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Electrification of heating in steelmaking -an enabler of fossil-free steel

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Current heating technology is predominantly gas-fired and there is a strong drive and commitment, from the steel industry to reduce emissions in steelmaking. Resistance heating technology potentially offers unique opportunities to reduce or remove use of fossil fuels while at the same time increasing thermal efficiencies, improving the work environment and enabling delivery of a fossil-free product.

This presentation addresses heating challenges along the entire chain of iron- and steelmaking, from the DRI and Blast furnace to downstream heat treatment processes.

The focus of this presentation is to highlight the latest developments in electric heating technology along the entire iron- and steelmaking process chain.

Examples of different electric heating solutions and select case stories for the different processing steps within steel production will be discussed. Results from the latest developments in electric gas heating will be discussed. Recent advancements within electrification of ladle heating and the ongoing development of electric heating solutions for reheating furnaces will be presented. To summarize, there is great potential to electrify heating processes within iron- and steelmaking, the main challenges are to develop large-scale and robust solutions to satisfy the current and future needs of the steel industry.

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