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Transforming Steel Manufacturing: Innovations and Achievements in Direct Casting and Rolling

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CSP® Nexus is setting the stage for a new generation of direct casting and rolling plants with its latest orders. Unlocked by its high-throughput casting and "real batch" rolling capability, this technology achieves the lowest energy and conversion costs by efficiently utilizing available casting heat through decoupled high-speed rolling in both roughing and finishing stages. Notably, CSP® Nexus will achieve a zero carbon footprint through the complete electrification of its first European reference at Stegra in Sweden.

The order from JSW Dolvi exemplifies CSP® Nexus' ability to integrate the advantages of conventional hot rolling into the direct casting and rolling technology, effectively combining "The Best of Two Worlds". This plant will set several new industry benchmarks: achieving the highest single strand productivity at 4.0 million tons per year (MTPY), producing the widest strips up to 2,600 mm, and manufacturing the thickest strips up to 32.0 mm on a direct casting and rolling plant. These advancements will enable CSP® technology to enter markets traditionally dominated by plate mills, offering significantly better conversion costs.

Moreover, CSP® Nexus' innovative technological solutions are poised to tap into additional markets, such as the production of automotive exposed parts. By leveraging these advancements, CSP® Nexus not only enhances its competitive advantage but also contributes to the broader industry trend towards sustainable and efficient steel production. As the industry increasingly emphasizes environmental responsibility and cost-effectiveness, CSP® Nexus' developments position it as a leader in the transition towards more sustainable practices in steel manufacturing.

This paper will thoroughly examine the various operating modes of batch and endless rolling, emphasizing the current and forthcoming reference plants and will explore the potential to produce grades that are presently supplied solely by the conventional production route.

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