technologies, as the world is looking at the Indian industry as an alternate sourcing hub.

At the other end of the spectrum lie frontline industries both in primary metal production and in the manufacturing sector. Here, we see a much seamless upgradation of technologies. These companies will have to transit to smart manufacturing technologies and Industry 4.0, if not already done, for improvement in quality, cost and sustainability. The disruption in production due to labour displacement could have been partially averted if smart manufacturing technologies were in place.

### Which new opportunities can you site for the metals industry?

There are huge opportunities for recycling of electronic products. These are known as urban mines. The challenge is to recycle with low power

consumption and effective neutralisation of effluents. Recycling of rare earths from BLDC motors is another opportunity. Separating metals from slag and cathode slime provide other set of opportunities. For metals such as rare earths, tungsten and magnesium, resources exist but these metals are not being produced. These metals have applications in magnets, armaments and in light weight aerospace alloys. Magnesium is also used as reductant in the production of titanium metal. Secondly, the technologically advanced alloys are rarely produced in India. These alloys command good prices. For example, most aluminium companies do not produce aerospace grade Al alloys. It requires large investments. Probably, the GoCo model, where Government invests in the infrastructure and corporates operate to produce alloys is a model to be explored. The titanium sponge plant set up in Kerala with DMRL technology is owned by ISRO and operated by KMML, which is a state PSU. This is a good model. However, there also, applications for non-aerospace Ti need to be found and implemented. It will make the Tis pond commercially more attractive. Lean ore processing to win valued metals is also an interesting area. Red mud reprocessing

and developing value added products will free valuable space within aluminium plants and reduce environmental pollution. There are huge quantities of gold ore tailings available at Hutt Gold Mines. Tungsten metal can be separated from these.

### What are the present activities of IIM?

At the core of all the functions and responsibilities of our Institute is "Metallurgy and Materials Engineering" which are enshrined in our logo. By these, we mean the knowledge of metallurgy which we share (through seminars, symposia and technical papers), document (in the form of technical books), test (by conducting certification examinations), enhance (by offering short courses), and do value-additions by taking up an advisory role for the Government and other stakeholders. We have done better on some fronts, while we need to improve on others. In the former category, we are successful in knowledge sharing: we have succeeded in creating a brand in the name of Annual Technical meeting, which attracts more than 600 professionals each year. There is an event called 4M (minerals, metals, materials and manufacturing) which is conducted twice a year and which attracts a wide range of participants from industry and research. Our flagship



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## Face to Face

journal Transactions of IIM has an impact factor more than 1.2 and attracts papers from 10-15 countries. Its editorial team is international. We publish books: both low cost text books and specialised books on advanced topics in association with Springer publishers. The Associate Membership of IIM is a certification examination which till recently was considered equivalent to degree. We have just started offering specialised metallurgical courses under CII collaboration.

### What are the New Initiatives of IIM?

In the near future, we will offer certification courses which are stringed sets of courses from open sources like NPTEL combined with special content prepared by IIM. Those who clear the exams will get level 1, level 2 etc certificates from IIM. We hope that like AMIIM, these certificates will gain value and will be honoured by potential employers. We also plan to offer industry specific specialised courses. We need to go international in our course offering. There is huge market in neighbouring countries for Indian courses.

Our flagship journal will allocate certain issues to Design and Manufacturing of Materials. We believe that there is growing interest among the manufacturing scientists and engineers to

align themselves with our institute. Another initiative is to create a Handbook on Steels and a book on 'Handling Data in Materials Engineering'.

Something we have never attempted is to create data bases. Data bases on our human capital, our industrial capabilities, data base on materials properties etc. A data base on where our students go, what kind of places they work after five or ten years is not known. This can be done with the help of major academic institutions. The relationship between students and IIM can be lifelong. But we need to attract them early. In future, the data bases can earn revenues for the institute and also serve the engineering community. We are also going for collaborations with international societies such as TMS, European metallurgical societies and societies in the eastern part of the world. There is possibility to create IIM chapters in neighbouring countries. We will host joint sessions in our conferences.

We have not done well in creating theme papers or status papers. This can be easily done in areas such as critical metals, environmental issues in metallurgical industries, urban mining, rare earths etc. We need to appeal to ministries to award us small projects to create such white

papers.

The Institute will celebrate its Platinum Jubilee next year. We will have several events to mark the event including an international symposium either as live program or as online program. We will create five important themes and launch programs on these themes through chapters around those themes.

As the Genext gets involved with IIM, we need to increase our digital outreach. We have become active on Twitter, Facebook, LinkedIn and Instagram, where we are advertising our programmes. I believe that the young generation will take these platforms for conducting many activities and better communications. To highlight, we will focus this year on

1. Training and reskilling for industry through courses
2. Conducting specialty workshops on emerging topics for academia and R&D
3. Creation of relevant data bases
4. Student activities that include tutorials, and promotion of Student-Industry-R&D interactions.
5. Status papers on selected materials technologies, technology gaps and the way forward



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# IIM President Message



**Prof Amol A Gokhale, President, Indian Institute of Metals**

**Greetings to all on my taking charge as the President of the Indian Institute of Metals!**

I take this position with full sense of responsibility and commit myself to achieve a higher level of performance for the Institute and its beneficiaries than before.

At the core of all the functions and responsibilities of our Institute is "Metallurgy and Materials Engineering" which are enshrined in our logo. By these, we mean the knowledge of metallurgy which we share (through seminars, symposia and technical papers), document (through technical books), test (through certification examinations), enhance (by short courses), and add

value by taking up an advisory role for the Government and the related stakeholders. It is in this spirit that I propose to steer our Institute in the year to come.

Let me now set the agenda for the Institute, in a point wise manner.

**Short courses :** The CII-IIM joint collaboration on offering technical courses for the industry professionals will be further strengthened. We will also explore other platforms for creating academic and certification courses for national as well as international audiences. The syllabuses of such courses may combine open source courses with IIM's specialised courses to be offered soon.

**Publications:** Our flagship

journal "Transactions of the Indian Institute of Metals" has been consistently performing well. One of the twelve issues in the year will be henceforth dedicated to Design and Manufacturing, keeping with the importance of metallurgical design and manufacturing. Depending on the response, the number of issues on Design and Manufacturing can be increased in future. IIM Metals News, the house magazine will create a calendar allocating monthly issues to cover important topics and invite experts to contribute. Sector-wise industries may be invited to contribute short articles as well.

Many technical books are on the anvil and will be published in due course of

time. We plan to break new ground by creating a handbook on Steels based on the large amount of data on steels that has been created in the country and elsewhere.

**Data bases:** The importance of data bases cannot be overstated in today's data empowered world. IIM can take up the responsibility to build data bases of companies, products, materials, experts etc on a digital platform amenable for analytics.

**Think tank:** A beginning will be made to create white papers on thrust areas to bring out gaps in metallurgical skills, education, technologies and knowledge.

**International Relations:** It's important to have strategic relations with the international professional associations to remain connected and be benefitted. The Institute's existing portfolio will be expanded to establish new collaborations in the coming year.

**Digital outreach and brand building:** We live in a digitally connected world and more so during the pandemic. In order to increase the Institute's outreach and have more meaningful participation by the young generation, an innovative use of the digital media will be the way forward. Our

institute will soon make its presence felt on media where active participation of professionals will be seen. The Institute's Vision and Mission, and the take aways from membership can be communicated on such media platforms effectively, apart from the latest information.

**Platinum Jubilee:** The institute is soon completing 75 years of its existence and service to the nation. Some of the activities are planned to celebrate the Platinum Jubilee year such as the International Symposium, Platinum Jubilee plaque, Monthly Commemorative Lectures by prominent metallurgical professionals, a movie on the achievements of the Institute and Essay competition for students.

**Membership and Finance:** A committee will specifically look into the growth opportunities. Three new award categories are introduced: Metallurgical Manufacturing, Materials Start-Up and Metallurgical Heritage. Further, the scope of existing awards is expanded to include New Materials, Safety and Health. With these inclusions and expansion, we hope to attract more members from other allied disciplines of science and engineering. We need to bring more corporate members.

**Chapters:** We will

encourage leading chapters to revive their neighbouring dormant chapters and create incentives for the same. We should not hesitate to merge dormant chapters with active chapters in the neighbourhood if needed. A structurally leaner institute will be easier to manage and focus.

**Events:** The NMD ATM 2020 event will see live and online mixed mode of delivery to optimise safety and appeal. We will encourage chapters to hold special events of high calibre throughout the year. The institute will make efforts to project women and young metallurgists. Student-centric events such as tutorials to develop problem solving skills, giving career guidance etc will be promoted.

**The Council:** The council has more corporate leaders, more women and more young professionals than usual. Apart from their advisory role, they will be encouraged to come forward to take up functional roles.

**Vice Presidents:** We are very fortunate to have highly experienced and capable Vice Presidents in office. We will encourage them to plan at least one activity in the year to promote Industry-R&D- Academic Interactions, Student Activities, Materials

Policy, Data Base Creation and International Outreach. They will be supported by task force leaders and task groups from the Council. The Covid-19 pandemic brought fear and restrictions, and curbed our physical activities. However, we see a much better engagement on the online medium, reducing much time and costs associated with travel and stay. I believe this challenge may be converted into an opportunity by transforming IIM from a uni-dimensional entity, revolving around the ATM and the Awards functions into a

multi-dimensional organisation humming with activities at national and chapter levels.

Thus in summary, the year ahead will see much activity in the following areas:

1. Training and reskilling for Industry
2. Specialty workshops on emerging topics for academia and R&D
3. Creation of relevant data bases
4. Student activities that include tutorials, and promotion of student-industry and R&D interactions
5. Status papers on materials technologies,

technology gaps and the way forward

So friends, let us resolve to build a new IIM in its 75<sup>th</sup> year which is strong, sustainable and dedicated to the service of metallurgy, the metallurgist and the larger public good.

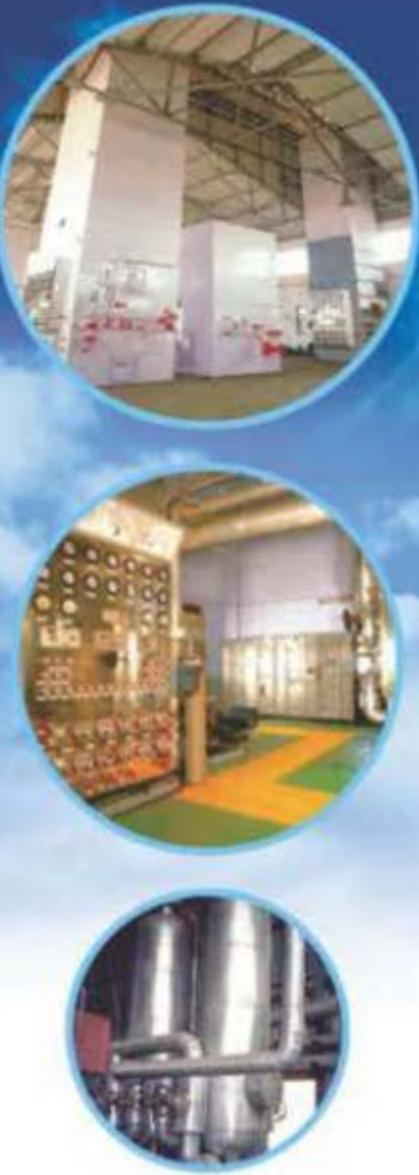
Thank you, one and all.

**Prof Amol A Gokhale,**  
President,  
Indian Institute of Metals



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## **Anticipating the new pathway in Steel Industry**

The steel industry is well set in the sense that it can hardly expect any fundamental change in the way steel is produced, used, consumed, marketed, transported, and sold. The changes, at best are incremental; and even in the case of new products, steel is now increasingly substituted by aluminum and plastics than it replaces materials like wood and cement. More and more countries need an ever-increasing support from the government to survive and these forms of support are either protection against

imports or waivers of loans on bad assets. The entry barriers to the industry are low while exit barriers are remarkably high and this makes capital get trapped in the industry. Large steel capacities often press down profits of banks generating a crisis of liquidity of sorts. Under such circumstances, what then should be new in steel?

Hydrogen for making steel is of course on the top of charts of new technologies and coal gas in a far second. Iron ore remains the main ingredient of steel, but its processed forms such as



**Dr Susmita Dasgupta**  
JCE, Economic Research Unit  
Joint Plant Committee

pellets or DRI would take on greater significance. DRI needs to shift to gas than coal because that way the DRI, or the HBI can be transshipped. Coal based DRI is only good for local use and fixes the location of the DRI plants close to the induction furnaces. For DRI to genuinely become a raw material for steel making, it must travel and hence we may see a shift away from the coal-based plants to the gas based MIDREX technology. That would be a major disruption unless coal gasification can convincingly replace shale gas.



Iron ore mines will face a tough time since processors rather than the mineral seller will fetch better margins.

Once there is a price formation and a substantial market for the pellet and the HBI, China's speculative powers over pricing which derives largely from its iron ore imports from across the world might be significantly curtailed. It is time that this process may be studied.

Steel is cyclical and the most important reason behind this is the economics of the steel industry depends on large scale of production. Even when steel is produced in electric furnaces out of scrap as its main input, the economics of heat optimization also demands that furnaces should be large scale. Hence, it is not a wise idea to localize, euphemistically nationalize steel. Steel is best specialized and traded. Data pooling on global procurement, production and logistics will be the next big technology and revolution in steel.

Data pooling will also be the next big technology because of a major paradox facing the steel industry and which is that the variety of the steel using products far exceeds the varieties those which the steel industry can possibly produce. This is because the economics of steel works in large scale consisting of millions of tonnes while the niche products barely needs a few thousands of tonnes of production. This anomaly

prevents the deeper entrenchment of steel into designs for goods with specialized uses.

In India, scrap collection will be a major industry if a money trail can be established empowering the scrap collectors to be able to supply to the big aggregators. Scrap collection and aggregation which needs a whole new way of financial instrumentation will also be a big innovation in times to come.

A major cost in the Indian steel industries and for the steel industry in most countries is technology. Technology comes in the form of closed packets of machines and machine parts. There seems to be a specialization and productification of technology from its state of being a process requiring constant learning. Only those nations can produce steel economically those which have formalized and systematized institutions for the constant development of knowledge. HR planning must now be more and more geared into creating new knowledge Centres in the steel plants. The companies which generate knowledge are the companies which are likely to remain in a position of leadership in the production of steel.

While it is fashionable to talk of knowledge companies, we are yet unsure of what constitutes this knowledge. Are we looking at knowledge of manipulation of account

books to maximize value for the shareholder? Are we looking at knowledge to get more out of iron ore or coal? Are we looking at knowledge to achieve better climate outcomes? What kind of knowledge are we pursuing? To my mind, this needs to be set at the level of the companies themselves. Companies which feel smart operations means accumulating cash or acquiring other companies are not those which are likely to excel in good technologies; those who are keen to develop research and development may not have the wealth to be listed in the bourses. Firms must decide their goals and define knowledge accordingly.

The new firms will invariably be global in product marketing and product planning because that is exactly how they will be able to attain scale economics while at the same time avoid excess capacities at home. Specialization and trade are the instruments by which the paradox of the constant demand on quality of steel and the scale economics could be resolved. There will be an enormous use of the IT instruments to assimilate knowledge of products and production from countries across the world. Logistics planning will also become enormous.



### CII nominate Shri Anil Kumar as the Chairman of CII PSE Council



The Confederation of Indian Industries (CII), one of the largest of its kind in the Country, has nominated Shri Anil Kumar Chaudhary, Chairman, SAIL as the Chairman of its PSE Council.

This PSE Council plays a vital role in the overall functioning of CII, which works with Government and the public sector enterprises on various policy issues and serves as a reference point for the industry. Formed in 2007, the Council has grown from strength to strength over the years. Today, it consists of 96 members comprising 10 Maharatnas, 14 Navratnas and 72 Miniratnas. The CII Council has been taking up various transformative development agenda to build systematic and active engagements with the Central Public Sector Enterprises with the latest being focusing on the path charted by Hon'ble Prime Minister for a self-reliant India. Accordingly, the annual flagship event of the Council scheduled to be held shortly is being planned on the lines and visions of "Atmanirbhar Bharat".

The Chairman of CII PSE Council acts as the key interface between government and the members of the Council. The Chairman also represents the Council in all the meetings and networking with the government/policy makers for taking forward the economic and enterprise policy advocacy framework.

On this appointment, Shri Anil Kumar Chaudhary commented, "Every responsibility comes with expectations towards fulfilment of related milestones. The position of Chairman CII PSE Council also carries with it the responsibility of protecting the interests of all member PSEs. CII is a premiere industry body acting as channel and platform for the industry and as the Chairman of its PSE Council, my focus would be on this aspect by channelizing their efforts towards building an "Atmanirbhar Bharat".

### Jindal Stainless Limited reports Q1 EBITDA at Rs 78 crore

Image Jindal Stainless Limited (JSL) recorded loss of Rs 87 crore after deducting the tax in Q1FY21 compared to the corresponding period last year (CPLY), primarily on account of COVID-19 induced business environment. Q1FY21 net revenue and EBITDA were severely hit, standing at Rs 1,262 crore and Rs 78 crore respectively. Sales volume contracted by 60%, from 222,119 MT in CPLY to 88,814 MT in Q1FY21.

The widespread disruption in supply chains and temporary suspension of manufacturing activity pulled down melt production to 90,329 tonnes, lower by 63% over CPLY. Interest cost during the quarter fell by 8% over CPLY to Rs 131 crore. Even though April'20 was a complete wash-out for domestic manufacturing, imports of stainless steel in April'20 were even higher than the pre-COVID levels of Jan'20. While the overall imports jumped by 44% during this period, those from Indonesia witnessed an eightfold leap. The domestic industry awaited relief measures from the Government to alleviate these distorted trade practices.

Particulars	Q1 FY 20-21	Q1 FY 19-20	% Change
<b>PAT</b>	<b>(87)</b>	<b>67</b>	<b>-</b>
<b>Net Revenue</b>	<b>1,262</b>	<b>3,067</b>	<b>(59)%</b>
<b>EBITDA</b>	<b>78</b>	<b>314</b>	<b>(75)%</b>

Commenting on company and sector performance in the first quarter of FY21, Managing Director, JSL, MrAbhyuday Jindal, said, "*Domestic stainless steel industry was no exception to the slowdown caused by COVID-19. For JSL too, it was an unprecedented quarter, with operations completely suspended in April. Through agile business planning and a global outreach, we were able to revive our exports in the May-June period, which helped offset the adverse impact of a depressed domestic market to some extent. We have undertaken several business, operational, and strategic initiatives to minimise the impact of the pandemic, and hope to recover by end of September'20 with improved business sentiments.*" The share of exports in total sales in Q1FY21 was 33%, as against 20% in CPLY. In line with the government's vision to go *Atmanirbhar*, JSL is cutting down on imports of input materials by significantly enhancing their procurement from local sources. This is expected to mitigate price and

# Breaking new ground with cutting edge technology



## NMDC – Striding towards the Future

Ranked amongst India's topmost companies in terms of its robust financials, NMDC's eco-friendly, scientific and safe mining operations have earned recognition for it not just as the world's lowest cost producer of iron ore, but also as the leader in its category. In step with the changing times, NMDC Ltd., has shifted from being a single commodity, single customer and limited mining operations to supplying multiple commodities to several customers across distant geographical locations.



**NMDC Limited**  
(A Government of India Enterprise)





## News Round Up

inventory fluctuations, release working capital, and strengthen the domestic raw materials industry. A fully equipped and rail-linked Inland Container Depot, Jindal Stainless Logistics Park, has further helped JSL in expediting supply chain movement and curtailing costs. SAIL fosters Employees Engagement; organizes on-line sessions on Management

Steel Authority of India Limited (SAIL) has always been a frontrunner in embracing employee-oriented management measures for their motivation and performance enhancement. In line with this objective, the Company through a Social NGO, AAS has organised a series of on-line sessions for employees on various topics such as motivation, positivity, leadership, professional and personal conduct.

These sessions are aimed at ushering in change management, conflict resolution and improving decision making abilities of the employees. The Company is continually trying to introduce constructive and effective programs which will help in alleviating the general stress caused by challenging health issues of recent times. These online sessions will provide a different viewpoint while dealing with the issues arising in day to day by blending the management concepts with mythology.

The series consists of 4 virtual sessions to be held over weekly intervals and are being conducted by the renowned leadership and motivational speaker, Shri Atul Satya Koushik. The first session in the series, held on 26<sup>th</sup> September, saw enthusiastic participation from a large number of SAIL employees from across the Country.

Shri Anil Kumar Chaudhary, Chairman, SAIL believes that such initiatives will bring in a fresh perspective to the working environment. He said, "The present challenging times have proven that staying healthy, physically and

mentally is the basic requirement to face any obstacle with ease. Through such programmes, it will not only create a wider and positive outlook but will also alleviate the overall mental stress and unlock the true potential of our employees".

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## EU imposes import duties on China, Indonesia, Taiwan stainless steel



The European Union will impose tariffs on imports of hot-rolled stainless steel coils and sheets from China, Indonesia and Taiwan after an investigation found they were being sold at artificially low prices.

The European Commission, which conducted the investigation, has set duties of up to 19% for imports from China, of 17.3% for product from Indonesia and up to 7.5% for stainless steel from Taiwan, the EU's official journal said on Wednesday.

The Commission said that the anti-dumping duties, to take effect from Thursday, aim to remedy the damage caused to EU producers located mainly in Belgium, Italy and Finland.

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## Tata Steel UK renews confidence in Danieli Automation

Tata Steel UK has awarded Danieli Automation with the revamping of the continuous annealing processing line at Trostre works, South Wales. The revamping activities will include the complete replacement of the line automation, including a new Level 1 system based on the latest platform available in the market, new MCC cabinets and new DC converters for the existing strip transportation motors - more than 140 motors, with individual armature control. Moreover, the supply will include the related on-site support for the revamp, considering the complete commissioning of

the new equipment and supervision of erection activities provided by the customer.

The new automation system will be designed to comply with Industry 4.0 principles, including safety logics provision for future add-on.

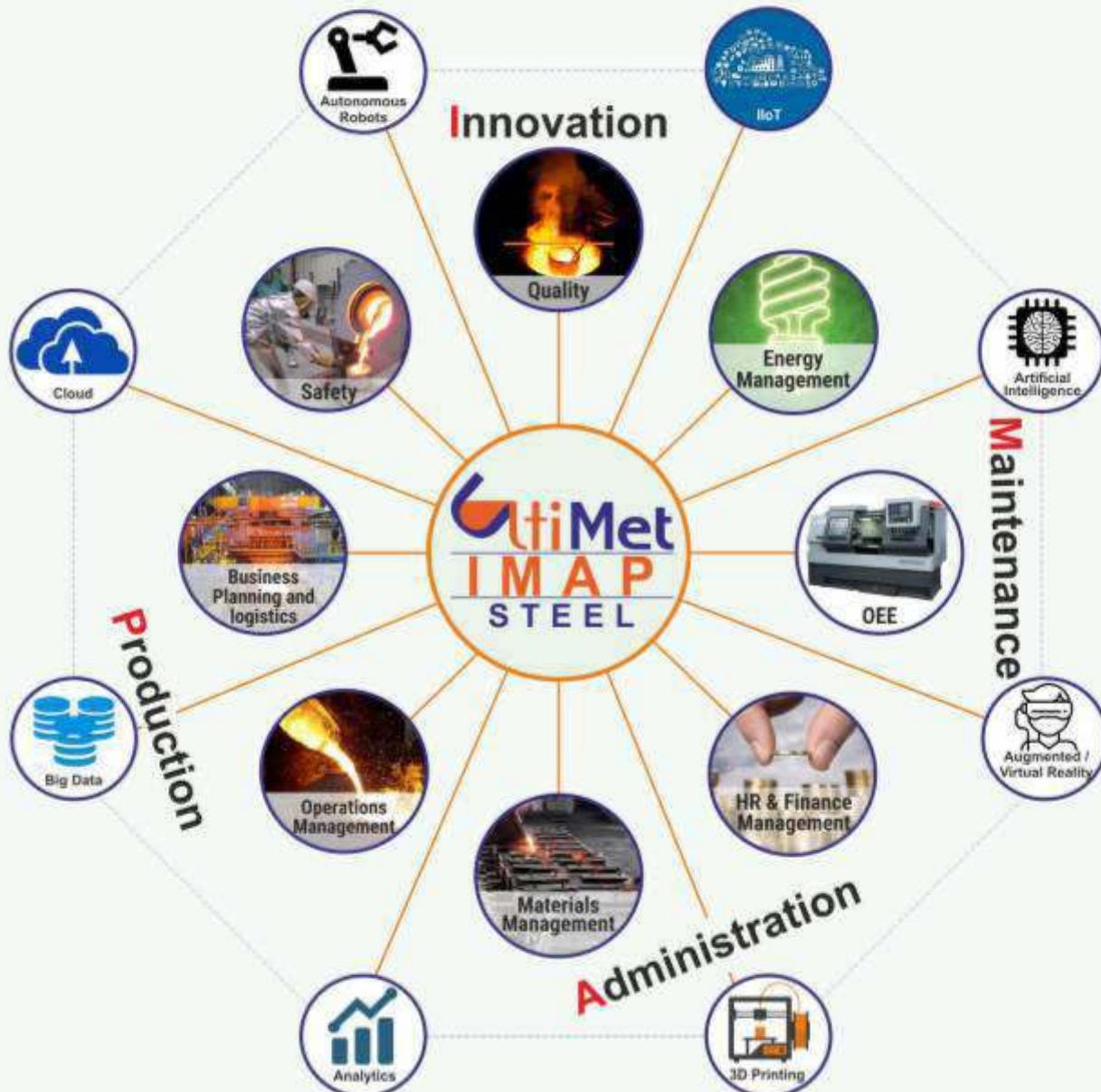
The project is scheduled to go live within end 2021. This is order follows the one for the revamping of the hot-dip galvanizing line 6 at Shotton Works to be commissioned by December 2020.

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## News Round Up

### OECD Steel Committee gravely concerned about impact of COVID-19 crisis on steel market



The OECD Steel Committee expressed grave concern at its meeting held during the last week of September 2020 over the deterioration in steel market conditions related to the COVID-19 crisis. The slump in demand caused by the global pandemic comes as steel production and inventories continue to grow in China. The

Committee also noted with concern that the difficult market conditions were causing significant job losses in the industry.

The latest OECD data show that global steelmaking capacity could increase to 2,455.8 million metric tonnes (mmt) in 2020. While the gap between global capacity and production narrowed from 2016 to 2019, it is likely to widen to as much as 700 mmt this year due to overall capacity increases and production decreases resulting from COVID-19. The Steel Committee noted that new steelmaking capacities due to come into operation in the Middle East and Asia this year are set to exacerbate excess capacity.

During a virtual four-day meeting, the Committee also reiterated the need for further capacity reductions in relevant economies, including by facilitating the exit of inefficient producers and by supporting workers affected by plant closures.

"Deep concern increases in steelmaking capacity, which may not reflect market fundamentals, resulting in a capacity-production gap that is expected to reach 700 million metric tonnes in 2020, after narrowing between 2016 and 2019 [The capacity-production gap is an estimate based on annualised data from the first half of the year. It differs, and is lower than, estimates of the capacity-demand gap which use real growth of demand" said by Ulf Zumkley, Chair of the OECD Steel Committee.

The [OECDSteelCommittee](#) has 25 members (Austria, Belgium, Canada, the Czech Republic, Finland, France, Germany, Hungary, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the UK, the US and the EU).

In addition, five associates (Brazil, Kazakhstan, Romania, Russia and Ukraine) and seven participants (Argentina, Bulgaria, Egypt, India, Malaysia, South Africa and Chinese Taipei) bring their perspectives to the Committee's work. A number of other economies also participate in some Steel Committee meetings as invitees.

OECD Steel Committee members, associates and participants account for around 42% of global steel production in 2019.

### Secondary steel units urge PM to ban iron ore export to China

The secondary steel producers have urged the government to ban iron ore export to China. Secondary steel units, which contribute 50 per cent of steel production, depend on domestic iron ore supply unlike large primary steel producers who own captive iron ore mines.

This apart, the sponge iron production of about 31 mt and pellet plants with 85 mt capacity are also dependent on domestic iron ore. The secondary steel industry annually require about 90-100 mt of iron ore, said Rajeev Singh, Director General, Indian Chamber of Commerce, in a letter addressed to the Prime Minister's Office.

Odisha and Chhattisgarh have about 136 sponge iron ore units with a capacity of 24 mt but produced only about 13-14

mt. However, amidst the current raw material crisis situation, it is expected to be cut down further to 6-7 mt by this year end.

About 30 per cent of the sponge iron capacity is idle due to shortage of raw material. This situation is creating stress not only in banking industry but also creating unemployment, said Singh.

Iron ore production between April and September was down 50 per cent to 47 million tonnes due to expiry of many mining leases and reallocation of leases.

However, exports in the same period was up 63 per cent to 22 mt.



## Qingdao award H3 Wire Rod Rolling Mill Project to Danieli

Qingdao Special I&S, part of CITIC Group, awarded twin Wire Rod Rolling Mills lines 5 and 6 to Danieli which is to be installed at Qingdao, in Huangdao District, China. Primary products of the new 1Mtpy wirerod mills will be tyre cord, bearing, spring and welding wire steels.



latest wirerod technologies for rolling, on-line processing, and heat-treatment, including LTR-Low Temperature Rolling process.

The new plant will be outfitted with all of Danieli's

The mill outlet design includes two-pass followed by eight-pass prefinishing blocks; DSC-Danieli Structure Control System, including water cooling lines and CCW-Controlled Cooling Conveyors; four-stand, high-speed TMB-Twin Module finishing Blocks and vibration-free OFB-Oil Film Bearing loop-laying heads.

The lines will produce finished wirerod products from 5 to 7 mm dia in coils weighing up 2,375 kg at a finishing speed up to 112 mps.

Danieli Automation will supply the automation and process control systems for the main equipment supplied.

The startup of the twin lines is scheduled for the beginning of 2021.

This order follows those for the wirerod rolling mills supplied to Qingdao in 2001, 2003 and 2013.

## ANDRITZ to supply train wheel production line to Russia

International technology group ANDRITZ and Allegro – a subsidiary of EVRAZ and RailService established to implement the project to produce train wheels in the Titan Valley special economic zone – have signed a contract to supply a complete production line for train wheels. The contract was signed by Valerij Galchenkov, Managing Director of Allegro GmbH, Heinz Autischer, Head of Metals Processing at ANDRITZ, and Daniel Huber, Managing Director of Schuler.

ANDRITZ GROUP subsidiaries ANDRITZ Maerz and Schuler will supply the production line. The main part of the contract is expected to be booked in mid-2021, with the first consignment being scheduled for delivery in the first quarter of 2022.

The production process comprises several stages: The blanks produced by EVRAZ are heated to 1,250 °C in the rotary hearth furnace, then descaled and preformed in a hydraulic press with 10,000 tons of press force. After this, the blanks are rolled in a wheel-rolling machine developed by Schuler and forged into a finished product in a crimping and piercing press with 5,000 tons of press force. This is followed by a geometric test in a laser measuring system and permanent marking in a marking press. Finally, the wheels undergo heat treatment and the running surfaces are hardened.

Allegro is investing a total of around 16 billion rubles (approximately 180 million euros) in the production of train wheels. With the new production line, Allegro will be

able to produce 200,000 trainwheels per year, and up to 300,000 with a further extension. Production is scheduled to start in the fourth quarter of 2022, and the project will create a total of 425 new jobs.

"We are looking forward to reaching this milestone with ANDRITZ as the main supplier," says EVRAZ Vice President Denis Novozhenov, who heads the Ural Division. "Production of train wheels requires highest competence and strict quality control, and this begins in production of the steel. The know-how from EVRAZ is vital to this project."

Heinz Autischer, Head of Metals Processing at ANDRITZ: "We are very proud that we have won a railway wheel line again to be supplied jointly by ANDRITZ Maerz and Schuler. With this order, we will deliver the most advanced production line ever built in this segment and also strengthen our technology leadership in this area."



3D model of a similar line from ANDRITZ Maerz and Schuler



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13. Billet welders
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17. Reheating systems
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**More than 35 euro/ton in OpEx savings** have been recorded at MIDA ECR installations.

**Since the first complete MIDA ECR** minimill supplied at CMC Steel in the USA in 2009, Danieli counts 17 reference plants worldwide, including three repeat orders.

**With energy savings up to 1.2 GJ/ton** and zero NO<sub>x</sub>, SO<sub>x</sub>, CO<sub>2</sub> during casting-rolling, MIDA ECR is the most environmental friendly and sustainable technology to produce steel.





## Prices of Alloy and Ore to play a vital role in the Indian Ferro Alloys industry

The outbreak of COVID-19 since March 2020 in the country and subsequent lockdown along with the migrant labor issues had an adverse impact on production of steel & Ferro Alloys Industries.

As a result, steel industry and ferro alloys industry and its downstream industries capacity had almost gone down upto 25-30 per cent but now recovering in the range of 50 to 60 per cent. Due to Pandemic, downstream industries are running with a low capacity

in almost all the state in the country some are temporarily closed now. The main locations are at Raipur, Durgapur, Vishakhapatnam, Hyderabad, & Ramgarh area etc. However, plants are operational but running at a lower capacity and some plants are still closed.

It has also affected Ferro Alloys which is an ancillary to the steel industry that's affecting the market demand of ferro alloys, due to low off take & low demand in the market. Apart from that the industry already reeling



Devanand Chauragade  
Raipur India

under major problems of higher input production cost of such as Power, non-availability of ore against excess capacities, stiff competition in the domestic & export market and Govt. exim policy etc.



Since ferro alloys industry is power intensive unit, the power cost is about 40-45%



of its total production cost. The balance is attributable to the cost of ore and other ingredients required to produce of ferro alloys. The power tariffs in India is 3-5 per cent higher in comparison to the competing countries, thus globally ferro alloys plants are situated geographically where power tariffs are moderate. Since the current power tariff in various states is quite higher side.

Therefore, it is recommended that the industry should get power at subsidies rate to enable the domestic industry to more competent in the international market.

The major raw material of ferro alloy industry is manganese ore for manganese alloys, chrome ore for ferro chrome, along with quartz and fluxes. It is to be noted that Indian manganese ore is of predominately low grade.

Due to huge demand and high rising costs of raw material globally and the scarcity of good quality manganese ore, chrome ore, coke etc in India the total domestic requirement of raw materials for the ferro alloys industry is not fully met.

Globally the prime manganese ore deposits are available in South Africa, Australia, Gabon, Ukraine, Kazakhstan, Ghana, Brazil and Mexico etc. In India

manganese ore is available with M/s MOIL Ltd., a government owned company producing around 1.3 million tonnes per annum. The other small manganese ore miners are producing are M/s OMC, M/s Mysore Minerals Limited, M/s Sandur Manganese in Karnataka and some small private mine owners in Madhya Pradesh, Orissa and Karnataka etc. hence the rest of Ore demand of the Industry met from Imports.



Coke is most widely used as a fuel in ferro alloys production; ferro alloys consume roughly 0.6- 0.7 tonne of fuel per tonne of ferro alloys. Coke and coal of Indian origin suffer from high ash and volatile matter content. Due to indigenous non-availability of low ash and low phosphorous coal and metallurgical coke, industry depends on imports from China and Australia. It is suggested to increase

the production of ore and to develop the new mining areas. The government should encourage the exploration on new mining leases and evaluation of mine reserves to the private sectors, to step up research and development activity for up gradation of low-grade ore.

Due to cheaper imports of semi-finished and finished products, the industry has urged the government to impose a customs duty of at least 10 per cent, excepting on ferro nickel, to provide a level playing field against the present nil tariff. Ferro nickel is not produced in India and is entirely imported and where the import duty is nil. It is strongly recommended that any measures applied to the steel industry should also be indiscriminately applied to ferro alloys, since the latter is a raw material to the steel industry. The ferro alloy industry should also be treated like the steel industry, levying a higher import duty will fetch more revenue to the government. It is to be kept in mind that the imports of ferro alloys have increased whenever basic customs duty was reduced. Now, the duty has been removed entirely. The requirement could have been met from domestic production by utilizing idle capacity, which would increase the revenue from



## Feature

indirect taxes etc.

As the government also getting handsome forex from the ferro alloys exports, it is necessary to take the promotion measures to safeguard the domestic industry. There is steep cut-throat competition in ferro alloys industry due to surplus production capacity in India especially among the manganese alloys producers. Further capacities are coming up in the industry against high power cost and non-availability of ore.

The future of industry will depend on international demand and export market against the wider industry impact of energy, ore shortages, and production cost volatility and lower profit margin.

The future prospects of

Indian ferro alloys industry will depend upon domestic demand and export market, price trend and input cost of power, availability of ores and other inputs

The price factor of alloys and ore play a vital role in this business. The price of Ferro alloys decided by the International Market & foreign exchange and it varies widely. In a highly volatile market condition the numbers of factors are affecting the prices of Ferro alloys especially among the Manganese alloys producers a numbers of clusters have been developed in West Bengal, Andhra Pradesh, Chhattisgarh, Orissa and Jharkhand and create the tough competition in the Market and during this critical time it is very difficult to sustain and overcome

from the current situation.

*The Indian Silicon-Manganese are focusing on trade in the domestic as well as export countries in south Asia but unfortunately more competition among the countries. In my view the Manganese Alloys Market would remain volatile during the coming days, subject to availability of covid-19 Vaccine in the country may recover the demand and economy as well.*

DevanandChauragade, E-mail - mnalloys@gmail.com

**IMPORTANT DISCLAIMER -**  
*The above Market Analysis, information & forecast of Ferro Alloys Industry from India has been made by me in my personnel Capacity on basis of my personal assessment*





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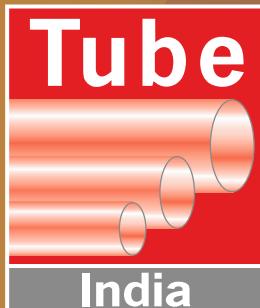
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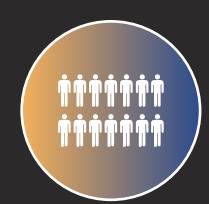
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## News Round Up

### India turns net steel exporter to China for first time in years



Even as various restrictions are being looked by government agencies to curb Chinese imports, the neighbouring country has provided big export support to Indian steel industry saving it from the blushes of a weak domestic demand and consequent fall in production. According to a report by CRISIL Research, India turned net exporter of steel to China for the first time in several years, with 69 per cent of semi-finished steel and 28 per cent of finished steel heading there between April and August. Indeed, it was exports that saw large primary steel makers through the peak lockdown months, with 60-80 per cent of their total production between April and August finding its way to various destinations, with China leading the pack

### Centre to review anti-dumping duty on steel products



The Commerce Ministry's investigation arm DGTR has initiated a probe to review the need to continue imposition of anti-dumping duty on certain types of steel products

imported from China, Korea, European Union, South Africa, Taiwan, Thailand and the US following complaints from domestic industry, according to a notification.

Jindal Stainless Ltd, Jindal Stainless (Hisar) Ltd and Jindal Stainless Steelway Ltd have filed an application before the Directorate General of Trade Remedies (DGTR) on behalf of the domestic industry for sunset review of anti-dumping duty imposed on imports of 'Cold Rolled Flat Products of Stainless Steel of width 600 mm to 1250 mm and above 1250 mm of non bonafide usage' from these countries.

The applicants have alleged likelihood of continuation or recurrence of dumping on the products coming from these countries and have requested for review and continuation of the duty imposed on the imports. "On the basis of the duly substantiated application by or on behalf of the domestic industry, and having satisfied itself, on the basis of the *prima facie* evidence submitted by the domestic industry, about the likelihood of continuation or recurrence of dumping and injury to the domestic industry...the authority, hereby, initiates a sunset review investigation," the notification, dated September 30, said. DGTR would review the need for continued imposition of the duties in force and examine whether the expiry of existing duties are likely to lead to continuation or recurrence of dumping and impact the domestic industry. The duty on the product was first imposed in February 2010 and was later extended in December 2015. The duty is aimed at ensuring fair trade practices and creating a level-playing field for domestic producers with regard to foreign producers and exporters.

### Steel industry sees signs of recovery from Q2FY21: ICRA



The rating agency ICRA mentioned the recovery of the steel industry in India. The industry is witnessing early signs of recovery in the second quarter of the fiscal year 2020. The

recovery was supported by easing mobility restrictions and a steady improvement in the domestic demand environment, according to ICRA.

Talking about the performance, it motioned the performance of steel mills, particularly the blast furnace



players, who are anticipating a healthy recovery in the second quarter coupled with increased capacity utilisation rates, tepid input costs, and consecutive steel prices hikes. As per ICRA, the domestic steel industry surpassed the average capacity utilisation level of 77 per cent in the months from July to September in FY21.

The rating agency believes that there is an uneven pace of recovery between the primary and secondary steel producers. The primary producers are managing to increase market share, helping them operate at higher asset utilisation rates compared to the secondary mills.

The COVID-19 pandemic, which led to the nationwide lockdown, severely impacted the production and the demand for steel in the country. It increased the inventory levels and the poor market conditions industry reduced their capacity utilisation. However, the agency said the industry's utilisation rates saw an increase from April 2020 lows of 27 per cent to 78 per cent in August 2020, suggesting an improvement in the overall operational environment

## **Steel prices marked up for the fourth month in a row**

Steel companies have hiked hot-rolled coil prices by ₹2,000 a tonne to about ₹42,500 and that of wire rods and TMT bars by a similar amount to ₹42,750 and ₹39,000, respectively.

The price hike this month is the fourth consecutive rise as the domestic demand showed strong signs of revival. However, the concern still lingers on a steady increase in Covid cases after gradual unlocking of economic activity by the government.

The recovery in both automobile and white goods sectors have helped steel companies push HRC prices above the pre-Covid level of ₹ 42,000 a tonne.

Since July, steel companies have increased HRC prices by ₹7,000-7,500 a tonne to cover the rise in raw material prices partially and bridge the discount in domestic prices compared to the landed cost of imports.

Besides improvement in demand from end users, dealers have also gained the confidence to replenish their inventory amid tight supply condition.

Amit Murarka, Research Analyst, Motilal Oswal Research said the rise in domestic steel prices is in contrary to the trend in China where prices have fallen by \$25 a tonne last month and are expected to decline further this month.

"We believe the domestic hike underscores the current

strength of demand in India for flat products and tight market supply," he said.

Post the recent hike, domestic HRC are priced at five per cent premium compared to the landed cost of imports from South Korea (\$555 a tonne) and about 10 per cent premium to imports from China.

The price trend in China, post their week-long national holidays, would determine the direction for regional and domestic steel prices. If prices in China do not improve post the holidays, it will be difficult for Indian steel producers to hold costs at a premium over China as imports will start seeping in, he added.

NMDC, the largest iron ore producer in India, reported that its sales were up 10 per cent in September at 2.11 million tonne against 1.91 mt logged in the same period last year.

Its production also increased by 12 per cent to 1.83 mt (1.64 mt). The company has managed to reduce its inventory on the back of strong demand from steel companies.

The public sector company, which hiked iron ore prices last month by ₹300 a tonne each for lumps (65.5 per cent Fe content) to ₹3,250 and for fines (with 64 per cent Fe) to ₹2,950 a tonne, is expected to increase prices further this month on the back of buoyant demand, sources said.

## **JSPL records 30% YoY growth in steel sales in Q2 FY21**

Steelmaker, JSPL has recorded a 30% yoy growth in consolidated steel sales at 2.41 million tonnes in the September quarter of FY 21 as against a sale of 1.85 million tonnes a year ago.

"We are setting new production benchmark for ourselves and would like to surpass them consistently going forward," said JSPL's managing director, V.R. Sharma.



The company is ramping up sales & production, as India comes out of the lockdown effect and ramps up its economic activities towards a renewed growth path, he added.

"With the revival of domestic steel demand, Jindal Steel & Power Limited records 29% (Y-o-Y) growth in Standalone Steel Sales with 1.93 Million Tons Q2FY21 as compared to 1.49 mt in Q2 FY20," the company said in a statement.



## News Round Up

### Tata Steel to Collaborate with CSIR to Deploy Decarbonization Technologies

Tata Steel Limited and the Council of Scientific and Industrial Research (CSIR) have joined hands to work toward carbon capture, utilization, and storage (CCUS) to combat climate change and global warming.

CCUS is the process of capturing waste carbon dioxide from large point sources, such as a factory, transporting it to a storage site, and depositing it where it will not enter the atmosphere like an underground geological formation.

As part of the memorandum of understanding (MoU) signed between the two parties, they will work together to deploy CCUS technologies in the steel industry. The move is expected to cut down on carbon emissions and expedite the transition toward a decarbonized economy. According to the press statement, both parties would collaborate and work together in key areas like CO<sub>2</sub> capture, utilization, and storage. Rakesh Kumar, Director of National Environmental Engineering Research Institute (NEERI), and Debashish Bhattacharjee, VP of Technology and New Materials at Tata Steel, will lead the collaborative effort.

The council is also planning to set up a national facility on CCUS at NEERI Nagpur that would provide a platform for interested stakeholders to participate in fostering the growth of such measures through a partnership model.

### JSW Steel likely to raise up to \$1 bn via offshore route



JSW Steel, among India's top two makers of the alloy, will raise up to \$1 billion through a combination of offshore bonds and loans, a corpus that could come in handy if the pandemic were

to hasten consolidation in the industry.

So, besides M&A, the proceeds could be used for a combination of factors as the company seeks to acquire new assets, meet working capital needs and refinance debt, multiple sources with direct knowledge of the matter told

[Tata Steel and CSIR signs MOU to collaborate for CCUS](#)



ET.

JSW Steel plans to bid for the insolvent Gontermann Peipers (India), owned by Pramod and Vinod Mittal, younger brothers of Lakshmi Mittal, promoter of ArcelorMittal.

The steelmaker held a cash balance of about Rs 12,000 crore at the end of FY20.

JSW's cash levels are now around Rs 8,754 crore, said a top official from JSW Steel, which is in the process of acquiring at least three new assets.

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The company is in talks with Standard Chartered, Deutsche Bank, Credit Suisse, Citi, Barclays, and Mashreq Bank for raising funds.

### RSP posts 19.2pc growth in saleable steel production



Due to Covid-19 pandemic situation, Rourkela Steel Plant (RSP) had to curtail production in the first quarter of the current fiscal which has registered a 19.2-per cent growth in saleable steel production in July-September.

In the September quarter, the company produced 96,700 tonnes of hot metal, 9,22,713 tonnes of crude steel and 8,65,103 tonnes of saleable steel, thereby posting growth of 17.6 per cent, 16.1 per cent and 19.2 per cent, respectively, as compared to the corresponding period last year, RSP said in a statement.

The total HR coil output has seen a 16.6-per cent year-on-year growth, while the rolling of plates from new plate mill rose by 14.2 per cent, it said.

The steel plant has also notched up "best September performance" on several fronts, including production of hot metal, crude steel and saleable steel, the statement said.

"RSP is the first PSU steel plant to set up a COVID testing centre and plasma bank for containment and treatment of the highly infectious disease," the company added.

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