

Midrex and Primetals selected by Blastr

MIDREX H2 Plant to produce 2.0 million tons of DRI per year

CHARLOTTE, NC, USA (July 9, 2024) – Midrex Technologies, Inc. (Midrex) and Primetals have been selected to supply a hydrogen direct reduced iron (DRI) plant for Blastr Green Steel (Blastr), one of the largest industry start-ups in the Nordic region. The 2.0 million tons per year MIDREX H2™ Plant will be located in Inkoo, Finland, that provides a strong grid connection, optimal logistics, and stable, competitively priced low CO₂ energy. The DRI plant is part of an ultra-low CO₂ emissions 2.5 million tonnes per year steelmaking facility, which will be supplied by Primetals in partnership with Blastr.

"This partnership marks a significant milestone in our journey towards sustainable steel production and decarbonizing the steel value chain. By combining our strengths with industry leaders, we are poised to drive innovation and shape the future of steel production," says Mark Bula, CEO of Blastr Green Steel.

The MIDREX H2 Plant, powered by up to 100% green hydrogen, will produce hot DRI (HDRI) for direct charging to the steel mill, as well as hot briquetted iron (HBI), enabling Blastr to decarbonize other value chains by providing ultra-low-carbon iron feedstock for its customers.

"We are pleased and excited by the selection of MIDREX H2 as the DR technology by Blastr," Midrex President and CEO K.C. Woody said. "The combination of up to 100% hydrogen-based HDRI and HBI production positions Blastr to be a major force in the decarbonization of European iron and steelmaking."

Blastr Green Steel's unique, integrated value chain will produce high-grade ultra-low CO₂ steel for segments like automotive and construction industries, with ~90% lower scope 1-3 emissions than conventional steel production. This represents a yearly reduction of close to 6 million tonnes of CO₂, which is 25% more than the yearly CO₂ emissions from all passenger vehicles in Finland.

Primetals Technologies will also supply an electric arc furnace-based melt shop designed for direct charging of hot DRI and to melt recycled scrap metal with fully automated operation and advanced control system. The technology partner is responsible for the full electrics and

automation, including advanced automation systems and solutions for optimized production management.

"The production process will be optimized with digitalization, enhanced use of robot technology, and advanced solutions for remote control to enable the highest possible level of autonomous operations enhancing occupational safety, a top priority for the project," said Andreas Viehböck, Head of Upstream Technologies at Primetals Technologies.

The secondary metallurgy equipment supplied by Primetals Technologies, consisting of a ladle furnace and an RH plant, will enable Blastr to produce top-quality steel grades for the automotive sector, among other industries. In addition, Primetals Technologies will provide a system to treat off-gases and a plant to recover waste heat for the electric steel plant, ensuring energy is reused efficiently.

The partnership also includes an Arvedi ESP thin slab casting and hot rolling line as well as a state-of-the-art continuous pickling and galvanizing line to produce a variety of hot-rolled steel products including coated steel sheets for various industrial applications.

"Blastr's ultra-low CO₂ targets require technology that ensures net-zero direct CO₂ emissions from the steel production. The MIDREX Plant, featuring an electric heater as an alternative to a gas-fired reformer/heater, and the Arvedi ESP technology, which is an officially certified carbon-neutral thin-slab casting and hot rolling process, are two key technologies needed on the path to meet our ambitiously set emission targets," says Mikael Lindvall, Chief Technology Officer of Blastr Green Steel.



MIDREX H2 Plant in Inkoo, Finland

Midrex is the world leader in direct reduction ironmaking technology and aftermarket solutions for the steel industry. As a developer of the MIDREX® Process, Midrex has designed, built, and serviced direct reduced iron (DRI) plants for 50-plus years. MIDREX Plants produce approximately 80% of the world's low CO₂ DRI. The MIDREX Process is highly flexible in reductant sources, iron oxide feed, and product discharge options. Plants can be configured to operate on natural gas, natural gas with hydrogen addition (MIDREX Flex®), and 100% hydrogen (MIDREX H₂™). Iron oxide pellets and lump ores, regardless of their Fe content, can be transformed into either cold DRI (CDRI), hot DRI (HDRI), or hot briquetted iron (HBI). Plants can be designed for cold and hot discharge at the operator's discretion, and proven options are available for transporting and charging HDRI into an EAF.

Blastr Green Steel (Blastr) aims to decarbonize the steel industry by creating an integrated green steel value chain that leverages Nordic advantages. By utilizing local raw materials and CO₂-free energy and applying a circular economy thinking throughout the value chain, the company aims to produce 2.5 million tonnes of cost-competitive, ultra-low CO₂ steel, with ~90% lower scope 1-3 emissions than conventional steel production. Blastr Green Steel will be one of the largest industry start-ups in the Nordic region. Blastr Green Steel is part of Vanir Green Industries. For more information, visit www.blastr.no

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 primetals.com.

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