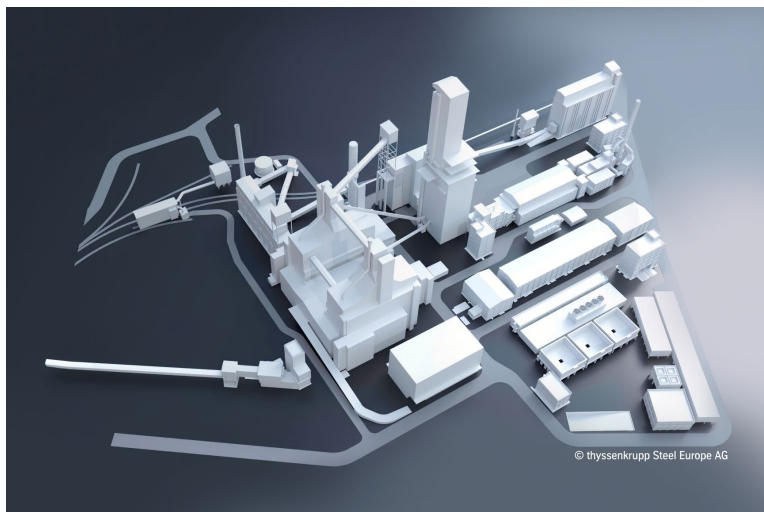


thyssenkrupp Steel selects MIDREX Flex™ for immediate CO₂ emissions reduction

Charlotte, North Carolina, USA (March 13, 2023) – Midrex Technologies, Inc. and Paul Wurth will partner to engineer, supply, and construct a 2.5 million tons/year MIDREX Flex™ direct reduction plant for thyssenkrupp Steel Europe AG at its Duisburg, Germany, site. The plant will initially operate on reformed natural gas, which contains 50% or more hydrogen (H₂) at the inlet to the furnace, until sufficient H₂ is available, at which time it will be transitioned to up to 100% H₂ operation. Furthermore, the direct reduction plant will be combined with advanced SMS group melting technology to significantly increase operating efficiency and reduce CO₂ emissions by more than 3.5 million tons per year. Plant start-up is planned for end of 2026.

MIDREX Flex technology provides the flexibility to operate on different ratios of natural gas (NG) and hydrogen (H₂), up to 100% H₂. It will allow thyssenkrupp to use natural gas, which already provides significant CO₂ savings over the conventional coke oven-blast furnace ironmaking route, until H₂ is available in sufficient quantities, which is expected in 2027.



The hydrogen-based DRI plant is a major step in thyssenkrupp's conversion of its integrated steelworks to a climate-neutral production site.

(pictured: 3D model of planned thyssenkrupp Steel Duisburg plant complex – courtesy of thyssenkrupp Steel)

Stephen Montague, President & CEO of Midrex Technologies, Inc., said, “Midrex prides itself in being at the leading edge of technology, and with our SMS Group partners we are demonstrating that leadership in two first-of-their-kind green steel projects. We have decarbonization solutions that can be tailored to each steelmaker’s situation to ensure long-term sustainability while contributing to near-term profitability.”

Midrex and Paul Wurth are also collaborating on the world’s first greenfield steel mill based on totally green technology for H2 Green Steel in Boden, Sweden. MIDREX H2™ technology will be used to produce 2.1 million tons/year of HDRI and hot briquetted iron (HBI). The MIDREX Plant is expected to begin production in 2025 and ramp up during 2026.

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About Midrex Technologies, Inc.

Midrex is the world leader for direct reduction ironmaking technology and aftermarket solutions. Midrex has designed, built, and serviced direct reduced iron (DRI) plants for 50-plus years. Plants based on MIDREX® Process technology produce approximately 60% of the world’s DRI and 80% from shaft furnaces.

The MIDREX Process is highly flexible and plants can be configured to operate on natural gas (MIDREX NG™), natural gas with hydrogen addition (MIDREX Flex™), and 100% hydrogen (MIDREX H2™). Any iron oxide pellets and lump ores can be transformed into either cold DRI (CDRI), hot DRI (HDRI), or hot briquetted iron (HBI). Combination plants can simultaneously discharge CDRI and HDRI, and proven systems are available for transporting and charging HDRI into melting furnace.

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 UAE (Dubai).

For more information, please visit www.midrex.com.

About Paul Wurth & SMS group

Headquartered in Luxembourg since its creation in 1870, Paul Wurth can look back on 150 years of excellence, during which the firm has developed into an international engineering company and an established technology provider for the global ironmaking industry. As a company of SMS group, Paul Wurth is a leading market player for the design and construction of complete blast furnace and coke oven plants. Direct reduction plants, environmental protection solutions and recycling technologies complete Paul Wurth's product portfolio.

SMS group is renowned worldwide for its future-oriented technologies and outstanding service for the metals industry. The company applies its 150 years of experience and its digital know-how to provide the industry continuously with innovative products and processes – even beyond its core business – and generates worldwide sales of more than 2.7 billion euros. SMS supports its customers throughout the lifecycle of their plants, enabling profitable and resource-efficient value creation chains. Paving the way for a carbon-neutral and sustainable metals industry is the company's stated goal. A global player with German roots, SMS group has about 14,000 employees.

For more information, please visit www.paulwurth.com and www.sms-group.com.