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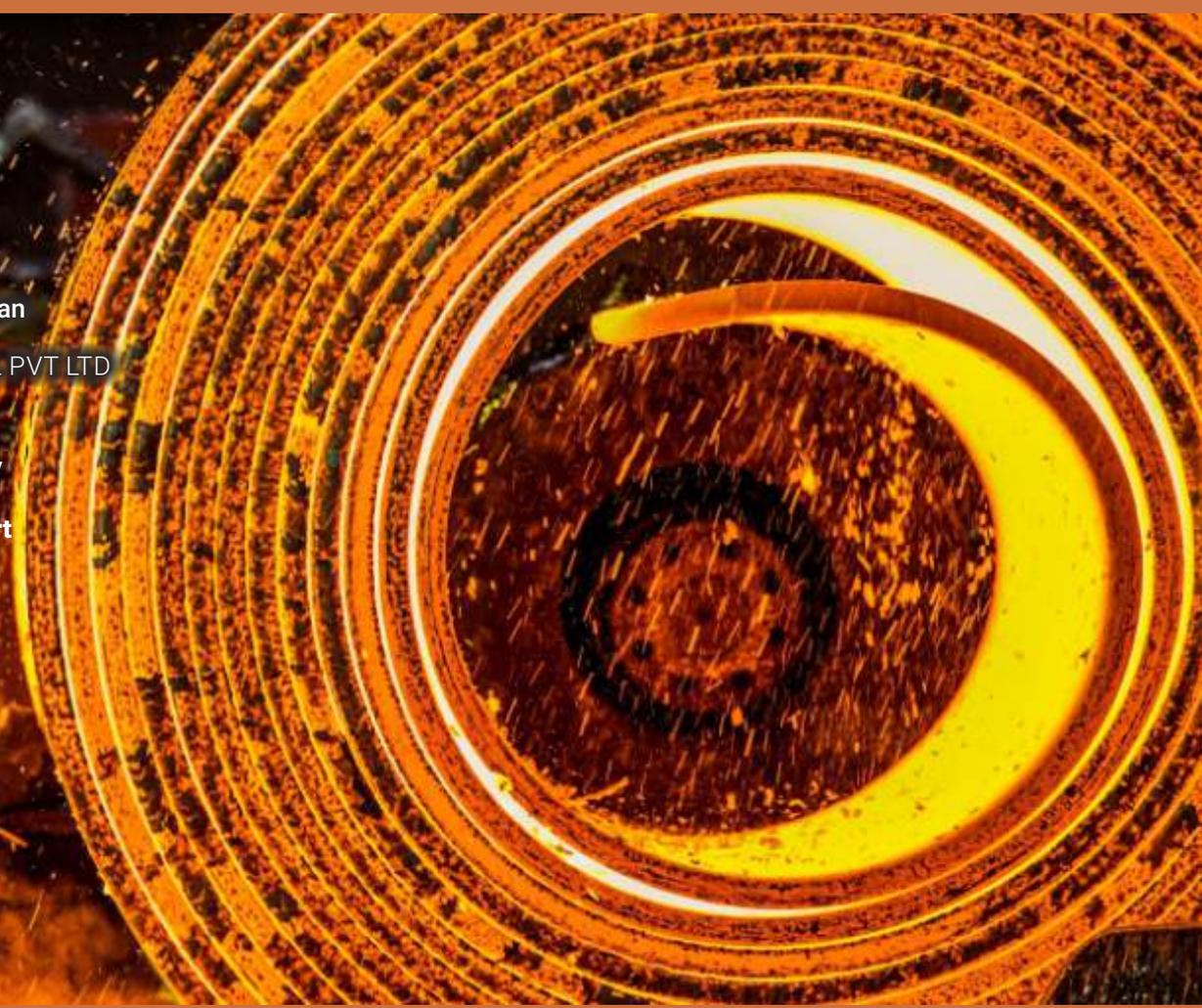
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Ramaswamy Visweswaran
Managing Director,
ARJAS MODERN STEEL PVT LTD
Commercial Director,
ARJAS STEEL Pvt LTD

■ **Special Steel industry
urges raw material
access to boost export**



■ **Primetals Technologies to
convert a continuous
tandem line into a pickling
tandem line**

■ **Tata Steel Europe enters
into profit**

■ **Nucor Corporation awards flat product
technological projects to Danieli**

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Editorial Desk



D. A. Chandekar
Editor

Dear Readers,

In the last two decades or so, due to faster, seamless and smooth communication, the world has surely come closer. Thanks to internet and its various tools, we can know about almost everything about almost anywhere on this planet and even beyond. Great feeling !

Obviously this has translated in the business environment too and today international trade is not as difficult as it was in the last century. Of course, there are other challenges like quality, price etc. thus making the trade extremely competitive. The supply chain of most of the mega corporates is spread over not countries but various continents. Even the markets are truly global. This strategy surely helps in building world class products and also due to spread out markets, required sustainability is achieved. Stretching this logic further, the effect of one country's or region's economy, positive or negative, is bound to be felt in other nearby countries and regions. So to say, today no country can progress or go through a depression in isolation. Rest of the

world would surely feel the tremors. Today, we are witnessing a war between Russia and Ukraine. It is going on for more than three weeks and there is a likelihood that it will not only extend but also spread elsewhere. As such the global situation remains quite delicate and the world leaders are busy trying to figure out a solution of this crisis. As we all know, Russia and Ukraine both export finished steel as well as semis in huge quantity. All this has nearly stopped due to this ongoing war. Even the prices of almost all the raw materials of steel have shoot up since the outbreak of the war. How can the finished steel prices remain stable ? They are bound to surge. Also the hike in petrol / diesel prices will surely have a cascading effect on the industry and finally on the consumer. Thus along with the global economy, the fortune of steel industry too is tied up with such events and the whole world suffers from any irresponsible act by anybody in any corner of the world. This is the unfortunate part of globalization, the other side of the coin.

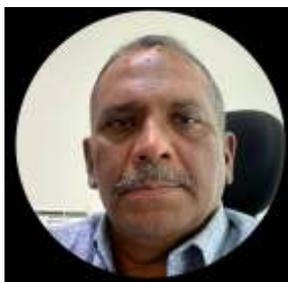
Fortunately India is not too much dependent on other countries for the steel raw materials except for coking coal, nickel and few types of refractories. Also, most of the domestically produced steel is consumed in the country itself. Thus in my opinion, India would feel the heat of the war but in a milder way. Let us hope this war crisis ends soon and the world economy resumes its normal peaceful functioning !

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Special Steel industry urges raw material access to boost export

Ramaswamy Visweswaran is the Managing Director of ARJAS MODERN STEEL PVT LTD and the Commercial Director of ARJAS STEEL Pvt LTD with the Overall responsibility of Arjas Modern Steel and complete responsibility of the Sales & Marketing, Commercial and Procurement activities of Arjas Steel Group.

Prior to joining ARJAS STEEL in Dec 2006, he was a Vice President Sales & Marketing with Sunflag Iron & Steel, which is one of the leading Special steel manufacturers in India. He was with Sunflag for 10+ years leading their growth as a pioneer in the automotive special steel sector.

During 1994-1996, he was working with SGS India, Heading the Quality Management systems. He started his career with TVS group in 1985 where he joined as Graduate Engineer Trainee and worked in various capacities till 1994.

Visweswaran has completed his Bachelor's degree in Metallurgical Engineering from NIT Tiruchirappalli, He has also done a Full time Executive M.B.A program from IIM-Bangalore and a program on Cross Cultural relationships from INSEAD. He speaks several Indian Languages like Tamil, Telugu & Hindi apart from English.

D A Chandekar, Editor & CEO, Steelworld Magazine had an exclusive interview with **Ramaswamy Visweswaran**, to understand the demand perspective of special steels market in India.



Excerpts :

How do you see the present market of special steels in India?

Indian Special steel market has come a long way from its inception in the late 1960's with a couple of steel plants producing very basic Carbon steel grades. Today we have more than 25 consistent manufacturers

producing a wide array of steel grades for use in some very critical applications also. Initially it was all scrap based melting process through EAF route with Ingots as the main intermediate product, but today several models like BF-BOF, BF-EOF, DRI/Scrap-EAF and even IF route is being used in the country. High Alloy grades and ESR route

steel is also being made in the country. The current market is in a developing phase and displays all the characteristics of a fast growing market with all type of manufacturers trying to retain and expand their footprint. We have some Large players with capacities close to a Million Ton and some very small players operating at around 100,000 MT capacity but the bulk of the manufacturers are in the middle range who are trying greenfield as well as brownfield routes for consolidation and expansion. Over the years the Industry has been able to cut down the Imports and is more or less self-sufficient today in catering to the bulk of Domestic demands.



What was the objective behind acquiring Modern Steels? How was it fulfilled?

The major objective for us as Arjas Steel was to expand our footprint in the country. We have come up well with our original manufacturing unit located in Tadipatri, Andhra Pradesh serving a wide array of customers across the country. Due to the distance the Logistics was sometimes not favourable for serving our esteemed customers situated in the Northern parts of the country. At the same time Northern region commands close to 35% of the special steel market of the country and some of our largest Automotive OEM's are situated up there hence we cannot ignore that market. Being closer to the customer has always been our key objective for providing the level of service that we are known for. Acquisition of Modern Steels helped us in fulfilling this objective apart from adding volumes immediately.

How do you see the future of Special steels in India?

Indian Economy is the fastest growing economy of the world and is expected to continue growing rapidly over the next 10 years at least. The Government is putting large emphasis on Infrastructure development and Huge investments have been planned in this area. The current steel consumption in India is far

less than the Global average and the Government has



drawn a very ambitious target of reaching 300 Million MT capacity in next 10 years. The special steel industry is amongst the fastest growing segments within the steel industry and the Large growth in Automobile industry has provided a big boost to this. India is not only making more Automobiles but has emerged as a large Auto Component Exporter to all the geographies across the world. This is good news for the growth of our Domestic Special steel industry as the steel consumed is all locally produced. Apart from Automotive, The Make in India program for Defence sector and the growing Aero space Industry are other areas which will boost the manufacturing and Consumption of High end special steels in the country. The PLI scheme launched by

the government is a big step in this direction. Definitely

the Indian Special steel industry is Poised for a very Bright future.

Any Specific Demand/ expectations from the policy makers?

The Indian Government over the recent past has been largely supportive to the Industry as a whole and has been proactive in providing solutions to the problems faced by the Steel industry in particular and the whole industry appreciates this. However, looking at the Large size of CAPEX required, Longer gestation period and the increasing Global competition we would request a more sympathetic view towards the Domestic players when it comes to Imports from countries with whom we have a FTA as a country. The Industry concerns should be given a more prominent place while



negotiating these deals also the norms for imports has been tightened to some extent by imposition of Quality control orders, but these needs to be further tightened and strictly implemented to avoid sidestepping.

The PLI scheme for Special steels is also a very welcome step but would request the government to broaden the horizon of Grades covered under the scheme to make it more useful for the benefit of larger number of Domestic manufacturers. Last but not the least the Special steel industry is not in a position to compete with the large scale Commodity players



when it comes to Raw material allocation and mining rights, it will be prudent to allow some preferential access to these raw materials for the special steel manufacturers.

Please share your Future plans?

Arjas steel as a group has quite ambitious plans for the future. We are going to not only expand our capacities at both our locations but are also working out a detailed road map for expanding our portfolio to cover the broad

spectrum of Special steel markets. In near future our endeavor will be to produce more of Value added and High end Special steels for critical applications and provide the customers with the product of their choice. Our focus will be on the growing Automotive market but at the same time we also aspire to expand our presence in Key Non-Automotive markets like Energy, Railways, Defence etc.

We work in a systematic well-planned basis in phases and some of our plans are already under implementation while the next phase plans are being chalked out. ■



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Primetals Technologies to convert a continuous tandem line into a pickling tandem line

Primetals Technologies has received a contract from voestalpine Stahl GmbH, a company of the Steel Division of voestalpine AG, to convert the existing continuous tandem line into a pickling tandem line at voestalpine's site in Linz. The package includes core components, process machinery, and their integration into the existing plant.

Increased quality

With the new fully automated pickling tandem line in cold rolling mill No.3, voestalpine will benefit from a quality increase in the

production of high-strength and ultra-high-strength grades for the automotive, household appliance, and construction industries, as well as for the production of electrical steel for e-mobility, and other industries. The plant is designed with a production capacity of around 1.9 million tons per year and fulfills the latest digitization standards for fully automated operation.

Commissioning is scheduled for the end of 2023.

Full project scope

This project will add a new pickling and trimming section to the existing

continuous tandem line at cold rolling mill No. 3 in Linz. Primetals Technologies is responsible for: engineering, supplying the strip running section equipped with essential process machinery of the tension leveler, supplying accumulator areas, the trimming shear with an inductive strip edge heating system, the strip inspection system, the electrical and automation equipment, and building and supervision services. The new pickling tandem line processes strips with input thicknesses between 1.5 and 6 millimeters with a



maximum strip width of 1,770 millimeters. The final thickness can be between 0.5 and 3 millimeters, and rolled down to 0.3 millimeters for electrical steel strips.

Optimized layout concept

During the construction phase in 2008, the overall line's layout was prepared by Primetals Technologies for a potential future expansion into a pickling tandem line.

The conversion of the existing entry area for hot rolled material will be carried out during existing operating and maintenance procedures. In the area in

front of the new scale breaker, an existing control roll serves as a switch between the existing and the new strip running area. This layout concept allows parallel building of new plant sections while simultaneously operating the tandem mill. In addition, it requires only short downtimes for merging the existing and new plant sections. Minimal modifications to existing foundations and standardization and reuse of existing plant components were considered during the engineering phase.

Improved strip thickness

tolerances

The existing entry area will be supplemented with a coil preparation system, which includes a scrap removal system and a new anti-coil break roll. The bend straightener improves the flatness of the incoming hot strip and to increase the pickling effect by scaling up to a maximum speed of 270 meters per minute. The trimming shear section is equipped with a turret type side trimmer, inductive edge heating, and edge and strip inspection; devices which can be operated up to 380 meters per minute. Edge heating supports trouble-



View Point

free trimming, especially for electric strip. The existing five-stand 4-high tandem cold rolling mill reaches a maximum speed of 1,000 meters per minute. A new thickness gauge behind stand No. 3 completes the already optimized instrumentation and, in combination with new controllers, enables the strip thickness tolerances to be improved.

Comprehensive upgrade Included in the project scope is a comprehensive upgrade of the electrics and automation systems for cold rolling mill No. 3, with the existing multi-processor control system being brought up to date. Control devices, control electronics, and safety switchgears will be replaced, and higher-level functions will be migrated to the latest programmable logic controllers. Operating systems will be upgraded, and Level 1 device libraries and Level 2 process models will be upgraded and optimized. At the same time, automation will be prepared for simultaneous operation of the existing and new plant configurations. The operator and user interfaces (HMI) will be converted to

plant for strip guiding of the new pickling line. Additionally, a new DC busbar for speed-controlled



drives with an operating voltage of 690 Volts, as well as a new low-voltage main distribution system will be installed for the strip feeding drives. Additional automation functions are available for the programmable logic controllers, for example for strip scale breaker control, trimming shear, S-blocks, accumulators, extensive strip inspection functions, and tension control and strip guiding. The pickling section is connected via a level 2 interface and is integrated into the common operator interface.

right) in cold rolling mill No. 3 at voestalpine's plant in Linz, Austria. Primetals Technologies supplies core components, process

machinery, and integration into the plant. Primetals Technologies, Limited, headquartered in London, United Kingdom, is a pioneer and world leader in the fields of engineering, plant building, and the provision of lifecycle services for the metals industry. The company offers a complete technology, product, and services portfolio that includes integrated electrics and automation, digitalization, and environmental solutions. This covers every step of the iron and steel production chain—from the raw materials to the finished product—and includes the latest rolling solutions for the nonferrous metals sector. Primetals Technologies is a joint venture of Mitsubishi Heavy Industries and partners, with around 7,000 employees worldwide. ■



"widescreen". The electrical and automation solution will be integrated into the existing

Pickling tandem line (tandem to the left, strip running area at center, and inlet to the

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Feature



Tata Steel Europe enters into profit

The European business of Tata Steel reported its most profitable years since its acquisition in 2007. It is mostly powered by a strong commodity cycle, resulting from a demand burst after the relaxation of coronavirus restrictions and a fall in Chinese exports, the European business has recorded £768 million EBITDA (earning before interest, depreciation, taxation and amortisation) at the close of nine months ended December 31, 2021. Analysts expect the trend to continue in the present quarter – that will make the profitability for this fiscal on a par with the best days the European business

has seen under its Indian owners.

T. V. Narendran, Managing director and CEO of Tata Steel Group, corresponded with the views of the analysts.

“It has been a good year. Quarter-on-quarter, there have been improvements and you will see more improvements simply because we had annual contracts which have all got renegotiated from January 1,” Narendran said in Calcutta.

Long considered the Achilles heel of Tata Steel Group, the European business is primarily split into two geographies: the UK and the Netherlands.



T V Narendran
*Managing Director
Tata Steel*

In 2007-8, the first year under the Indian ownership, it reported EBITDA of £1,063 million. EBITDA dropped to £893 million in the following year in the wake of the subprime financial crisis that was precipitated by the fall of the Lehman Brothers.

The European business could never see that level of EBITDA thereafter as it continued to struggle with a high cost base. The remarkable performance comes in the backdrop of shrunken volumes.

TSE has recorded 6.63 million tonne (mt) steel deliveries in nine months compared with 22.8mt in 2007-8 and 18.8mt in 2008-



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Feature



9, indicating stronger EBITDA margin in this fiscal. The sharp decline in volumes is mainly due to the fact that TSE had to periodically sell off units to remain afloat.

The war impact

The market is very volatile after the Russia-Ukraine conflict. Raw material and freight costs have gone up significantly — but so have prices.

“Overall prices have shot up in Europe because everyone’s costs have gone up. Spot prices in Europe have crossed €1000 a tonne,” Narendran said at the sidelines of CII’s annual eastern regional council meeting.

The Tata Steel chief predicted that margins may

expand for a couple of months before cost pressures catch up with the business. Coking coal prices have reached \$650 a tonne, while iron ore has crossed \$150 a tonne.

“In the immediate future you will see margins improve simply because the price increases are ahead of the cost increases. But in the next couple of months, cost increases will start hitting everyone. To the extent that you have inventory in the system, you have an advantage for a couple of months.”

“But it will catch up. If this prolongs for longer, you will start feeling the pressure, one is cost pressures and two, is the working capital pressures because everyone

is holding high value material,” Narendran said. While costs have gone up, the conflict has taken out Russian and Ukrainian steel exports to an extent. The two countries exported 45mt annually and a large part of it went to Europe.

This has now created an export opportunity for Indian steelmakers, especially to Turkey and Europe. However, Tata Steel typically exports to southern Europe and Turkey to avoid competition with the European business which caters to the markets in the north.

Narendran said the export from India would continue to be 10-15 per cent of output as the focus remains on meeting domestic demand. In terms of prices, the impact is more on long products — used in construction and infrastructure — than the flat products, used in automobile and consumer durables. The war hit the production of long products as Russia and Ukraine were big exporters of billet, a long-product intermediary. With rising prices of billets, scrap prices have shot up.

“In India, the secondary producers are seeing scrap prices going up, coal prices going up and hence the price increases have been pushed first by secondary producers,” Narendran explained. He said flat steel prices were relatively stable as there were no secondary producers. ■

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Nucor Corporation awards flat product technological projects to Danieli

Nucor Corporation entrusted Danieli and its innovative technologies for equipment and automation with new orders valued in excess of US\$ 650 million. This represents the largest worldwide order for equipment and automation in the last 20 years.

The leading American EAF steelmaker selected QSP-DUE® Danieli Universal Direct Rolling technology for a new greenfield installation in West Virginia to produce quality hot strip, and cold-strip rolling and processing technology for two cold-strip projects.

The QSP-DUE® Danieli Universal Endless plant will produce 3.0 Mshtpy of quality hot-rolled strip in the widest range of steel grades and most flexible way; strip dimensions up to 2,100 mm wide and from 0.8 to 25.4 mm thick. Danieli QSP-DUE® is the only technology that allows coil-to-coil, semi-endless and endless modes to be performed in a single line.

This will be the first thin-slab casting rolling plant to produce also automotive-exposed grades, allowing Nucor to operate without steel grade limitations.

Danieli endless casting-rolling is an energy-saving operation fitting with Nucor's green steel approach. The plant will be managed by Danieli Automation's

advanced process technologies and artificial intelligence. Q3 pulpits will support Nucor Steel operators in supervising fully automated plants, making use of big-data analysis and Q3 manufacturing execution systems. Robotized solutions will increase plant safety according to "zero-men on the floor" concept.

The two cold-strip projects awarded to Danieli will result in additional flat-product finishing capacity for the largest USA steelmaker.

First, a new Pickling Line and Tandem Cold Mill -PLTCM and temper mill to complete the QSP-DUE® quality hot-strip plant will process 2.3 Mshtpy hot-rolled strip, 0.80- to 6.35-mm-thick, up to 1,982-mm-wide, into 0.25- to 3.05-mm-thick cold-rolled strip for both construction and automotive products.

The pickling line will be characterized by patented Turboflo® technology for highly efficient scale removal and high- and adjustable-turbulence on both strip surfaces at speeds up to 250 m/min.

Coupled with the pickling line, a five-stand tandem cold-mill mill featuring Danieli original 6-hi Optimized Shaped Roll Technology (OSRT) will ensure the best strip flatness, thickness control and performance stability at speeds up to 1,200 m/min.

A 0.45 Mshtpy stand-alone temper mill to improve material formability, flatness and surface finish grades in dry and wet tempering modes will complete the Danieli supply for this new cold-mill complex.

A second order for cold-strip technology is for a galvanizing line and a color-coating line to be installed at the existing Nucor Steel Crawfordsville plant, Indiana, to serve markets for steel buildings and home appliances.

Danieli Automation will provide advanced process control systems to supervise operations, running the lines in automatic mode, guaranteeing quality and production consistency.

The startup of these plants will begin in mid-2024, with operation by the end of 2024.

Furthermore, Danieli is currently upgrading the Nucor Steel Gallatin plant from CSP to QSP® technology; the full startup of this QSP® plant is expected by April 2022. This original Danieli technology applied at Gallatin will be the first in the USA. It's winning layout configuration has been proven successful since the first installation at Algoma Steel, Canada, in operation since 1997 and continuously improved since then. ■

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Eco-Friendly Miner



News Round Up

RINL-Visakhapatnam Steel Plant observed the 51st National Safety Day on 3rd March 2022. To mark the occasion, a function was organized at the Learning and Development Centre (L&D Centre) auditorium of VSP today. The theme of 51st National Safety Day is "Nurture young minds - Develop safety culture".

Guest of Honour, Sri DCS Varma, Director of Factories, Govt of Andhra Pradesh applauded RINL for achievements on the safety front and emphasized accidents can be prevented only when safety is adopted as a value and nurturing safety into the younger minds. Shri Atul Bhatt, CMD, RINL-VSP, The Chief Guest, in his address said that, "I am proud to say that we have achieved 22 million accident free man hours during the last 3 months. This shows the commitment of employees after taking the pledge. I request all the employees to maintain the same tempo to achieve zero accident targets." He also emphasized to follow technical discipline and focus on safety considering the new hazards of modern equipment.

Sri VVV Gopal Rao, Director (Finance), Sri KK Ghosh, Director (Projects), Shri K. V. Nagi Reddy, CVO, Sri B K Mohanty, CGM(Maintenance & Iron) I/c, Sri P Chinna Rao, Inspector of factories, Senior Officers of RINL, Union leaders, Steel Executive Association members, representatives from SC/ST Association, OBC association and WIPS were also present. Prizes to the winners of various Safety competitions held in this connection among employees, Contract workers, School Children and Family members were distributed.

On the occasion, Flag hoisting was done at ED (Works) building by Sri B K Mohanty, CGM(Maintenance & Iron) I/c and Sri MSV Krishnaiah CGM(S&E) in the presence of employees. A Safety Pledge was administered on this occasion.

In the projects division also, Safety Flag was unfurled by Sri PK Sarangi, CGM(Proj)- & In charge- Construction. A Safety Pledge was also administered. Several senior officials of Projects Division, Engineers, Supervisors and Contract workers actively participated.

Global coal prices at record high, to increase India's import bill

The ongoing conflict between Ukraine and Russia is likely to have a bearing on the supply of thermal coal, while direct or indirect sanctions from the western countries are also expected to put an upward pressure on its prices. Currently, international coal prices are at their lifetime high at above \$400 per tonne.



"With Russia's invasion of Ukraine, there is an anticipation of lower supply of coal in the global market, thereby driving up the prices in

the international market. Also another factor could be the rise in the price of alternate fuels like crude and natural gas," said Rajnath Yadav, Research Analyst at Choice Broking.

Russia accounts for around 20 per cent of the global thermal coal exports.

"Currently, the pan-India incremental coal productions are meeting the incremental coal demand, but sustaining a required level of inventory at the power plant and also to serve the non-power sector, a higher growth in production is required."

Thus, for the power sector, there are no concerns from the higher international coal prices, but the non-power sector is expected to face the maximum impact.

Even though India doesn't import coal from Russia, the surge in its prices globally will have a cascading effect on the price discovery front in those origins where it imports from. As per reports, India ships in high-grade coal from Indonesia, Australia, and South Africa.

According to Manoj Kumar Jain of Prithvi Finmart, rise in international coal prices would increase import bills, thereby widening the country's trade deficit.

"Higher coal prices are having direct linkage to the inflation as rising energy prices impact industrial and processing costs," he said.

Coal supply side shortages (mainly due to under-stocking in the pre monsoon months) and price increases are affecting power generation and growth.

Currently trading at \$459 per tonne, with all the global economies opening up (sans geo-political worries), coal prices are seen shooting up towards \$478-\$505 per tonne in the near-term, said N.S. Ramaswamy, Head of Commodities at Ventura Securities.

"An ongoing energy crunch in Europe and Asia has been driving unprecedented demand for shipments of thermal coal from Australia, and (which) has boosted commodity prices to record levels."

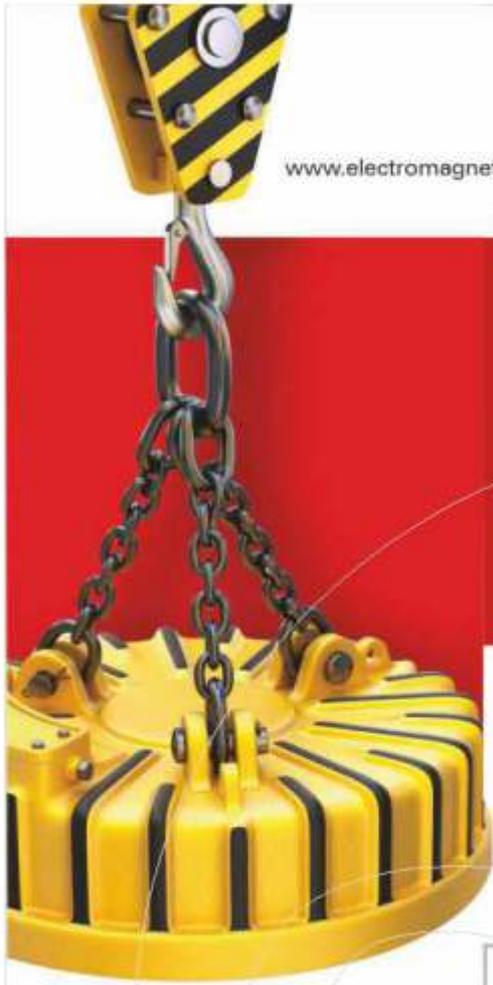
Of all the sectors, India's MSME industries are facing the brunt due to coal shortage, Ramaswamy said.

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India will ensure steady coking coal cargoes for steel midst of supply concerns

India will take steps to ensure a steady supply of coking coal for domestic steel companies, which are struggling with cargo disruptions and rocketing prices in the wake of Russia's invasion of Ukraine.

"We are discussing amongst ourselves, and we will definitely chalk out some plan on how to deal with this situation," by India's Steel Minister Ram Chandra Prasad Singh told Reuters in an interview.

"We will do something to bring a sense of confidence among our (steel) producers that in this situation also, we can find some solution. There are many options. And we will discuss in detail with everybody on how to go about this."

He did not give details but he said India could approach other producers and could look at boosting local supplies and importing pulverized coke injection (PCI) as a substitute.

India's demand for coking coal, used in steelmaking, is growing at a faster clip, and the country imports the bulk of its requirements from Australia.

India's overall coking coal imports total 50-55 million tonnes, with overseas purchases rising 4% annually.

India's coal import declines by 20 percent from Apr- Dec 2021



Despite a steep surge in the demand of coal from power productions, India's coal import has come down by almost

20 %, thanks to the steep increase in the production of coal from domestic coal mines during the past one year. The data released by the Coal Ministry here on Tuesday revealed that import of all grades of non coking coals has come down from 147 Million Metric Tons (MT) in April-December 2020 to mere 117 MT in April-December 2021. The import of coal is going to reduce further in the coming months as new coal mines and captive mines have started their production, admitted a senior officer of the Coal Ministry. All efforts are on to further enhance domestic coal production as availability of additional coal will aid in import-substitution of coal," he added.

The Ministry said the import of Non Coking coal, primarily used in power sector has decreased by 59.20% from 52.49 MT to 21.41 MT upto Dec 2021 in comparison to the same period of FY 20. And the overall import of coal has also reduced to 160.84 MT in the period April to December 2021 as compared to 186.65 MT during the corresponding period of FY 20, indicating a decrease of about 13.82% which has resulted in significant savings of forex reserves this year especially when the coal prices are at a high level in the international market, the Ministry claimed.

The domestic coal based power generation up to December 2021 is 727.39 BU (Billion Units)—which is 12 % more than the coal based power generation during the corresponding period of FY 20.

On the contrary, the imported coal based power generation which was 69.56 BU during April to Dec 2019 has reduced by 53.10% to 32.62 BU during corresponding months of current FY 22, the Ministry claimed.

India is the world's third largest energy consuming country and electricity demand grows by 4.7% every year. To reduce dependence on imports of coal, major reforms have been carried out by the Ministry of Coal with the vision of "Atma Nirbhar Bharat". The Ministry has also amended the Mineral Concession (Amendment) Rules, 1960 under MMDR (Amendment) Act, 2021 to allow lessee of captive mines to sell coal or lignite up to 50% of the total excess production after meeting the requirements of the end- use plant, the Ministry stated.

With this amendment, the Ministry has paved the way for releasing of additional coal in the market by greater utilization of mining capacities of captive coal blocks which has led to increase in production of coal by 36.75% from 45.47 MT up to Dec 2019 to 62.18 MT during corresponding period of FY 22, the Ministry said.

The reforms have led to an increase in domestic production of coal by 8.68% and consequently, the overall coal production rose at 522.34 MT upto December 21 as compared to 480.62 MT in the corresponding months of FY 20.

India's Tata Steel explores alternative coal supply amid Russia-Ukraine crisis

Tata Steel Ltd., India's multinational steel company, is exploring alternative sources of coal supply amid rising fears of supply disruptions and surging costs due to the ongoing Russia-Ukraine crisis, Bloomberg reported.

The Indian corporation reportedly imports up to 15 percent of its coal requirements from Russia. One option that the firm is contemplating is to import coal



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from North America, Bloomberg reported, citing Managing Director T.V. Narendran. Narendran said the conflict has also created room for Indian steel exports to countries in Europe

and Turkey etc.

Tata Steel plans to continue exporting 10 to 15 percent of its sales in the next financial year.

"We want to focus on best prices when selling that 10 to 15 percent, so southern Europe is now a better option than South East Asia," Bloomberg quoted Narendran as saying. Given that price hikes exceed that of input costs, projections indicate that the firm's margins should improve in the near future, he said.

India's great opportunity to emerge as steel export hub

Indian steelmakers -- including Tata Steel, JSW Steel and Steel Authority of India (SAIL) -- are pursuing aggressive capacity expansion, expecting a surge in domestic demand with the infrastructure development and steel shortage in key international markets in the wake of Russia-Ukraine conflict. They look to enhance the capacity by 70-100% in this decade as the government's National Steel Policy estimates a domestic requirement of 300 million tonnes per annum (MTPA) by 2030. The new capacity creation is expected to require an investment of ₹7-8 lakh crore, say industry experts.

The country currently has 142 MT of steel manufacturing capacity and produced 118 MT in 2021. The excess capacity and availability of iron ore are already turning Indian players aggressive in the international market. During the time of lockdowns, the steel majors had increased exports to maintain cash flow.

India has an opportunity to be an exporter like Japan or China, says TV Narendran, managing director and CEO, Tata Steel. "China exports 60 MT of steel by importing iron ore and coal from other countries. Japan exports 30MT. Korea also exports. They import raw materials to make steel and export. India has a great opportunity here to become an exporter of steel because we have rich iron ore resources," he added.

Tata Steel aims to double its capacity to 40MT by 2030 with the expansion of its existing steelmaking facilities at Angul, Kalinganagar and Jamshedpur. The capacity doubling expenditure is expected to be ₹1 lakh crore. According to Seshagiri Rao, joint managing director and

group chief financial officer, JSW Steel, the capacity needs to be expanded by 10 MT every year to meet the incremental domestic demand. "In addition, there is huge demand for Indian steel in export markets which China has vacated," he said recently. The domestic steelmakers exported around 22 MT for the full financial year. JSW Steel plans to increase capacity to 45MT by 2030 from 27MT at present.

Public sector steel major SAIL is looking to more than double capacity to 50 MT by 2030. JSPL plans to raise total crude steel capacity to 15.9 MT by March 2025 from 8.6 MT.

Post the US sanctions on Russia, leading Indian steel companies can capture market share in Europe and the Middle-East, if they enhance their capacity utilisation levels. They could also pitch for a greater footprint in the US, where Russia and China are key suppliers.

Export substitution: move to replace Russian supplies to EU

Indian exporters of iron and steel, jewellery, chemicals, plastics, aluminium, marine products and machinery are gearing up to increase their shipments to the European Union (EU) to try and fill a shortfall caused by disruptions to Russian exports.

In a report expected to be submitted soon to the ministry of commerce and industry, apex exporters' body Federation of Indian Export Organisations (FIEO), has identified sectors where Russian exports to the EU exceed \$500 million, said Ajay Sahai, the body's director general and chief executive.

"Inorganic chemicals are an important area where India can look at expanding supplies to the EU. Jewellery could be another opportunity for exports. Same goes with plastics and marine."

The EU buys gems and jewellery worth \$22 billion, iron and steel products (\$3.8 billion), organic chemicals (\$1.4 billion) and inorganic chemicals worth \$1.2 billion from Russia.

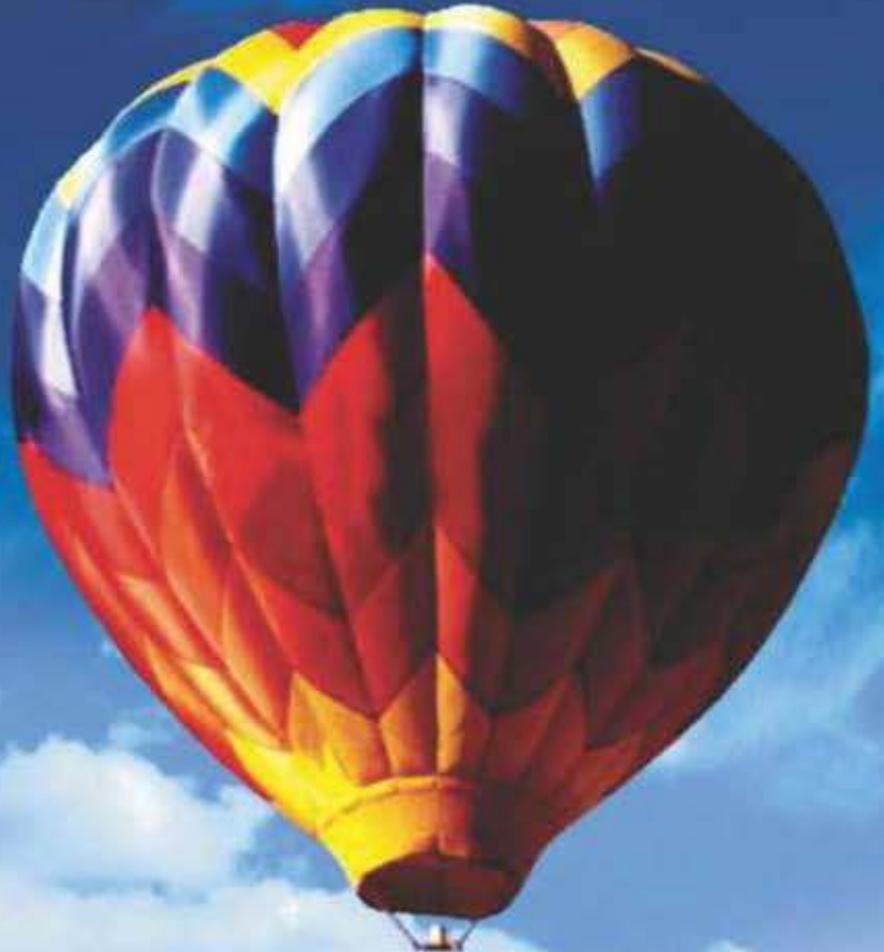
Indian steel companies and engineering exporters have seen mounting enquiries from the EU since the Russia-Ukraine conflict broke out. "Steel, chemicals, engineering goods, platinum and gold jewellery sectors can tap into the opportunity as supply gets disrupted from Russia. We will be sharing our study with the government and industry," Sahai said.

Enquiries on steel and engineering products should translate into exports growth, he added.

The EU accounts for 15% of Indian exports, and shipments to the region grew 59% to \$50.7 billion in the nine months from April 2021 to January 2022. Biswajit Dhar, professor, Centre for Economic Studies and Planning, Jawaharlal Nehru University, said iron and steel is a major sector that could gain significantly from the supply chain disruptions caused by EU sanctions. Europe is hugely dependent on Russia for iron and steel.

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Indian steel industry looks to push consumption, reduce CO2 emission

- India is the second-largest steel-producing country and the sector is expected to grow further with increasing prosperity.
- The steel sector in India is highly emissions-intensive and contributes almost a third of direct industrial CO2 emissions.
- India's per capita consumption of steel remains low with a huge rural and urban divide.
- The government needs to find a way of reducing emissions from the steel sector and also to increase its consumption in India.

Around a month ago, the managing director of Tata Steel, India's leading private steel manufacturer, said that there was not enough scrap and gas available to produce cleaner steel in India. Now, India, the second-largest steel-producing country, is showcasing its steel industry in Dubai where it is hosting a 'Steel Week' at the ongoing EXPO2020. These two facts underline two fundamental aspects of the Indian steel sector – on one hand, India is keen on increasing its per capita steel consumption, a sign of prosperity, as well as increasing its steel export and luring foreign investment. On the other hand, the production of clean steel, made using processes with low carbon footprint, remains a concern.

As the second-largest steel producing country, India produced 118.1 million tonnes (MT) of steel in 2021 from January to December. Other major steel-producing countries are China with 1,032.8 MT, Japan (96.3 MT), the USA (86 MT), and Russia (76 MT).

The Indian steel industry is poised to see tremendous growth in the coming year. A report published by the International Energy Agency (IEA) in 2020 predicts that India is one of the few regions – and the only one among today's large producers – that undergoes a strong growth trajectory in the Sustainable Development Scenario. Crude steel production will increase from 111 Mt in 2019 to 180 Mt in 2030 and 350 Mt in 2050, it predicts.

However, when there is a global race to reduce carbon emissions and limit global warming, the Indian steel industry is facing its biggest hurdle in the form of its high carbon footprint. Additional Secretary Rasika Chaube had admitted the fact while speaking at a webinar organised by FICCI in 2021.

The crisis became visible when Managing Director of Tata Steel TV Narendran got vocal and said that there is a lack of scrap and gas in India. So, the industry is dependent on



iron ore and coal as steel feedstocks. Tata Steel is one of the top metal producers, globally. However, an associate professor at School of Public Policy and Administration at Carleton University, Canada, Alexandra Mallett gives a new perspective to the crisis.

"There is not enough demand for 'green steel' in India," she says while responding to questions asked by Mongabay-India. Green steel refers to the metal used with the lowest carbon footprint currently possible. Using maximum gas or renewable energy along with scrap helps in producing 'green steel'.

Steel Minister inaugurates Steel Week at India Pavilion in Expo 2020 Dubai

Steel Minister Ram Chandra Prasad inaugurated the Steel Week at India Pavilion in Expo 2020 Dubai on 10th March 2022. The minister is leading a delegation to showcase and discuss with investors the business opportunities available in the Indian steel sector. Inaugurated Steel Week at India Pavilion expo2020dubai.

Singh accompanied by Senior Officials from the leading steel producers including SAIL, JSW, JSPL, Tata Steel, and AM/NS India. Senior officials from Indian steel sector delegates. The meetings of senior officials from Dubai Chamber of Commerce, UAE-based steel producers & steel user companies have been conducted for collaboration of Indian steel companies and to showcase investment opportunities in India.

Singh met representatives from the PIO Chambers of Commerce and Industry and Indian Business & Professional Council, comprising members from leading industries in the UAE on Thursday. This meeting was followed by a meeting with representatives from the Abu Dhabi Investment Authority at their headquarters.

Reprocessing scrap will boost India's steel production: Minister Ram Singh

Union Steel Minister Ram Chandra Prasad Singh on Saturday said production of steel in India will increase in the years to come as it expands scale of reprocessing scrap materials.

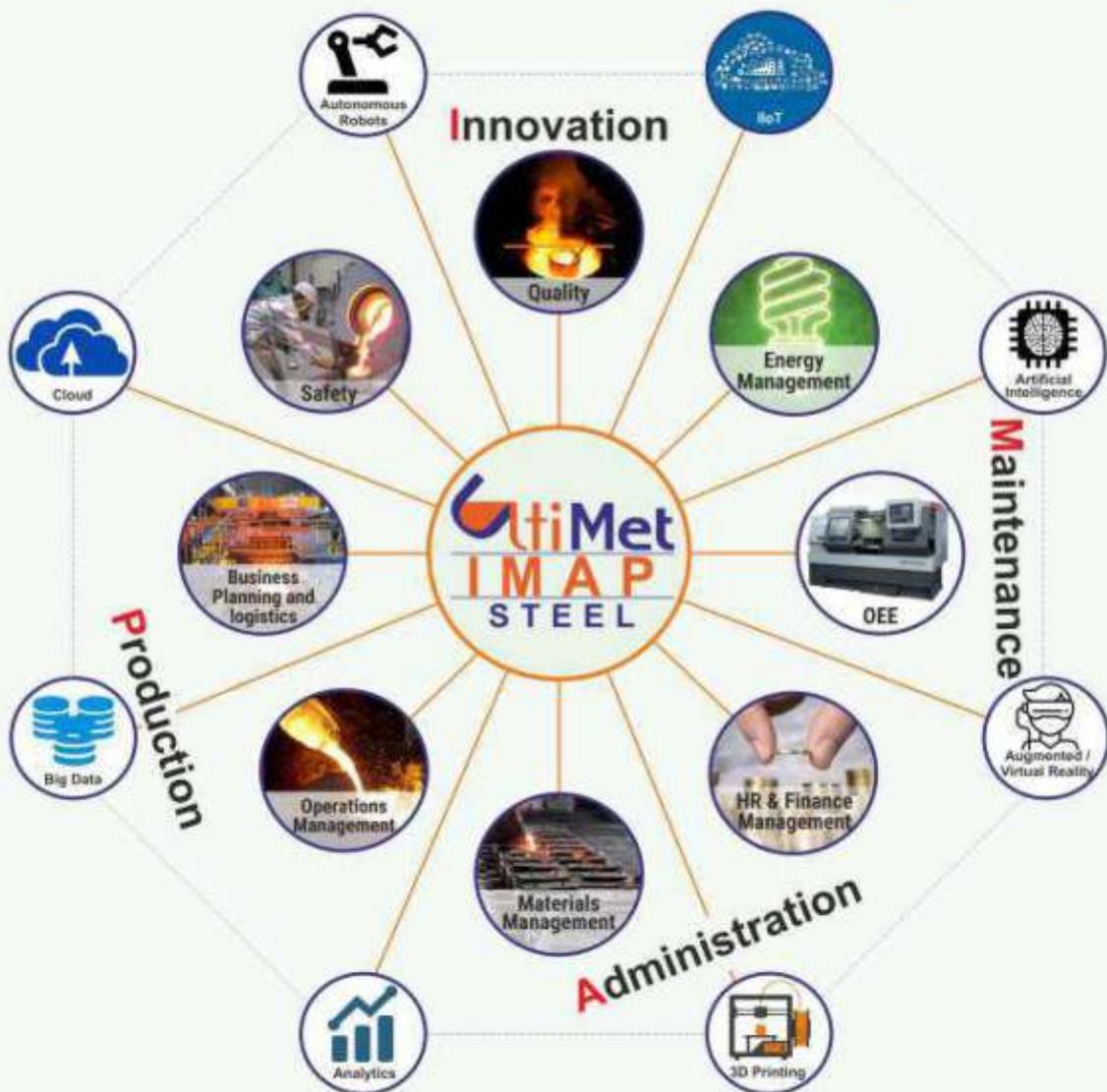
Speaking to PTI here, Singh said as part of the India-UAE Comprehensive Economic Partnership Agreement (CEPA)

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it will be easier for India to import scrap from the gulf kingdom, which will be recycled for precious industrial metals.

"With the signing of this CEPA agreement, there will be further cooperation and collaboration between steel manufacturers of both countries and this will be a win-win (situation) for both," he said

Singh said India was producing over 118 million tonnes of steel and by 2030 it is planning to produce 300 million tonnes of steel.

"We should produce enough (steel) to become self-sufficient, as well as export to other parts of the world, he said.

He said earlier India was importing a specific type of steel. Now, we have introduced a PLI (Production Linked Incentives) scheme, for which this budget has provided about Rs 6,322 crore, Singh said.

Singh said the ministry expects investments worth Rs 40,000 crore and there will be export potential of Rs 23,000 crore and a saving of almost Rs 17,000 crore on import bills.

This will create 5.25 lakh jobs and out of that 68,000 will be direct jobs. Very good situation for us and we will be producing quality steel in India, he said.

Addressing the perception of cartelisation in the steel industry, the minister said steel is a deregulated sector in which as of now 86 per cent was in the private sector and only 14 per cent in the government sector.

The private sector is contributing towards 65 million tonnes altogether, the minister said, adding that eventually prices depend on demand and supply.

Mission to develop secondary steel sector is in the making : Steel Minister

Union minister of steel Ram Chandra Prasad Singh on Saturday said that a mission to develop the secondary steel sector is in the making that would help to increase steel consumption in the country.

Chairing an interactive session with steel companies based in Odisha the minister said that steel consumption will continue to increase due to the various programmes and schemes of the government, such as Gatishakti Master Plan, in which the contribution of secondary steel sector will be very high.

Singh also lauded the government and the people of Odisha for taking lot of strides in development. Through institutions like the World Skill Centre, Bhubaneswar, Odisha government has rightly focused on skill development which is the need of the hour, he said. During

the interactive session concerns of the industry were put forward by representatives from the companies which included a better environment for the industry especially on finance, logistics, environment, support for the small-scale industries in the sector.

Steel Ministry officials also emphasised that the Government has been actively taking all efforts to address the concerns of the steel industry and welcomed inputs and comments on specific issues hindering the sector, especially the secondary steel companies.

Research to use plastic waste in steel making being done by various companies: Steel minister

Union Steel Minister Ram Chandra Prasad Singh on Friday said research to use plastic waste in steel making is being done by various companies. Singh also emphasised on Prime Minister Narendra Modi's vision of creating wealth from waste.

He was speaking during a two-day Conference of Ministers of Mines and Industries from States. Reiterating the importance of effective rehabilitation and resettlement, he said only those companies that can leverage social capital positively and are ready to give back to the local population will be able to gain in the long run.

Similarly, India can thrive only if a level-playing field is available for all players in the sector. A policy to encourage the secondary steel players is necessary to give direction to this vision.

Deliberations on the issues pertaining to mining, specific to steel sector, were conducted on the issues put forth by central and state governments leading to fruitful discussions that were welcomed by participating delegates, the steel ministry said in a statement. Highlighting the issues related to mining and steel making, officials from the Ministry of Steel mentioned the policy support that is being extended by the Centre.

Tata Steel to invest ₹1 lakh crore to double its steelmaking capacity

Tata Steel's plan to double its capacity to 40 million tonne (MT) is expected to entail an investment of around ₹1 lakh crore, said industry experts. The company plans to complete the expansion by 2030. According to sources, the company prefers to grow the capacity organically rather than acquiring assets to achieve the target.

The expansion of its existing steelmaking facilities at Angul, Kalinganagar and Jamshedpur will be enough to double its capacity to 40MT a year. "Tata Steel's capacity enhancement at the premises of existing facilities will cost around ₹5,000 crore for a million tonne," said a steel

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industry analyst. The expansion of the Kalinganagar plant to 8 MT from 3 MT is now underway and it will incur a cost of around ₹25,000 crore.

The current capacity in India of 20MT is going to be doubled during this decade," said N Chandrasekaran on Thursday in Jamshedpur, where Tata Steel has its largest plant of 10MT capacity. "Tata Steel has had the best-ever performance in its history, in terms of output and financial performance," he added.

Including its capacities in the UK, the Netherlands and Southeast Asia, Tata Steel has 34MT steelmaking capabilities. The company, which struggled with heavy debt of over ₹1 lakh crore, has cut down its net debt by ₹41,910 crore, or 40%, in the last seven quarters since the outbreak Covid-19 in early 2020. The net debt stood at ₹62,869 crore. The focus on debt reduction will help the company to become fiscally prudent to begin its new investment cycle, said the analysts.

During the time of lockdowns, the company had remodelled its debt management plan and channelled the free cash flows to reduce financial liabilities.

The priority of the company is now the repayment of its off-shore debts, said officials. The company has made ₹17,376 crore overall repayments in the nine months of this financial year. The net debt to EBITDA improved to below 1 and net debt to equity improved to 0.68 times.

Tata Steel spent ₹7,214 crore towards capital expenditure in April-December 2021 period and targets to increase it to a total of ₹10,000-12,000 crore by March 2022. Work on the pellet plant, the cold roll mill complex and the 5 million tonne expansion at Kalinganagar is progressing.

The steelmaker has posted a consolidated profit of ₹9,598 crore, which increased by 139%, in the December quarter. Recently, subsidiary Tata Steel Long Products has been declared as the winner for the acquisition of Neelachal Ispat Nigam Ltd. The acquisition will be financed by Tata Steel largely through internal accruals and bridge funding. It took over Bhushan Steel and Usha Martin's steel business in the recent past.

Along with the expansion, the company will need to increase its production from captive mines for raw materials -- iron ore and coking coal. It produces about 25% of its required coal from the captive mines, while it is fully secured when it comes to iron ore.

"The company targets to continue with 25% own coal and 75% imported coal," said TV Narendran, managing director and CEO, Tata Steel, recently. The iron ore production capacity is enough for covering the

requirements until 2030. Tata Steel has also participated in the recent mine auctions and picked up 350MT reserves.

"We have about 450 MT of mines already available to us. It is enough to cater to our requirements. Besides, we will continue to participate in auctions," Narendran said. The company has already expanded iron mining capacity to produce 30-35 MT of steel a year. "We are expanding the mining capacity for 50 MT steel production," he added.

Telangana minister KT Rama Rao urges Centre to sanction steel plant at Bayyaram

Stating that the central government has been giving the cold shoulder to the state, the Telangana IT and industries minister KT Rama Rao on Sunday again wrote to Union steel minister Ram Chandra Prasad Singh urging the Centre to sanction the setting up of a steel plant at Bayyaram in Telangana.

Despite Bayyaram (iron ore mines) accounting for 11% of the steel production in the country, the Union government has decided that a steel plant will not be set up at Bayyaram, KTR said.

"But the same Union government spent Rs 71,000 crore towards revamping old plants under the Steel Authority of India Ltd. Not a penny has been given to (for setting up) Bayyaram steel plant," he said, adding that the Centre's 'lack of will' has become a curse for the region.

KTR pointed out that the Centre's lack of interest comes despite the fact that the state government had extended all support in developing the steel unit.

The Union government has also been assured of iron ore supply from Chhattisgarh's NMDC, but there was no response either," he said, adding that none of his previous letters to other Union ministers on the Bayyaram steel plant issue have been answered so far.

He reiterated that the BJP government has ignored all the promises made under the Andhra Pradesh Reorganization Act, 2014.

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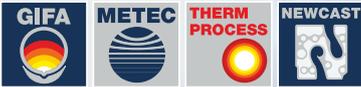
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11th SPECIAL STEELS CONVENTION & EXPO

4 - 11 March 2022

(On Digital Platform)



India can emerge as a potential supplier of Alloy Steel to the world

Steelworld Magazine successfully concluded its 11th Special Steel Convention & Expo on 4th March, 2022 on a Digital platform with key sessions including inauguration, panel discussion, business session I, II, III and ended the webinar with closing remarks.

In the opening remarks of the inaugural session, D A Chandekar, Editor & CEO, Steelworld highlighted the past 10 years of successful seminars. Digitalization in steel industries has spread a lot.

Special steel industry is going through ups and downs. Micro alloyed steels are getting stabilised. Although the tonnage of

special steels produced is not much, it is a very challenging field in terms of Metallurgy.

Mr Paramjeet Singh, Industrial advisor, MOS, GOI commented that Future of special steels is the need of the day topic. Cleanliness of these steels is of great importance. We are far behind the world on quality aspects of these steels although, import of these steels has come down from 6.7 Mmt to 4.0 Mmt in recent times.

These steels are produced in low quantities but the value is high. Industry should be aware about different grades and types of these steels



Dhiraj K Chauhan
(Director- METCON)

He offers metallurgical consultancy services in the areas of Heat treatment and quality as well as process controls in cold rolling mills. He is B.Tech (Hons) and M.Tech. in Metallurgical Engg. form IIT Mumbai.

which are imported. Steels for the pipeline industry are important. This sector should prepare for the next generation advances. We have very low industry – academic interaction. Partnership is necessary. Mr Ramaswamy Visweswaran, M.D. Arjas Modern Steel said that our country is doing well in the special steel area. We have become global and think global. Entry of EV is a challenge. By 2030, 50% of 2 wheelers and 10% of passenger vehicles will go off the roads. Alternate materials like carbon fibre may also pose a challenge to special steels. Production of best quality special steels at low cost is a challenge.

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Analysis

Mr Pranav Bhardwaj: (President – Alloy Steel Producers Association). He said that the alloy steel

During the Panel discussion, Dr Anil Dhawan, Executive Director – Alloy Steel Producers Association said

factors will affect demand for alloy steels. Mr Rajkamal Srivastav, Business Head - Wire rods &



industry has come a long way and it is producing good quality steels. Engineering components have become smaller and they are stressed more. Cleaner steels are required to withstand fatigue and higher temperatures for these components. He further elaborated that the steels have better quality than foreign manufacturers since they are produced from virgin raw materials. BIS quality standards are being followed by us.

that Alloy Steels have a bright future. Alloy steel production capacity is 10% of total steel capacity. Import of these steels is an issue, because China, Japan, Korea are dumping these steels in India. Hence, FTA should be opposed. In 3-4 years' time the demand will be 12 Mmt. In the next 5 years' time, there will be a technological shift. We can meet international standards of quality. In 10 to 15 years time, the growth of the alloy steel industry will be 6 -8%. EV entry and environmental

Alloy Steel Rounds, JSPL explained about the 1970s EAF and Ingot casting was common and very few people had CONCAST technology. Late 80s have seen MBF, Cold charging, BF - BOF and ESR technologies. Special steels for non auto applications should also be looked at. The special steels have a very golden future. These steels offer better reliability and better fatigue life. The demand for automobiles will rise due to the scrappage policy. By

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Analysis

2030, demand growth for alloy steels will be 20 -25 Mmt. Steel capacities are being built in India but green field expansion will be difficult.

However, there is a scope for heavy vehicles of 50 -60 mt capacity and also infrastructure like roads also need to gear up. The loss in demand of auto because of EV will get offset as a result of heavy capacity vehicles as well as demand from railways. Railways need 10 -12% and defence 3 -5% special steel. Technology adopted should consider CO2 emission, green steel making etc. JSPL has set up a gas based sponge iron plant at Angul. Training and Metallurgists should be available for QA and R&D work. Salary structure for technical people is good.

In China, Japan the working conditions are very good. Special steel producers have good equipment and process controls. Due to the availability of virgin raw materials, the quality of steel is good. India can emerge as a potential supplier to the world.

In the first Business session, Mr Ranjan Upadhyay, Head – Marketing, Arjas Steel gave information about his company regarding capacity, product profile, plants and number of employees etc. He further highlighted the opportunities and challenges of special steels. He also elaborated that India is the second largest steel producer in the world and

80% of the steel is produced by private steel industries. This shows the confidence of the investors in the steel industry. The government has planned the capacity of 300 Mmt of steel production, so investment is required in this sector. 9% of the steel is used in the Auto sector and 15% is used by capital goods. We have low per capita consumption of steel. Quality manpower is an issue.

Government support in terms of PLI (production linked incentive) scheme is available for special steels. The capacity of special steel production will be 23 Mmt by 2027. Vehicle scrappage policy will boost the demand for automobiles and enhance the scrap availability for secondary steel producers.

Infrastructure and defence sectors are being encouraged by the government. In the special steel sector 17% large players are there with a market share of 39% whereas there are 39% small players but with only 18% market share. Midsize players are 43% with a share of 43%. Thus, there is scope for consolidation. In the US there are only 4-5 major players of special steels. Green steel, ecology conservation, energy efficiency etc require a good focus.

Mr Pradeep Kumar, AVP & NSM - Wire rods, JSPL) shared the information on different plants and capacity.

He further explained the Market size of special steels in India is 6 Mmt per annum. China is a major supplier of special steels to India as well as West and Europe. However, the world is looking at India as an alternate supplier to China. Putting all eggs in one basket is not desirable for the world. Due to the Russia and Ukraine war some steel plants are closed down. Also, due to sanctions and restrictions put by the US and Europe on Russia, India can export more steel. Price increase of 100 to 150 USD in steel and 9-10 Mmt shortfall of steel can take place. The supply of scrap from Ukraine to Europe will increase.

During the Business session II, Mr Yatin Purandare, Chairman – Vega group explained the challenges to the special steel industry are many viz (1) Plant up time (2) Quality management (3) Synchronizing the processes of steel making (4) Communications (5) Real time MIS (6) Connected Resource Planning – CRP and (7) Continuous Improvement. In addition, integrated quality control laboratories, conversion costs e.g. electrical energy cost are also important. The evolution from ERP to CRP connects the process data and business on a single platform.

Other benefits of digitalization include connected workers, last mile service, Training, skill developments, quick expert's

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Analysis

access, virtual presence and online high level training. Now, industries are moving from Industry 4.0 to the next Industry 5.0 level of digitalization.

Mr Gopalkrishnan: (Dy. Secretary, MOS, GOI) He explained the PLI scheme (Production linked incentive scheme) introduced by GOI for special steel production. Salient features of the scheme are as under. The scheme has an outlay of Rs 6322 Cr. The aim of this scheme is (1) to promote value added steel manufacture and (2) to move up in the steel value chain. MECON Ltd is the nodal agency for the scheme.

Key deliverables of the scheme are – 1) Increase production 2) Accelerate investment 3) Increase exports 4) Bring down imports.

Incentive Cap for individual companies is restricted to Rs 200 Cr. Specifically, this scheme is offered to the products like coated steel products, alloy steel products and steel wires, speciality Rails and High strength wear resistant steel.

Mr Udayan Pathak: (Exec. Director, Udayan Pathak and Associates) He explained the GOI scrappage policy and its repercussions on the industries, especially the special steel industry. This policy will create turbulence for the special

steel industry. Dismantling agencies of vehicles should be associated. AIS 129 (Auto industry standard) has been modified on 13-08-2021. At ELV (end of life vehicle), polluting as well as unfit vehicles should be phased out.

This policy will result in a viable circular economy, reduction in the number of polluting vehicles, and boost car sales. This will give an opportunity to the special steel sector and increase consumption of these steels. There will be higher availability of good and clean scrap.

The vehicles scrapped as a result of ELV program will be (assuming only 35% are scrapped) 2 wheelers 15.8 Lacs, 3 wheelers 4.8 Lacs, 4 wheelers 9.5 Lacs and CV 4.2 Lacs. This will generate 132, 82,180 Mt steel scrap and 2, 85,535 Mt of aluminium scrap.

While the Business session III. Prof. Dipak Mazumdar (IIT Kanpur) explained Special steel production and importance of steel cleanliness.

Now a days more than 10 MI Mt of special steel is produced in India. Inclusions (Non metallic particles) in steel cause premature failure. Bigger inclusions are not a problem as they float on top of molten steel and get removed. Entry of oxygen in the steel bath must be prevented to control inclusion formation. Clean steel should have <40µm size inclusions. Basic slag

will absorb the inclusions and good in house R&D can help ultra clean steel production.

Prof. G G Roy, IIT Kharagpur highlighted the recent developments in green steels means fossil free steel or steel produced with minimum carbon emissions. Iron & steel industry emits 2.6 Gt direct emissions which is 7.8% of global emission from fossil fuels. He explained various steel making processes and techniques like TGR-BF to separate carbon dioxide from exhaust gases. Use of reactive coke, reformed gas, Mini BF with charcoal as reductants as a means of low emissions were explained. Hydrogen steelmaking is good but needs huge electrolysis capacity for Hydrogen production of 1000 GW. The DRI process with coal gasification techniques is also good.

In the concluding remarks, Mr Chandekar highlighted the salient points of each speaker and said that the special steel sector will have great times ahead. He thanked Mr Gopal for explaining the PLI scheme and the Professors from IITs for presenting highly technical papers for the benefit of participants. ■



World steel output down by 5.7% in February

Global crude steel production dropped by 5.7 per cent in February compared with the same period a year ago, while it was lower by eight per cent month-on-month, data from World Steel Association (worldsteel) showed.

According to worldsteel February statistics, steel production from the 64 countries reporting to it was 142.7 million tonnes (mt) compared with 150.2 mt in February 2021 and 155 mt in January this year.

Chinese production slips in eighth consecutive month, while India registers 7.6% growth. China's steel production in February was estimated at 75 mt compared with 83 mt a year ago and 81.7 mt a month ago. This is the eighth consecutive month that crude steel production in China has dropped. Crude steel production in February was lower than the output during December and January.

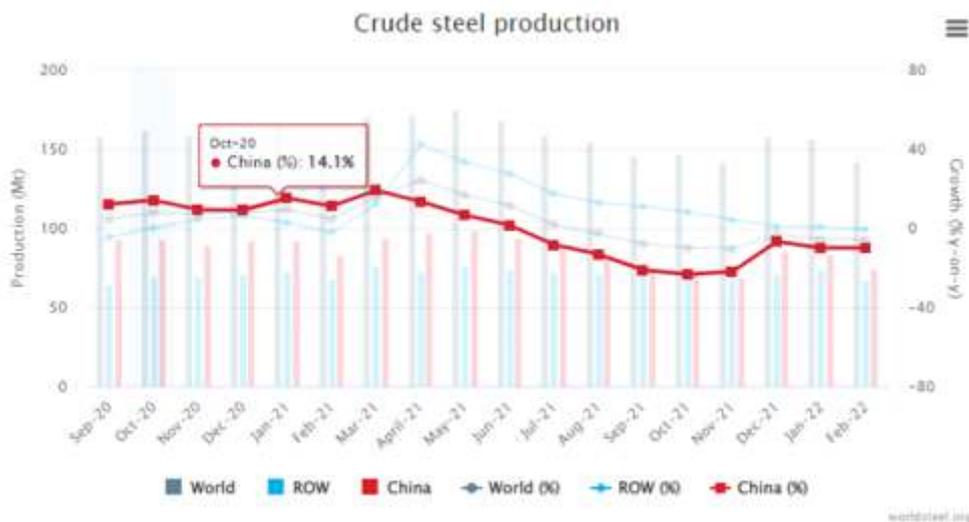
One reason for the decline in production could be the week-long holidays for the new Chinese lunar year. But there could be other reasons such as curbs due to the flareup of the Omicron variant of Covid-19. This month, too, steel production could be affected as the Communist

nation continued to announce curbs to control the spread of the pandemic, the worst in two years as the virus cases doubled. The Chinese steel output is also 10 per cent lower in the first two months of this year at 158 mt.

India's steel production has been pegged at 10.1 mt, up 7.6 per cent a year ago. But the output was lower than 10.8 mt in January and 10.4 mt in December. For the first two months, the Indian steel production increased 6.6 per cent compared with the year-ago period to 20.9 mt.

Japan was the third-highest producer in February with its output estimated at 7.3 mt, though it is 2.3 per cent lower than the year-ago period. Compared with January too, the production is lower by 0.5 mt. During January-February, its production at 15.1 mt is 2.2 per cent lower than the year-ago period.

Steel production in the US increased by 1.4 mt to 6.4 mt in February, but it was lower than January's 7.4 mt. January-February output has been estimated 0.6 per cent higher at 13.4 mt.



Russia's output slips

Russia's conflict with Ukraine has probably affected Moscow's production, which is estimated to have dropped by 1.4 per cent to 5.8 mt. In January, its production was 6.6 mt and for the first two months, its output is up by one per cent at 12.4 mt.

South Korea's production slipped by six per cent to 5.3 mt to compound its one per cent dip in January.

For the year so far, it produced 11.2 mt, a 2.6 per cent drop.

Germany's production picked up by 3.8 per cent in February compared with February 2021 at 3.2 mt. It was a turnaround from the 1.4 per cent decline in January. Overall output for January-February has been pegged at 6.5 mt, up 1.1 per cent.

Of the other producers, production in Turkey and Brazil continued to decline, while Iran's output increased. The World Steel Association data is collected from 64 countries which make up 85 per cent of the total global output.



Statistics

Table 1. Crude steel production by region

	Feb 2022 (Mt)	% change Feb 22/21	Jan-Feb 2022 (Mt)	% change Jan-Feb 22/21
Africa	1.3	4.1	2.5	5.9
Asia and Oceania	102.6	-7.1	215.8	-7.2
CIS	7.7	-5.8	16.8	-1.7
EU (27)	11.7	-2.5	23.8	-2.2
Europe, Other	3.8	-2.7	7.8	-4.8
Middle East	3.5	2.8	7.4	9.4
North America	8.8	1.8	18.5	0.4
South America	3.3	-7.0	6.9	-5.9
Total 64 countries	142.7	-5.7	299.4	-5.5



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