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## Guangxi Guixin orders EAF Quantum electric arc furnace from Primetals Technologies

- **Tapping weight of maximum 80 metric tons**
- **First application of split tapping process reduces tap-to-tap time**
- **Plant concept reduces electrical energy requirement, operating costs and CO<sub>2</sub> emissions**
- **High degree of automation**

The Chinese steel producer Guangxi Guixin Iron & Steel Group Co., Ltd (Guangxi Guixin) has placed an order with Primetals Technologies to supply an EAF Quantum electric arc furnace for its Hezhou, Guangxi works. The furnace has a tapping weight of 80 metric tons and will replace to smaller existing arc furnaces. For the first time, an EAF Quantum arc furnace features the new split tapping process: Tapping is performed under full power with a tap-to-tap time of just 26 minutes. The furnace has an extremely low requirement of electrical energy, which also contributes to a reduction in both operating costs and CO<sub>2</sub> emissions. The high degree of automation, starting from the scrapyard, makes the EAF Quantum ready for Industry 4.0. Commissioning of the new furnace is scheduled for mid-2019.

Guixin Iron and Steel Group Co., Ltd. was established in 1993. The privately owned group comprises companies active in the steel, real estate, port, finance, and trade businesses. Its steelmaking capacity amounted to 8 million metric tons (2017), mainly rebar and wire rod and coil. The production site in Hezhou is EAF based and produces long products.

Primetals Technologies will supply the entire mechanical and electrical process equipment for the EAF Quantum electric arc furnace. This includes the automated scrap yard management, the automated charging process as well as automated oxygen lancing and sand filling as well as level 2 automation, making the plant ready for Industry 4.0. A special feature of the new EAF Quantum is the newly introduced split tapping process. This allows for continuous tapping with smaller but faster heats due to the large hot heel of the furnace and Primetals Technologies' FAST tapping solution, significantly reducing tap-to-tap times.

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Developed by Primetals Technologies, the EAF Quantum combines proven elements of shaft furnace technology with an innovative scrap feeding process, efficient preheating system, new tipping concept for the lower shell, and an optimized tap system to attain significantly reduced tap-to-tap times. The electrical energy requirement is considerably less than that of a conventional electric arc furnace. In conjunction with reduced consumption of electrodes and oxygen, a cumulative benefit of around 20 percent is achieved for respective conversion costs. Overall, reductions of up to 30 percent of CO<sub>2</sub> emissions per metric ton of crude steel can be attained when compared to conventional arc furnaces.



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