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Calix's Zero Emissions Steel Technology (ZESTY): Breakthrough pilot testing results for the Hydrogen Direct Reduced Iron (H-DRI) process

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Calix's ZESTY technology is a flash reduction process based on the indirectly heated Calix Flash Calcination (CFC) technology. In 2024, Calix completed a second testing campaign (over 100 runs) with 6 Australian-sourced hematite/goethite iron ores.

The campaign demonstrated it is possible to achieve commercially viable metallisation degrees for a range of ores approaching near-theoretical minimum hydrogen consumption.

This presentation and paper covers the ore testing campaign, the preliminary results on downstream testing of the H-DRI produced, and the status of TRL development and commercial scale-up, including the design-ready 30,000 tonnes per annum H-DRI demonstration plant.

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