

September 14, 2017

## Midrex and Primetals Technologies receive performance test certificate from Lebedinsky GOK for new 1.8 mtpy MIDREX<sup>®</sup> HBI-3 plant

- **MIDREX<sup>®</sup> Plant will produce 1.8 million metric tons of hot briquetted iron (HBI) per year**
- **7-day Performance Guarantee Test (PGT) completed with 100% achievement of performance guarantee parameters**
- **HBI production exceeded design criteria during the PGT period**

The new 1.8 million metric ton per year MIDREX<sup>®</sup> Hot Briquetted Iron (HBI) plant at Lebedinsky Mining and Processing Integrated Works (LGOK), in Gubkin Russia, has announced the completion of its performance guarantee test (PGT). The plant, Midrex HBI-3, was supplied to Metalloinvest by a consortium of Midrex Technologies, Inc. and Primetals Technologies; it is the facility's second MIDREX<sup>®</sup> HBI plant. Metalloinvest is Russia's biggest iron mining company and the region's largest producer of high quality steel. The company is also a leading producer and supplier of iron ore and ore-based metallic iron products.

Midrex HBI-3 began commissioning in early 2017 and passed its performance test, receiving its Performance Test Certificate on June 30, 2017 with the preliminary acceptance received on March 15, 2017, and the PGT completed on May 13. Test parameters included HBI production, HBI physical and chemical characteristics, the plant's key natural gas and electricity consumption and environmental/emissions impacts. Midrex HBI-3 achieved 100% of the test parameters during the first attempt of the PGT.

Metalloinvest contracted with Primetals Technologies (formerly Siemens VAI Metals Technologies) and consortium partner Midrex Technologies, Inc. to supply the new Midrex HBI Plant as a key part of its development strategy for LGOK to strengthen the company's position in the global HBI market and significantly increase production volume of high value-added iron ore products. Metalloinvest also utilized the expanded project financing capabilities (export credit financing) of Midrex and Primetals Technologies Austria through Midrex UK, Ltd.

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Midrex and Primetals Technologies were responsible for engineering and supply of mechanical and electrical equipment, steel structure, piping, ductwork, as well as training and advisory services. The MIDREX® plant produces high-quality HBI from iron ore pellets using the natural gas-based MIDREX® Direct Reduction Process (Midrex NG™) - the most environment friendly technology for ore-based ironmaking. By using natural gas to make HBI, the technology is free of emissions associated with the production of coke and sinter. Additionally, HBI production displays a significantly higher energy efficiency and a significantly lower carbon footprint than traditional blast furnaces.

The first HBI module at LGOK using the MIDREX® Direct Reduction Process also was supplied by the Midrex/Primetals consortium in 2005 and began operation in 2007. In each of the last 5 years, the plant has operated over its 1.4 million metric tons/year design capacity, and on April 26, 2015, produced its ten millionth ton of HBI.

LGOK's HBI-3 Module will increase the company's HBI production capabilities to 4.5 million metric tons per year, strengthening Metalloinvest's leadership in commercial HBI and boosting their world market share to more than 40%. The feed for the new HBI plant consist of pellets produced from Lebedinsky GOK iron ore.

Metalloinvest also owns Oskol Electrometallurgical Works (OEMK) (city of Stary Oskol, Belgorod region, Russia) – one of the up-to-date steelmaking enterprises in Russia employing MIDREX® Direct Reduction Ironmaking Technology and electric arc steelmaking rather than blast furnace production. Both produce high quality steel almost free of detrimental impurities and residual elements which is providing a stable high demand for it both in Russia and abroad.

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*MIDREX® is a registered trademark of Kobe Steel, Ltd.  
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Pictured – The MIDREX® Direct Reduction HBI plants of Lebedinskiy GOK near the city of Gubkin, Belgorod Region, Russia (MIDREX® HBI-3 in the front, MIDREX® HBI-2 in the background). The largest single module of this type in Russia was built by Midrex Technologies, Inc. and Primetals Technologies; it achieved the performance test certificate on June 30, 2017.

This press release and a press photo are available at

[www.primetals.com/press/](http://www.primetals.com/press/) or [www.midrex.com](http://www.midrex.com)

**Midrex Technologies, Inc.** is an international process engineering and technology company providing steelmakers with commercially proven solutions for greater profitability and has been the leading innovator and technology supplier for the direct reduction of iron ore for more than 40 years. The company offers eco-friendly technologies for ironmaking that provide high productivity, outstanding product quality, and cost competitiveness. Midrex has built its foundation upon the MIDREX® Direct Reduction Process that converts iron ore into high-purity direct reduced iron (DRI) for use in steelmaking, ironmaking, and foundry applications. Each year, MIDREX® Plants produce about 60 percent of the world's DRI. For more information, visit [www.midrex.com](http://www.midrex.com).

**Primetals Technologies, Limited** headquartered in London, United Kingdom is a worldwide leading engineering, plant-building and lifecycle services partner for the metals industry. The company offers a complete technology, product and service portfolio that includes integrated electrics, automation and environmental solutions. This covers every step of the iron and steel production chain, extending from the raw materials to the finished product – in addition to the latest rolling solutions for the nonferrous metals sector. Primetals Technologies is a joint venture of Mitsubishi Heavy Industries (MHI) and Siemens. Mitsubishi-Hitachi Metals Machinery (MHMM) - an MHI consolidated group company with equity participation by Hitachi, Ltd. and the IHI Corporation - holds a 51% stake and Siemens a 49% stake in the joint venture. The company employs around 7,000 employees worldwide. Further information is available on the Internet at [www.primetals.com](http://www.primetals.com).

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