

VISION MAX AICHER: CLIMATE NEUTRALITY 2040



ELECTRICITY 69%*



PROCESS EMISSIONS 17%*

- Broken down as follows:
- Coal 74 %
 - Electrodes 15%
 - Alloying agents (in total) 10%
 - Other 1%



NATURAL GAS 14%*

*Percentages = CO₂ as a proportion of total Scope 1 +2 emissions for crude steel production (high-quality steel)

Product Carbon Footprint 2020: 345 kg CO₂ / t raw steel (high-quality steel)

1.
**SUSTAINABLE
FORMS OF ENERGY**

L O C A S
LOW-CARB STEEL FROM BAVARIA
A Vision by Max Aicher

5.
**EXTERNAL CO2
REDUCTION
WITH REGIONAL PARTNERS**

2.
**TECHNICAL
MEASURES**

3.
INPUT MATERIALS

4.
**CIRCULAR
ECONOMY**

Climate-neutral Steel production 2040

Key examples of the 5 points can be found on the reverse.



VISION MAX AICHER: CLIMATE NEUTRALITY 2040

1. SUSTAINABLE FORMS OF ENERGY

Substitution of current electricity mix through

- a) Purchase of green electricity (Power Purchase Agreement - PPA, direct contract with generator)
- b) Own generation through solar farms and wind farms
- c) Storage and demand-oriented delivery of energy (pumped storage power plant)

Hydrogen

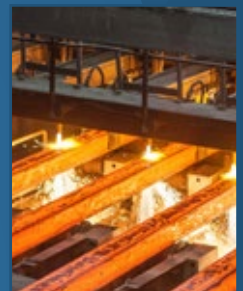
- a) Own generation of H₂: Use of process heat
- b) Use of H₂: Reduction of natural gas use through H₂ in the EAF (and in the reheating furnaces)



2. TECHNICAL MEASURES

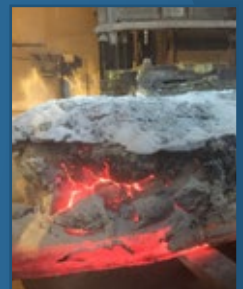
Increasing efficiency of steel plant (new-build and modernisation)

- a) Energy efficiency improvement of electric arc furnaces
- b) Reduction of electrode consumption and improvement of process control
- c) Improvement of output through AI-supported processes



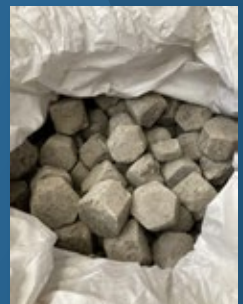
3. INPUT MATERIALS

- a) Bio-char as a substitute for fossil coal (carbonisation of vegetable feedstock, e.g. bio-waste)
- b) Reduction of energy requirements in the electric arc furnace through direct charging of hot tundish steel skulls



4. CIRCULAR ECONOMY

- a) Increasing the recovery rate and reducing smelting energy demand by optimising scrap quality (improved disintegration and separation of impurities)
- b) Substitution of primary raw materials (e.g. lime) by reusing own processed by-products, recyclable materials and residual materials



5. EXTERNAL CO₂ REDUCTION WITH REGIONAL PARTNERS

Slag granulation

„Black granulated blast furnace slag“ as a substitute for primary raw materials (clinker) in the cement industry

Local and district heating network

Provision of environmentally friendly heating energy by feeding waste heat into a local and district heating network for

- surrounding communities (private households, public buildings) and/or
- neighbouring commercial facilities (e.g. greenhouses for cultivation of exotic fruits).

