

---

## Primetals Technologies and Midrex Technologies sign contract with Mikhailovsky HBI for world's largest HBI plant

- **Plant will produce 2.08 million metric tons of hot briquetted iron (HBI) per year**
- **Latest design features reduce energy consumption and environmental impact**
- **Contract includes engineering, supplies and advisory services**
- **Startup of the plant is expected in the first half of 2024**

**Dubai, United Arab Emirates, February 28, 2021** - Mikhailovsky HBI, which was jointly established by USM and Mikhailovsky GOK (part of Metalloinvest), signed a contract with Primetals Technologies and consortium partner Midrex Technologies, Inc. to supply a new Hot Briquetted Iron (HBI) Plant in Zheleznogorsk, Kursk region, Russia. The plant is designed to produce 2.08 million metric tons of HBI per year. Latest design features ensure reduced energy consumption and environmental impact. The contract includes engineering, supplies and advisory services. Startup is expected in the first half of 2024.

The agreement was signed by Pavel Mitrofanov, Deputy CEO of USM; Stephen Montague, President and CEO of Midrex; Etsuro Hirai, Chief Technology Officer of Primetals Technologies and CEO of Primetals Technologies Austria; and Aashish Gupta, Executive Vice President and Head of Global Business Unit – Upstream, Primetals Technologies.

Ivan Streshinsky, CEO of USM, said: "This is the start of an important project for the Russian metals and mining industry that will further strengthen our country's leadership in the global market for hot briquetted iron (HBI), the base product for the green metallurgy of the future. One of the world's largest HBI plants will be built and commissioned in close technological cooperation with Metalloinvest."

"Mikhailovsky HBI project will help fill the growing demand for low CO2 metallics that our industry desperately needs," Stephen Montague, President and CEO of Midrex said. "We are proud of our

contribution in development of HBI production and the role that Midrex plays in helping steelmakers to decarbonize.”

“Previously we have successfully completed HBI 2 and HBI 3 at Lebedinsky GOK. That Primetals Technologies and Midrex have been selected by Mikhailovsky HBI as the technology supplier underscores trust in expertise of our specialists and in our solutions,” Etsuro Hirai, CEO of Primetals Technologies Austria said. “This project will include all the latest technological features and will be one of the largest and most modern HBI plants in the world.”

Nazim Efendiev, CEO of Management Company Metalloinvest, said: "Metalloinvest is the world leader in the market for merchant HBI. In 2020, almost 4.8 million metric tons of briquettes were shipped from Lebedinsky GOK. The Company will bring its accumulated experience in organising HBI production processes to ensure successful implementation of the project. Andrey Varichev Mikhailovsky GOK will be a supplier of high-quality iron ore for the new plant. It is vital that the new plant is designed based on the principles of carbon-free metallurgy, with the prospect of fully transitioning to the use of "green" hydrogen as a reducing agent. This project creates strong basis for further development of "green" metallurgy and active implementation of eco technologies of steel production in the industry”.

The new contract once again proves Midrex-based direct reduction technology as the leading technology in the market with a market share of 80%.

The new plant will be the largest HBI plant in the world and is equipped with the latest design features. The plant includes a 7.15m diameter Midrex shaft furnace, a 19-bay reformer with 280mm MA-1 reformer tubes and low NOx burners for NOx reduction. An increased top gas pressure ensures higher furnace productivity and reduced power consumption. A flue gas hot fan additionally reduces electric power consumption. Also, a hot fines recycling system will be included. The level 1 and level 2 automation systems, including the DRIpax expert system, are also part of the project.

Midrex and Primetals Technologies will be responsible for engineering and supply of mechanical and electrical equipment, steel structure, piping, ductwork, as well as for 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 environmentally friendly technology for ore-based ironmaking. Compared to traditional ironmaking technologies, the carbon footprint of a Midrex NG plant is reduced by more than 50% compared with blast furnace ironmaking. By replacing natural gas with green hydrogen there is potential to further decrease carbon emissions in the future. The contracted

plant is capable of being converted in the future to use up to 100% hydrogen as a reducing agent. The feed for the new HBI plant consists of pellets produced from Mikhailovsky GOK iron ore.

Investment in the construction of the plant is estimated at over 40 bn roubles excluding VAT. The project will create around 400 highly qualified jobs in Zheleznogorsk. Mikhailovsky HBI (55% owned by USM, 45% by Mikhailovsky GOK) will implement the project based on the principles of project financing.

MIDREX is a registered trademark of Kobe Steel, Ltd.

MIDREX NG is a trademark of Midrex Technologies Inc.



Midrex plant LGOK III at Lebedinsky GOK. A comparable plant will be built in Zheleznogorsk

**Media Contacts:**

**Metalloinvest:** Anton Troshin, +7 (495) 981-55-55, [pr@metalloinvest.com](mailto:pr@metalloinvest.com)

**Midrex:** Lauren Lorraine, +1 (704) 378-3308, [llorraine@midrex.com](mailto:llorraine@midrex.com)

**Primetals Technologies:** Dr. Rainer Schulze, +49 9131 9886-417, [rainer.schulze@primetals.com](mailto:rainer.schulze@primetals.com)

**Metalloinvest** is a leading global iron ore and merchant HBI producer and supplier, and one of the regional producers of high-quality steel. The Company has the world's second-largest measured iron ore reserve base and is one of the lowest-cost iron ore producers. Metalloinvest is wholly owned by Holding Company USM LLC. Alisher Usmanov is the major beneficiary of Holding Company USM LLC (49%).

**Midrex** is the world leader for direct reduction ironmaking technology and aftermarket solutions for the steel industry. As the technology provider of the MIDREX® Process for 50-plus years, Midrex designs, builds and services Direct Reduced Iron (DRI) plants.

The MIDREX Process fits the need of steelmakers seeking a dependable and clean source of iron. Each year, MIDREX Plants produce more than 60% of the world's DRI in its three forms: cold DRI (CDRI), hot DRI (HDRI), and hot briquetted iron (HBI). The MIDREX Process is unsurpassed in the industry in terms of production and process flexibility.

The company's headquarters and research and technology development center are located in Charlotte, NC, USA. Midrex Technologies also has offices in the United Kingdom, China, India, and Dubai, and will execute this project through its wholly owned subsidiary Midrex UK Limited. For more information, please visit [www.midrex.com](http://www.midrex.com).

**Primetals Technologies, Limited**, headquartered in London, United Kingdom, is a pioneer and world leader in the fields of engineering, plant building, and the provision of lifecycle services for the metals industry. The company offers a complete technology, product, and services portfolio that includes integrated electrics and automation, digitalization, and environmental solutions. This covers every step of the iron and steel production chain—from the raw materials to the finished product—and includes the latest rolling solutions for the nonferrous metals sector. Primetals Technologies is a joint venture of Mitsubishi Heavy Industries and partners, with around 7,000 employees worldwide. To learn more about Primetals Technologies, visit the company website [www.primetals.com](http://www.primetals.com).

**USM** is a diversified Russian holding company with significant interests across the metals and mining, telecommunications, technology and Internet sectors. The group's assets include industry leaders such as Metalloinvest, Udokan Copper, MegaFon and ICS Holding. USM is a shareholder of the Centre for Research in Perspective Technologies and an indirect shareholder of Mail.ru Group. USM is registered in Russia. Its key shareholders are Alisher Usmanov, Vladimir Skoch, Farhad Moshiri and Ivan Streshinsky.