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MAEGMA Minerals Partners with Primetals Technologies for MIDREX Flex Plant

- **New MIDREX Flex direct reduction plant with annual capacity of 2 million tons of high-quality hot briquetted iron (HBI) to address Southeast Asia's demand for ore-based metallics**
- **Collaboration with a global high grade iron ore supplier which will operate a pelletizing plant near the MAEGMA site in Lumut, Malaysia**
- **Powered by competitively supplied natural gas from the Peninsular Malaysia public gas grid and green hydrogen produced from off-grid renewable energy and a planned nearby solar park**
- **Cutting-edge technologies will reduce energy consumption and environmental impact**

On May 6, 2025, MAEGMA Minerals signed a Memorandum of Understanding (MoU) with Primetals Technologies to establish a MIDREX Flex plant with a capacity of 2.0 million tons of HBI per year in Lumut, Perak, Malaysia. The new plant, provided in collaboration with Midrex Technologies, Inc. (Midrex), will enable MAEGMA to meet growing demand for high-quality merchant HBI in Southeast Asia. Operations are scheduled to begin in 2029.

HBI Plant for a Flexible Transition

The MIDREX Flex technology is designed to operate at different ratios of natural gas and hydrogen, up to 100 percent hydrogen. Initially, the plant will operate with a mix of natural gas and hydrogen, allowing for a carbon footprint reduction of more than 50 percent compared to traditional blast furnace-based ironmaking. It will feature hydrogen-ready equipment and piping, such as three stages of process gas compressors. Key components include a MIDREX Shaft Furnace with a 7.15-meter diameter and a 19-bay MIDREX Reformer with 280-millimeter reformer tubes.

“The industry is increasingly transitioning to hydrogen, but energy prices remain a challenge. Under these conditions, the flexibility of the MIDREX Flex plant is a major advantage for MAEGMA Minerals,” said Andreas Viehboeck, Executive Vice President and Head of Global Business Unit Upstream at Primetals Technologies. “This technology allows MAEGMA to scale up hydrogen usage based on market conditions while significantly reducing carbon emissions compared to conventional methods. We are thrilled to embark on this partnership and support MAEGMA in achieving its goals.”

High-Quality HBI Production

This advanced technology solution offers both flexibility and performance, integrating state-of-the-art systems for efficient and sustainable production. Notable innovations include a conveyor system that reuses fine-ore residues from the briquetting process. Primetals Technologies will also supply a complete basic automation system (Level 1), an advanced process optimization system (Level 2) featuring the DRIpax expert system to ensure consistent high-quality HBI production, as well as additional digitalization solutions.

The plant will be powered by locally-sourced natural gas provided by a reputable gas supplier through the public grid, and by green hydrogen produced from off-grid renewable energy and a planned solar park. Additionally, the pellet feed will be sourced from a leading global mining company with operations near the MAEGMA site, significantly reducing transportation costs.

MAEGMA Minerals is a member of the Kuala Lumpur-based Melewar Group, a prominent Malaysian industrial conglomerate and industry leader in cold-rolled flat steel (CRC). The group also manufactures steel pipes, hollow profile and other products widely used in construction, furniture, automotive, bicycle, and engineering industries.



The agreement for the new MIDREX HBI plant was signed by Friedemann Plaul, Senior Vice President Iron- and Steelmaking, Andreas Viehboeck, Executive Vice President and Head of Global Business Unit Upstream, both with Primetals Technologies, and YM Tunku Dato Yacoob Khyra, Executive Group Chairman, and Uwe Ahrens, CTO, both with Khyra-Melewar Group.

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