

## GIFA, METEC, THERMPROCESS, NEWCAST 2023

### Steel industry



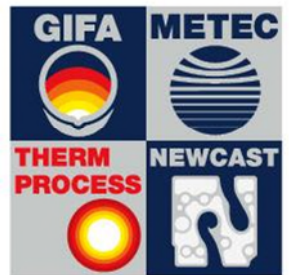
In the global steel industry, the blast furnace is at the center of decarbonization. Pictured here at India's Tata Steel.

image: SMS group



Design for the world's first climate-neutral steel mill: H2 Green Steel in Sweden.

image: SMS group



The Bright World of Metals

12–16 June 2023  
Düsseldorf/Germany

15<sup>th</sup> International  
Foundry Trade Fair  
with Technical Forum

11<sup>th</sup> International  
Metallurgical Trade Fair  
with Congresses

13<sup>th</sup> International Trade Fair  
and Symposium for Thermo  
Process Technology

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Trade Fair for Castings  
with NEWCAST Forum

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Öffentliche Verkehrsmittel:  
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Bus 722: Messe-Center Verwaltung



In the US greenfield project Hybar, a new mini-steel mill in Osceola, Arkansas, will produce reinforcing steel from scrap using 100 percent renewable energy from 2024. For this purpose, the minimill to be built by SMS will be connected to a solar field.

image: SMS group



The world's first hydrogen-based direct reduction: the demonstration plant built in 1999 using Lurgi's (now Metso) Circored technology.

images (3): Metso



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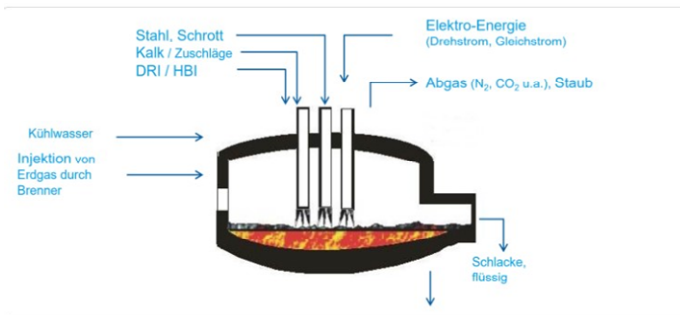
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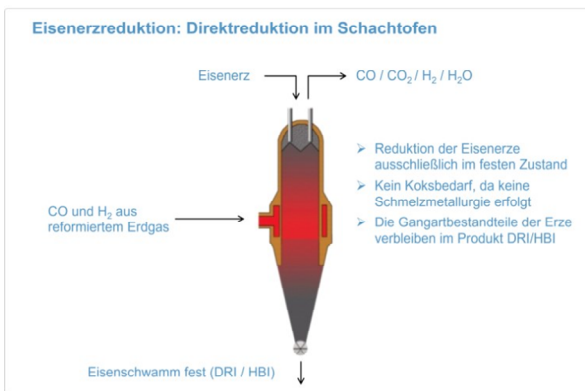
Midrex direct reduction plant of Algerian Qatar Steel in Algerin.

image: SMS group



Crude steel production in electric arc furnace.

image: VDEh



Direct reduction in the shaft furnace.

image: VDEh



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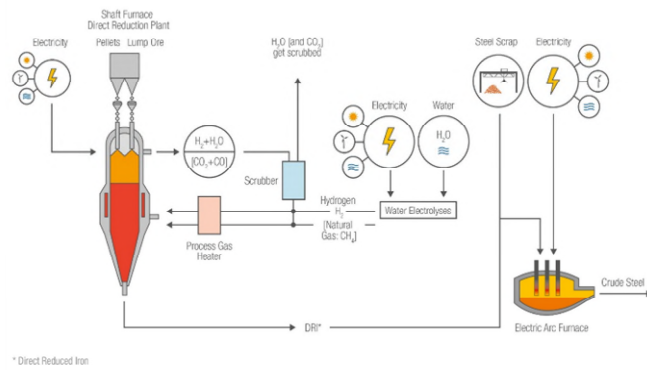
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**Carbon direct avoidance (CDA)**



Hydrogen as a reducing agent.

image: VDEh

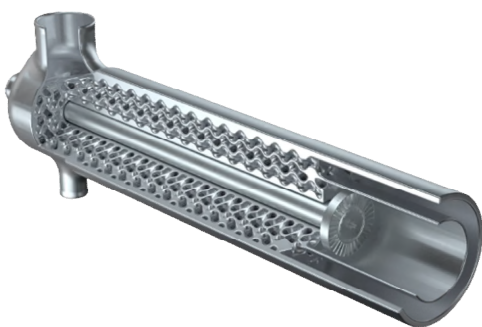
Foundry Industry



Decarbonization of the melting operation with induction furnace.

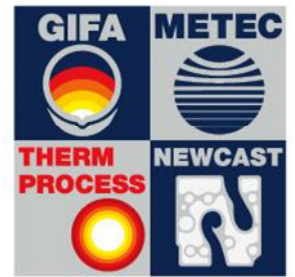
Image: ABP

Thermoprocessing



The IRecu recuperative burner is a combination of additively manufactured mixing unit and additively manufactured recuperative burner for maximum fuel flexibility at thermoprocessing plants. The burner efficiently utilizes the residual heat contained in the exhaust gas in counterflow and achieves best efficiencies. Fuels such as coke oven gas or propane/butane can also be used.

image: Kueppers Solutions



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