



Mobarakeh Steel Company, a Rising Star in World Steel Industry

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Mobarakeh

# STEEL NEWSLETTER



Domestic Steel Industry Plagued by Rampant Imports

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## Volume of MSC Special Products Up 30% Last Year

The volume of special products Mobarakeh Steel Company (MSC) produced in the 12 months to March 20, 2016 registered a 30 percent increase over the year before, said Gholamreza Javanmardi, the manager of the steel giant's Metallurgy and Manufacturing Methods.



MSC Mission Focuses on Diverse Production With Higher Added Value

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## Volume of MSC Special Products Up 30% Last Year



The volume of special products Mobarakeh Steel Company (MSC) produced in the 12 months to March 20, 2016 registered a 30 percent increase over the year before, said Gholamreza Javanmardi, the manager of the steel giant's Metallurgy and Manufacturing Methods. The achievement came on the back of efforts by all members of staff and as a result of special attention the company pays to production of items with high added value, he said, adding special products accounted for 39.5 percent of the steelmaker's exports last year.

The company designed and produced three special grades of slabs used in the manufacturing of API X60 and X65 products, Javanmardi said.

He added the special grades MSC produced in the 12-month period

are used in the automotive and oil and gas industries as well as in the production of pressure tanks, and in the development of high-strength building structures. Boron steel and high-carbon steel are suitable for thermal operations.

As for the application of the special steels MSC produced last year, he said IF steel (grade DC06) - which has less than 0.003 percent carbon and is of high tensile strength - is used in the automotive industry to produce car body parts. Saipa and Iran Khodro [two Iranian automotive juggernauts] are major buyers of such steel. Javanmardi further said medium-strength micro-alloy steel produced in line with the Peugeot-Citroen standards - including HE275, HE335D and HE390D

grades - were used by the same two automakers to build connecting rods and levers that hold the rail-mounted seat adjusters of vehicles. And high-strength micro-alloy steel - the strongest hot rolled steel produced at MSC - was used in the production of tractor chassis by Mammut and Shassi Saz Iran Company (Bahman Group).



P275LN2 and P355LN2 grades are used in the production of pressure tanks such as giant liquid gas tanks used in Asaluyeh and Kharg Island gas fields, he said, adding such micro-alloy steel has high levels of toughness and is fairly flexible in temperatures as low as minus 50° C.

The oil and gas industries use grade API 5L X60 steel in the production of high-strength pipes. The level of impurity and sulfur in the composition of such steel is low and

special tests focusing on mechanical qualities are conducted on the product which is mainly used by Ahwaz Pipe Mills. He added S355MC, S420MC and S460MC grade steel used in high-strength building structures was mostly exported to European markets.

Javanmardi went on to say that boron treated steel - grades SPHC (TAI) and S235 JR (TAI) - which contains a minimum 0.009 percent of boron was designed and produced to be exported to Thailand. The high-carbon grade used in thermal operations, including SAE 1030, which contains 0.3 percent carbon and has a higher level of toughness, is used for very special purposes.

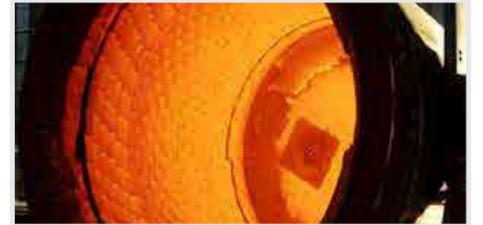
## MSC Sets New Record of Refractories Consumption

The Refractory Center of Mobarakeh Steel Company (MSC) took a firm first step in the early days of the current year in March 2016 and set a new record when it came to consumption of refractories in its steelmaking plant: 6.4 kg per ton liquid steel, said Iraj Mokhtarpoor who leads MSC's Refractory Center.

The previous record was set in November 2015: 6.48 kg per ton liquid steel, he added.

"Like other steelmaking firms, Mobarakeh Steel Company is experiencing trying times, economically. Only companies which fare well in managing their expenses will successfully weather the [economic] crisis. Refractories are among costly materials used in producing steel; that's why at this challenging time a decline in refractories consumption can be a boon in riding out the existing crisis," he added.

He further said the company's new record is the result of close interaction and contact between refractories repair units at the steelmaking plant, improvement of working methods and guidelines, constant inspection of equipment,



and contribution of the unit in charge of procurement of raw materials to the supply of quality refractories.

In conclusion, Mokhtarpoor thanked all those who helped the unit and expressed hope the company will set new records by observing safety principles and reduce the cost price of steel so that it can better compete with other steelmakers.

## France's Peugeot Citroen Audits Mobarakeh Steel Company

Auditors from Peugeot Citroen and Iran Khodro carried out an audit of Mobarakeh Steel Company (MSC) on April 17 and 18. According to the correspondent of Steel Newsletter, the preplanned inspection featured both process and product audits, and MSC - building on its experience - got passing marks from the audit.

As the trading partner of Iran Khodro, France's Peugeot Citroen performs an audit of suppliers of its raw materials after it places an order with the supplier; the audit of Mobarakeh Steel Company was part of the same process.

At the opening of the auditing session which was attended by MSC's vice presidents of sales and technology as well as the company's managers and experts, MSC's background, its regional and global status, and its expansion plans, especially its plans for quality and quantity upgrade of car-related products, were laid out.

Later a team of auditors from the French company - namely Messrs. Arnold Salesse and Ludovic Avage - mapped out their plan for auditing the company's department in charge of supplying raw materials. The Steelmaking and Hot Rolling

Plants were audited on the first day of the procedure.

Day two of the process saw the Cold Rolling Plant audited with a focus on assessing the capabilities of Mobarakeh Steel Company when it comes to supplying the sheets automakers need; luckily the auditing process produced desirable results. Chahar Mahal Bakhtiari Automotive Sheet Co. was separately audited as one of the subsidiaries of Mobarakeh Steel Company. It should be noted that Iran Khodro is one of

the biggest customers of Mobarakeh Steel Company. In the post-JCPOA [the nuclear deal Iran cut with world powers in 2015] era, Iran's giant automaker has plans to act in line with the deals it has clinched with Peugeot Citroen and develop the range of its products. To that end, Iran Khodro is expected to roll out new products - namely Peugeot 301, Peugeot 208 and Peugeot 208 - next year [starting March 22, 2017]. These new products are advanced automobiles and Iran Khodro is expected to use more advanced steel sheets for the body of its new products. These types of steel which are known as high strength and ultrahigh strength steel, including BH, CP, DP, are used in the new cars [produced by Iran Khodro].

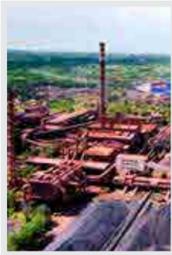


## 2nd Iranian Iron & Steel Conference

26 - 28 September 2016

Abbasi Hotel, Esfahan, Iran Connecting the Iranian iron ore and steel markets with the world, this conference will be the ideal place to learn about Iranian markets and create international links.

metalbulletin.com/event



## Serbia launches sale of Zelezara Smederevo

Serbia opened a tender for the sale of the country's sole steel producer, Zelezara Smederevo, on March 4. The Serbian ministry of economy has set the starting price at about €45.69 million (\$49.76 million). China's Hebei Iron & Steel is interested in the mill, which is equipped with two blast furnaces and three basic oxygen converters that can produce 2.2 million tpy of crude steel, plus hot-rolled, cold-rolled and tin mill products. The deadline for offers was March 30.



## Essar Steel wins first iron ore mine auction

Essar Steel has won the first iron ore mine to be auctioned by the government of India following enactment of the Mines & Minerals (Development & Regulation) Amendment Act 2015. The bid was for the Ghoraburhani-Sagasahi iron ore mine, in the state of Orissa, which has reserves of 99.59 million tonnes of iron ore. The ore from this mine has an iron content of 62-63%, and will be able to service at least 50% of Essar's iron ore requirement for 12 million tpy of pellet production at the port of Paradip in Orissa.

## MSC at Forefront

The country's largest steelmaker, Mobarakeh Steel Company, which accounts for about 60% of Iran's steel sheet deliveries, including subsidiaries, in Marcus' opinion who is one of the most famous analysts of global steel industry, is the "brightest rising star" in Iran's steel industry.

In fact, World Steel Dynamics recently added Mobarakeh Steel Company to its list of 37 world-class steelmakers.

Marcus noted that MSC ranked 13th due to factors such as considerably expanded production capacity, location in a high-growth market close to customers, pricing power in the domestic market, cost-cutting efforts, harnessing steel's technological revolution and its high profitability.

MSC is the largest integrated steel producer in the Middle East, with its main plant near Isfahan Province plus two steel-producing subsidiaries, Hormozgan and Saba steel complexes.

Besides the steelmaker's "ultra-low production costs," including an operating cost to produce hot-rolled band just below \$300 per ton, the company is positioned to expand capacity at a relatively low capital investment cost.

Furthermore, MSC is currently operating its facilities at more than 90% of their capacity, which is over 6.5 million tons of steel sheet products per year and is one of the highest operating rates in the country.

In Marcus' view, other Iranian steel companies will hardly be able to keep up with Mobarakeh due to their fund shortages, relatively higher-cost expansions and inability to match MSC when it comes to improvements in product quality, including the production of automotive sheets.

## Steel Industry Growth Faces Systemic Challenges



Iran aims to become the world's sixth largest manufacturer of steel, as per the goals set in the 20-Year National Vision Plan (2005-25).

The plan has stipulated the annual production of 55 million tons of crude steel. Despite objections regarding the plan's feasibility by industry experts, the government remains adamant in pursuing the goal.

The "Comprehensive Steel Plan" was devised in 2004, based on which domestic steel production was to rise to 28 million tons per year by 2010.

The goal proved to be elusive, however, and the industry fell short of the target by close to 4 million tons by the deadline.

Subsequently, officials in the Ministry of Industries, Mining and Trade as well as those in the Iranian Mines and Mining Industries Development and Renovation Organization revised the original plan and sought to develop new steel projects and attract investments to reach an even more ambitious target.

Based on the revised plan, which is part of the 20-Year National Vision Plan, domestic steel output is to reach 55 million tons per year, 20 million tons of which are supposed to be exported.

Mining and Mineral Industries Commission of Iran Chamber of Commerce, Industries, Mines and Agriculture recently published a report on "systemic challenges" in the way of achieving the envisioned goals for the steel industry.

According to the report, the government's overprotective policies in support of the steel industry, along with lack of constructive dialogue between the public and the private sectors, have effectively left the infrastructure severely underdeveloped and impeded the sector's path toward growth.

Rail Transportation Rail transportation is one of the fastest and cheapest means of freight transportation. It uses a minimum amount of energy and is highly secure and considerably more environment-friendly compared to land transportation. Iran's railroads currently span a total of 11,998 kilometers and are capable of transporting 35 million tons of goods per year. This is while based on the 20-Year Vision Plan, the railroad must expand to over 25,000 kilometers and carry close to 88 million tons of industrial products annually.

Statistics show that the railroad system must sustain an 11% annual transportation capacity growth rate for the next 10 years to achieve the envisioned figure. This is a far cry from the 3.79% average annual growth rate for the last decade. Expanding the underdeveloped railroad system seems like a tall order without the hefty amount of investments and financing required.

POSCO chief:

# World-Class MSC Can Successfully Make Its Presence Felt on Global Markets



The managing director of POSCO [a multinational steel-making company headquartered in Pohang, South Korea] along with the chairmen and deputies of POSCO E&C and POSCO Daewoo Corporation and their representatives paid a visit to Mobarakeh Steel Company (MSC) on May 4 to get familiar with the production lines of the Iranian steel giant and discuss ways to enhance mutual cooperation.

According to the correspondent of Steel Newsletter, in a joint press conference with senior managers and deputies of Mobarakeh Steel

Company, Chief Executive Officer of POSCO Oh-Joon Kwon said given the continuous progress MSC has been making, it can swimmingly make its presence felt on global markets as a world-class company.

He went on to say that there are many areas in which we can cooperate with Mobarakeh Steel Company, expressing hope his company can establish cooperation with the Iranian side given that Iran is home to a large number of industries as well as iron ore and coal mines and natural gas.

On his own company, he said POSCO which has as many as 100 offices

around the world produces an annual 37 million tons of steel, adding it can offer consultation services on steel production and cooperate with MSC, among other things, on technical, engineering, energy and IT fronts.

The POSCO chairman said the presence of the South Korean president and businessmen in Iran can set the stage for Tehran and Seoul to have better cooperation and added they toured the Middle East's largest steelmaker to get familiar and launch cooperation with Iran's industries, including Mobarakeh Steel Company. He said

such tours will better identify the status of the steel industry in Iran.

The prospect of cooperation with Mobarakeh Steel Company is bright, said Mr. Kwon, adding the presence of technical experts and engineers from POSCO in Mobarakeh Steel Company will further specify the areas the two sides can cooperate in.

At the same news conference, MSC's deputy director in charge of operations Mahmoud Arbabzadeh laid out the strategies Mobarakeh Steel Company has adopted as well as its goals and achievements over the years

thanks to the endeavors of its staff.

He expressed hope that contacts between Mobarakeh Steel Company and South Korea's POSCO can help MSC keep shining in the future.

For his part, MSC's deputy for technical and engineering affairs Mohammad-Ali Shahriari presented a report on the company's activities.

A Q-and-A on bilateral cooperation brought to an end the meeting between the managing director of POSCO and his accompanying delegation and senior managers of Mobarakeh Steel Company.

# MSC Desulphurization Unit Becomes Operational in "Resistance Economy, Action and Implementation" Year

The desulphurization unit of the Steelmaking Plant at Mobarakeh Steel Company has become operational thanks to efforts by staff members of the steel giant.

The inauguration of the unit, which is meant to unlock MSC's potential to produce quality steel, came after final tests resulted in the realization of the stated objectives.

Mehrdad Abdolrahimzadeh, who is in charge of MSC's steel- and iron-making projects, said that earlier an RH-TOP degassing unit became operational; to complete the process of producing special quality steel, the desulphurization unit came on stream earlier in April.

Experts with Germany's Kuttner were on site two weeks prior to the inauguration of the desulphurization unit, he said, adding in cooperation with related units, the sulfur of the

steel melted in the unit was reduced.

He went on to say that in production of quality steel, melted steel is transported to the ladle furnace after exiting the electric arc furnace. It is designed to improve the metallurgical qualities of steel and adjust its temperature. It is then taken to the desulphurization unit to have its sulfur levels reduced and then to RH-TOP degassing unit to have other unwanted elements removed. Eventually, it is transferred to the casting plant to produce slabs.

He said in the desulphurization process, when the ladle is placed on the tilter, CaSi powder and argon are blown into the ladle through a lance. Simultaneously, argon is injected in from the bottle of the ladle at 21 bars. Chemical reactions in the ladle absorb sulfur and force out CAS in the form of slag.



Meanwhile, Soroush Jafari, an expert of steelmaking expansion projects, said the desulphurization unit can reduce the amount of sulfur in melted steel by as much as around 10 PPM and that low-sulfur steel is used in production of API steel

which is applicable in oil, gas and petrochemical industries to make natural gas pipelines.

He added low-sulfur steel is also used in production of IF grade sheets which are in turn used in production of deep-drawing auto parts and ship hulls. EL

steel, another product of low-sulfur steel, is used in the transformer cores.

Jafari said staff made efforts for months to secure the desired results and successfully handle problems associated with the constant supply of fluids at the appropriate pressure, removal of unwanted elements from CaSi, lance injection and control and automation systems. After the removal of these problems, the desulphurization unit was eventually launched in April.

In conclusion, he thanked the senior management of Mobarakeh Steel Company for its support and the staff of different units such as steelmaking expansion projects, steelmaking operations, contractual affairs, Mobarakeh Steel Engineering Company, Ara Electrical Co. and all others who contributed to the project, directly or indirectly.

## An Environmental project to Recycle Sludge at Emergency Lagoons

Construction of emergency lagoons at mega-modules of Shahid Kharrazi Plant to recycle sludge will amount to compliance with environmental standards; besides, the water the project produces can be used in the direct reduction process.

According to the correspondent of Steel Newsletter, Mehrdad Abdolrahimzadeh, the project manager of the iron- and steel-making plants, said the lagoons project includes four ponds for sludge, two stilling basins and a pumping station. Each pond approximately holds 3,120 cubic meters of liquid. Some 3,700 cubic meters of earth has been removed for the construction of the lagoons and nearby roads. Some 3,900 tons of rebar and 4,000 cubic meters of concrete have been used in the foundation, walls and floors of these ponds.

He went on to say that in the six months since the project got off the ground, it has made 65 percent physical progress and that the project is expected to

be complete by August 21, 2016 as stipulated in the contract.

Meanwhile, Abdolreza Motamedi, the head of Iron-making Expansion Projects, said upon the completion of the lagoons, the sludge will be pumped from clarifiers to the ponds via pipes four inches in diameter. When the sludge settles, the overflow water finds its way to the stilling basin which is under 60 ppm. It is then pumped to the mixing section of mega-module clarifiers to be reused in the direct reduction process.

That the lagoons prevent recyclable materials from going to waste and eventually sends them to the Pelletizing Plant is one of the advantages of the lagoons, he said. Besides, they will recycle the sludge of clarifiers to be used in the direct reduction process. When there are repairs-related problems, the transfer of sludge to the lagoons will be expedited, and the leak of sludge to rainwater canals can be prevented.

In conclusion, he thanked Iran



International Engineering Company (IRITEC), which designed the project, Touka Beton, which is

implementing the project, and MSC for its engineering supervision, the division overseeing expansion

contracts and all others who have contributed to the project, one way or another.

## Saarstahl Starts up Blooming line

Saarstahl has started up its new €30 million continuous blooming line at its Völklingen rolling mill in south-west Germany. The old blooming line at this site has been replaced with a seven-stand continuous rolling line of about 500,000 tpy capacity. The new blooming line will allow Saarstahl to produce a broader range of cross-sections for rolling, as well as shorter cycle times, the company said.

## MMK Invests in More Galvanizing

Russia's Magnitogorsk Iron & Steel Works (MMK) plans to launch a new 450,000 tpy hot-dip galvanized (HDG) unit by 2018.

The original contract with SMS Group was for a capacity of about 360,000 tpy, but this has been increased. MMK has an HDG capacity of 1.86 million tpy, and a colour-coating capacity of 400,000 tpy.

## Sources of Scrap

There are three main sources of scrap for steelmakers, and BIR data show that steel mills' own revert scrap accounts for around 35% of the total. In 2014, this amounted to 207 million tonnes out of a 585 million tonne total.

The rest is purchased scrap, of which old (obsolete) material accounted for the larger part - 245 million tonnes, against 133 million tonnes of new scrap.

These figures are world totals, but the situation can vary considerably between countries. For example, MBR's Atilla Widnell observes that there is very little obsolete steel scrap collected in China, where most ferrous scrap is new and revert.

## Annual Steel Production Slightly Down



More than 16.7 million tons of crude steel and 15.2 million tons of steel products were manufactured in the last Iranian year (ended March 19, 2016), indicating a 0.57% and 7% decline respectively compared with the previous year, Iranian Mines and Mining Industries Development and Renovation Organization reported on its website. According to the report, the decline in global steel prices and shrinking demand for industrial material at home were the main reasons for the weaker output.

## Omani Steel Plant to Outsource Raw Material to Iran

Oman-based Dhofar Steel has announced plans to establish a steel rolling mill in Sohar Industrial Estate with raw material sourced from Iran, Bahraini digital news provider GDNOnline reported. The project will see a billet manufacturing plant at Sohar upgraded and expanded into a major rolling mill with its output of reinforced steel bars (rebars) targeted primarily at regional markets, Salim Al Mashekhi, group chairman, was quoted as saying in a report by Oman's Daily Observer. Mashekhi noted that the company envisages a rebar manufacturing capacity of 10,000-15,000 tons per month, slated for commissioning and launch within the next six to eight months.



## USA Keeps Duties on Chinese seamless pipe

Anti-dumping and countervailing duties will continue on seamless steel pipe imports from China, the US International Trade Commission (ITC) ruled on February 19. In 2010, the US Commerce Department set dumping margins of between 48.99% and 98.74% for Chinese seamless pipe imports and set subsidy rates between 13.66% and 56.67%.

The ITC said it had unanimously determined that revoking the duties "would be likely to lead to a continuation or recurrence of material injury within a reasonably foreseeable time".



## Vale Transfers steel project to Cevital

Vale has transferred its idled steel project in Brazil's northern state of Par to Algeria-based Cevital.

Aços Laminados do ar (Alpa) was designed to produce as much as 2.5 million tpy of slab but it faced several potential difficulties related to its logistics, leading Vale to put it on hold before it was built. Cevital will invest around \$2 billion to build a 2.7 million tpy steel plant in Marab, Par state, according to the state's official news agency, Agência Par. Construction work is forecast to start this year, with commissioning expected in 2019.

The mill will be able to produce steel coil, billet, bloom and rails.

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# Reforming Catalysts at Direct Reduction Module Indigenized

In a bid to help realize a resistance-based economy, support local knowledge-based companies and cut dependence on foreign products, Mobarakeh Steel Company (MSC) has successfully completed the local production of three catalysts used in the production of sponge iron, Dariush Rashidi, the manager of the steel giant's Direct Reduction Plant, said.

He further said in the Midrex production of sponge iron, methane and the gases that emerge from the furnace are exposed to catalysts - at temperatures in excess of 900° C and under proper pressure - to be broken into H<sub>2</sub> and CO in the reduction module reformers. The gaseous combination that is produced in this process reduces the oxidized pellets and turns them into sponge iron.

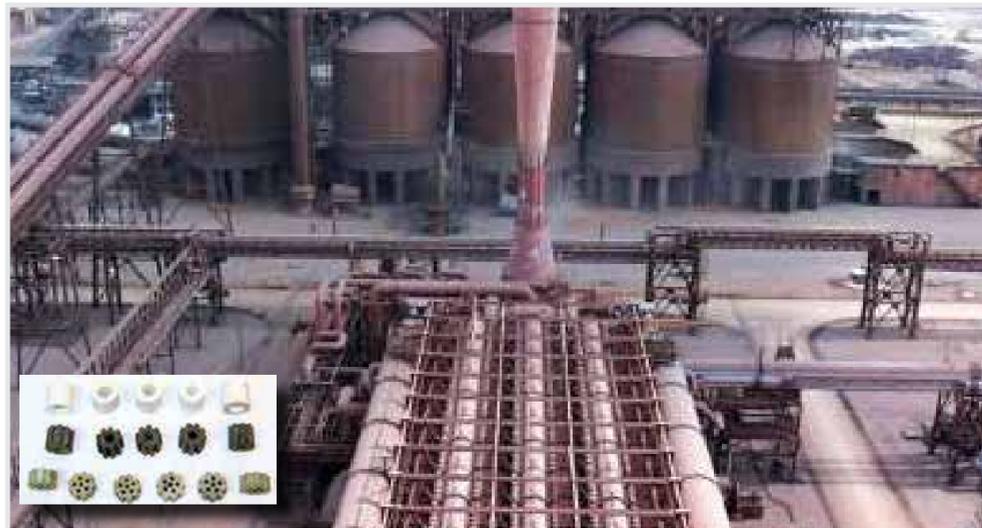
In light of the fact that production of these catalysts - in highly active, semi-active and inert forms - is a high-tech process, a few foreign companies maintain a monopoly on these catalysts, he said, adding local production of quality catalysts was initiated and successfully completed with an eye to tapping the expertise of local knowledge-based companies, cutting dependence and indigenizing these items.

The indigenization of these catalysts was initiated in 2008 in cooperation with a local knowledge-based firm. Following the development of prototypes,

they were used on an experimental basis in three reforming tubes. A subsequent analysis of output gases and improvement of parameters affecting the quality of catalysts resulted in the production, on an industrial scale, of the catalysts. In early 2014, they were first used on an industrial scale in 80 percent of reforming tubes of Module B.

The use of these catalysts in Module B produced satisfactory results, Rashidi said, adding the qualitative and procedural parameters of these catalysts were monitored as a result of collaboration between the experts of knowledge-based companies and those of the technical office and technical production office. Following these assessments which led to improvements in quality, production of catalysts was placed on the agenda. During the production process, the firm in charge of production along with the laboratory of Mobarakeh Steel Company conducted quality control as well as tests involving chemical and physical quality, strength, etc.

The manager of the Direct Reduction Plant further said Module A was fully loaded with locally produced catalysts, weighing around 145 tons, in March 2016. All quality parameters related to the breakdown of methane, including the volume of remaining CO, H<sub>2</sub> and CH<sub>4</sub> and pressure difference at either end



of the tube, were at a standard level competitive with foreign products.

Since the start of its operations, the module has been producing more than 105 tons of sponge iron - with metallic percentage of 94 and carbon percentage of 2.5 - on an hourly basis, he said.

The use of these catalysts results in high

quality sponge iron in high quantities, he said. In addition the project helps the local industry save foreign currency and leads to competitive prices and products which match up to foreign standards when it comes to quality and life span, promotes the expertise of local experts, facilitates easy access to suppliers and

timely supply and institutionalizes technical know-how in line with measures to promote the resistance-based economy at home and support local production.

In conclusion, he thanked all those who contributed to the "valuable achievement".

Geneva's Economy and Security Minister :

## MSC a Force to be Reckoned with on International Stage

Geneva's Economy and Security Minister Pierre Maudet along with a 25-member delegation which brought together businessmen and economists traveled to Mobarakeh Steel Company (MSC) on Friday to inspect the production lines of the Iranian juggernaut and get a firsthand account of the potential of the largest steelmaker in the Middle East.

In an exclusive interview with the correspondent of Steel Newsletter, Pierre Maudet said the visit by the Swiss delegation to Mobarakeh Steel Company was mainly designed to get familiar with MSC which is one of the biggest industrial companies of Iran.

He further said that the visit which took the Swiss delegation to the production lines of the Iranian steelmaker was very interesting. To learn that MSC is competing with foreign rivals and has made its presence felt on the competitive



international market was even more interesting. As for the future of ties between Iran and Switzerland and the new

international atmosphere [that emerged following the nuclear deal Tehran struck with P5+1 in 2015], he said although Switzerland was conspicuous by its absence in the roadmap MSC has developed for its relations with other countries, Switzerland's overall ties with Iran are very good, and plans have been developed to forge closer ties, especially with MSC when it comes to banking facilities, financial contracts and trade.

Mr. Maudet further said establishment and development of useful relations can help turn MSC into a very significant factor in the future of relations between the two countries.

Dr. Bahram Sobhani and a number of his deputies and senior MSC managers hosted the Swiss delegation. During the visit, the MSC managing director talked about the steel industry in Iran and the world and said Iran ranks 14th

in the world when it comes to steel production and that efforts will be made down the line to improve that position.

Iran accounts for 60 percent of the steel products in the Middle East and 45 percent of steel production in the Middle East and North Africa (MENA), he said.

The managing director of the Iranian steel giant went on to say blast furnaces accounted for some 75 percent of steel production in the world in 2015. The remainder was produced in electric arc furnaces. In light of energy advantages in Iran, 83 percent of production was in electric arc furnaces and the rest in blast furnaces. After offering a detailed account on the production process at Mobarakeh Steel Company and the steelmaker's position in Iran's economy and in the world, Dr. Sobhani answered the questions posed by participants.

# The Second Indigenized Impeller Installed at Pelletizing Plant

The second indigenized impeller has been installed at the Pelletizing Plant of Mobarakeh Steel Company, the head of the plant's Office for Technical Repairs said.

Khashayar Pasyar said during a six-day shutdown in March, a second centrifugal impeller - the largest indigenized impeller in the Middle East - developed by Iran's Mangan Industrial Group was successfully installed on a 08V03 fan and became operational.

He further said the fan sucks hot air away from the firing zone and takes it to the preheat furnace of the Pelletizing Plant. The two-inlet-suction centrifugal impeller which weighs 29.6 tons operates at 320-400° C. It is 4,335 mm in diameter. The width of the impeller mouth is 1,470 mm; its shaft is 8,295 mm and the diameter of its hollow shaft is 860 mm. The impeller operates at 744 RPM.

The first such impeller was installed on a 08V04 fan in June 2015. In the more than eight months since its installation, the impeller has not required any repairs and this has resulted in record production at the facility.

Meanwhile, Zolfaghar-Beig, who is in charge of purchasing locally-manufactured spare parts, said

because of sanctions the French manufacturer of the impeller would not sell it to MSC. So Mobarakeh Steel Company decided to tap into the capabilities and experience of Iranian engineering companies to build a quality impeller locally. The end product had a price tag almost one-sixth of the foreign-made impeller.

And Foroughi, who is in charge of Indigenization Planning at Mobarakeh Steel Company, said when his office was commissioned to explore the technical and economic aspects of the local production of the impeller, experts were immediately sent to local companies capable of developing large industrial fans.

Those visits made it clear to our experts that it is possible to locally manufacture such impellers, he said, adding the Reverse Engineering Unit then mapped the MSC's impeller before the company was commissioned to develop it. The indigenization of the impeller came in interaction with and under the supervision of an MSC Indigenization Planning team.

In conclusion, he said designing and developing the impeller at home for the first time and its



subsequent installation needed a lot of ambition and self-belief which were displayed by the technical team of Mobarakeh Steel Company.

In the absence of contribution by staff at the Office for Technical Repairs of the Pelletizing Plant, the Repairs and Production Office of the Pelletizing Plant, the Indigenization Office, the

Reverse Engineering Unit, the Procurement Office, the Metal Structure Workshop, the Technical Office of the Central Repairs Unit, and the Office for Technical Inspection of Rotating Machinery, such an achievement would have been impossible, he said as he thanked all those who played a role in the project for their contribution.

## Vale and FMG Sign MoU for Cooperation

Vale has signed a memorandum of understanding with Australia's Fortescue Metals Group for iron ore business co-operation. Under the memorandum, Vale and Fortescue will pursue long-term opportunities to enhance competitiveness in their operations, as well as create additional value to the Chinese steel industry. These opportunities include the establishment of one or more joint ventures for the blending and distribution of Vale's and Fortescue's respective products in China in order to meet local long-term needs.



## ThyssenKrupp buys Hungarian service centre

ThyssenKrupp Materials Services has acquired a Hungarian steel service centre, IAI Holding, to tap into the country's growing automotive industry. Located at Gyor in north-west Hungary, the service centre, which has been renamed ThyssenKrupp Materials Processing Hungary, specialises in cutting to length and slitting carbon steel coils. It also processes stainless steel and aluminium, particularly for the automotive sector. ThyssenKrupp has recently announced other investments in Hungary.

## Steel M&A volumes rise in 2015



The number of mergers and acquisitions (M&A) transactions in the global steel industry rose by 19% to 115 deals in 2015 from 97 deals the year before, according to a report published by PwC.

However, the value of M&A transactions involving steel-sector companies in 2015 fell by 57% year-on-year to \$3.3 billion, down from \$7.6 billion in 2014. There was a focus on smaller deals, PwC said, with 87 of the year's deals being domestically based while 28 were cross-border, compared with 69 domestic deals and 28 cross-border deals in 2014. The merger between South Korea's Hyundai Steel and sister company Hyundai Hysco was cited by PwC as the biggest M&A deal in the steel industry in 2015, valued at \$1.148 billion.

## Singapore Grapples with Slow Growth

The city-state of Singapore experienced an average annual growth rate of 6.2% in gross domestic product (GDP) between 2000 and 2010, one of the highest among all of the world's developed economies. Since 2011, however, the Southeast Asian nation has been facing a slowdown. Last year, GDP rose 2%, down from 3.3% in 2014 and 4.1% in 2013. In 2016, the rate could soften even further. As happened with other mature economies, Singapore has been grappling with what credit agency Moody's called "a structural tipping point" in a recent report:

the moment when the share of manufacturing in a country's GDP starts to fall steadily, while that of services rises. Following its independence in 1965, the small island saw its manufacturers shifting their focus from oil-refining in the 1960s and 1970s to electronics in the 1980s, before scaling further up the value chain towards industries such as semiconductors in the 1990s and pharmaceuticals in the 2000s. "Since the 1990s, however, the emergence of regional competitors with cheaper labour has precipitated a shift away from manufacturing," Moody's said in its research report early in March. Bearing a "spatially constrained economy with no natural resource base and a limited workforce", Singapore has also been recently hurt by low or commodity prices because of the "sizeable share" of oil-related industries within the manufacturing sector, Moody's noted. The government's challenge now is to increase productivity amid an ageing population, and with the added pressures that China's own slowdown poses in the whole Southeast Asian region. In its favour, Singapore boasts a favourable location, high trade openness, and economic flexibility and dynamism, according to Moody's. "The city-state's growing importance as a trade hub and the evolution of its services sector will support growth at 1.5% to 3.0% over the next four years," the credit agency concluded.

## Tata to Sell UK Operations; Liberty House invests

Tata Steel confirmed plans to sell its entire UK business, following a board meeting in India on 29 March.

Having reviewed the restructuring proposals for the Strip Products UK division, the board concluded that the plan was "unaffordable", that underlying assumptions were "very risky" and the chance of delivery "highly uncertain".

On 24 March, international steel and metals group Liberty House agreed to buy Tata Steel Europe's 200,000 tpy Dalzell and Clydebridge steel plate mills in Lanarkshire, Scotland.

The value of the deal was not specified but it was believed to be nominal, with Liberty taking on financial responsibility for operating and investing in the two sites.

Liberty House also outlined plans to build a 'green steelmaking hub' in the UK, by converting the group's Uskmouth power station in Newport, South Wales, to renewable power - using biomass, waste and tidal energy - to supply Liberty's own idled EAF works nearby, which currently uses imported slab to produce hot-rolled coil.

# Mining and Recycling

while analysts continue to wonder whether any new major driver of global metal demand growth can emerge to replace the reduced momentum generated by China's slower expansion, miners hit by lower prices continue to change priorities and restructure to address the new economic realities. Our cover interviewee, X2 Resources ceo Sir Mick Davis, stresses the need to react quickly to fundamental changes in global demand and supply. He says that mining is an industry in which momentum can be lost until it's nearly too late.

He also notes that there is no primary commodity that has seen absolute demand destruction.

Despite general market gloom, many millions of tonnes of steel and non-ferrous metals are still needed each year - the key question is from where they are sourced.

Secondary metal supply from scrap recycling increasingly provides an answer.

Our major feature section on scrap & recycling addresses multiple issues and opportunities being tackled by

the sector now.

Steel and non-ferrous metal prices are naturally impacting the volume of material released to the market and the fortunes of scrap collectors and processors.

Low prices, combined with often tightening regulatory requirements for scrap handling, processing and trade, directly affect investment decisions made by the industry. China already has a large and growing scrap recycling industry of its own, as articles about aluminium and copper recycling in the nation show.

Another feature article, contributed by the European Aluminium Association, summarises progress in EU regulatory thinking on recycling and stresses the need to consider strategies from a global perspective.

Producing an important metallic for steelmaking, the direct reduced iron (DRI) industry is also facing changing international economic dynamics, linked with pellet, gas and coal availability as well as steel prices.

The advantages of feeding hot briquetted iron (HBI) into blast furnaces has long-term potential to



boost demand. Looking downstream, our feature section on aluminium extrusions considers demand and developments in all major consuming sectors in the mature markets of

the USA. A separate article looks in detail at the high-tech application of precision extruded aluminium tubing for the heating, ventilation, air conditioning and refrigeration sector.

Building in the recyclability of components has become another important factor in that industry and many other consumer market applications, of course.

## Trying Times for DRI

The global downturn in ferrous markets has left demand for direct reduced iron in the doldrums. But as the DRI industry tackles its own supply-side challenges, the advantages of its products make longer term prospects brighter, reports Nina Nasman

The direct reduced iron (DRI) industry has grown exponentially over recent decades, driven by the availability of direct reduction (DR) pellets and cheap natural gas.

Yet recent supply challenges for pellets and gas, coupled with global steel overcapacity and falling prices of scrap - a lead indicator for DRI given its use in electric arc furnaces (EAFs) - has left the industry squeezed on all sides since last year.

Global production of DRI fell by 6% year-on-year to 59.37 million tonnes in 2015, according to data from the World Steel Association

(worldsteel).

The market for hot-briquetted iron (HBI), a form of DRI made for transportation, has arguably been even harder hit.

"There is about 20 million tpy of commissioned merchant HBI capacity in the world, but almost 17 million tpy is idled or has switched to hot-linked DRI," said Stuart Horner, secretary general of the International Iron Metallurgical Association (IIMA), estimating current reliable availability at only 2.5-3 million tpy.

Supply-side tightness The DR pellet segment, a small fraction of the global seaborne iron ore market, has tightened since November 5, when Brazilian producer Samarco halted output after a severe tailings dam collapse.

The 50:50 Vale and BHP Billiton joint venture has a 30.5 million tpy pellet capacity, half of which is estimated to be for DR purposes.

Operations at Samarco are unlikely to restart until 2017, leaving a supply gap to be filled by the few existing DR pellet producers, including Vale, Sweden's LKAB, Rio Tinto's Iron Ore Co of Canada, Bahrain Steel, and more recently US-based Cliffs Natural Resources.

Tighter supply has also resulted in higher input costs for many DRI producers. DR pellets are generally sold on long-term contracts, with prices settled on a quarterly or annual basis and consisting of a benchmark 62% Fe iron ore index price - currently below \$60 per tonne cfr China - plus an iron content adjustment and a premium for the higher quality pellet material.

"I understand that the DR pellet premium for 2016 is now \$45 per tonne, compared with \$35 per tonne in 2015 for annual contracts, which makes a lot of DRI producers less competitive," Atila Widnell, senior metals analyst at Metal

Bulletin

Research, said.

Limitations in gas access have challenged many DRI producers in the Middle East and North Africa (Mena) region, where the steel industry has not always been prioritised in the allocation and subsidisation of gas contracts.

Early last year, Al Tuwairqi Steel in Pakistan began moving its DRI operations out of the country to Saudi Arabia, blaming high production costs and failure to access cheaper gas supplies from the Pakistani government.

Egypt's biggest steelmaker Ezz Steel launched a new DRI plant in late-2015 at the height of an economy-wide gas shortage. Initially operating at a reduced run rate, it exceeded its planned output by late February as gas supply issues eased.

## Figuring Out Scrap

The global picture for steel scrap shows rising total consumption but market patterns hit by various economic headwinds, reports Steve Karpel

Ferrous scrap retains its status as an essential input to the steel production process, notably as the major feedstock for electric arc furnaces but also as an important constituent of basic oxygen furnace steelmaking.

Although scrap's contribution to total crude steel output has fallen slightly as a percentage over the last five years, to 35.2% in 2014, steel scrap remains the world's most recycled material: scrap consumption in steelmaking has risen from 530 million tonnes in 2010 to a record 585 million tonnes in 2014, according to the most recent data from the Bureau of International Recycling (BIR).

Global DRI capacity has continued to gradually increase and is the dominant material of choice in some regions, contributing about 5% to global crude steel output. Ferrous scrap also makes up the overwhelming fraction of iron and steel foundry feedstock: of a world foundry output of around 85 million tonnes in 2013, scrap consumption was about 72 million tonnes, or 85% of the volume cast, reports BIR. Like steel and iron ore, scrap is a globally traded material, and the trade data over recent years show certain trends.

The USA has been by far the biggest ferrous scrap exporter for many years, and was so again last year, but

its shipments have fallen dramatically from 24.4 million tonnes in 2011 to under 13 million tonnes in 2015, according to the Iron & Steel Statistics Bureau (ISSB).

Other countries have seen annual variations in their scrap exports, but no very strong trend one way or the other, in contrast to the USA (see table). Japan moved up to second place of scrap exporters with 7.8 million tonnes shipped in 2015, although it achieved a recent peak of 8.6 million tonnes in 2012.

Germany was the third biggest exporter with 7.5 million tonnes, and the UK was fourth with 7.3 million tonnes.

Russia has been steadily increasing its scrap exports in recent years, and was in fifth place with 5.9 million tonnes last year.

Exchange rate impact

Why have US scrap exports fallen so significantly? A key factor is the strong dollar, which makes US exports globally less competitive, says Lisa Gordon, ferrous scrap editor for Metal Bulletin's sister publication American Metal Market (AMM). This makes international buyers opt for discounted sources in a highly cost-sensitive situation - which is made more acute by a low steel price environment.

A strong dollar also makes it more economical for US companies to import finished steel, as well as raw materials.

Greater steel imports into the USA

means less steel made there, and thus less demand for scrap at home. In fact, the steel imported is actually a source of more scrap - up to 25% of the volume - after it is processed, Gordon notes, and this adds to the scrap stockpile. Steel imports into the USA amounted to 34.1 million tonnes in 2015, a fall from 2014's 39.0 million tonnes, reports ISSB, but still a historically high level.

The biggest national steel exporters to the USA last year were its NAFTA neighbour Canada with 4.89 million tonnes, Brazil with 4.82 million tonnes and South Korea with 4.30 million tonnes; the volume from China was 2.36 million tonnes - the fifth largest.

Steel imports helped to push US mill operating rates down to 70.1% in 2015, from 77.5% in 2014, although there was some recovery to 73.6% in mid-March this year.

Steel imports are now cutting into the domestic output of several steelmaking countries, and which is therefore reducing their demand for scrap.

A prime example is Turkey, the world's biggest scrap importer.

Last year, Turkey's steel imports increased by 38% year-on-year to 19.06 million tonnes (including 7.9 million tonnes of semi-finished), according to the Turkish Iron & Steel Producers' Association (TODD), making it a net steel importer for the first time in 15 years.

Even though Turkey's steel consumption rose significantly by



11.7% to 34.36 million tonnes in 2015, its own crude steel production fell by 7.4% to 31.5 million tonnes, reports TODD. The difference was made up by imports, including a rise in imported semis that pushed up its finished products output by 2.6% to 36.94 million tonnes.

Turkey's falling crude steel production depressed its scrap

imports by 14.8% year-on-year to 16.25 million tonnes last year, while they had been as high as 22.42 million tonnes in 2012.

This has been a significant factor in falling US scrap exports, since Turkey is their major destination. However, this country remains the main terminus for US scrap, even though volumes have fallen.

## Tin Supply deficits will persist

Tin has witnessed some very impressive gains in the first quarter of 2016. After hitting a 7-year low of \$13,225/tonne in mid-January, prices have surged upwards by over 30% in the subsequent eight weeks with hardly a backward glance. In recent weeks, we rebased our 2015 supply-demand balance using the latest data. We made downward revisions to our production estimates as well as our consumption estimates, which virtually offset one another to leave the deficit almost unchanged at 8,600 tonnes last year. Generally, tin supply has fallen by way of cutbacks mostly in China and Indonesia, to mirror shrinking demand. This has been an important self-regulating function of the tin market preventing a build in stocks despite the worst demand performance since 2012. It has also been a vitally important factor in enabling tin prices to rebound so strongly. Upward momentum will start to stall shortly, but the underlying fundamental picture remains solid with another annual supply deficit forecast for 2016.

## Zinc We maintain our view that the Tightness starting to appear

We maintain our view that the zinc market's underlying fundamentals will tighten steadily across the course of 2016, albeit mainly driven by the supply side. We also maintain that in the short term, prices at six-month highs have run a little ahead of themselves, and are vulnerable to a correction lower and consolidation. But the fact that investors are beginning to embrace the zinc bull-story again suggests dips will probably be viewed as a good entry point. A correction and consolidation in the short term will help to establish a higher price base above the January lows, and this could be the springboard for the next move higher. But for it to be sustainable, it would need to be backed up by tighter fundamentals. While that is visible in the concentrate market already, we do not expect real signs of tightness in the refined market until later in the year. Premiums remain low, which is also not a bullish sign ahead of peak demand season.

## Aluminium A rising tide lifts all boats

MBR's fundamental view on aluminium has not changed, and we are still not bullish for this market even though the LME price maintained its stronger tone during March. A six-month high just above the \$1,600/tonne landmark put its performance somewhat on a par with some of the more robust base metals with supply-demand balances far tighter than that of aluminium. Admittedly, short-covering driven counter-trend upswings in an underlying bear market should be no surprise, especially given the presence of dominant LME position holders, but in general aluminium's large stock overhang is not supportive to sustainable price rallies. That visible LME stocks have been trending lower does not mask the fact that years of oversupply and producer indiscipline have created a considerable stockpile of excess metal which is sitting off-market. Also, higher prices will have given marginal producers another forward selling opportunity, prolonging overproduction or delaying still much-needed cutbacks.

source: Metal Bulletin



## Samarco agrees 15-year reparations deal

Brazilian iron ore pellet producer Samarco has agreed to a 15-year reparations agreement with the federal court, state governments and other authorities in relation to the Fundão tailings dam collapse. Samarco's joint owners, Vale and BHP Billiton, have agreed the deal with Brazil's federal attorney general, the states of Espírito Santo and Minas Gerais, and other Brazilian authorities, for the restoration of the environment and communities affected by tailing dam failure on 5 November. Samarco is currently unable to conduct ordinary mining and processing, and the feasibility, timing and scope of restarting remain uncertain.



## Posco to build 1.6 million tpy steel plant in Iran

Posco has signed a memorandum of agreement with Iranian company Pars Kohan Dيار Parsian Steel (PKP) for the construction of a joint venture steel plant with 1.6 million tpy of crude steel capacity, in Iran's Chabahar free economic zone. Posco will have an 8% stake in the plant. Total cost of the plant, which will utilize Posco's Finex and Compact Endless Casting & Rolling Mill (CEM) technologies, is estimated at \$1.6 billion. Construction is planned to start next year. In a second project stage, a 600,000 tpy production line will be added for cold-rolled coil and galvanized steel.

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## Domestic Steel Industry Plagued by Rampant Imports

**BusinessAnd Markets**  
Unrestrained imports of steel products are one of the main impediments to the domestic steel industry's growth, says the sales manager of Mobarakeh Steel Company, Mahmoud Akbari.

Over 3 million tons of steel products were imported during the nine-month period of the previous Iranian year (March-December 2015), indicating an 86% rise compared with the same period of 2014, according to the latest data from Iran Steel Producers Association.

The hike in steel imports, coupled with the ongoing recession in the domestic construction sector, have lowered demand and forced many domestic steel producers to operate below capacity.

According to Akbari, flat steel producers operated at only 53% capacity last year and MSC, Iran's largest flat steel manufacturer, cut down its production for the very first time in the company's history.

Mobarakeh Steel Company, located in the Isfahan Province and accounting for production of over 45% of Iran's steel products, is the largest manufacturer of the industrial material in the Middle East and North Africa region.

Pointing to the lingering effects of the global steel recession, which overwhelmed the industry back in 2015, Akbari says domestic producers have already faced the double-whammy of freefalling global steel prices and rising energy prices at home.

"The current unfavorable conditions of the

domestic steel sector and the market will most likely challenge the realization of goals envisioned for the steel industry in the 20-Year National Vision Plan (2005-2025). Struggling to maintain sales in the domestic market, local producers will find it difficult to expand their production capacity," he said.

The vision plan entails an increase in steel production to 55 million tons by 2025.

The most widely-used means to protect domestic industries against unfair foreign competition is imposition of import tariffs.

The Iranian government's efforts to protect its steel industry started in 2014. During the first months of the year, a 4% import tariff rate was slapped on alloy steels, 10% on steel sheets and 15% on other flat products.

The measures proved to be inadequate and the government proceeded to bar steel importers from using special exchange rates offered in special circumstances as opposed to market rates in early 2015.

Following further pressure by steel producers, import tariffs on various steel products were jacked up to reach 20% this year. Many market players, including Akbari, believe the government took the right measures at the right time, but did not go far enough with it, considering that other steel producing countries have imposed massive import tariffs on steel products to protect their domestic industries. The United States, for instance, also recently introduced punishing tariffs on steel imports from China.

Imports of steel into the US from China have been hit with 522% trade tariff, as tensions



in the global trade market increase. The US Commerce Department has increased import duties on cold-rolled flat steel fivefold as it hits back at what it says is Beijing subsidizing its largely state-owned steel industry, which is dumping excess production on global markets.

Chinese steel coming into the US now faces a 266% anti-dumping levy and a 256% anti-subsidy duty, The Telegraph reported last week.

Crude Steel Output up 1.5%  
Despite the global setback in steel production by nearly all major manufacturers, Iran posted a robust rise in crude steel output in

the first four months of 2016. According to data from World Steel Association, about 5.5 million tons of crude steel were produced in the country from January to April, indicating a 1.5% growth in production volume compared with the same period of 2015.

The output in April stood at its monthly high of 1.5 million tons, up 7.8% compared to last year's similar month. This is while the industrial behemoth, China, recorded a 2.3% drop in its 2016 crude steel production volume with 261 million tons. Japan, South Korea and the European Union also followed suit, with the two

Asian countries posting a 2.3% decline and European Union's production sinking 6.5% compared to 2015. Meanwhile, Ajabshir Steel Complex, located in East Azarbaijan Province, has resumed production after it was forced to close down in the last Iranian year (March 2015-16) amid recession, IRNA reported.

The steel mill began operation on Saturday and is set to produce 1,000 tons of steel ingots per year to meet the provincial demand, the report added.

The company was established in 2008 and became operational three years later.

## MSC increases exports to Italy

Iranian and Italian companies signed a number of contracts, memoranda of understanding (MOUs) and agreements during a visit by the Italian prime minister and his entourage to Iran Chamber of Commerce, Industries, and Mines (CCIM). According to the reporter of Steel Newsletter, Isfahan's Mobarakeh Steel Group inked an agreement with Marcegaglia (a leading industrial group in steel manufacturing) to sell its products to the Italian firm. MSC's Managing Director Bahram Sobhani, and Antonio Marcegaglia, the CEO of Marcegaglia, signed the agreement.

On the sidelines of the signing ceremony, Dr. Bahram Sobhani said under the agreement MSC will increase the sale of its products and

those of Hormozgan Steel Complex to Italy's Marcegaglia. He added, "Marcegaglia is a rival of sorts for MSC. It has cold rolling lines, galvanizing plants, etc. By and large, it is the largest steel distributor in Europe. This Italian firm has always purchased steel from MSC and now it has called for a rise in the volume of its imports from Mobarakeh Steel Company."

"We agreed to export up to 80,000 tons of different kinds of steel sheets and up to 30,000 tons of steel slabs from Hormozgan Steel Complex to Marcegaglia on a monthly basis. In the past, the monthly share of Marcegaglia's purchase of MSC products was around 60,000 tons, and now we have agreed to raise that figure." The MSC managing director went on to

say Marcegaglia has downstream facilities for cold rolling, galvanizing and tin-plating. It buys hot rolls from MSC and turns them into cold rolls in its plants to be later used in pipe-making. Or it turns the imported hot rolls into galvanized and color-coated parts, and then distributes them in Europe. Under the agreement inked between MSC and Marcegaglia, the Iranian steel giant will sell about 900,000 tons of steel products to the Italian firm, earning more than €400 million in foreign exchange, he said.

The MSC chief further said his company has set a target of 2 million tons of exports for the 12 months to March 21, 2017, adding, "MSC was expected to export 1.5 million tons of its products last year [ended March

19, 2016]; we raised the figure to around 1.8 million tons, posting a 20 percent growth. I hope we can realize our target of 2-million tons this year as things change for the better after the implementation of the Joint Comprehensive Plan of Action (JCPOA) and removal of sanctions against the country." On cooperation between Mobarakeh Steel Company and Italy's steel firm Danieli, Sobhani said MSC has now different expansion plans and contracts, among them construction of a hot rolling plant and a slab casting unit which is under construction already. Sefid Dasht Steel expansion project is now underway and plans have been drawn up for the development of Hormozgan Steel Complex. A number

of [foreign] companies, including Danieli from Italy and [Germany's] SMS Demag, are expected to supply the equipment needed in these expansion projects. During the trip by the Italian premier to Iran, Butia Iranian Steel Company (a subsidiary of MIDHCO [Middle East Mines & Mineral Industries Development Holding Co.]) and Danieli signed a contract to construct a 1.5-million-ton steelmaking unit worth €350 million, with the Italian side agreeing to supply technical equipment and services. Butia Iranian Steel Company (BIS CO.) also struck a deal with Italy's FATA to construct a 450-megawatt power plant in Kerman Province which is projected to absorb €237 million in finances.

## Global Steel Behemoth Sets Foot in Iran

Bonab Steel Industry Complex, which was nearly driven out of business in the last Iranian year (ended March 19), has recently found new vigor following the signing of a cooperation agreement with the world's largest steelmaker, ArcelorMittal.

According to Babak Alizad, managing director of Bonab Steel Complex, the contract entails the takeover of the Iranian plant's management, raw material provision, marketing and production operations for five years.

The contract was signed between the Tourism Financial Group, Bonab Steel's parent company, and the Luxembourg-based giant in London early March.

"This contract was signed with the purpose of acquiring the latest industrial technology, regulating the company's human resources and production lines, and connecting to regional and global steel markets through ArcelorMittal's marketing network," Alizad told our sister publication, Donya-e-Eqtasad newspaper.

Mahan Industries and Mines Development Corporation, a subsidiary holding of Tourism Financial Group, also signed a deal with ArcelorMittal to jointly invest in the exploitation of an iron ore mine in Kerman Province and establish a direct reduced iron production plant as part of the Bonab Steel Complex agreement.

ArcelorMittal's presence in Iran will not only increase the quality of Iran's



steel products and provide it with high-tech machinery, but it will also boost the country's competitive edge in regional and global steel markets.

According to Alizad, Bonab Steel Complex is set to start production

of carburized steel alloys, used for manufacturing of certain auto parts during the current Iranian year.

"This will be our company's first step towards exporting quality, high value-added products," he said.

Alizad emphasized that acquiring modern steel production technologies is going to mean layoffs at Bonab Steel Complex.

"We expect to reach our nominal production capacity and start making profits within a year," he said.

"The company will consider employing indigenous expert workforce by then."

Currently, 1,700 people are employed at the steel company. Bonab Steel Complex, founded in 2005, became one of Iran's largest private steelmaking companies after a merger with several major hot-rolling and smelting companies.

ArcelorMittal was created after the takeover of western European steelmaker Arcelor (owned by Spain, France and Luxembourg) by Indian-owned multinational steelmaker Mittal Steel in 2006, at a cost of €40.37 per share, worth approximately \$33 billion.

Mittal Steel launched a takeover bid that replaced a previous planned merger between Arcelor and Severstal, which had lacked sufficient shareholder approval. The resulting business was named ArcelorMittal and has been producing approximately 10% of the world's steel, rightfully earning it the title of being the world's biggest steel company. The chief executive of ArcelorMittal is now on the back foot, however, as the powerhouse created by the mega deal is grappling with some of the worst conditions in the global steel market for more than a decade.

The company reported last month that its net losses increased more than sevenfold last year to \$7.9 billion. It has now turned to cost-cutting measures by focusing on higher value steel products, such as steel for cars.

## ArcelorMittal to Close HBI Plant

ArcelorMittal is to permanently shutter its Trinidad & Tobago HBI operations. The plant at Point Lisas, with a capacity of 550,000 tpy, has been idle since November, when nearly 500 workers were temporarily laid off. ArcelorMittal Point Lisas blamed increases in the prices of natural gas and energy, port rental fees and new tax announcements at a time of falling commodity prices for its inability to remain internationally competitive: it recorded a net loss of \$281 million in 2015, and has been recording net losses since 2009.



## Nord Stream 2 Selects LD Pipe Suppliers

The Switzerland-based Nord Stream 2 project company has chosen Germany's Europipe and Russia's OMK and Chelpipe to supply a total of 2.2 million tonnes of largediameter (LD) pipe. Europipe, a joint venture between Dillinger Hütte and alzgitte, won the largest share of the pipe tender for the offshore gas pipeline, at around 890,000 tonnes. United Metallurgical Co (OMK) and Chelyabinsk Pipe-Rolling Plant (Chelpipe) won 33% and 27% shares of the order, respectively. The two pipelines, totaling 2,500 km, will be an extension of the two existing Nord Stream pipelines running parallel under the Baltic Sea from Wyborg in Russia to Greifswald in Germany. Pipe deliveries are expected to begin in September 2016, with construction of the two pipelines set to start in 2018.

## Planning Platform Upgrades at Arvedi and Outokumpu

Quintiq, a leading supplier of supply chain planning and optimisation (SCP&O) software, has been contracted to install its planning software platform at two European steelmakers, Acciaieria Arvedi and Outokumpu. The Arvedi Group produces hot-rolled pickled and galvanized carbon steel coils, welded carbon and stainless steel tubes, and precision stainless steel strip products, with production volumes that reach about 4 million tpy. In order to further improve customer service across its entire supply chain, Arvedi sought a solution providing maximum visibility into its complex supply operations, which incorporate its patented In-Line Strip Production (ISP) and its Endless Strip Production (ESP) technologies. Quintiq's planning platform entirely accommodates the steelmaker's unique production processes, says the software company, and it will enable end-

to-end visibility to improve control and coordination of future order flows. It will be installed at the steelmaker's plants in Cremona and Trieste, which focus on special steels and thin/ultra-thin gauges. The first phase of the project will be completed in the first quarter of 2017, and the final phase will be in place by the second quarter of 2018. Stainless steelmaker Outokumpu has a stainless cold rolling capacity of 2.6 million tpy and operates in more than 30 countries. It has employed various types of Quintiq software in recent years, and is now targeting further improvements with a solution that will fully integrate and provide visibility of workflows at production facilities in over 40 locations. The software is designed to optimise planning for inbound and outbound logistics, steelmaking and rolling, and will help Outokumpu to accelerate improvements in productivity and efficiency, says Quintiq.



## Saving Europe's Steel Industry



While European politicians struggle with a migration crisis, the region's steel industry still has its sights fixed on the volume of Chinese steel products flowing into the region's ports. In a mid-March statement, the European Steel Association (Eurofer) issued a blunt warning that "Heads of State must act immediately to save the European steel industry". It noted that the European Commission launched a Communication on Steel - Preserving Sustainable Jobs and Growth in Europe on 16 March. In light of the Communication, "EU leaders must immediately take their responsibility to preserve this vital European sector," stated Eurofer. Axel Eggert, Eurofer's director general, said: "We welcome the objective and proposal of the Commission Communication to speed up the EU's ability to react to unfair trade and increase effectiveness of anti-dumping and anti-subsidy measures. A lot can already be done, even without further legislative changes."

He added that the EU should follow the USA's example by reacting faster and more vigorously. "The EU's Trade Defence Instruments' (TDIs) capabilities must be upgraded substantially," he said, noting that the gap until the implementation of provisional anti-dumping tariffs is only four-and-a-half months in the USA: "The EU needs nine months for the same task." Eggert also stressed that the USA fully applies the calculated anti-dumping margin while the EU uses a 'Lesser Duty' on unfair imports. He cited a recent case on cold-rolled steel products from China where the EU measure was as low as 13%, instead of a calculated 60% that could have been applied. "The US recently applied an anti-dumping tariff of over 265% on the same product!" he exclaimed. Eurofer also pointed out that a European Commission proposal to modernise TDIs has been on the floor of the Council since 2013, where it has remained blocked by some member states. Eggert says that member states should do more to push through the proposal.

## Why are Steel and Raw Materials Prices Now Rising?

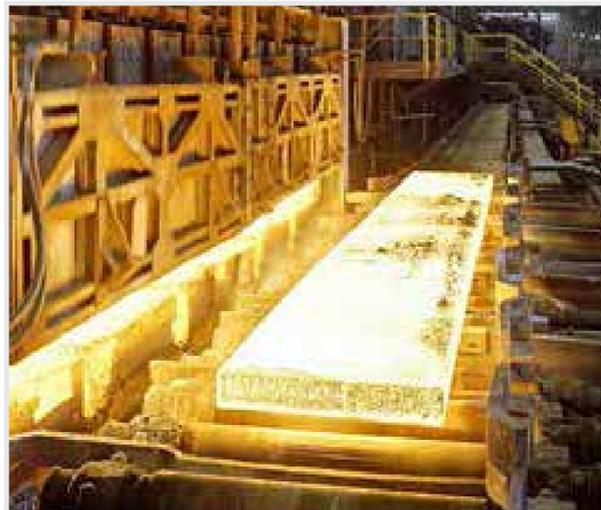
One of the key questions that market participants have been regularly asking this year is: why are steel and raw materials prices suddenly rising? A glance at our own forecasts published in the Steel Tracker back in July 2015 shows that MBR predicted Chinese HR coil would have been higher by now, averaging at \$325/tonne fob in the first quarter of this year, but actually such levels have only been reached in March, having found their floor in December.

While we have certainly been less surprised by the revival in China, the reasons for it are arguably different than anyone had envisaged. In terms of demand, preliminary data indicate that steel consumption remained weak in China during the first quarter, moving up modestly from 161.5 million tonnes in

Q4 2015 to 161.7 million tonnes in Q1 2016 - the worst quarters in several years. What is clearer, however, is that while steel demand remained depressed, especially for long products such as rebar, steel production arguably declined even more rapidly. For much of the past few years, steel suppliers outside China have been discouraged by the constant surge in Chinese exports, but so far this year they have actually been retreating, to levels last seen at the start of the recent surge in Q3 2014. Much of the reductions, given China's long products malaise, have understandably occurred among flat products, with near-20% cuts in uncoated flat products offsetting large gains in bar and rod.

While the relative dearth, by recent standards, in Chinese flat-rolled

exports, thanks in no small part to a wide range of anti-dumping duties, has helped to boost prices among remaining exporters, it clearly does not explain why Chinese long and international long products have also been gaining ground. In our view, this relates in part to the more dramatic seasonal changes to demand that occur in the spring - cement production surges between February and March every year for example - but also an increasing confidence among ferrous scrap suppliers to raise prices, not only because of higher purchasing for the same seasonal reasons, but also because of higher iron ore prices, which have made scrap prices appear more competitively priced than before, not only in China but also in Europe. Whatever the reasons to date, the



outlook for further price rises remain dependent in our view on ongoing production cuts at Chinese flat-rolled producers and, for long products,

whether the construction revival that has so long been predicted can finally come to pass after the latest round of seasonal purchasing is complete.

## More Fluctuations to Come

Average long and flat-rolled prices in China have been on a rollercoaster ride over the past month. Prices of steel billets, HRC and rebar all jumped by more than RMB500-600/t (\$77-93/t) over the first week of March, although prices quickly fell back. In reality, the property price rises so far this year have fuelled something of a Chinese real estate revival. Indeed, floor space for new buildings rose 13.7% year-on-year in the January-February period, after recording two-digit negative growth for the past two years since steel demand peaked in 2013. However, MBR finds that it represents just one quarter of the total new starts and may not be fully reflective. After all, cement production - a better guide to rebar demand in China - fell more than 8% in the same period, compounding the seasonal decline in activity at the start of the year. More positively, the far smaller automobile production sector continues to accelerate, thanks to a large surge in light trucks, which are more steel-intensive. While demand growth remains negative overall in China, steel mills have continued to curb production. The year-on-year erosion in February may have been far less severe than January but largely because of the leap year. Early March data provided by CISA-member mills, continue to show only a seasonal revival in supply. Profit margins at steelmakers have turned from negative to positive in recent weeks but following a bout of inventory replenishment throughout the steel supply chain, MBR doubts whether the rally in iron ore prices has continued, defying MBR's bearish expectations. At the time of writing in mid-March, the spot price benchmark (MBIOI62) had risen to a monthly average of \$56.25/t cfr, having accelerated from the December low of \$40.39/t cfr. Total Chinese iron ore stocks were finally starting to plateau in March, which suggests that iron production had begun to revive, and enough to begin tightening a hitherto oversupplied

market. CISA-member mills, which produce the vast majority of iron (hot metal) in China (over 87% last year) began to raise hot metal supply in February, but on a year-on-year basis production continues to fall sharply. Indeed, early March provisional data suggest that Chinese production fell by 5.3% year-on-year at CISA mills and, according to their estimates, by 0.7% among non-CISA members. These figures may underestimate the decline. Overall, China's National Bureau of Statistics reports that pig iron production fell by 7% year-on-year during the first two months while iron ore imports rose by 6% at the same time. Perhaps local mined supply is finally in the more substantial decline that industry observers feel is necessary for a sustainable iron ore price rise. At least to date, however, MBR has its doubts! In reality, daily prices have been relatively volatile: a sign of understandable, fundamental uncertainty, but the comparatively firmer steel market has continued to pull raw materials out of their malaise. While last month iron ore was moving in the opposite margins can continue to revive so strongly. The ability of raw materials prices to revive recently, even as market fundamentals are so much weaker, suggests that steel margins may soon retreat if Chinese producers increase supply, tightening the raw materials but potentially not the steel markets. Finished steel product exports from China dipped by 1.3% year-on-year in the first two months and although long products exports probably rose, given that most of the declines recorded so far were in flat-rolled products, international prices have rallied for both product categories. Steelmakers worldwide are still under pressure and are wary of relying on Chinese production cuts for further gains, but now that seasonal demand across the northern hemisphere has arrived, we would be surprised if prices correct downwards in the short term.

## Rising Prices Defy Expectations

The rally in iron ore prices has continued, defying MBR's bearish expectations. At the time of writing in mid-March, the spot price benchmark (MBIOI62) had risen to a monthly average of \$56.25/t cfr, having accelerated from the December low of \$40.39/t cfr. Total Chinese iron ore stocks were finally starting to plateau in March, which suggests that iron production had begun to revive, and enough to begin tightening a hitherto oversupplied market. CISA-member mills, which produce the vast majority of iron (hot metal) in China (over 87% last year) began to raise hot metal supply in February, but on a year-on-year basis production continues to fall sharply.

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In reality, daily prices have been relatively volatile: a sign of understandable, fundamental uncertainty, but the comparatively firmer steel market has continued to pull raw materials out of their malaise. While last month iron ore was moving in the opposite direction to other key raw materials benchmarks, the gains over the past month have



been far more widespread. Indeed scrap prices, in the Asian import market, have moved back to levels last seen in mid-September, though not all scrap grades are moving in-line. In the USA, for example, prime grades associated with manufacturing activity continue to underperform, unusually running at a discount to obsolete benchmarks. Looking ahead, MBR has raised its raw materials forecasts substantially this year given the large hikes in March, though our outlook remains depressed. Seasonal demand strength, in the form of higher steel production, should support current prices over the next quarter but thereafter we continue to anticipate a downward correction, which we suspect will be more severe for scrap than other raw materials. After all, the present value of the iron contained in scrap imports is considerably higher than that in spot iron ore. In the recent past, this has encouraged more Chinese finished steel or semi-finished steel flows into other markets, which in turn has limited demand and therefore prices of scrap.

## Steel Prices Increase Despite Low Demand

Steel prices increased across the Middle East in March, following the lead from the rest of the world. As China increased its export prices, all Middle Eastern producers, as well as exporters to the region, followed.

The UAE billet import price, which was \$245-265 per tonne cfr on January 12, rose to \$310-335 per tonne cfr on March 15. The rebar import price to the country was \$332-333 per tonne cfr on January 12 and reached \$390-395 per tonne cfr on March 15. Many market participants were expecting the prices to decrease by early April or slightly later, however, believing that demand could not support such steep rises. Several countries in the region have taken further action to protect their domestic industries. Turkey's Ministry of Economy has set a dumping margin for Chinese colourcoated coil (PPGI) at 30.10%.

At the moment, products under customs code 7210.70.80.90.11 are subject to 15% import duty, whereas the duty is zero for imports under customs code 7210.70.80.90.19. The ministry said that investigators will now prepare a final report to be submitted to Turkey's Commission for the Prevention of Unfair Competition in Imports.

Ministers of commerce and industry in member states of the Gulf Co-operation Council (GCC) are planning to meet to discuss a possible increase in import duty on rebar to 15%. Most of the GCC nations - Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the UAE - impose a 5% import duty on rebar, although the global average of such import duties is 15-30%.

Studies for an undersea gas pipeline to carry gas from Iran to Oman will be completed in the next six months, Oman's foreign ministry said in February. It will ship 20 million cubic metres of gas per day from Iran to Oman. The countries signed another deal in 2007 to build a liquefied natural gas (LNG) plant in Oman to process the gas.

## Shahid Rajaei Port Exports More Steel



About 3.6 million tons of steel products were exported from Shahid Rajaei Port, Iran's biggest container port near the Strait of Hormuz, in the last Iranian year (ended March 19), says deputy head of Hormozgan Ports and Maritime Organization. Mohammad Ali Asl-Saeedipour added that the figure is expected to rise by up to 15% this year. "The exports mainly included iron rods, steel slabs, iron pellets, rolls and sheets. Companies have now shifted from exports of raw material to those of mineral products," IRNA quoted the official as saying.

## Thyssenkrupp Expands Auto Component Capacity



Thyssenkrupp is to build a new automotive components plant in Hungary, investing around €100 million in a site for engine components and steering systems.

Construction of the plant in Jászfényszaru, 70 km east of Budapest, will start in spring 2016, with production of electronic power-assisted steering systems and cylinder head covers with integrated camshafts planned to commence by then.

The expansion of production capacities in Hungary is necessary because Thyssenkrupp's components division has recently acquired major orders from international OEMs, says the company.

"For the first time in Europe we are localizing production of two different technologies at one site.

That will be an immense help in offering competitive cost structures," said Dr Karsten Kroos, CEO of Thyssenkrupp's components technology business.

"We have already enjoyed success with this strategy in China and will also be employing it in other growth markets," he added.

In Hungary, Thyssenkrupp already operates a steering technology software centre in Budapest and a front and rear axle assembly plant for Audi in Győr.

source: Metal Bulletin



## US Steel Restructures Tubular Operations

US Steel Corp has moved ownership of its tubular operations to a single new limited liability company, US Steel Tubular Products Holdings LLC. Ownership of its seamless plants in Alabama and Ohio has been transferred to a newly-formed US Steel Seamless Tubular Operations LLC, which, together with the group's existing US Steel Tubular Products Inc subsidiary, have been brought together under the above holding company from March 1.



## Conares Starts Installation of New Pipe Mill

UAE steel producer Conares has started installation of its 250,000 tpy 12-inch pipe mill at its facility in Jebel Ali Free Zone, UAE. The new mill will start production in the last quarter of 2016 and is part of the company's plan to increase its total production capacity to 1 million tpy. Conares produces 500,000 tpy of rebar and 250,000 tpy of tube & pipe.

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## DRI in India

India's DRI sector is extensive, but much of it is working under capacity. Kunal Bose explains why

Three years ago, India set a total steel capacity target of 300 million tpy by 2025.

This was set by the previous United Progressive Alliance government, but the present coalition government headed by Narendra Modi of the Bharatiya Janata Party is sticking to the target even though it appears overly ambitious.

Major steel groups have had frustrating experiences in land acquisition and getting iron ore mines allotted despite commitments by host state governments.

"Take it for granted, we will not be anywhere near that [300 million tpy] capacity by 2025. At the same time, the compulsion to grow steel capacity rapidly to meet rising domestic demand will build up," says Deependra Kashiva, executive director of the Sponge Iron Manufacturers Association (SIMA).

"As we are encountering major problems in acquiring big parcels of adjoining land of up to 5,000 acres to house BF-BOF based large capacity steel plants, greater reliance is to be placed

on building capacity through electric arc furnace and induction furnaces where land requirements are much smaller," he adds.

In India's crude steel production of 89.582 million tonnes in 2015, the "secondary" sector, comprising EAF and IF units which use sponge iron (DRI) as feedstock, had a share of 56%. In fact, for many years, output from this sector has exceeded the BF-BOF mills.

Sponge iron is a substitute for steel scrap, but the growing import of steel melting scrap, aided by low duty, is working against it.

Small units multiply But India's DRI sector also has a very large idle capacity. Sanjay Patnaik, CEO of Tata Sponge Iron, India's biggest merchant DRI producer, says that because of the commissioning of a large number of uneconomically-sized coal-based sponge iron plants during 2002-10, average overall capacity use by the industry, including gas-based units, was down to 35.89% in 2014-15 from 48.09% in the previous year.

He adds that small coal-based plants that are found across the country are

not environmentally-friendly nor do they have facilities to capture the waste gas from sponge iron-making kilns for power production.

DP Deshpande, managing director of Tata Sponge Iron, thinks that it is unfair to put an "environment polluter tag" on the sponge iron industry as a whole for the "irresponsible acts" of some units. "Look at Orissa where the industry has a large profile.

DRI units in the state fully conform to exacting environmental performance standards laid down for the industry," he stresses.

The government should make it mandatory that in future "only kilns with daily production capacity between 350 and 500 tonnes, and with facilities to capture waste gas for producing power, will be allowed to be built," says Patnaik. In any case, as sponge iron has gone through a downturn in synchronisation with steel in the past three years, only serious players are left in the field to build new units and make brownfield expansions.

Of India's total DRI capacity of 48.63 million tpy, coal-based plants have a



share of 36.03 million tpy (seetable); they range in capacity from the largest - 1.37 million tpy at Raigarh for Jindal Steel & Power - to only 15,000 tpy. Units using coal

as the reductant number around 400. The majority, "denied benefits of economies of scale, particularly in a market which remained depressed for three years up to 2015, are in a bad way," says a steel ministry official.

With many such plants either closed or operating on a "now-on now-off basis" depending on the market for sponge

iron and the prices of iron ore and coal, capacity utilisation in this sector was 39.74% in 2014-15, down from 55.33% in the previous year according to SIMA's data. Conditions remain difficult for the five gas-based DRI plants, which have a total capacity of 12.6 million tpy.

Inadequate supply of gas resulting from a continuous fall in domestic gas production restricted capacity use to 24.90% in 2014-15, down from 27.23% in 2013-14. Essar Steel's gas-based units at Hazira in Gujarat have the capacity to produce 6.8 million tpy.

## Planning Platform Upgrades at Arvedi and Outokumpu

Quintiq, a leading supplier of supply chain planning and optimisation (SCP&O) software, has been contracted to install its planning software platform at two European steelmakers, Acciaieria Arvedi and Outokumpu.

The Arvedi Group produces hot-rolled pickled and galvanized carbon steel coils, welded carbon and stainless steel tubes, and precision stainless steel strip products, with production volumes that reach about 4 million tpy.

In order to further improve customer service across its entire supply chain, Arvedi sought a solution providing maximum visibility into its complex supply operations, which incorporate its patented In-Line Strip Production (ISP) and its Endless Strip Production (ESP) technologies. Quintiq's planning platform entirely accommodates the steelmaker's unique production processes, says the software company, and it will enable end-to-end visibility to improve

control and coordination of future order flows.

It will be installed at the steelmaker's plants in Cremona and Trieste, which focus on special steels and thin/ultra-thin gauges.

The first phase of the project will be completed in the first quarter of 2017, and the final phase will be in place by the second quarter of 2018.

Stainless steelmaker Outokumpu has a stainless cold rolling capacity of 2.6 million tpy and operates in more than 30 countries. It has employed various types of Quintiq software in recent years, and is now targeting further improvements with a solution that will fully integrate and provide visibility of workflows at production facilities in over 40 locations.

The software is designed to optimise planning for inbound and outbound logistics, steelmaking and rolling, and will help Outokumpu to accelerate improvements in productivity and efficiency, says Quintiq.

## Harsco Signs 15-Year contract with Hebei I & S Group



Harsco Corporation, USA, has signed a new 15-year contract for on-site mill services at the Tangshan plate mill of China's largest steelmaker, Hebei Iron & Steel Group.

The plate mill is one of two subsidiaries of Hebei's Tangshan Iron and Steel Group (TangSteel) served by Harsco.

Since 2011, Harsco has supported the plate mill with a range of slag handling and metal recovery services through a Harsco-led joint venture relationship.

The new contract, valued at about \$125 million over the 15 years, builds on previous operations. Harsco will significantly expand its role to encompass a new metal recovery plant, a BOF briquetting operation and a new innovative steam-box

slag cooling process, as the plate mill consolidates and expands its production capacity to 4 million tpy.

The mill produces premium grade plates and sections used in various structural applications and shipbuilding.

Harsco's Metals & Minerals division, which will carry out the new contract, has operations at about 140 customer sites across more than 30 countries. Last year, it successfully negotiated a number of contract renewals and add-on service expansions. One of these was a \$60 million contract for mill services at Thyssenkrupp's Acciai Speciali Terni (AST) stainless steel works in Terni, Italy.

Harsco has been providing on-site services to the AST works for over two decades.

## China Growth Weakens



China's economy continues to remain under pressure as latest economic indicators suggest the economy is undergoing a slump, reviving growth concerns among policymakers.

The country's production output, retail sales, and investment all saw decelerated growth last month. National Bureau of Statistics on Saturday said in a statement that industrial production rose 6% year-over-year compared to 6.8% recorded in March, news outlets reported.

Retail sales in April climbed 10.1% from a year earlier, compared to 10.5% YoY incline in the prior month. From January till April, fixed-asset investment increased 10.5%, missing analysts' expectation of 11%.

Analysts believe weak economic indicators are proof that recovery in the economy was not as strong as expected. The economy was in correctional phase last month after solid economic rebound in March, they add.

The Chinese economy has been under pressure over the past few months as local demand drops. Beijing has employed several stimulus measures to underpin growth in the economy but little to nothing seems to have changed, as the economy slows down further in the first quarter of the year.

Below Estimates China's economy resumed its grind towards slower growth in April, weighed by overcapacity industries such as steel and coal.

After a rocky start to 2016 marked by a sliding yuan, capital outflows and tumbling shares, China's economy had stabilized and even picked up since March, led by a surge in new credit and rebound in the housing market.

A pullback in lending and Saturday's tepid industrial output data dash hopes that the economy had turned a corner. Top leaders signaled a shift away from debt- and stimulus-fuelled growth this week, stressing the need for deleveraging, upgrading industrial capabilities and cutting excess capacity. "All the engines suddenly lost momentum," said Zhou Hao, an economist at Commerzbank AG in Singapore. "The policy tightening will be only a short-term phenomenon."

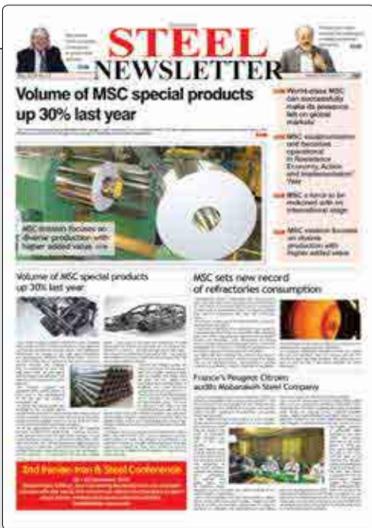
The slower industrial output was due to weak external demand, a sharp drop in mining, high energy consumption and overcapacity sectors including steel and coal, as well as seasonal effects, the National Bureau of Statistics said in a statement released after the data.

New Credits Data released showed China's broadest measure of new credit rose less than expected last month. Aggregate financing was 751 billion yuan in April, the People's Bank of China said, below all 26 analyst forecasts in a Bloomberg survey.

New yuan loans were 555.6 billion yuan, compared with the median estimate for 800 billion yuan. China's central bank sought to reassure investors that monetary policy will continue to support the economy after the sharp slowdown in new credit. The deceleration was mainly due to a pick-up in a program to swap high-cost local government debt for cheaper municipal bonds, with no less than 350 billion yuan of such swaps conducted last month, while aggregating financing growth was affected partly by a decrease in corporate bond issuance, according to the central bank. China's monetary policy remains prudent and policy moves must support economic growth while fully considering the impact on future prices and the need to prevent financial risks, People's Bank of China research bureau chief economist Ma Jun said in an e-mailed statement from the bank. Global Slowdown All major economies are slowing, but unlike 2008, China won't be here to save the day. China kept its economic engine running with credit. Chinese corporations borrowed heavily to prop up economic output after 2008, spending money that they didn't really have. It was a good run, but the government is now realizing how dangerous credit can be. If there's one dangerous thing the world has learned, it was the seductive power of credit. Central banks have been following the Federal Reserve's lead by printing money around the clock, buying up all the debt in sight. There's no doubt this kind of system is going to come crashing down—the only question is when.

# STEEL NEWSLETTER

Mobarakeh



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Renowned analyst of steel industry:

## Mobarakeh Steel Company, a Rising Star in World Steel Industry

Peter F. Marcus, one of the most famous experts and analysts of the global steel industry, has released a detailed report in World Steel Dynamics [a "Strategic Information Service" providing critical and new perspectives on possible and probable steel industry developments] to offer his views and analyses on Iran's steel industry following his visit last year to Iran's major iron ore and steel companies.

What comes next is a look at parts of his report [entitled WORLD STEEL DYNAMICS' CORE REPORT - April 2016]:

As for Iran's steel industry, Peter Marcus says, "[...] the Iranian steel industry will be one of the global industry's 'rising stars' in the next decade".

He further says, "The country's largest steelmaker, Mobarakeh, which has about a 60 percent share of the country's steel sheet deliveries, including subsidiaries, is the 'brightest rising star' in WSD's opinion. Besides its ultra-low costs, including an operating cost to produce hot-rolled band just below \$300 per ton, the company is positioned to expand capacity at a relatively low capital investment cost. And, it's positioned to continue to enhance its already-strong standing with customers in the domestic marketplace. It has a highly qualified and proactive management team, including a visionary leader (Bahram Sobhani, its CEO)."

He says, "[...] it's quite evident to WSD that, despite its current financial crisis, the Iranian steel industry will be one of the global industry's 'rising stars' in the next decade. In comparison, steelmakers in a number of countries, including China, are now falling stars."

He adds, "The Iranian steel industry is facing an array of challenges in the next decade, including a) a severe shortage of capital since the central

government is not providing direct financial help;... b) capital from domestic sources is extremely expensive;... c) the risk that the Iranian currency, the Rial, appreciates sharply in the next decade (WSD's view), which will boost the Iranian steel mills' costs on a U.S. dollar basis; d) far from adequate low cost iron ore reserves;... e) the lack of a sufficient countrywide rail transportation system; and f) poor labor productivity.

Despite all these problems, there is a glimmer of hope for Iran's steel industry after the removal of sanctions and the country's access to foreign markets, Marcus says.

"Nevertheless, granted that economic sanctions are not re-imposed on the economy by foreign countries, the Iranian steel industry's risks and problems

natural gas and the price charged for electricity, the fairly low cost iron ore mines in the country, the good location to export, attractive capacity expansions via the DRI/ EAF route and a government that will be sufficiently supportive on the industry (including the imposition of trade barriers against foreign steel mills when needed)."

He then touches on strategies Iranian steelmakers can adopt to overcome problems and says, "[...] In the case of Mobarakeh, the leading company, its EBTIDA to sales ratio is down to only about 5% at present versus 30% for a while a few years

common stock), it's clear that Iranian steel companies and iron ore producers, in general, and Mobarakeh Steel, specifically, need to attract equity funding and loans from offshore groups.

"Mobarakeh Steel and the other steelmakers, for example, could benefit substantially from 'strategic partnerships' with non-Iranian steelmakers - especially since steel's technological revolution has

continued to advance at a rapid pace over the past decade and that, because of the economic sanctions against its country, Iranian steelmakers have not had

10 percent per annum, rather than about 20 percent per annum in Iran (just reduced by the government from 27% per annum), the interest expense will be far lower. Although, of course, there would be big debt -repayment problem if the Iranian Rial were to weaken sharply - a development not expected by WSD, but nevertheless is a theoretical possibility given Iran's high 'country risk' ratings at the present time. At present construction is stagnant in Iran mainly because of a drop in crude prices. To exit this, investment costs in the economy should increase, he said, adding as long as such a thing does not happen, a drop in the profitability margins of Iranian steelmakers won't come as a surprise.

"Interestingly, a good number of Iranian steel industry people are buying into the IMIDRO forecast that the country's steel production in 2025 will rise to about 55 million tonnes versus about 16 million tonnes per annum at the present time. Included in this forecast, apparently, is about 18 million tonnes of exports by Iranian steel mills. In fact, WSD thinks that the export market for steel products is so 'competitive,' in the academic sense of the word, over much of the steel cycle that it will be impossible for Iranian steel companies to obtain funding based on an expectation that exports rise so sharply. "In Iran's case, its industry association, IMIDRO, forecasts steel production to be about 55 million tonnes in 2025 versus about 16 million tonnes annually at present. If so, this would be a compounded annual growth rate of about 13.1% per annum."

In light of the fact that the largest steel production growth happens in India (6.8 percent), "WSD thinks that a more reasonable 'mid-high' figure (for Iran) is about 36 million tonnes, which is a growth rate of 8.5% per year," he says.



seem to be less than those faced by steelmakers in most other countries. The opportunities for a prosperous industry are good given the highly favorable steel demand outlook, the access to low-cost energy in the form of

ago. "Given the current reduced profitability of the steel business in Iran and the lack of direct governmental financial support (including the government-owned financial institutions that own a sizable share of Mobarakeh

direct access to, and/or have installed, many of these new and important technologies.

"If an Iranian steel company can borrow funds outside of Iran, let's say for an annual interest expense that ranges from five to

### NEWS

## MSC CEO Emphasizes on Facilitating the Progression of Expansion Projects, Production of Low-thickness Sheets



Managing Director of Mobarakeh Steel Company (MSC) Dr. Bahram Sobhani has stressed the need for immediate completion of expansion projects and production of low-thickness sheets in Saba Steel Complex. Accompanied by a host of senior managers, the MSC president went on an inspection tour of Saba Steel Complex to get a first-hand account of progress at the complex's expansion projects.

During the visit which was meant to facilitate the progress of Saba expansion projects and remove the obstacles standing in their way, the MSC president stressed the importance of the production of lower-thickness sheets and said thin sheets will be rolled out by Saba Steel Complex after the inauguration of its expansion projects. Thin sheets which are used in making pipes, profiles, gas and oil pipelines as well as DDO high tensile products for the car industry can raise MSC's share of products with higher added value, he said.

For his part, Bahman Khalili, the technical manager in charge of project operations at Saba Steel Complex, said water distribution workshops, SVC, the material transfer unit, FTP silos, arc furnaces, thin slabs casting, hot rolling tunnel kiln, and workshops of Saba expansion projects were among the projects the MSC president and his team inspected.

During the visit, a meeting was held to address the obstacles facing expansion projects. The meeting reviewed the progress reports of the projects, with those in charge together with contractors and operators discussing plans to launch the required [production] lines. Khalili went on to say that the expansion project of Saba Steel Complex was launched in 2013 to increase the facility's production capacity to 1.6 million tons from the current 700,000 tons. The project is 85 percent complete already. In the first phase, a tunnel furnace and No. 7 are expected to be installed and the hot rolling automation to be replaced; and in the second phase, the second casting, the second electric arc furnace and are to become operational.

source: Metal Bulletin

## Iran, World's Largest Sponge Iron Producer

Iran produced 1.29 million tons of sponge iron through direct reduction of iron ore in March, maintaining its world ranking when it comes to turning out the intermediate product.

The country's overall production of sponge iron in the first quarter of

2016 hit the 3.7 million ton mark, slightly more than India's 3.6 million tons. Following Iran and India, Saudi Arabia came in a distant third.

According to the correspondent of Steel Newsletter, Managing Director of Mobarakeh Steel Company (MSC) Bahram Sobhani - who also serves

as the head of Iran's Steel Producers Association - addressed the opening ceremony of the 4th World DRI & Pellet Congress in Dubai and talked about the position of the steel industry in Iran and in the world and the advantages of sponge iron production in Iran.

He also laid out plans to increase the production of sponge iron following the inauguration of new projects.

The congress organized by Metal Bulletin Events was held in the UAE commercial capital (April 25-27). The direct reduction plant of

Sefid Dasht Steel Complex in Chaharmahal and Bakhtiari comes on stream this week and is designed to produce 800,000 tons of sponge iron each year. It is the first in the so-called provincial projects Mobarakeh Steel Company is launching.

## MSC Mission Focuses on Diverse Production With Higher Added Value

The managing director of Mobarakeh Steel Company (MSC) has undertaken flexibility in production of special steel sheets, insight into the market and prediction of its developments, constant inspection of equipment, workforce productivity and A to Z of production in the Iranian steel giant.

According to the correspondent of Steel Newsletter, Dr. Bahram Sobhani, who was speaking at an MSC management committee last week, recalled the steelmaker's plans for the current year [started March 20, 2016] and said the company aims to turn out diverse products with higher added value.

The MSC chief thanked the personnel of different plants who are making efforts to help realize the objectives of the company and said the promising reports presented by the company's senior managers

at the meeting show that attention to issues such as safety, record production and diversity has helped Mobarakeh Steel Company better ride out the storm pummeling the steel industry and suffer fewer setbacks.

The MSC managing director described attention to product diversity as important and said Mobarakeh Steel Company's mission is to turn out diverse products with higher added value. "Although market conditions have slightly improved, planning for a likely repeat of the past should not be ignored."

Dr. Sobhani called attention to the question of exports as crucial and said fortunately MSC has secured success in overseas markets in addition to meeting local market demands. "We need to formulate plans for both exports and the local

market in order to secure our stated objectives."

The MSC managing director went on to say in order for the company not to run into trouble, attention should be paid to the requirements of quality production; procurement of needed equipment should be placed on the agenda; and all requests should be transparent so that their examination in appropriate committees can help determine priorities and MSC's own potential or that of consultants can be tapped to meet its needs.

In light of the fact that MSC products are custom-made, they should match up to the standards of customers, he said.

Dr. Sobhani went on to say over the past couple of months, a large number of MSC staffers have retired and more are expected to take retirements in the months



to come. "I would like to thank these individuals for the efforts they have made for this huge industrial complex over the past 30 years. The measures these dear individuals have taken are a legacy for generations to come. I want to thank each and every one of these dear individuals and wish them honor, glory and health in their

retirement." It should be noted that during the MSC management committee session, deputy directors and managers of the steelmaker presented detailed reports on the plants and offices they are in charge of, and mechanisms to achieve what was outlined by the managing director were weighed.