WAELZHOLZ

Engineered for change

STEEL MATERIALS WITH A REDUCED CARBON FOOTPRINT

Digital, transparent, and validated.

Numerous questions arise when considering how to reduce carbon emissions along the value chain from crude steel production to the final product. As a technology leader, we supply the answers.

Steel materials from Waelzholz are enablers of transformation.
For energy, mobility, and industry.

On the road to a carbon-neutral future, we already make it possible to reduce our products' carbon footprint through certified savings.

HOW CAN CARBON EMISSIONS BE REDUCED IN THE PRODUCTION OF HOT ROLLED STEEL STRIP?

New blast furnace technologies and the use of hydrogen and scrap steel make it possible to significantly reduce carbon emissions in the production of crude steel. Both green hydrogen and scrap steel are in limited supply worldwide, however.

IRON ORE

SCRAP STEEL

USING GREEN HYDROGEN TO PRODUCE LOW-EMISSION HOT ROLLED STEEL STRIP

Process A
DRI-EAF route
Direct Reduced Iron

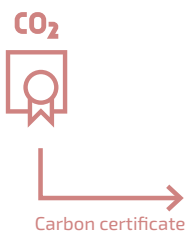
- Will run on green hydrogen in the future
- Up to 95% reduction in carbon emissions possible
- Can also be operated with natural gas in transitional phases (up to 60% reduction in carbon emissions possible)

Process B
EAF, scrap-based route
Electrical arc furnace

- Uses 100% scrap steel (scrap supply limited, however)
- Generates only around 30% of the carbon emissions of the conventional blast furnace route

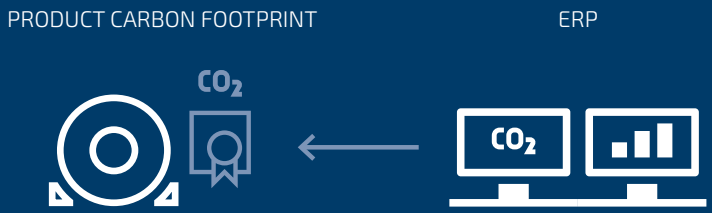
SCOPE 3
≈ 90% OF CARBON EMISSIONS

Share of carbon emissions from hot rolled steel strip production in the cradle to gate approach (from iron ore extraction to steel production to delivery of the coils through the Waelzholz factory gates)



HOW DO WE TRACK ALL THE ENERGY AND EMISSIONS DATA AND CALCULATE THE PRODUCT-SPECIFIC CARBON FOOTPRINT?

The method we developed to calculate the carbon footprint uses all of the digitally collected energy data and carbon emission factors. It is fully integrated into our ERP system and has been validated by GutCert with regard to its conformity with the relevant international standards ISO 14067 and the Greenhouse Gas Protocol.

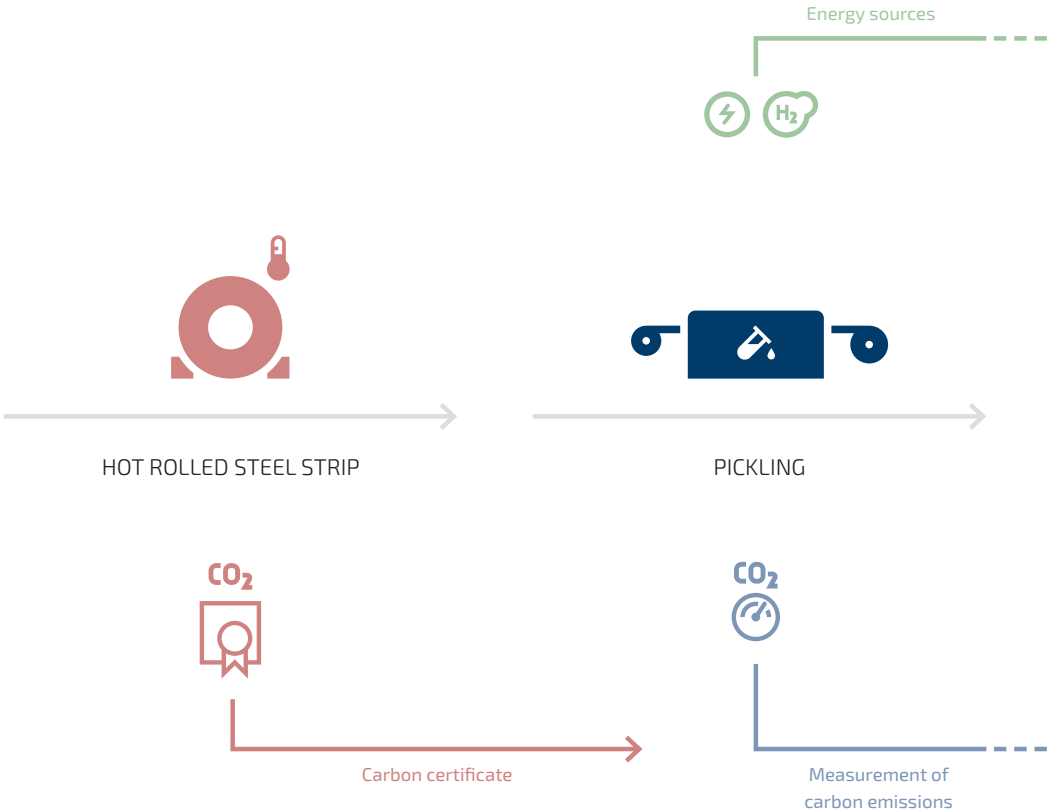


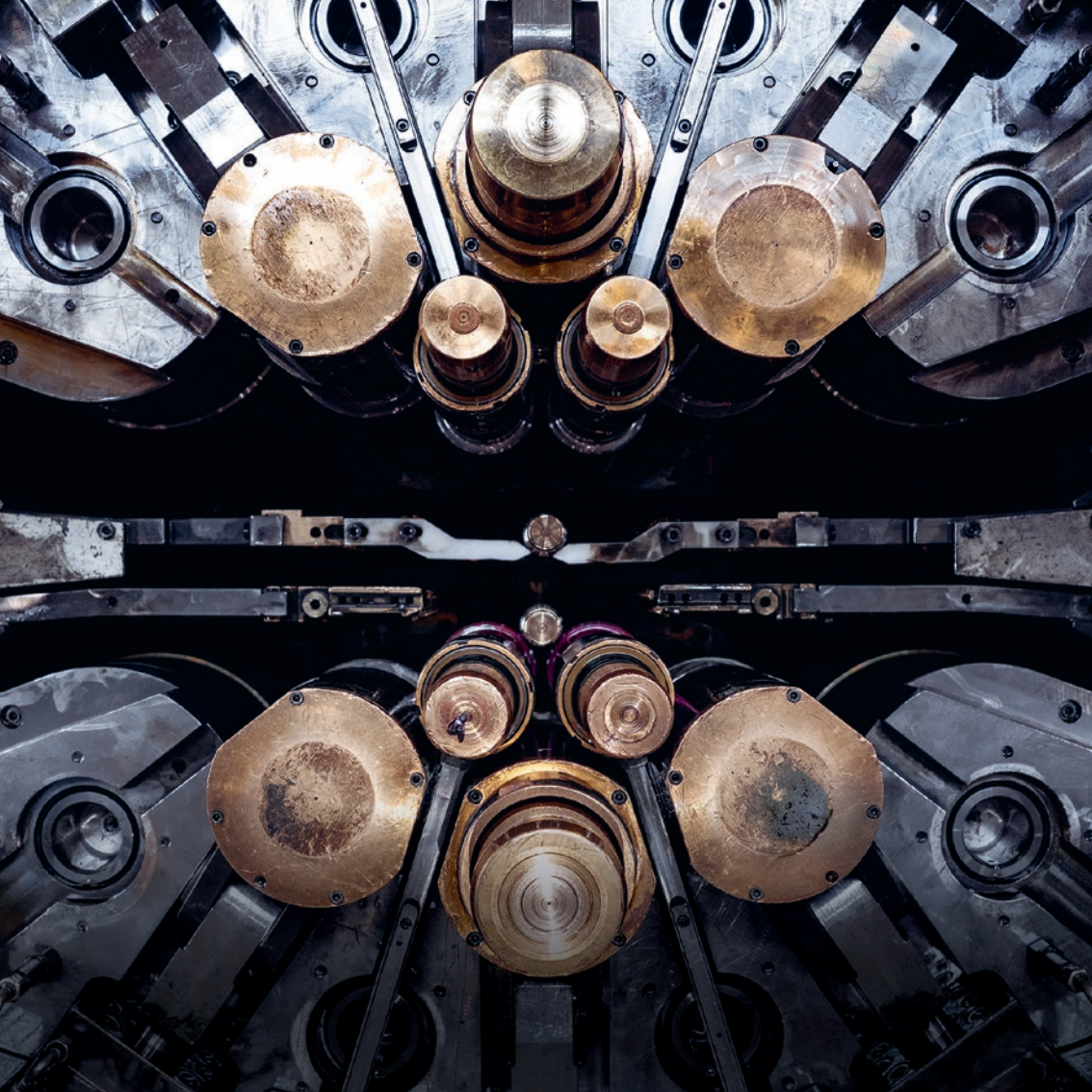
PRECISE CALCULATION THANKS TO DIGITAL PROCESSES WITH OVER 1,000 DATA POINTS

- Carbon emissions of each manufactured item are tracked
- Energy data collected at cost center level
- Allocation of carbon emissions to each cost center
- Carbon emissions of each item disclosed on the mill certificates

SCOPE 1 AND 2
≈ 10% OF CARBON EMISSIONS

Share of carbon emissions from cold rolled steel strip production in the cradle to gate approach



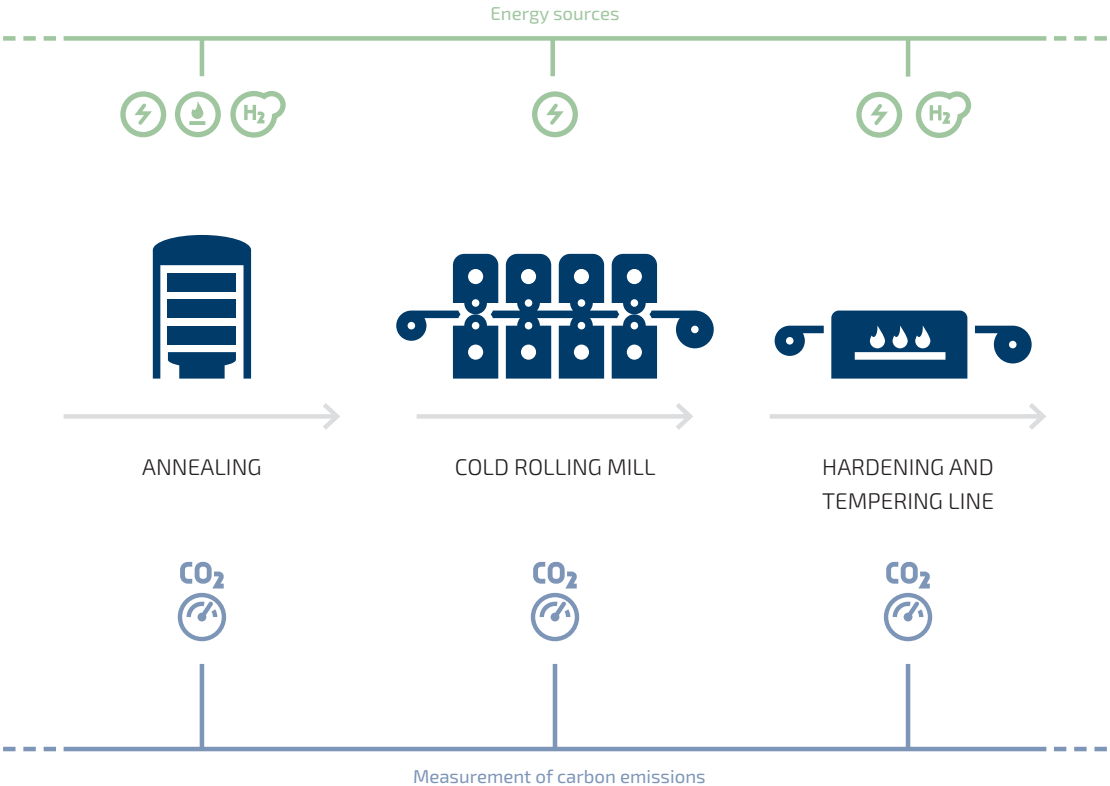


HOW DOES WAELZHOLZ REDUCE CARBON EMISSIONS IN ALL STEPS OF PRODUCTION?

Today, the majority of our production lines are already "H2-ready" – i.e., technologically ready for the use of hydrogen. Once the hydrogen infrastructure has been established and connected to the factory, Waelzholz will be able to replace almost 100% of the natural gas it uses today with climate-neutral hydrogen. During the transition period, in addition to specifically integrating with all the partners along the value chain as well as with policymakers, we are driving various emissions reduction measures forward.

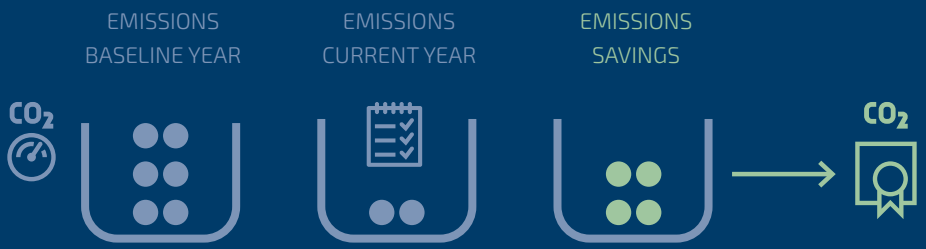
WITH GREEN HYDROGEN, GREEN POWER, AND FULL DIGITAL INTERCONNECTIVITY

- Optimizing the electricity mix (increasing the share from renewable sources)
- Adapting the energy mix (green power instead of gas)
- Improving process and energy efficiency (CIP)
- Systematically establishing ties with suppliers of hot rolled steel strip and energy policy stakeholders


Energy sources
H2
H2
ANNEALING
COLD ROLLING MILL
HARDENING AND
TEMPERING LINE
CO2
CO2
CO2
Measurement of carbon emissions

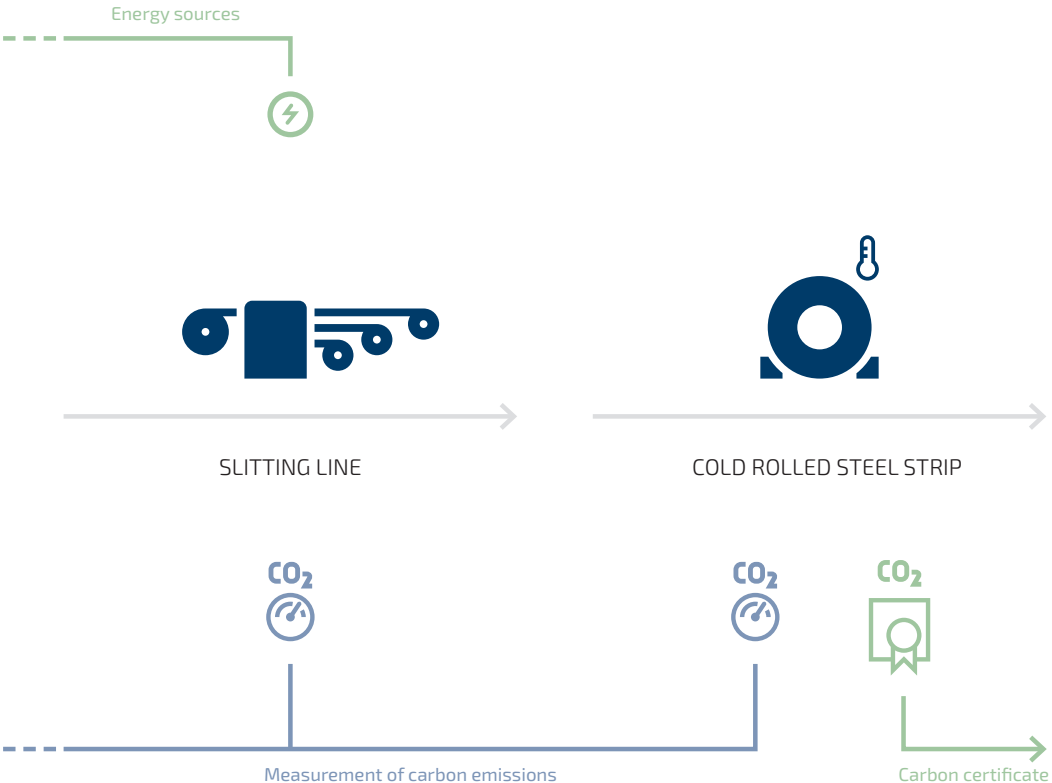
HOW DO WE OFFER OUR CUSTOMERS A REDUCTION IN CARBON EMISSIONS FOR THEIR MATERIALS?

We can offer real carbon savings along the value chain for our entire product range on the basis of a verified accounting system. The level of carbon savings is scalable and reported on our mill certificates. This is always subject to an individual agreement due to the limited availability of low-emission raw material.



ALLOCATION OF ACTUAL CARBON SAVINGS TO CUSTOMERS ON THE BASIS OF A CARBON ACCOUNTING SYSTEM

- Allocation of product-specific carbon savings in relation to the baseline fiscal year of 2018/2019
- Carbon savings allocated to an account
- External auditor: Verification of carbon savings
- Verified carbon savings are available for the reduction of product-specific carbon footprints in customer orders on the basis of the accounting system
- Allocation to customer products by means of unique product declarations


Energy sources
SLITTING LINE
COLD ROLLED STEEL STRIP
CO2
CO2
CO2
Measurement of carbon emissions
Carbon certificate

HOW DO OUR CUSTOMERS BENEFIT FROM THE ADVANTAGES OF MATERIALS WITH REDUCED CARBON EMISSIONS WITHOUT COMPROMISING ON PRODUCT QUALITY?

Whether high-performance electrical steel strip grades, high-strength materials capable of withstanding tremendous loads, or stainless precision steel strip – our materials are the enablers of the energy transition. Thanks to our verified accounting model, you can purchase real carbon savings throughout the value chain customized with your material – without impacting the material properties.

DECOUPLING EMISSIONS REDUCTION FROM THE MATERIAL-SPECIFIC MANUFACTURING PROCESS

- Real emissions reduction decoupled from the product
- Maximum quality in terms of the required properties, such as formability, tensile strength, surfaces, magnetic properties
- Established production processes and steel grade concepts remain unchanged
- No additional approval processes
- Emissions reduction can be scaled flexibly depending on the availability of the required raw material

Our high-performance electrical steel strip grades, our extremely resilient high-strength materials, and our stainless precision steel strip form the technological basis for the transformations of a wide variety of applications.

E.G., STAMPING

FINAL PRODUCT

STEEL MATERIALS FROM WAELZHOLZ: ENABLERS OF TRANSFORMATION