PRIMETALS TECHNOLOGIES

Press

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Shanxi Jingang New Materials Technology Selects Primetals Technologies for Arvedi ESP Line

- **Enables a highly diversified product mix focused on advanced steel grades including grain-oriented and non-grain-oriented electrical steels (GO and NGO), deep-drawing steels, and grades for hot forming**
- **Revolutionary approach to producing ultra-thin endless hot-rolled coil (eHRC)**
- **Rapid implementation, with first coil scheduled for the first quarter of 2027**
- **Marks the 14th ESP line worldwide and the 10th in China, underscoring the proven success of Arvedi ESP technology**

On 19 September 2025, Chinese steel producer Shanxi Jingang New Materials Technology has awarded Primetals Technologies a contract to supply a new thin-slab casting and rolling plant adopting Arvedi ESP (Endless Strip Production) technology at its facility in Jincheng, Shanxi province. The scope of supply includes a complete electrics package, Level 1 and Level 2 automation, and an extensive digitalization solution.

The new plant will have an annual capacity of 2.6 million tons and is designed to operate fully in endless mode, producing strip gauges from 0.7 to 12.7 millimeters. This project represents a major advancement in Arvedi ESP configuration, with several innovative features tailored to meet the demands of a highly diversified product mix. The line will primarily focus on advanced steel grades, including electrical steels (GO and NGO), deep-drawing steels, and grades for hot forming.

Building on extensive experience in the rapid commissioning and ramp-up of ESP lines, Primetals Technologies has committed to an accelerated project schedule, targeting the first coil within 18 months of the contract's effective date.

Profit-Oriented Production of eHRC

Li Qiang, Chairman of Shanxi Jingang New Materials Technology, said the company selected Primetals Technologies for this strategic project because of the proven performance and reliability of its Arvedi ESP lines, innovative technical solutions tailored to the required product mix, deep process know-how, and collaborative partnership approach.

“This significant project demonstrates our extensive expertise and pioneering spirit in both technological and automation solutions,” said Andreas Viehboeck, Executive Vice President and Head of Global Business Unit Upstream at Primetals Technologies. “For Shanxi Jingang, this will enable superior, profit-oriented production of eHRC – a product that can partially replace cold-rolled

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coil and be used directly in end products. We are excited to support Shanxi Jingang in implementing Arvedi ESP technology and advancing their development of high-grade steels."

Extensive Digitalization Solution

The scope of supply includes a complete electrics package, Level 1 and Level 2 automation systems, and a comprehensive digitalization solution. This features the Asset Life Expert (ALEX) condition monitoring assistant, which visualizes asset status and provides recommendations for service, maintenance, and operation. The Thought-Process Quality Control (TPQC) system delivers real-time visibility into product quality and actionable insights at every stage of steel production, guiding operators and inspectors in addressing defects and corrective actions. The ESP Scheduler optimizes production management by creating detailed schedules for the ESP line based on production order data from higher-level systems.

Improved Product Quality

Arvedi ESP technology, with its zero CO_2 emissions thanks to the use of energy from renewable sources, is recognized as the only officially certified solution for carbon-neutral thin-slab casting and rolling. It is also the most energy-efficient process for producing high-quality eHRC.

Giovanni Arvedi, founder and president of the Arvedi Group and inventor of the Arvedi ESP technology, commented on the order from Shanxi Jingang: "I am pleased to see that the market fully recognizes the superiority and many advantages of the Arvedi ESP technology, making it the world's best-selling thin slab casting and rolling technology in recent years. This trust from our customers is the greatest acknowledgment of the dedication and hard work my team and I have invested in developing this revolutionary approach to producing endless hot-rolled coil."

The Shanxi Jingang ESP line will feature an innovative configuration with four high-reduction and five finishing mill stands. It will be the 14th ESP line worldwide and the 10th in China, underscoring the growing adoption of Arvedi ESP technology. Key design features that enable the production of advanced steel grades include a split-core electromagnetic brake (EMBR) for precise liquid steel control in the mold, an advanced anti-bulging caster roll design with optimized secondary cooling, and a primary descaler before the roughing stands to improve surface quality.

A vertical edger solution will increase flexibility and improve strip edge quality for electrical steels. The down coiler pinch roll features a polisher and ensures enhanced strip and roller surface quality. The line will also be equipped with an in-line submerged entry nozzle (SEN) exchange system at the caster and an in-line work roll change system in the last three finishing stands – both patented by Primetals Technologies. These solutions are critical for extending campaign length in endless casting and rolling and for improving product quality.

Development of Advanced Steel Grades

As part of the project, Primetals Technologies will also support Shanxi Jingang in developing even more advanced steel grades such as electrical steels with silicon content over 3.2 percent and ultra-low carbon steel like DC04 (with carbon content around 0.08 percent), known for excellent ductility, malleability, and formability. These grades are widely used in automotive and appliance manufacturing.

For these developments, Primetals Technologies will leverage the expertise of its partner RINA to finalize alloy design and optimize ESP process parameters, ensuring the desired microstructure from meltshop through downstream processing.

Representatives from Shanxi Jingang New Materials Technology and Primetals Technologies at the signing ceremony for the new Arvedi ESP line.

Li Qiang, Chairman of Shanxi Jingang New Materials Technology.

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