

PRESS RELEASE

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Sinosteel E&T and Tenova have successfully completed the performance test for the ENERGIRON DRI Plant at the Baosteel Zhanjiang site in China

The sustainable hydrogen-based 1,000,000 tonnes/year ENERGIRON Direct Reduction (DR) plant demonstrated the nominal production of DRI, reducing carbon dioxide emissions and marking a significant step in the green steel industry.

Castellanza/Beijing, September 18, 2024 - Sinosteel Engineering & Technology Co., Ltd. (Sinosteel E&T), a leading industrial technology and engineering service provider offering low-carbon metallurgy full lifecycle solutions, and **Tenova**, a leading developer and provider of sustainable solutions for the green transition of the metals industry, have recently agreed on the successful completion of the Performance Test for **Baosteel Zhanjiang Iron & Steel Co., Ltd.'s new hydrogen-based 1,000,000 tonnes/year ENERGIRON Direct Reduction (DR) plant.**

The plant, designed by Tenova using ENERGIRON, the innovative DRI technology jointly developed by Tenova and Danieli, and completed with the engineering by Sinosteel, is installed in the Zhanjiang Economic and Technological Zone, Guangdong Province. During the performance test, the plant achieved a milestone production of a total of 21,620 tonnes of direct reduced iron, after 168 hours of continuous full-load production, with a metallization rate of more than 94% and using a 70% hydrogen-based reducing gas.

The ENERGIRON solution is the **most flexible DR technology for virgin metallic unit production** in terms of makeup gas utilization, and the most sustainable as it is designed to maximize reduction of CO₂ emissions. The plant installed at Baosteel, a **Baowu Group** company, has the **flexibility** to use different reducing gases, like Hydrogen (H₂), Natural Gas (NG), and Coke Oven Gas (COG), in any combination or proportion, using the same ENERGIRON Zero Reformer (ZR) scheme.

The full plant capacity is 1,000,000 tonnes/year, making it the **largest and first-of-its-kind hydrogen-based DRI facility in China**. It has been additionally designed to **capture CO₂** that can be sold commercially, further reducing the plant's overall CO₂ emissions and providing an added revenue stream for the plant operations.

“The successful operation of the Baosteel Zhanjiang million-tonne hydrogen-based shaft furnace stands as a pivotal initiative in Baowu’s efforts to promote low-carbon production. Thanks to this project, Baosteel is proceeding towards its path of reducing carbon emissions, paving a new way for green steel production.”, stated **Liang Lisheng**, Assistant General Manager of Baosteel Zhanjiang Iron & Steel Co., Ltd., and Director of the Ironmaking Plant.

“Congratulations to Baosteel Zhanjiang on the successful completion of the 168-hour performance test of the million-tonne hydrogen-based shaft furnace. We are grateful to Baosteel for their support and pay tribute to the relentless efforts of the team. Building on this significant

achievement, we will continue to dedicate our technology and engineering expertise to advancing the steel industry towards carbon neutrality goals.”, stated **Hua Guanglin**, Executive Deputy Managing Director of Sinosteel E&T and General Manager of Sinosteel MECC.

“We are really satisfied with this project which confirms the great collaboration among all parties that participated in this achievement. Thanks to our ENERGIION technology we have provided Baosteel with the first direct reduction iron production line integrating hydrogen, natural gas, and coke oven gas for industrial production”, declared **Stefano Maggiolino**, President and CEO at Tenova HYL, the company center in direct reduction technology.

About Tenova

Tenova is a worldwide partner for sustainable, innovative, and reliable solutions in the metals and – also through the well-known TAKRAF and DELKOR brands – in the mining industries. Tenova leverages a workforce of over 2,400 forward-thinking professionals located in 18 countries across 5 continents, who design technologies and develop services that help companies reduce costs, save energy, limit environmental impact, and improve working conditions.

For more information, visit www.tenova.com.

About Sinosteel

Sinosteel Engineering & Technology Co., Ltd. is a technology and engineering company that provides life-cycle service along the entire iron and steel production chains, as well as all-in-one green solutions to customers around the globe. Making the Solution Provider of Low-carbon metallurgy, Pioneer of Greener Growth as the company's business motto in the new era, Sinosteel E&T is determined to forge a leading low-carbon metallurgy company in China and assist the iron & steel industry to achieve the goal of carbon dioxide peaking and neutral ahead of time.

For more information, visit mecc.sinosteel.com.

About Baosteel

Baosteel Zhanjiang Iron & Steel Co., Ltd. is a manufacturing base of Baoshan Iron & Steel Co., Ltd., It has a complete set of modern iron and steel processes, covering ironmaking, steelmaking, hot rolling, thick plate, cold rolling, and supporting public and auxiliary facilities. Zhanjiang Iron & Steel actively responds to the national "Dual Carbon Strategy" and takes the lead in implementing low-carbon metallurgy technologies. It has successfully put China's first million-ton hydrogen-based shaft furnace into operation and accelerates the construction of the first zero-carbon high-grade thin steel plate factory project in China.

Zhanjiang Iron & Steel adheres to the development path of “innovation, coordination, green, openness, and sharing”, and strives to be high-end, intelligent, green, and efficient, and adheres to the principles of “simplicity, efficiency, low cost, and high quality”. The company is determined to achieve the strategic goal of “building the world's most efficient and competitive green carbon steel manufacturing base”.

For more information, visit www.baosteel.com.