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**Utilisation of byproducts
to play an important role
to become Atmanirbhar –
ASM International
India Chapter**

Mr. Sudhakar Bonde
Chairman, ASM
International - India Chapter

- Auction theory and its relevance to the Indian Mineral Industry
- Innovative and Improved Beneficiation Process for Iron Ore & Manganese Ore for sizes up to 40mm

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**D. A. Chandekar**
Editor

Dear Readers,

The iron & steel industry in India seems well on recovery track.

We all are observing that for the last few days, the number of covid cases per day are reducing across the country. Also, the severity of the cases has reduced thereby reducing the death tally and also improving the survival rate. This has substantially improved the sentiment and in most part of the country people have resumed their normal routine taking some precautions. The industry too has been working hard to restore normalcy.

As such, the construction sector was less affected by this pandemic and the steel demand for this sector had never been too low. The western states in the country did face labour migration problem for few months but these migrated labours slowly returned back and the work has now started in full swing. As discussed in the last month's piece,

the auto sector was facing a lower sales issue from atleast one year before the start of the pandemic. Slowing down of the economy and the emergence of other options like Ola and Uber were the reasons attributed for this bad performance of auto sector. Now after more than seven months the scenario is quite different. The monsoon was good which gave a boost to the tractor demand in the country. Travelling by public transport is now perceived as somewhat risky and thus the urge to have our own vehicle has increased. This has reflected in the higher sales of two wheeler and passenger vehicle segment. The growth in the commercial vehicle segment is bit slow but one can safely say that the auto sector has bounced back. At the same time we should not forget that auto consumes only 10 to 12 % of steel production and is not in a position to make a big impact on steel demand. The mega infrastructure projects are surely in a position to trigger the steel demand. They were paused for all these months but are now gradually re-starting. Hope all this helps the steel sector to stabilise and move ahead on a sustainable and long term growth path.

The 17th Iron & Steel Summit, organised by 'Steelworld' on digital platform was very well received by the industry. The tone of the event was quite positive and the panellists and speakers were bullish about the short term as well as the long term future of the iron & steel sector in the country. I also think the industry is now geared up for more such interactive webinars on digital platform. It is simple, less time and money consuming and equally effective. I am slowly getting convinced that Digitalisation is the only way forward.

What say you ?

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

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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 ³ /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
8	HBIS LaoTing	3	9700
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



Top 10 Trademark High-end Equipment of Henan Equipment Manufacturing Industry in 2018
International Leading Technology Level Stove project reference nos up to 550, highest monthly mean HBT of 1314.7 deg C achieved in China
Henan Yuxing Engineering & Technology of Hot Blast Stove Co
Henan Hot Stove Engineering Technology Research Center

Efficiency, Long Lifetimes & International Leading Technology



Conventional 3-section top fired stoves for 3x2500m³ BFs converted into Yuxing 4-section top fired by cutting the top portion of the existing stove shell over 2000m³ 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 2000m³ 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)



3x3580m³ BFs configured with Yuxing 4-section top fired stoves



Internal combustion chamber stoves for 1497m³ BF at JianLong Steel converted into Yuxing top fired with a catenary dome

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Content

Face to Face



10 Utilisation of byproducts to play an important role to become Atmanirbhar – ASM International India Chapter

Mr. Sudhakar Bonde
Chairman, ASM
International - India Chapter

Mineral Thoughts



16

Auction theory and its relevance to the Indian Mineral Industry

News Round Up

18 Unlocking economy improves India's steel capacity utilisation – CARE Rating

India's iron & steel exports to China surge to \$1.86bn trade in Apr-Aug

20 EMEA steel players see no early end to protectionism with new US president

22 China's new steel scrap standards 'will pave way for imports'

23 Tata Steel, POSCO join forces to develop hyperloop tubes

Technology Update
EAF steelmakers likely to benefit from technological innovation

News Round Up

24 Steel makers raise prices by Rs 1,200 per tonne on demand up tick

Bhushan Power acquisition to cost Rs 6,000 crore on JSW books

26 JSPL Q2 loss widens to Rs.706.49 crore despite strong performance

27 Tata Steel to source entire domestic requirement from Hind Zinc

RINL to make forged wheels at Rae Bareli by year-end

SAIL Q2 Results: Steelmaker back in green with Rs 393 crore profit

28 APL Apollo Tubes signs MoU with Zamil Steel Buildings India

Only 36.9% of iron ore e-auctioned on Tuesday

Commercial Coal Mining: 19 Auctioned Blocks To Generate Rs 7,000 Crore Annual Revenue

Technology

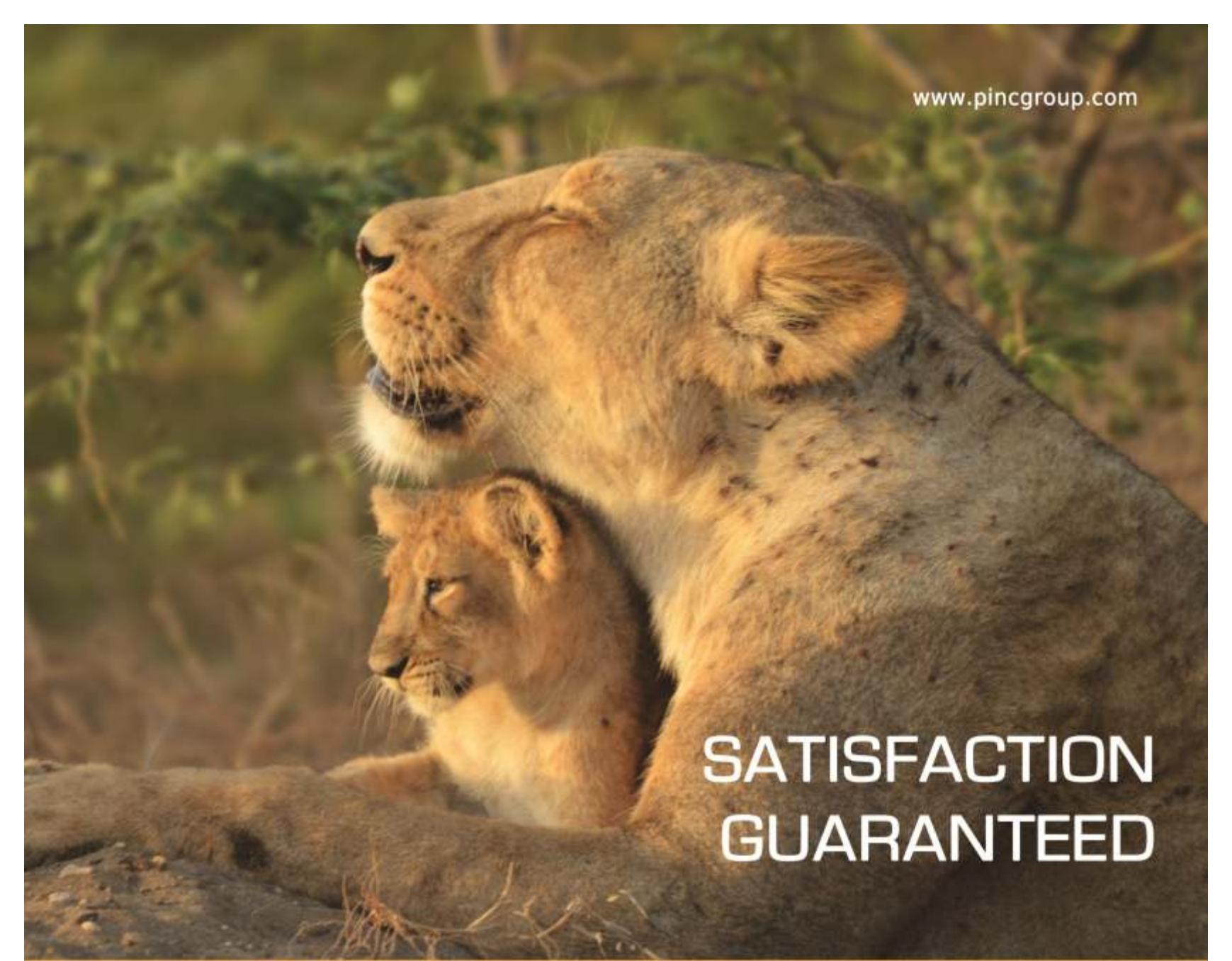
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Utilisation of byproducts to play an important role to become Atmanirbhar – ASM International India Chapter

The ASM International is the world's foremost professional society for Materials Scientist. It has been known for developing new products and services for nearly a century to meet the needs of ASM members and the materials community. Globally, ASM Material is uniquely positioned to supply expertise to the demands of material challenges.

While ASM International has its India National Council existing since past 30 years. It aims to foster an Indian identity within ASM and to serve the particular interests of the Indian members of ASM without conflict with the international position of ASM. It shall also be the responsibility of the council to contribute new program and service ideas that support the Strategic Plan.

The COVID-19 pandemic is one of those global challenges which has been severely impacted the metallic material science industry.

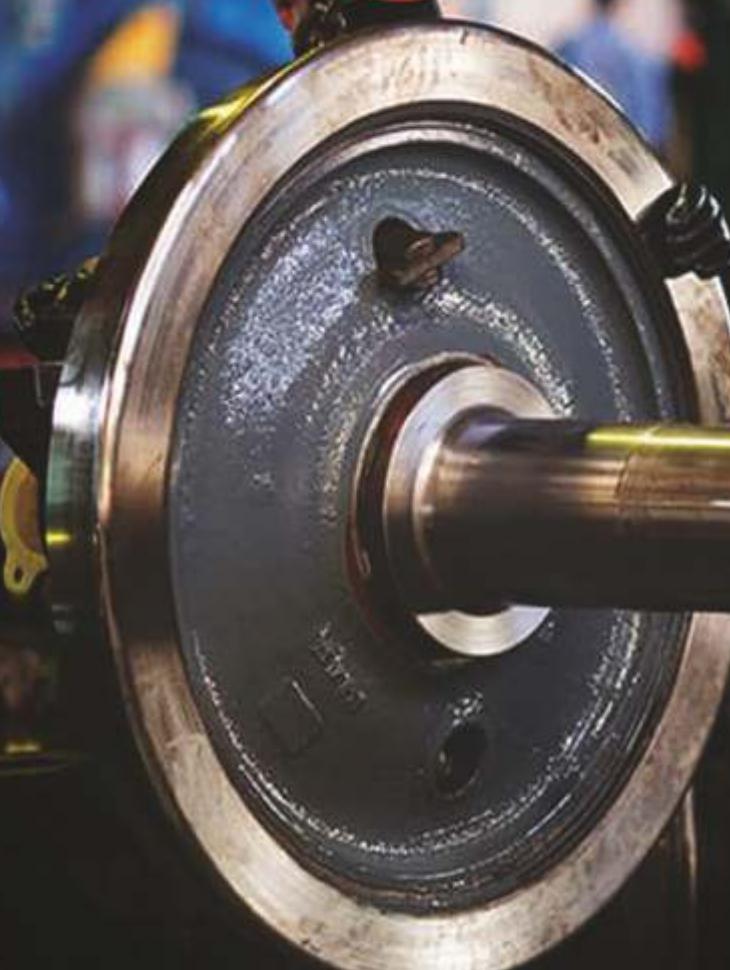
Looking at such negative impacts on the Metallic Material Industry, Mr D A Chandekar, CEO & Editor, Steelworld had an interview with Mr. Sudhakar Bonde, Chairman, ASM International India Chapter who has guided on how to resolve the various associated issues like transmission, supply-chain disruption and role of technology is important for the sustainable future as well.

Presently, Mr. Sudhakar Bonde is the CEO of Subodh Technologists since twenty years which is leading material testing laboratory at Navi Mumbai & accredited as per ISO 17025 (2017). Empanelled as Independent Director by Institute of Directors New Delhi and Founder director of Subodh

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Face to Face



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Excerpts:

What is the present situation in Indian metals industry, especially post Covid-19 pandemic?

Since APRIL 2020, we are under lockdown or partially operating to 50 % capacity. However things are improving & feel that we will be on track by October 2020. COVID taught us so many things like compassion, financial management & driven us to be Atma nirbhar.

Metal industry is facing problem on fronts like labour ,finances, Taxation & mismatch of demand supply

What are the process and Technology upgradation should be adopted by the Indian industry in order to be viable and competitive in the global marketplace?

Technology up gradation required in following areas :

- Utilization of byproducts of steel plants & other industries
- Taxation on steel & metals to be revisited to make it globally competitive

Which are the new opportunities and areas for the metals industry?

New opportunity in

following area is to be availed by metals industry:

- 1 Rare earth elements rule our life. Fifteen lanthanides elements are used in smart phone, battery. LCD to supersonic jets. Ninety percent of world requirements are met by China. We have rare earth reserves in states like Kerala, Chhattisgarh Andhra Pradesh but not exploited fully although institutes like Indian Rare Earth are in existence
- 2 Electronics& Magnetic materials
- 3 Additive manufacturing potential to be utilized fully
- 4 Bio materials
- 5 Emphasis on mineral beneficiation, metal extraction as by product Ferro alloys, Titanium alloys , Nickel alloys, Copper alloys & ALUMINIUM ALLOYS .

What are the present activities of ASM International ?

ASM International is a premier professional society of metallurgists, material scientists , Technologists, Educators & students with a membership of over 20,000 worldwide .

ASM offers excellent networking link and gives an instant access to wealth of

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Face to Face

information sharing network for anyone who works with metals, alloys, composites, ceramics, polymers & electronic materials.

INDIA CHAPTER is one of the most vibrant chapters, established in the year 1979 by members like Dr H M Mehta, Shri Pradeep Goyal, Shri Prem Kumar Aurora, Dr A K Tiwari, Shri D V Shah. ASM International is aggressively working on completing the digitization of the vast library of ASM Literature.

What are the proposed new initiatives after becoming the Chairman of ASM International India Chapter?

The initiatives planned using wisdom of learned members are :

- a) Membership growth :
ASM International India chapter membership has been increased from 150 in August 2019 to 246 by end of August 2020. We are envisaging the growth up to 275 nos which is @ 30 % of total strength of seven chapters in India. Since ASM is by members & for members based on the principle of Volunteerism we are confident about this growth
- b) ASM India chapter is making efforts for representation on BIS -

Premier specification body of INDIA particularly MTDC division dealing with material characterization & metallic product specification group .

- c) ISO 9001 CERTIFICATION
We are at the advanced stage of getting the certification which will help us to streamline our operations of various committees like Membership, Program, Materials Camp, Student Outreach, Website up gradation, Newsletter, Public outreach & strategic planning .
- d) Planning for Various courses like Corrosion, Metallography, Bio materials & medical implants, Additive manufacturing, Metallurgy for non-Metallurgists, Metallurgy for engineers, Failure analysis, Heat treatment & webinars on subjects of interest to members
- e) Material camps & student outreach programs are planned
- f) Work with Government bodies for recognition of our course offerings
- g) Embrace diversity &

women empowerment

- h) Focusing on giving solutions to members through MSN (material solution networking)
- i) To keep members well informed, we are constructing new website www.asm-india.com which is expected to be operational by Nov 2020.
- j) Adding fresh talent to present pool of administrative staff
- k) New & revised edition of events like MET + HTS are planned in the year 2021
- l) Collaborations with IIT, BARC, Defence organisations, educational institutes, Private establishments & other societies like IIM, NACE, SFA is planned
- m) S B Firke Memorial lecture by distinguished technocrat has been proposed during Dec 2020
- n) ASM International India Chapter has planned its prestigious conference & exhibition program MET + HTS in the year 2021 under the leadership of Shri Pradeep Goyal, Past Trustee of ASM International.



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Auction theory and its relevance to the Indian Mineral Industry

“We must think about how the auctions work while considering for any specific context how the auction rules & format in that situation, while taking in what determines the value of the auctioned objects and what kind of information and levels of uncertainty the bidders might have”

By Haresh Melwani

We are observing that the Indian Govt is tending towards the AUCTIONS Model as the solution to the problem of allegations of favouritism in the allocation of the Mineral Resources.

We have also observed that the the 2020 Nobel Prize has been awarded to 2 economists for their



research into the Auction Theory and how it affects our business.

So let us take an overview of what the Auction Theory holds and how it will affect us so far as Mineral Resources are concerned?

The simplest form of Auction is the ENGLISH AUCTION, wherein the bids are ascending until the highest bid is reached and accepted.

Another widely practised Auction is the DUTCH AUCTION (due to its widespread use in the auctioning of flowers in the Dutch markets) which starts with a high bid for the lot and then declines until the first person speaks up and accepts the price level.

However these are extremely simple Auction formats and like all market mechanisms, they can go sideways and produce undesirable results, in certain settings.

This led to an extensive research into these problems in the search for the perfect auction in different situations, and this year's Nobel Prize in Economics was awarded to Paul R Milgrom & Robert B Wilson for " Improvements to auction theory and invention of new auction formats ".

In my opinion, there is no single perfect auction, and we must think about how

the auctions work while considering for any specific context how the auction rules & format in that situation, while taking in what determines the value of the auctioned objects and what kind of information and levels of uncertainty the bidders might have.

The auctions that most players participate in are " PRIVATE VALUE AUCTIONS " wherein the main issue is just how much you want it because you plan to use the material for your own use rather than to resell it.

But auctions for Oil Leases, Spectrum Rights, Privatized Companies, etc. have some element of being " COMMON VALUE AUCTIONS " wherein the value of what will be sold will be similar across potential buyers.

We observe that in most auctions, bidders have both PRIVATE AND COMMON values.

The ratio of which will determine the bids offered.

Therefore, for a higher revenue, the seller has an interest in providing participants with as much information as possible about the object's value before the bidding starts.

An improper ratio in the analysis of the above 2 factors results in an overbid for the asset which we have observed in India in the Auctions for Mineral Rights wherein the winner overbid the price only to realize to their horror that it was not economic to operate that asset.

Not to say that other countries have not solved this problem, and with further dialogue between the intelligentsia and the Govt Policy making bodies, can be solved as many models have now been evolved to handle these aberrations. ■





Unlocking economy improves India's steel capacity utilisation – CARE Rating

Domestic steel production and consumption continued to improve in October 2020 both sequentially as well as on y-o-y basis, CARE Ratings has stated in its latest report. In October 2020, India's crude steel production stood at 9 million tonnes (mt), up 0.2% as compared with the corresponding month in 2019 and 5.7% higher as compared to September 2020, the ratings agency has stated.

"Production of finished steel also grew by 1.1% y-o-y to 8.4 mt and 3.7% compared to September 2020. The y-o-y fall in consumption of finished steel contracted to -2% in October 2020 from - 4.9% in September 2019. Both production and consumption of steel have consistently been improving since April 2020.

The y-o-y contraction in finished steel consumption have been reducing since the last six months, from (85.8%) in April 2020 to (10%) in July, (4.9%) in September 2020 and just (2.1%) in October 2020. Production of finished steel which had tanked 82.1% y-o-y in April returned to growth in August, albeit marginally by 0.1%, it further improved and rose by 1.1% y-o-y in October 2020," CARE Ratings has stated.

According to the ratings agency demand for steel from the infrastructure activities, pipe manufacturing, automobiles, and consumer durables sector ahead of the festive season has led to increased steel consumption and higher restocking demand.

"Capacity utilisation levels of crude steel improved with the unlocking of the economy and recovery in demand initially on the back of higher international demand before domestic demand began to pick-up which eventually moderated export. After hitting bottom in April 2020 at 27%, capacity utilisation rate of crude steel returned to year-ago level of 76% in October 2020," CARE has stated.

India's iron & steel exports to China surge to \$1.86bn trade in Apr-Aug

India's exports of finished and semi-finished steel to China has risen sharply this financial year, spurred by the latter's quick economic recovery from the Covid-19 pandemic, and despite the rising tensions between the neighbours in Ladakh.

India's total iron and steel exports in the first five months of this fiscal to China were more than three times the figure in the entire financial year 2019-20.

Data from the Ministry of Commerce and Industry shows that the total iron and steel exports to China were worth \$1.86 billion in April-August 2020, up from \$514 million for all of 2019-20.

India exported \$889 million worth of semi-finished products of iron or non-alloy steel to China in the first five months of 2020-21, as against \$107.24 million overall 2019-20. The exports of hot-rolled products of iron and non-alloy steel were at \$637 million this year, as against just \$23 million last year.

Care Ratings had pointed out that the finished steel exports as a percentage of total finished steel production peaked during April-August 2020 – the figure was 21 per cent, compared to 8 per cent in April-August 2019, and 6 per cent in the same period in 2018.

The ratings agency said the Covid-induced lockdown in April-May had crippled domestic demand, and steel players were forced to look at export markets to keep their inventory in-check.

"Domestic steel companies ramped up export of steel products, especially semi-finished products, significantly during May and June 2020 due to fall in domestic demand and relatively better demand from China and other export destinations," Care Ratings' report said.

Bhaskar Chatterjee, secretary-general of the Indian Steel Association, pointed out that around 60 per cent of the Indian steel exports were to countries like China and Vietnam.

"The reason for the increase in the steel demand by China and Vietnam is their faster recovery from the pandemic. The other reason for China is the series of stimulus packages, both monetary and fiscal, which also includes some sector-specific stimulus for the infrastructure and construction sector. Due to this stimulus, the steel demand and prices for steel products in China remained at an elevated level," Chatterjee said in an email response.

Ajay Sahai, Director general and CEO of the Federation of Indian Export Organisations, added that China is consciously shifting more into value-added production in the manufacturing sector.

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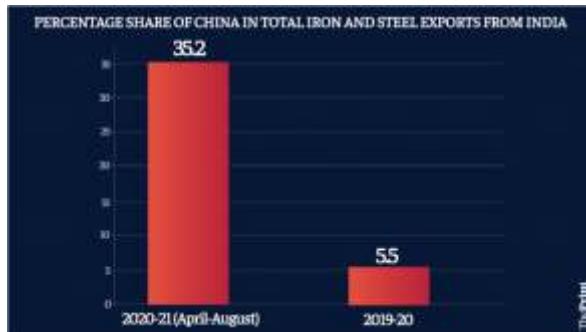
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News Round Up

"It has also recovered faster from Covid compared to other countries, which is one of the reasons for the increased demand," Sahai said.

Due to this surge in demand, China's share in India's total iron and steel exports has also surged to 35 per cent in April-August from 5.5 per cent in all of 2019-20.



This has meant that while relations between India and China have hit a new low thanks to the border standoff in Ladakh, China's share in India's export and import baskets has increased this fiscal. While China's share in India's overall exports increased to 9 per cent in the current fiscal from 5.3 per cent in 2019-20, on the imports side, the corresponding figures were 18 per cent and 13.7 per cent. Chatterjee concurred that the lockdown and sluggish demand in the domestic market saw a marked change in the trade pattern.

"The total exports of finished steel products from India registered a significant increase. For the months of May, June and July, the country's exports on an average increased more than 200 per cent when compared with the same period last year. In June 2020, the total exports touched 1.5 million tonnes, which is an increase of around 334 per cent over June 2019," Chatterjee said.

However, he added: "Imports of finished steel products registered a significant decline. For the period April to August, the country's imports decreased more than 51.7 per cent when compared with the same period last year."

EMEA steel players see no early end to protectionism with new US president

Now the work begins for USA newly elected President, Joe Biden to start making good on the policy changes as he promised. While European and Middle Eastern steel players see no early end to protectionism in steel markets

with Democrat Joe Biden's confirmation as the next US president, market sources said after and immediately before Biden's victory in the presidential race was called



over the weekend. Many however expect trade tensions with certain countries and regions will be eased.

The Section 232 import tariffs on steel, instituted in March 2018 by President Donald Trump, are widely expected to remain with the new president, the sources believe. These led to the EU's introduction later the same year of an import safeguards scheme, which regional steelmakers are seeking to extend after its scheduled expiry in June 2021, particularly as no immediate change is expected in the Section 232 tariffs.

"We at ArcelorMittal believe that EU safeguards should continue due to global overcapacity that continues in the market, I don't expect a significant impact on the 232, considering Biden has suggested in his campaign that he will maintain 232," said Aditya Mittal, President and CFO of ArcelorMittal and CEO of ArcelorMittal Europe, in the company Q3 results call late last week.

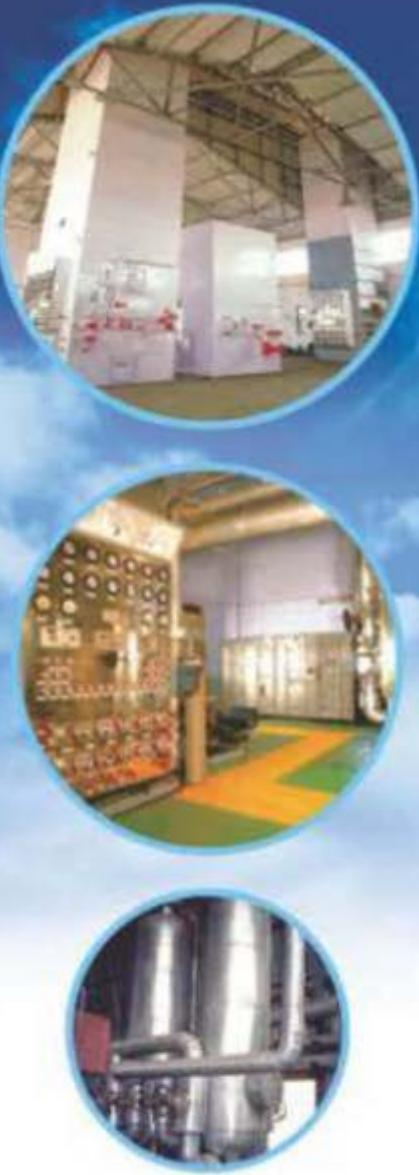
"For the steel industry Donald Trump will be memorable for his basket of measures aimed at restricting international trade, which is quite an unusual move for the US," said Ilya Gushin, vice president sales for Russian steelmaker NLMK. "From what we know about Biden, we believe as a president he may well be bound for measures that will ease the existing tensions [in world trade]."

"If Biden wins, we might see some slack in the trade war with China, but that's it," a Turkish mill source said. "I don't see much impact on the steel market otherwise."

European steel market assessments remained largely stable Nov. 9, confirming perceptions last week that the market was already "pricing in" a Biden win after recent price gains.

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News Round Up

Biden's program provides for a huge short-term economic stimulus package of \$2 trillion dollars, which includes infrastructure projects as well as the expansion of digitalization and renewable energies, noted Karl Haeusgen, president of the German mechanical engineering association VDMA. "The European capital goods industry should also benefit from this. However, government contracts are expected to be awarded to American companies whenever possible."

"A lot depends on the US dollar exchange rate as we understand Biden wants to start a lot of governmental projects, such as in infrastructure," an EU steel recycler said. "This means the US national debt may go up, which is not good for the exchange rate."

China's new steel scrap standards 'will pave way for imports'

Market participants in China are increasingly confident that Chinese authorities will revive steel scrap imports into the country in 2021 following the release of new domestic scrap classification standards.

A draft of the new standards for ferrous and stainless scrap for China's domestic market was released late last month. Market participants expect these standards to be launched and implemented by the end of this year.

This is expected to make the restart of significant volumes of steel scrap imports to China easier because the new classifications are designed to be close to international standards.

Simpler classification

The new standards divide ferrous scrap into five grades, namely heavy recycled steel materials, medium heavy recycled steel materials, small recycled steel materials, shredded recycled steel materials and bundled recycled steel materials.

Standards also list stainless recycled steel materials as one grade, according to the draft released by China's State Administration for Market Regulation in late October.

New specifications are listed as follows:

Heavy recycled steel materials

solid body with minimum thickness = 6mm or minimum diameter = 10mm
length < 1,500mm
width < 600mm
maximum unit weight = 1,500kg

Medium heavy recycled steel materials

solid body with minimum thickness = 4mm or minimum diameter = 8mm

length < 1,500mm

width < 600mm

maximum unit weight = 1,500kg

Small recycled steel materials

minimum thickness = 2mm

length < 1,500mm

width < 600mm

maximum unit weight = 1,500kg

Shredded recycled steel materials

bulk density 0.8-1.8 tonnes per square meter

Bundled recycled steel materials

maximum length = 1,500mm

maximum width = 1,000mm

maximum height = 1,000mm

maximum unit weight = 2,000kg

Stainless recycling steel materials

maximum length = 1,500mm

maximum width = 1,000mm

thickness = 300-700mm

maximum unit weight = 1,500kg

Market reaction

"The classifications will facilitate scrap trading around the country, compared with [the] previous dozens of grades implemented by mills in different regions," a trader in eastern China said.

"Grades listed in the new standards are closer to international standards, which will make imports easier when they restart," a second trader in the region said.

For instance, the "heavy recycled steel materials" category expands the length requirement to an internationally accepted 1,500mm from the previous 1,000mm, he said.

Market participants expect that, after the implementation of the new standards domestically, Chinese authorities will move on toward finalizing standards for scrap imports.

But any final say on the reboot of steel scrap imports to the country must be signed off by a number of different Chinese state departments, including the General Administration of Customs, and it may take a while for the new rules to be implemented.

"I think by the end of 2020, the new import scrap policy may be approved and by the middle of 2021, China may start importing," a third Chinese trader said. Some Chinese traders are also looking for reliable suppliers from abroad, and they thought HMS and shredded scrap - the most popular grades consumed by Chinese steelmakers - will be at the top of mills' shopping list.

Strict requirements

The new domestic standards require all ferrous scrap



Technology Update

EAF steelmakers likely to benefit from technological innovation



The technological innovation that is occurring in the steel industry will be beneficial to scrap-fed electric arc furnace (EAF) steelmakers and

detrimental to integrated steel producers, said Peter Marcus of World Steel Dynamics (WSD). The managing partner of the Englewood Cliffs, New Jersey-based steel information service spoke during one of the keynote sessions at Steel Success Strategies, which *Fastmarkets Metal Bulletin* hosted in partnership with WSD online Oct. 26-28.

Marcus said this technological advancement is threatening to the integrated mills because it offers reduced economies of scale, lessens barriers to entry and reduces production costs for high-end products, which is leading to the commoditization of these products.

He added that steel industry jobs are being eliminated by machines faster than overall economic growth can create new jobs. "Karl Marx is turning over in his grave," Marcus said, adding that the technological advancement could leave developing economies behind because low wages no longer offer the advantage they did previously.

Marcus predicted that basic oxygen furnace steel production would decline by 256 million tons to 753 million tons by 2050 while EAF production would increase by 218 million tons to 758 million tons.

He also said a glut of metallics will be available, predicting the scrap reservoir will grow from 14.4 billion tons to 32 billion tons by 2050 while direct-reduced iron production will more than double from 111 million tons to 235 million tons.

Marcus said protectionism likely will continue as will mergers and acquisitions in the steel sector.

to be processed before they are put into furnaces. Mills are not allowed to consume raw scrap.

In the category of recycled steel materials, the content of phosphorus and sulfur is no higher than 0.050%; the content of copper is no higher than 0.300%, and the content of arsenic is no higher than 0.050%.

In the recycled stainless steel materials category, the content of nickel is no lower than 6% and chromium is no lower than 10%. Hazardous materials content should not be over 0.01%.

Carried-waste with environmental influence is no higher than 0.3% and those without environmental influence is no higher than 1.5%.

"If the same requirements are applied on scrap imports, no raw scrap will be brought into China," a fourth trader in eastern China said.

Tata Steel, POSCO join forces to develop hyperloop tubes



Tata Steel Europe and South Korea's POSCO will collaborate to develop steel tubes needed for high-speed hyperloop transportation systems, the companies said.

Richard Branson's Virgin Hyperloop on Sunday completed the world's first passenger ride on their levitating pod system, which it hopes will transform human and cargo transportation while slashing carbon emissions.

Tata Steel Europe, a unit of India's Tata Steel, said in a joint statement with the world's fifth biggest steelmaker POSCO that they would develop high-quality steel grades needed for the huge vacuum tubes that allow high-speed transport using very little energy.

"POSCO has been conducting hyperloop related research such as feasibility, design and structural optimisation of various types of steel tubes for more than 10 years," said Duk-Lak Lee, head of technical research laboratories at POSCO.

The steel tubes not only need to allow a vehicle to travel in a low-pressure environment, where air is removed to cut resistance, but retain straightness over very long distances, the companies said.

They neither gave a time frame nor financial details for their hyperloop project.

In a hyperloop system, which uses magnetic levitation to allow near-silent travel, a trip between New York and Washington would take just 30 minutes. That would be twice as fast as a commercial jet flight and four times faster than a high-speed train.



News Round Up

Steel makers raise prices by Rs 1,200 per tonne on demand upturn



Indian Steel companies have increased prices by Rs 1,200 a tonne effective November 1, bringing it closer to

peak levels of 2018. In November 2018, prices of hot rolled coil (HRC) – a benchmark for flat steel – were at Rs 46,250 a tonne.

However, prices were reduced the following month. Prices of HRC were close to Rs 45,000 a tonne after the current increase. According to a producer, while HRC prices were increased by Rs 1,200 a tonne, the rise in prices of galvanized and colour coated products were higher, but widely varying.

V R Sharma, managing director, JSPL, said the company had increased prices by Rs 1,000-1,200 a tonne. On a cumulative basis, steel mills have increased HRC steel prices by Rs 8,000-8,500 since July. The increase in prices reflected a recovery in domestic demand.

Jayanta Roy, senior vice-president, ICRA, said domestic steel (HRC) prices had been through a roller coaster ride in the past two years.

"While steel prices ruled at Rs 46,500 per tonne in the beginning of November 2018, the rates dropped sharply to the recent low of Rs 32,250 per tonne in the next one

year until November 2019. Prices, however, took a u-turn thereafter, reaching the current level of close to Rs 44,500 per tonne. At current levels, domestic prices are aligned with international steel prices," he added.

A producer said, "I have not seen these kind of margins in a long time. They are not at peak levels but at least somewhat close to it." Though iron ore prices are at elevated levels, coking coal prices have partially offset it.

The price rise in steel is largely seen as a reflection of the upturn in domestic demand, especially from segments like automotive, appliances, apart from rural. Sharma said the government projects had also picked up. Consumption of finished steel in September 2020 registered an increase of 3.74 per cent month-on-month basis but was lower by 0.8 per cent over 2019.

With domestic steel demand picking up, companies are cutting down on exports. In the initial months of the lockdown, steel firms diverted bulk of their output to export markets. For some companies, exports accounted for 70-80 per cent of total output.

However, month-on-month exports have been coming down. In July, exports of finished steel products stood at 1.376 million tonne which dropped to a little more than a million tonne in August and in September it was around 864,000 tonne that was lower by 15.2 per cent compared to September 2019. In contrast, exports in July saw a rise of 128 per cent compared to the same period last year.

Sharma said JSPL's exports were now at 15-17 per cent of the total produce. He said the firm had decided not to export semi-finished steel and would be exporting finished steel as realisations were higher.

Bhushan Power acquisition to cost Rs 6,000 crore on JSW books



The acquisition of 3.5 million tonne (MT) Bhushan Power and Steel Ltd (BPSL) may cost just around Rs 6,000 crore on

the books of JSW Steel. If the Supreme Court (SC) allows immunity from prosecution for the assets of BPSL, the lead bidder JSW Steel plans to keep it as a strategic

investment which it will not consolidate by merging. SeshagiriRao, Joint Managing Director and Group CFO, JSW Steel, said the company will be a major investor in newly acquired entities including BPSL and Asian Colour Coated, and will not consolidate them with the flagship company. JSW Steel plans to raise 70 per cent of the acquisition value as debt on the books of BPSL.

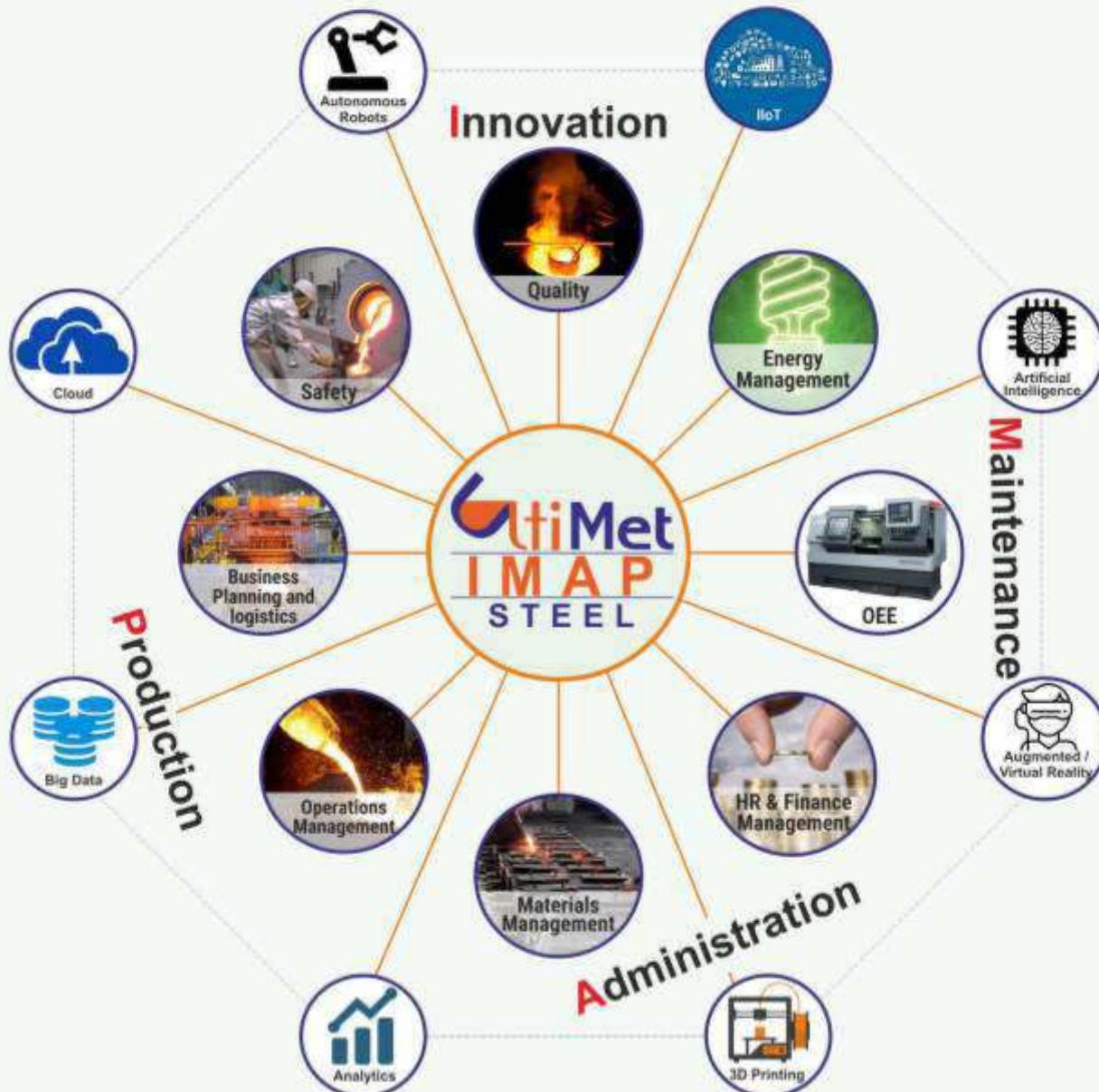
"BPSL deal was supposed to happen last year. We have already arranged the capital to contribute to the equity portion of the acquisition. The debt for the acquisition will

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News Round Up

be raised on the books of BPSL and it will have to make repayments from its cash flows," Rao stated.

JSW Steel is also looking to rope in a strategic investor to divest 49 per cent stake in bankrupt BPSL to reduce the financial burden further. The strategic investor's equity contribution will further reduce the liability of the steelmaker to around Rs 3,000 crore from Rs 6,000 crore. JSW Steel had agreed to acquire BPSL for Rs 19,700 crore in bankruptcy proceedings. Although the company had been adjudged as the winner of BPSL assets in September 2019, it failed to conclude the deal after the Enforcement Directorate (ED) intervened.

The federal probe agency wanted to attach the assets as part of the pending corruption charges against erstwhile promoters, the Singal family. JSW will proceed with the acquisition if the SC grants protection for BPSL assets under the Insolvency and Bankruptcy Code (IBC), the management stated earlier.

JSW Steel expects the top court to give its final verdict in

the BPSL insolvency case soon to help it conclude the deal before December. The company has already completed acquisitions of two bankrupt firms-- Monnet Ispat and Asian Colour Coated.

The steelmaker is keen to de-risk the acquisition as it has been concluding expansions, including doubling capacity at its Dolvi plant to 10MT. JSW Steel has reduced its consolidated debt by Rs 1,600 crore in Q2 to Rs 52,900 crore.

Excluding the acquisition cost for BPSL and Asian Colour, the steelmaker will not engage in any major capital expenditure that can increase its debt, Rao said.. The company plans to bring down its debt to EBITDA to 3.75 times by March 2021 from the current 4.73 times.

JSW Steel, among India's top two makers of the alloy, raised \$500 million through an offshore bond and Rs 4,000 crore through non-convertible debentures (NCDs) in October. Rao said steel demand is surging, especially because of high orders from automobile, solar, appliances and packaging industries.

JSPL Q2 loss widens to Rs.706.49 crore despite strong performance

Jindal Steel and Power Limited reported a consolidated net loss of Rs.706.49 crore in the second quarter of FY21. This is higher than the Rs.399.31- crore net loss reported by the company in the same period of the last financial year.

But there was an improvement in total income for the quarter, which rose to Rs.9,137.43 crore by September 30, 2020-end from Rs.7,688.62 crore by September 30, 2019-end.

Net sales from power stood at Rs.1,837.86 crore, higher than Rs.1,681.12 crore reported in the year-ago period. Net sales from iron and steel stood at Rs.7,633.07 crore, also higher than the Rs.6,384.59 crore reported in the same period of the previous fiscal.

A company statement said JSPL reported its highest-ever steel production volumes at 1.84 million tonnes (up 16 per cent year-on-year) and sales of 1.93 million tonnes (up 30 per cent year-on-year).

"As domestic demand returned, the company increased its

sales within India, reflected in declining export trend in the reported quarter, declining to 38 per cent (compared to 58 per cent in the first quarter of the fiscal). Exports stood at 0.74 million tonnes," the statement said.

JSPL also said it is interested in the auction of coal mines, which is expected to begin from November 2. "A number of coal blocks offered for auction are located in the States of Chhattisgarh and Odisha. Successful completion of these auctions will bode well for the availability of coal," the company said.

Commenting on the sale of its asset in Oman, the company said: "JSPL successfully completed the first tranche of the divestment by selling the 48.99 per cent of the Oman subsidiary to the acquirer."

In June this year, JSPL said that Jindal Steel & Power (Mauritius) Limited has accepted a binding offer from Templar Investments Limited to divest its entire stake in its Oman asset, Jindal Shadeed Iron and Steel Co LLC.

The enterprise value of the deal is over \$1 billion.



Tata Steel to source entire domestic requirement from Hind Zinc

Tata Steel, the country's oldest producer, has signed a Memorandum of Understanding to procure its complete domestic zinc requirements from Hindustan Zinc, India's largest and the world's fifth largest zinc producer.

The move has paved way to bolster the idea of Aatmanirbhar Bharat with one of the largest companies choosing to become 'vocal for local'.

Under this MoU, Hindustan Zinc will cater to both Tata Steel & Tata Steel BSL (Earlier known as Bhushan Steel Limited, now a subsidiary of Tata Steel).

"This MoU is a joint step by Tata Steel and Hindustan Zinc towards Atmanirbhar Bharat. While Global technical experts deliver curated technical services for productivity and quality improvement, Vendor Managed Inventory will ensure significantly lower inventory costs across Tata Steel units. This is a first of its kind partnership in the non-ferrous metals industry and is reflective of our commitment to being value creators for our partners and towards nation-building," the release quoted Arun Misra, chief executive officer of Hindustan Zinc as saying.

Hindustan Zinc has implemented a vendor management inventory (VMI) solution for Tata Steel.

As the first VMI customer Tata Steel's inventory and stock will be closely monitored. Upon sensing a shortage on a real time basis, the material shall be delivered on impromptu basis from Hindustan Zinc warehouses with no risk to operation. Besides, Hindustan Zinc will also keep safety stock at all their depots across India for Tata Group Companies.

RINL to make forged wheels at Rae Bareli by year-end

State-run steel maker RINL is planning to start commercial production of forged wheels at its Rae Bareli unit in Uttar Pradesh by December-end, the company's chairman and managing director P K Rath has said.

Visakhapatnam-based Rashtriya Spat Nigam Ltd (RINL) has set up a plant in Rae Bareli at a cost of around Rs



1,680 crore with a production capacity of one lakh pieces of forged wheels per annum.

"We are looking to begin the commercial production by the end of next month. It can be early also as we are waiting for foreign experts, (who are) expected to arrive this month to conduct certain trials required before commissioning the plant," Rath said.

Earlier, the plan was to start the commercial production by March-April 2020 following the hot trial of forged wheel lines at the plant but it was disrupted due to the coronavirus-induced lockdown, and the company had to postpone it, the CMD said.

In 2018, trial production of 430 mm steel rounds to be used for production of forged wheels was conducted.

The wheels produced at the unit will be supplied to the Indian Railways. At present, not 100 per cent demand of wheels is met through locally manufactured wheels, Rath said.

"We are confident after commissioning of the unit, the entire demand of the railways (of wheels) will be met from the domestically manufactured wheels. This will help reduce dependence on imports," he said.

Earlier, a senior Steel Ministry official had said that after achieving 100 per cent capacity, it will be expanded to two lakh pieces per annum.

RINL, under the Ministry of Steel, produces special steel, including wire rod coils, rounds, billets of different grades and dimensions.

SAIL Q2 Results: Steelmaker back in green with Rs 393 crore profit

Steel Authority of India Ltd (SAIL NSE 0.40 %) has reported a consolidated net profit of Rs 393.19 crore during the September quarter of FY21, as against a loss of Rs 248.08 crore during the same period last year, mainly on account of increased domestic demand as economic activity picked up during from August, the company said.

"SAIL collectively did this and the company registered a profit in Q2 of FY21 by braving all odds and exhibiting growth in the operational ..

The company had reported a net loss of Rs 1,265 crore during the June quarter of FY 21.

The profit achieved during the second quarter of FY'21 reflects a fast reviving economy and domestic market



News Round Up

which has been battling the adverse impact of the pandemic during the initial month of the year, said the company in a statement.

Following the resumption of operations during the later part of the first quarter, the company has operated at normal capacity in the quarter ended 30th September 2020, it said.

Sail's turnover in the September quarter also registered an improvement of more than 20% year-on-year and stood at Rs 16,834 crore. The company's earnings before interest, taxes, depreciation and amortization registered a 58.1% year-on-year growth at Rs 2,098.09 crore.

APL Apollo Tubes signs MoU with Zamil Steel Buildings India



In order to develop market for pre-engineered steel buildings (PEB) made from structural steel tubes APL Apollo Tubes (APL) has signed a Memorandum of

Understanding (MoU) with Zamil Steel Buildings India to develop a market for pre-engineered steel buildings (PEB) made from structural steel tubes. This is in line with APL's strategy to create new markets for structural steel tubes in India.

Zamil Steel India is a subsidiary of Saudi Arabia-based Zamil Industrial Investment Company. Its main factories are based in Saudi Arabia, the United Arab Emirates, Egypt, Vietnam, and India.

Zamil Steel India's annual production capacity is more than 5,55,000 tons of fabricated steel, which is used in low-rise and high-rise steel buildings and structures for diverse industrial, commercial, agriculture, aviation, entertainment, and military applications, APL Apollo said. This can help create a new annual market of 200,000 tons for its high diameter and high thickness steel tubes 'Apollo Column' in the coming years. APL already has a huge market share in this segment, and this will get a further boost next year with the launch of a 500 x 500 mm diameter structural steel tube. APL's target is to increase the share of Apollo Column multifold to its revenue in the coming years.

Only 36.9% of iron ore e-auctioned on Tuesday

Of the three million tonne of iron ore put up for e-auction on Tuesday, only 1.1 million tonne was purchased. With only 36.9% of the ore lying at jetties and plots being sold, the revenue will not be as per the state's expectation. With the state's revenue collection dipping to 40%, and the government continuing to borrow money from the market, this auction was aimed at generating a substantial amount of much-needed revenue for the state. Thirteen mining companies participated in the e-auction. The government had announced the e-auction of the iron ore lying at jetties and plots at Pale, Rivona, Sirigao, Kotambi, Vagus, Sulcorna, Maina and Tollem. The last one, held in May, received a poor response largely because no mining company wanted to invest in the ore during the monsoon.

Commercial Coal Mining: 19 Auctioned Blocks To Generate Rs 7,000 Crore Annual Revenue



The auction of coal mines for commercial mining witnessed "fierce competition" and the 19 blocks that went under the hammer can generate total revenues of around Rs

7,000 crore per annum and create more than 69,000 jobs once they are operationalised, Coal Minister Pralhad Joshi said on Monday.

The auction of blocks for commercial mining has opened India's coal sector to private players. "With a combined peak-rated capacity reaching 51 MT per annum, it is expected that these 19 mines will generate a total revenue of nearly about Rs 7,000 crore," the minister said while briefing the media. The auction of these mines witnessed fierce competition and companies have offered great premiums, he said. "Out of 38 mines put on auction, 19 mines were successfully auctioned. The success of the auction is 50%," he said. "I appeal to the state governments to cooperate with the bidders. The sooner these coal blocks are operationalised, the sooner the state governments will get revenue from these blocks," he added. The minister further said except coking coal, all other coal imports should be stopped in the coming years.

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Table: 1 New Technologies are;

TNo.	Ofx !Ufdi opipjft	P qfsbijo	P sf !!Gf fe !!fj{f Range	Qfs formance
2	I jhi !Jofotjuz!Permanent Magnet Plate Magnetic Separator	X fu	1/3 mm n !tp!7!mm	Sfdpwsfbqqspv!l: 9&! liberated fines
3	I jhi !Jofotjuz!Dry Roll Magnetic Separator	E sz!or washed wet	7n n !tp!3 In n ! ! 20mm to 40mm	Fosjd! tu f!hsbee by 10 – 30%
4	P qj dbrfSeparator	X bti fe!	7!mm to 50mm	Sfn pwft jn qvsjyft!vq! to 80%
5	Gof N busjy!Vertical Pulsating High Gradient Magnetic separator	X fu	6!tp!36 micron	?!: 6& mineral recovery
!	Opuf!: The performance / upgradation will depend upon the liberation level of minerals.			

^AFor beneficiation of paramagnetic minerals like Manganese ore, Hematite ore, Ilmenite ore etc, Wet High Gradient Magnetic Separators (HGMS/WHIMS) are being used which work on electro-magnetic induction principle. However, in these Magnetic Separators, there are limitations on the feed size. They are only effective for a size range between 1 mm to 20 microns.

Now with the development of High Intensity Permanent Magnetic Separators with intensity up to 15000 Gauss (1.5 Tesla), it is possible to beneficiate coarser ores of 0.1 mm to 40 mm size which is treated in two separate equipments / methods. In addition Optical Separators also perform excellent where there is colour difference between product & impurities.

Some of the performance data & pictures of Wet High Intensity Permanent Magnetic Separators (Intensity - 15000 Gauss) are shown in the **Table 2**

Tif Range	Crfe	Dpofousbf	Ubjjoh
1/3 mm to 5 mm			
	Mn > 36%	Mn > 47%	Mn < 1%
0.1 mm to 1 mm			
	Mn 12-18%	Mn > 40%	Mn < 1%
Iron Ore - 0.2 to 5mm			
	2.0 mm-magnetic	0.2 mm-magnetic	
Iron Ore - 5 to 10 mm			
	2.0 mm-magnetic	0.2 mm-magnetic	

Table 3: Optical Separation Results for Manganese Ore (Feed size 20mm, Region – Balaghat M.P)



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- Expert in identifying hidden challenges, improvements & opportunities in operating plant performance & troubleshooting of equipments and related systems.
- Some of the exemplary techniques introduced by us:
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 - First to introduce Filter Press for iron ore tailing de-watering
 - First to introduce Coarse Mineral Beneficiation

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Piranha

- Capacity is 6-60 tons / hour according to models.

Shark

- Capacity is 8-30 tons / hour in cutting and 10-35 tons / hour in baling.



Features

- Presses heavy and light scrap before cutting and increases its density.
- Then it performs cutting process in desired lengths automatically and continuously.
- Short stroke program (line up to scrap thickness) available for shorter cycle time
- Remote modem diagnosis and repair system for fast service
- Special oil filtration system for smooth operation
- Automatic lubrication



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