

LEADING
PARTNER
IN THE
WORLD
OF METALS



SMS group - CMT[®] Continuous Minimill Technology

2022 SEAISI Steel Mega Event Expo - Carlo Cascino

SMS  **group**

CMT[®] minimills

The greenest and most efficient production route for steel bar



Green technology



CO₂ friendly



Powered by
renewable energy

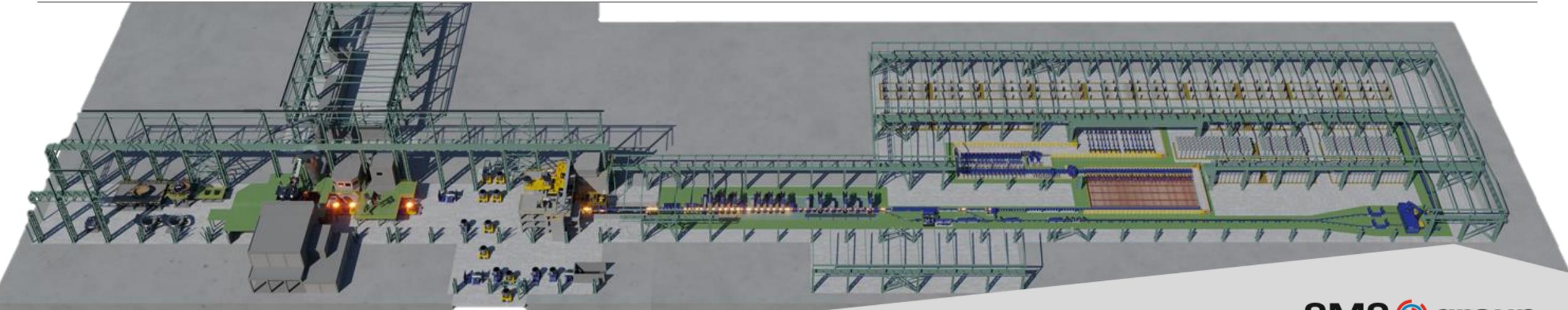
What is CMT[®]

CMT[®] Continuous Mill Technology is the SMS group solution for bar minimills: from scrap to high end final products by the integration between steel making, caster and rolling mill into a highly reliable single process

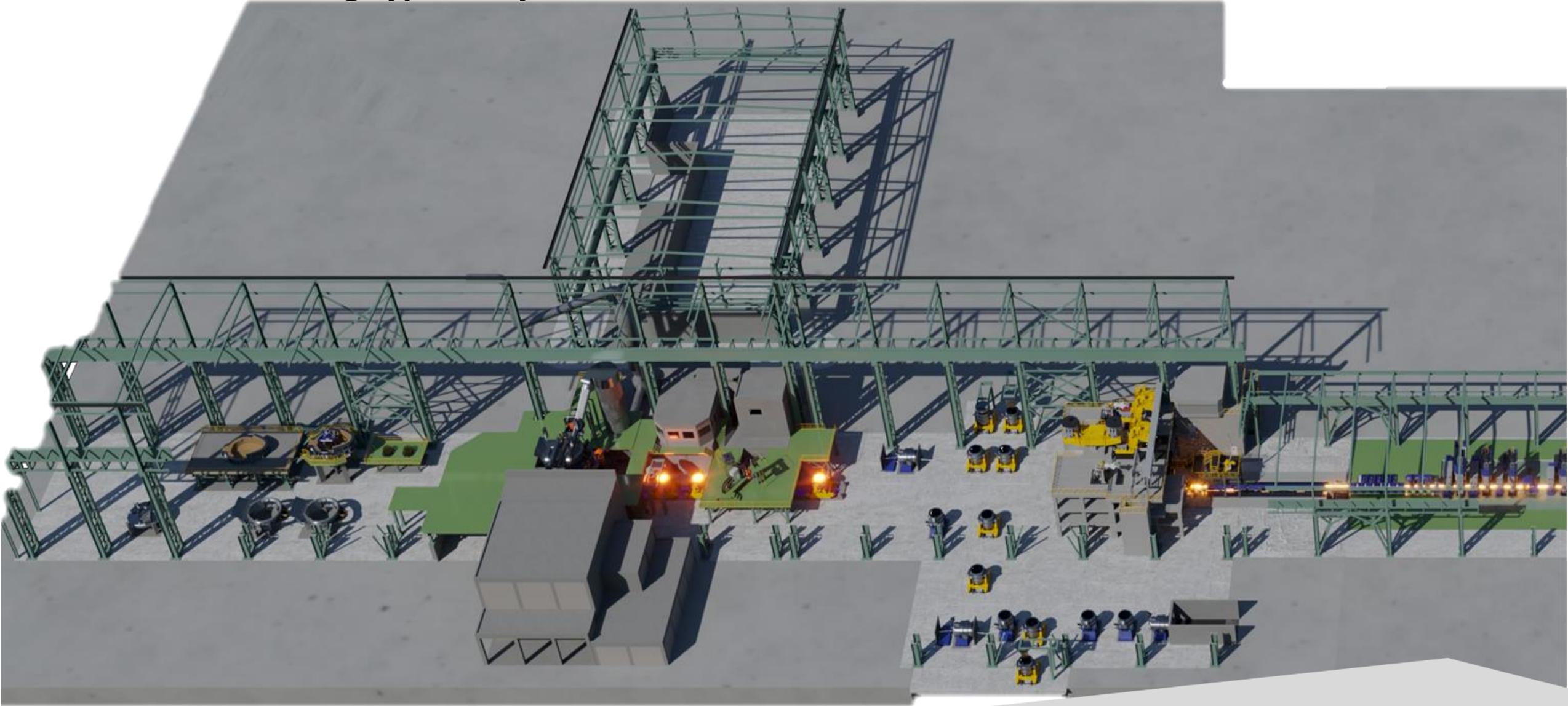
- › **Lowest carbon footprint** per ton of steel produced
- › **Lowest water usage**
- › **Hydrogen-ready!**
- › **120 min** from scrap to product
- › 23 hours non stop operation per day
- › **LOW in CAPEX**
- › **LOW in OPEX**

CMT® - Size overview

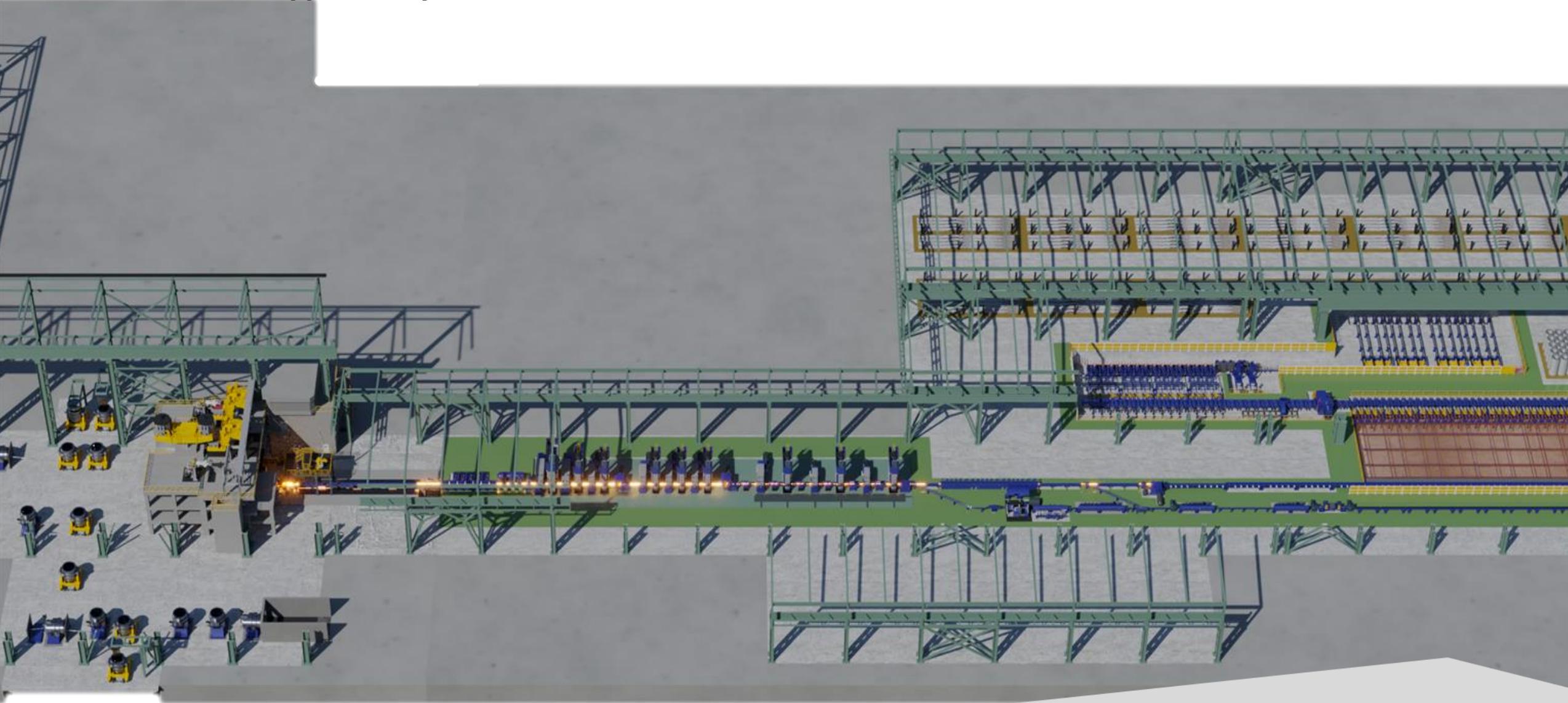
	CMT®350	CMT®550	CMT®700
Heat size	35t	50t	70t
Productivity	51 t/h	82 t/h	108 t/h
	350,000 t/y	550,000 t/y	700,000 t/y
Cast section	CONREX 130	CONREX 165	CONREX 190
Nominal casting speed	6.5m/min	6.5m/min	6.5m/min
Process	Continuous mill technology from caster to the rolling mill, through induction equalization furnace		
Finished product range	Straight bar: 8-63 mm, 6-24m bundle, 2-4t; VCC Coil: up to 25 mm, 8t; Wire rod: 5.5-25 mm		



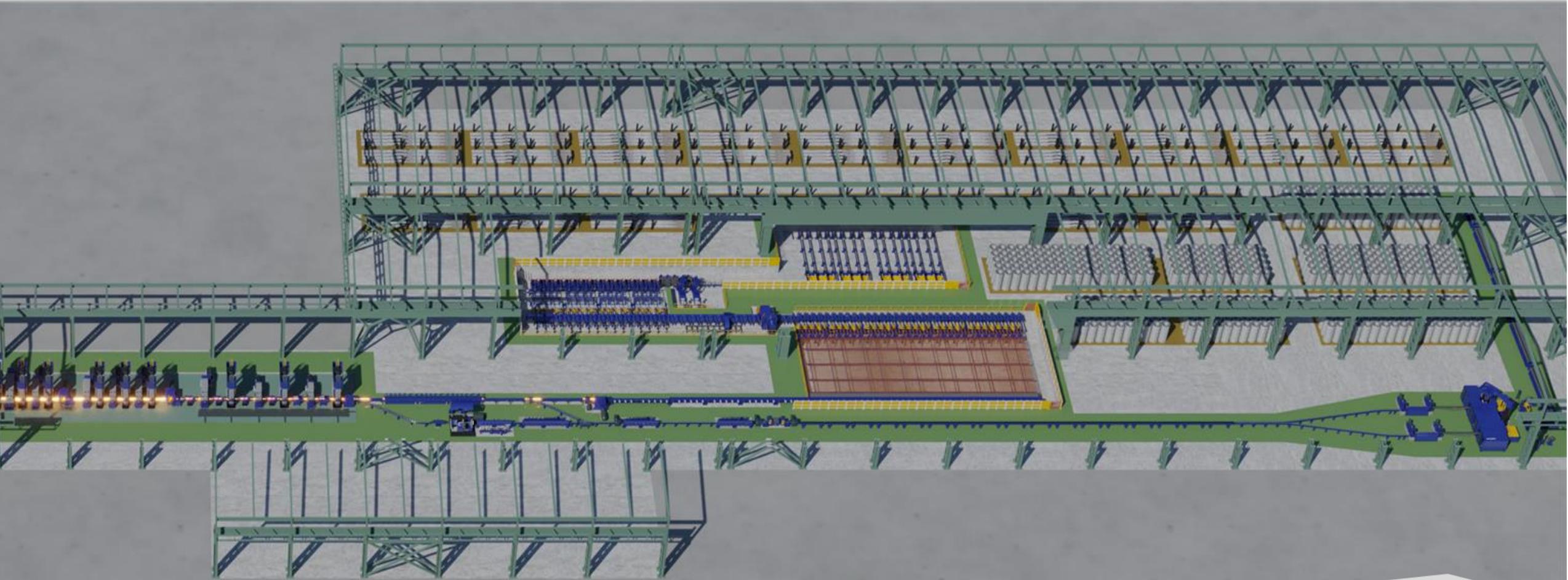
CMT® - Steelmaking typical layout



CMT® - Caster typical layout



CMT® - Rolling typical layout



CMT® - Innovation Highlights

Steel making

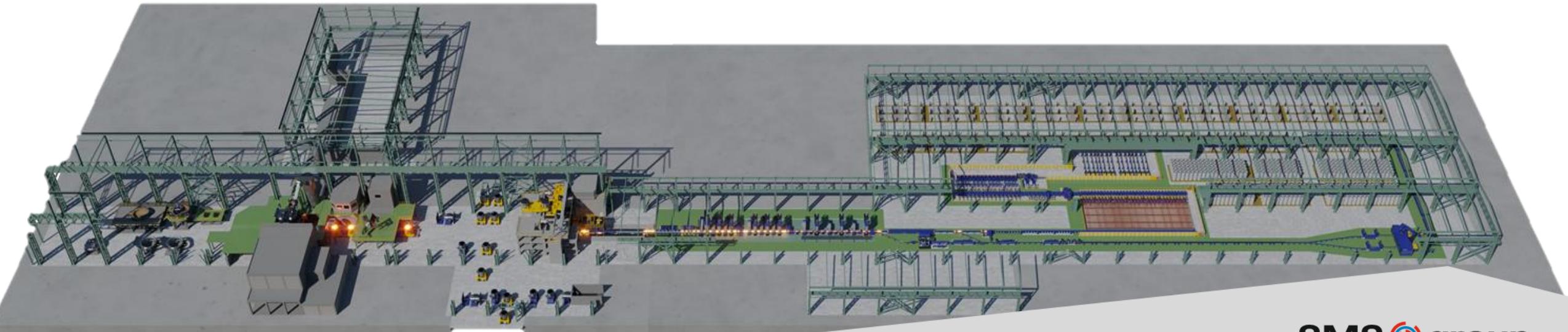
- ALLCHARGE
- AURA

Caster

- CONREX
- CONDRIVE
- CONGAUGE

Rolling

- HSD
- MEERdrive
- VCC



CMT® - Innovation Highlights

Steel making

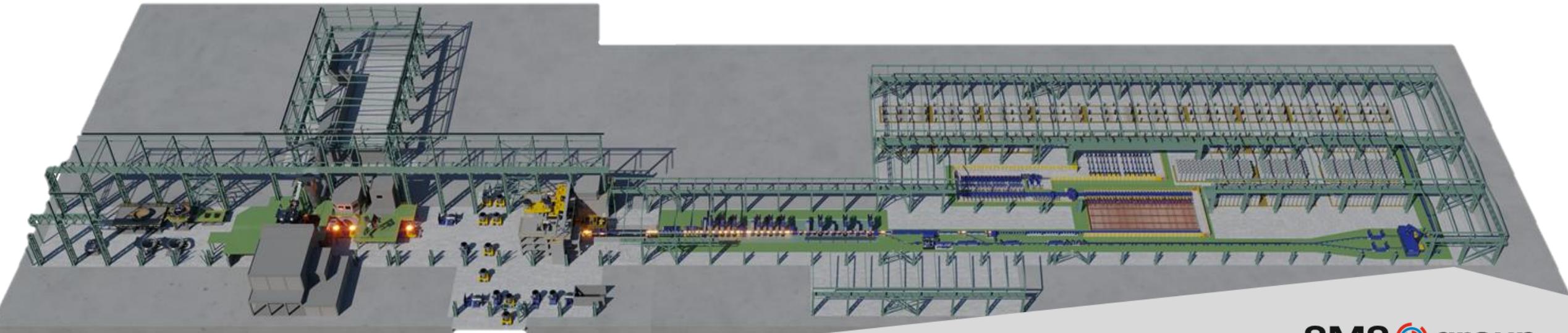
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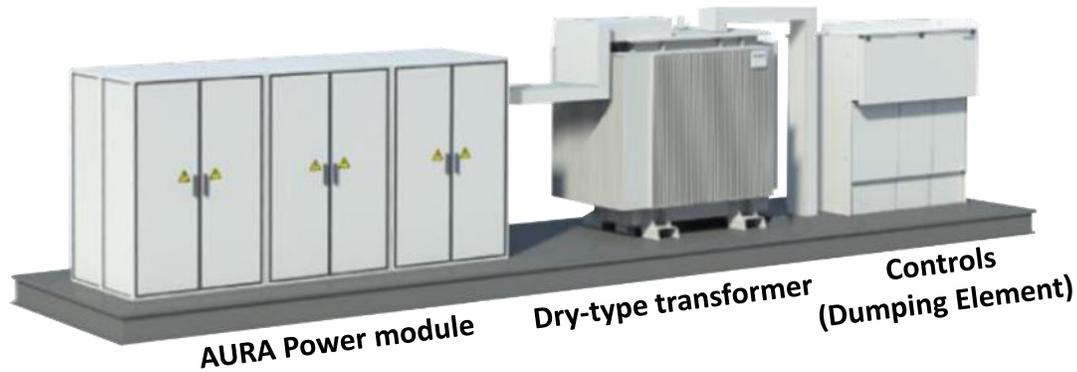
CMT® - Steel Making Highlights



ALLCHARGE

- › **Automatic scrap charging:** Reduced man power in the yard and furnace areas.
- › **Full sealing furnace during melting process:** Roof remain always positioned on the shell, no false air entrance.
- › **Minimized carbon injection**
- › **Zero burner concept:** No Natural gas consumption in the melting process.
- › **NOx reduction:** No preheating for decreasing the environmental impact.
- › **Best post CO combustion:** no cooling and air intakes, fumes suction via 2nd hole allows the optimum mixing.
- › **Safety:** Flat bath and no splashes thanks to horizontal scrap feeding operation.

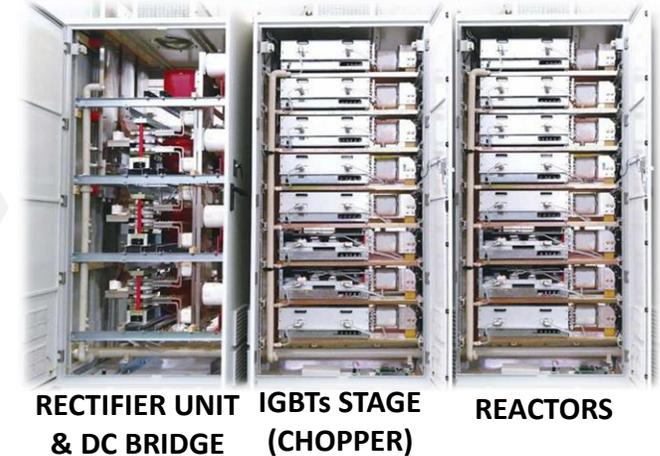
CMT® - Steel Making Highlights



AURA™ POWER MODULE



COMPACT & EFFICIENT



AURA powered DC EAF - A clean electrical load

- › Based on IGBT Chopper technology
- › Higher power factor than conventional AC or DC TCR design (> 0.95)
- › Installed power reduced by 20% compared to conventional AC or DC TCR
- › Extremely low harmonic distortion (EAF load is isolated from the feeding grid)
- › No SVC necessary to comply with IEEE519 for weak network
- › No furnace breaker, no tap changer, no large reactor required
- › The AURA module provides
 - a new approach to Company's spares stock
 - possible further power increase due to modular design

CMT® - Innovation Highlights

Steel making

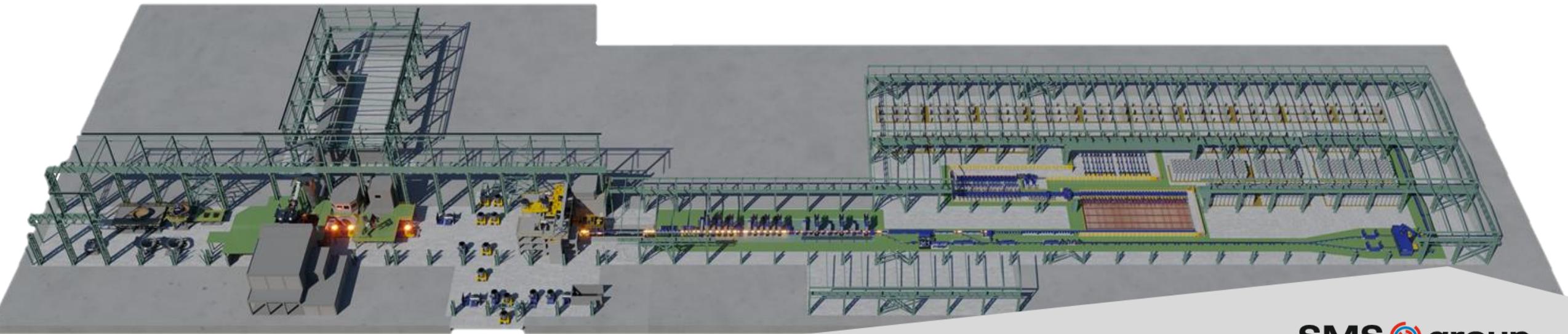
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Caster

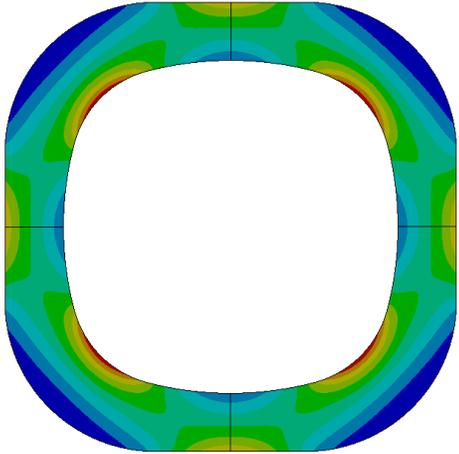
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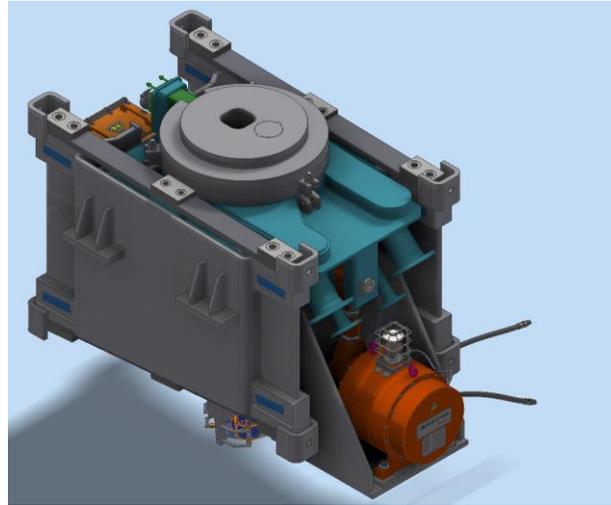
CMT® - Caster Highlights



CONREX section

The technology for high speed casting

- › Optimized containment length
- › Optimized temperature profile
- › Improved performance in induction heating process
- › Less roughing mill rolls wear



CONDRIVE mold oscillation

The new standard!

- › Electrical stroke and frequency adjustment
- › Very low maintenance costs
- › Lower energy consumption than hydraulic oscillation



CONGAUGE^{LB6755}

Combined measurement of steel and powder level in mold

- › One sensor only
- › Close loop powder feeding
- › Reproducible process conditions (quality tracking)

CMT® - Innovation Highlights

Steel making

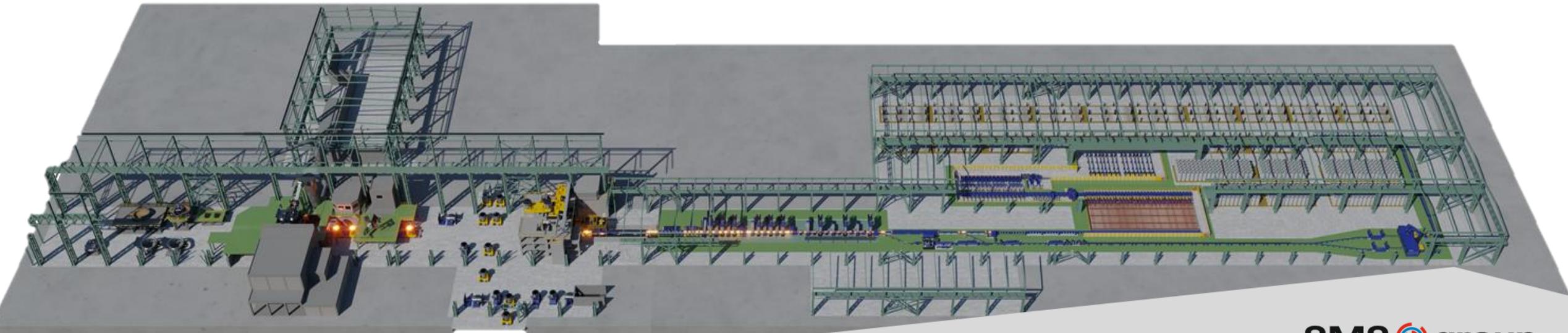
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Caster

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CMT® - Rolling Highlights



HSD® High Speed Delivery

Single Strand Rolling for small diameters:

- › Best product tolerance
- › Extremely reduced changing times thanks to simple pass design
- › Reduced cobble rate
- › 1 bar per notch in cooling bed on most products



MEERdrive® Finishing Block

- › Simplified roll ring management
- › Rolling modules quickly exchangeable
- › Lowest vibrations due to dynamic balancing of rotating parts
- › Motorized under load adjustment
- › Increased yield thanks to reliable rolling



Vertical Compact Coiler VCC®

- › Coil wound in final Vertical Position.
- › Easy coil handling, no rotation.
- › Simple machine maintenance, elevated over foundation
- › Fastest cycle on the market 65 sec.

Autonomous plant operation

Four dimensions to boost efficiency and sustainability



Actionable Items

Actionable Items

DATA FACTORY

Optimized rebar production

Metallurgical knowhow meets artificial intelligence

A synergy of advanced digital solutions and unmatched metallurgical experience

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CO₂ friendly



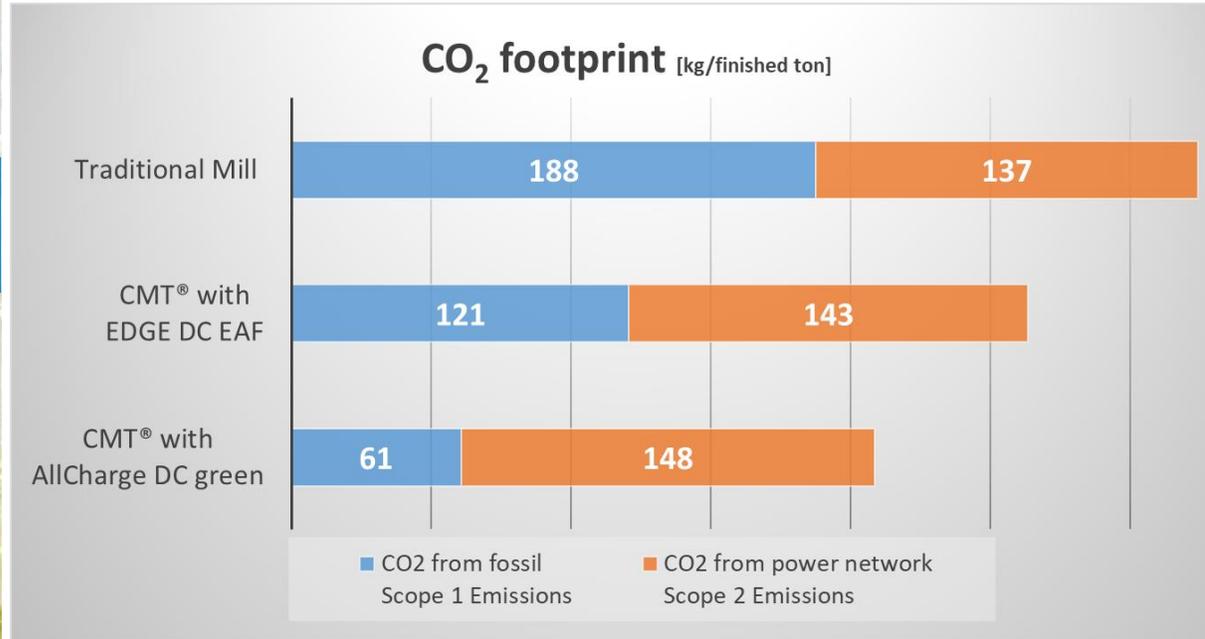
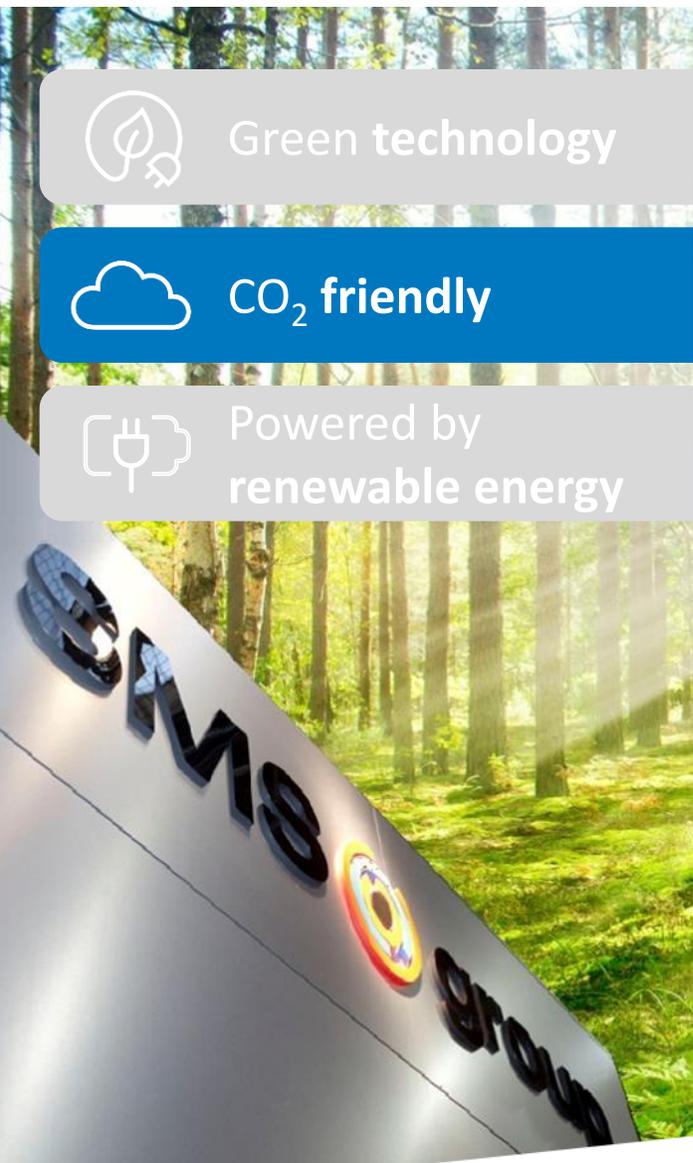
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- › **Optimal energy conservation:** no need of reheating process at the rolling mill entry
- › **Maximum yield:** highest rolling tolerance thanks to endless process
- › **Zero burner concept:** no combustion gas in the entire process: melting, casting and rolling.



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■ Scope 2 depends on the CO₂ footprint of the electrical energy on the selected provider.



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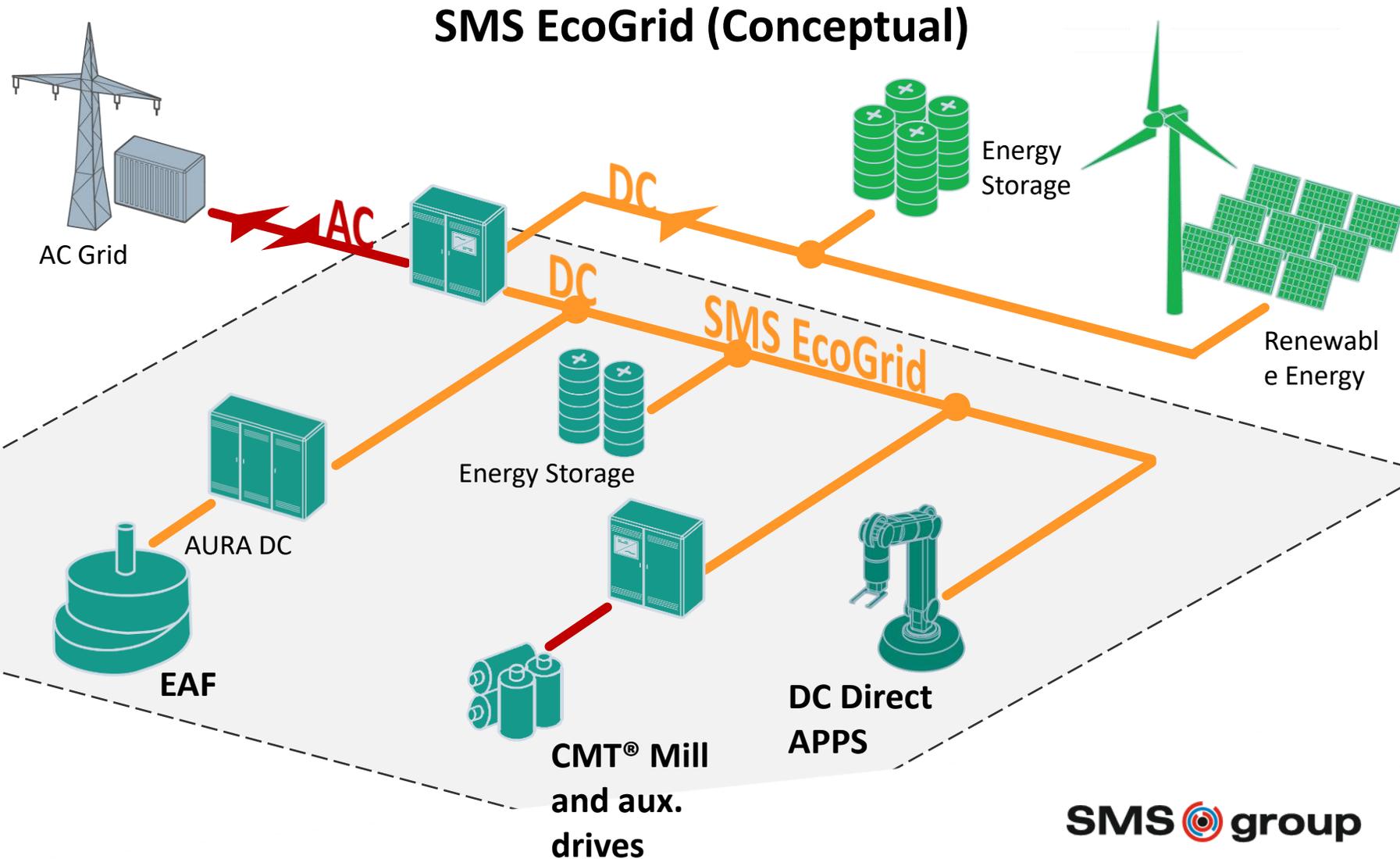
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Let us stay **#connected!**

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Thank you!

The information provided in this presentation contains a general description of the products concerned. The actual products may not always have these characteristics as described and, in particular, these may change as a result of further development of the product. The provision of this information is not intended to have and will not have legal effect.

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