



GREEN STEEL IN THE MAKING

Future vision becomes reality

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PHOTOGRAPHY / ILLUSTRATION

CARSTEN BRAND SALZGITTER AG

At Salzgitter AG green hydrogen has been produced using electricity generated by wind power since March 2021. Here at the KHS parent company, a sector coupling project that is unique in Germany has now gone into operation – the result of a significant and future-oriented networking of industry and the energy sector whose aim is to produce low-CO₂ steel. Wind Hydrogen Salzgitter or WindH₂ is the name of the central element in the SALCOS® technology project (Salzgitter Low CO₂ Steelmaking). This is designed to cut CO₂ emissions by approximately 95% by the year 2050. This goal is to be achieved

by replacing the carbon previously used to smelt iron ore with hydrogen from renewable sources. For this purpose, the three blast furnaces will be gradually substituted by a combination of direct reduction plants and electric arc furnaces.

A short explanatory film provides an insight into the SALCOS® technology project.

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Strong partners

The Wind Hydrogen Salzgitter project has been implemented in cooperation with Avacon and Linde. Avacon, a company in the E.ON Group, generates a total of 30 megawatts of electricity on seven wind turbines recently erected on the Salzgitter premises. In the future, two 1.25-megawatt PEM* electrolysis units will produce around 450 cubic meters of ultra-pure hydrogen an hour at the Salzgitter Flachstahl plant that is already being used in the production of steel for annealing purposes and on the galvanization lines. At the moment, the gas is trucked in from industrial gas company Linde who in the future will also ensure a continuous supply of the amount of hydrogen required.

* PEM = proton exchange membrane.

WindH₂ enables all those partners involved to gain expertise and experience in the on-site generation of wind power and hydrogen and the incorporation thereof into the complex processes of an integrated steel mill. The total cost of the project, which is partly sponsored by promotional bank KfW, amounts to around €50 million.