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## Primetals Technologies Receives FAC for EAF Quantum Deployed for Special Steel Production in China

- **Next-level production flexibility in terms of raw material utilization**
- **Significantly reduced production costs**

Chinese special steel producer Huaigang Special Steel, a part of the Jiangsu Shagang Group, has recently granted the final acceptance certificate (FAC) to Primetals Technologies for an 80-ton EAF Quantum electric arc furnace implemented at a site in Huai'an, Jiangsu province. The first heat was produced in January 2024, just five months after Primetals Technologies and Huaigang Special Steel commenced on-site installation works.

### Tap-to-Tap Times of 32 Minutes

This EAF Quantum showcases remarkable production flexibility while achieving single heats with tap-to-tap times of 32 minutes. In July, Huaigang operated the furnace on 25 percent hot metal and 75 percent scrap at a power consumption of 240 kWh per ton and an oxygen consumption of 23 to 25 cubic meters per ton. The month after, Huaigang changed the raw material mix and used 100 percent scrap. The producer has also operated a mix of 30 percent hot metal and 70 percent scrap at power consumption figures of less than 230 kilowatt-hours per ton. Moreover, Huaigang has the option to utilize 30 to 40 percent hot metal during the charging process.

Primetals Technologies has supplied Huaigang with key mechanical and electrics process equipment as well as a Level 1 automation system, an automated charging process, automation systems for oxygen injection and sand filling, and a Level 2 automation system.

### Outstanding Power Consumption Figures

In 2021, Jiangsu Shagang Group ordered its first EAF Quantum from Primetals Technologies. Positive experiences from this project contributed to the company's decision to order a second EAF Quantum in 2022. Huaigang Special Steel's existing line produces 3.2 million tons of special steel annually, and the facilities are combining long and short processes. Focusing on high-end special steels such as spring steel and bearing steel, Huaigang is the leader of China's special steel market.

A flexible application of raw materials and the EAF Quantum's high melting efficiency ensure production of high-quality special steel products, further reduce the melting power consumption to less than 230

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kilowatt-hours per ton for single heats, and significantly shortens the melting time. Compared with conventional EAF plants, production costs are reduced by more than 20 percent.

### Exhaust Gas Used to Preheat Scrap

One of the most significant differences between conventional EAF plants and the EAF Quantum is the procedure for preheating scrap – the EAF Quantum feature a trapezoidal shaft and a scrap retention system. Thanks to this design, scrap distribution is optimized, and it allows exhaust gas to be used to preheat scrap. As a result, the EAF Quantum requires less time and energy to melt scrap, leading to reduced power consumption and increased productivity – the latter being a result of shorter processing times.



A part of Primetals Technologies' on-site team commemorating the first heat at Huaigang's new EAF Quantum electric arc furnace plant.



Picture of the first heat at Huaigang's EAF Quantum supplied by Primetals Technologies.

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Page 3/3