



NEWS RELEASE

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JSW Steel uses COG to Supplement NG for DRI Production

Midrex successfully completes first phase integration

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Midrex Technologies, Inc. and JSW Steel Ltd. have announced successful completion and modification of the existing MIDREX® Direct Reduction Plant located at JSW Steel Dolvi Works (formerly JSW Ispat, Ltd.) to utilize coke oven gas (COG) to partially replace its natural gas supply for production of direct reduced iron. This is the first time that COG has been used commercially in a MIDREX® Shaft Furnace to replace natural gas consumption.

India has been the largest producer of DRI since 2003; however, Indian gas prices have risen dramatically over the past few years idling several DRI facilities.

“High natural gas pricing within India has presented challenges to making DRI with natural gas alone,” said Alok Chandra, Chief Operations Officer of the JSW Dolvi Plant. “Therefore, JSW Dolvi has embarked on a way to reduce natural gas consumption with no impact on production rates, and still deliver quality DRI to our steel shop by utilizing COG from on-site coke oven batteries.”

JSW’s coke ovens traditionally supply coke oven gas to its melt shop, Pellet & Sinter plants. However, the vision of Ashok Aggarwal, Jt Chief Executive Offer of the JSW Dolvi plant is to use “Chemical energy of COG for Production of DRI instead of it’s traditional use of thermal Energy” has given new dimensions for going to COG use in DRI plant.

JSW contracted with Midrex Technologies, Inc. in late 2013 to utilize COG along with natural gas in JSW’s Dolvi MIDREX® DRI plant. COG due to its impurities content can present challenges for use, but Midrex and JSW resolved these issues and the project was completed on schedule within 16-months, under the direction of JSW’s project manager, Mr. Anil Mhatre.

“We are excited to announce that approximately 20,000 M3 of coke oven gas is being used in the JSW Dolvi MIDREX® DRI Plant on an hourly basis,” stated Anil Mhatre, Head of Operations (SIP). “This is allowing our DRI plant to offset natural gas equal to half of COG consumption and produce DRI at a steady rate with same product quality”

“We are proud to say that we accomplished what JSW and Midrex set out to do,” Midrex’s Project Manager Laszlo Tibold stated. “By using COG as a supplement to natural gas, the JSW DRI Plant is able to take advantage of the COG reducing properties and efficiently operate with a greater efficiency under a wide range of operating parameters, offering maximum flexibility to JSW’s Dolvi Works.”

For this first phase of integration, JSW allocated a portion of the COG to be used for making DRI. Based on the positive results, JSW may allocate additional COG for DRI production at a later date.

Strategically located on the coast in the state of Maharashtra, India, the JSW Dolvi Works 1.0 million ton/year MIDREX® Plant began operation in 1994 producing cold DRI for use on site utilizing 100% natural gas. With the continuing escalation of natural gas pricing, combined with infrequent availability of consistent gas supply in India, JSW Steel has looked to Midrex for use of coke oven gas to create better sustainability for the plant and overall site.

JSW Dolvi Works is owned by JSW Steel Ltd. (India's largest privately owned steel company) and has a long history of implementing technological enhancements to boost productivity, lowering costs and improving environmental performance. These include the induction of an automated lime coating and an oxygen injection system.

About JSW Steel

JSW Steel is India's leading private sector steel producer and among the world's most illustrious steel companies.

JSW Steel is around \$9 billion global conglomerate spread over six locations in India and a footprint that extends to the US, South America and Africa.

JSW Steel, the flagship company of around \$11 billion JSW Group, is testament to decades of experience and a dynamic culture that have culminated in the company becoming the leading provider of specialized steels in India.

JSW Steel's business vision is centered on sustainability. JSW Steel realizes that only by creating a sustainable future can the company help pave the way for the goal of a self-reliant India. This belief has always stood JSW Steel in good stead. With a conviction in their values, JSW Steel has grown from a single steel mill in 1982 to the large operations that define the company today.

JSW Steel is a pioneer in the use of innovative technology that keeps the company ahead of the curve. Not only do they offer the widest product portfolio in India, they also further leverage their capability to customize offerings to match customer expectations.

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