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REUSE OF RECOVERY THERMAL ENERGY FOR WATER TREATMENT IN STEEL INDUSTRY

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Water consumption and wastewater disposal are critical challenges in the steel and metallurgical industries. Conventional **reverse osmosis (RO) systems**, widely used for producing demineralized water in cooling circuits, generate a concentrated waste stream (25-50% of feed water), which requires disposal due to high levels of calcium, magnesium and other contaminants.

At Contec Industry, we apply our **WASM method**, a sustainable approach aligned with **ISO 14046** and **ISO 14001 standards**, to **optimize water reuse and reduce environmental impact**. Our solution integrates **vacuum evaporation technology with waste heat recovery**, converting excess thermal energy (hot water or steam) into a resource for water treatment. This enables the production of **low-salinity distillate for reuse**, minimizing fresh water intake and wastewater discharge.

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The presentation will be accompanied by a real-world case study, demonstrating the practical application and benefits of this innovative solution in an industrial setting.	

Key Benefits:

- **Reduced Water Consumption**: Maximizing reuse of treated water in cooling circuits and wastewater treatment plants (WWTP).
- Lower Wastewater Discharge: Decreasing the volume of reject water, reducing environmental burden.
- Enhanced Energy Efficiency: Utilizing available heat from industrial processes, lowering energy demand.
- Cost Savings: Cutting operational costs for osmotized water production.
- **Sustainability & Compliance**: Improving the water footprint of the facility and contributing to ESG performance.

This approach exemplifies **how circular economy principles can drive efficiency in industrial water management**. By transforming waste heat into an asset, steel plants can achieve **significant environmental and economic benefits**, aligning with global sustainability goals.

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