



Media information

Green Steel pioneer GMH Gruppe: Forerunner of climate-neutral steel production in Germany attends "Woche der Umwelt"

GMH Gruppe is the only steel producer taking part in the "Woche der Umwelt" (Environment Week) at Bellevue Palace in Berlin. On 4 and 5 June, the Group will be presenting innovative ways of transforming the steel industry to the Office of the Federal President and the Federal Environmental Foundation.

Berlin/Georgsmarienhütte, 7 May 2024: The Federal President is once again inviting guests to "Woche der Umwelt" in June. GMH is the only steel producer to have been selected by an independent jury to present the latest innovative developments in the green transformation of the industry in the Palace grounds. Around 190 companies and organisations will showcase their ideas and solutions for a climate-neutral future at the trade exhibition organised jointly by the German Federal Environmental Foundation and the Office of the Federal President. The organisers are expecting a total of 12,000 invited visitors, including high-ranking representatives from business, politics, science and wider society.

GMH Gruppe impressed the judges with its "Pioneers on the road to climate-neutral electric steel production" approach, which includes ground-breaking transformation projects. *"It is a special honour for us that our projects were selected by the jury and are thus deemed exemplary in the transformation of an entire industrial sector. Steel is essential for our modern society and changing its production is a necessary step on the path to climate neutrality. With our innovative approaches, we can show that sustainable, future-oriented electric steel production is possible in Germany,"* says Luciana Filizzola, Director Sustainability and Communications at GMH Gruppe.

GMH Gruppe has set itself the goal of manufacturing steel products under almost climate-neutral conditions by 2039. The company already relies on electric melting processes, which enable a reduction in CO₂ emissions of up to 80% compared to conventional steel production. To continue along this path, GMH Gruppe plans to halve its greenhouse gas emissions by 2030.

This plan is being implemented via a targeted roadmap characterised by innovative projects. This involves modifying processes and methods in order to optimise further progress towards CO₂ reduction. At "Woche der Umwelt", the Green Steel pioneers will provide an insight into their transformation strategy and key projects:

CO₂ is the currency of transformation - the PCF is the price tag

Georgsmarienhütte GmbH has developed algorithms for a detailed calculation of the product carbon footprint (PCF) in order to determine the fully automated CO₂ effect of the products manufactured at the site, on the basis of actual values. The calculation tool for determining the PCF has been validated by TÜV SÜD for 1,000 steel variants and provides values for each individual order that are appropriate to the source.

Heat treatment using electricity – switching fuel for future markets

Green electricity replaces fossil natural gas in heat treatment: This is made possible by the investment in an inductive single-bar tempering system at Georgsmarienhütte GmbH. Every



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year, 17,000 tonnes of steel can be tempered at the plant to produce pre-material for particularly stressed components. The material is used to produce heavy-duty key components, such as screws and fasteners for wind turbines or steering rods for electric cars. This plant alone saves around 2,800 tonnes of CO₂ every year compared to the natural gas-based process.

Forging furnaces using green hydrogen - energy-intensive processes in transition

In future, the furnaces at Schmiedewerke Gröditz will gradually be operated with hydrogen. A pilot project is currently underway at furnace 31, and by investing early in H₂ readiness, GMH is signalling the fastest possible start of regular operations using hydrogen as soon as it is available. The technologically sophisticated conversion is another important step towards climate neutrality, as no CO₂ emissions are produced when the hydrogen is burnt.

Improving load management - AI determines process pauses for optimum capacity utilisation

Small optimisations with great potential for energy savings: The electric arc furnace at Georgsmarienhütte GmbH is the largest energy consumer at GMH Gruppe. During production, its power consumption competes with the power available to the entire plant. The aim therefore is to optimise the integration of the furnace into the load management system. For this purpose, production-related process pauses at the electric arc furnace are scheduled every quarter of an hour, in order to optimally distribute the power available throughout the plant and prevent the maximum permissible peak load from being exceeded. Artificial intelligence (AI) is used to fill knowledge gaps and provide load management with information on the course of continuing production at the electric arc furnace. These measures will also stabilise the regional electricity grid.

Focus on electricity and natural gas requirements - energy forecasting using AI

GMH Gruppe operates many energy-intensive units in order to manufacture its broad product portfolio. An important prerequisite is an efficient and seamless supply of energy. By forecasting energy requirements using artificial intelligence, electricity and natural gas requirements are predicted in various resolutions up to one year in advance and automatically transmitted to the energy supplier so that they can plan optimally. GMH Gruppe's energy purchases can therefore be predicted and relieve the burden on the grid, which is in the interests of all energy consumers, particularly during the ongoing transformation.

About GMH Gruppe

GMH Gruppe is a full-range supplier of steel as a primary material, melted from scrap, through to ready-to-assemble components. It is one of the largest privately owned metal processing companies in Europe. The group includes 16 medium-sized production companies in the steel, forging and casting industries, which are represented in more than 50 countries. With around 6,000 employees, GMH Gruppe generates an annual turnover of around two billion euros.

GMH Gruppe is a pioneer in sustainable steel production and has been accepted into the "Association of Climate Protection Companies". Based on the recycling of scrap metal, the company produces green steel and thus makes an important contribution to the circular economy. The use of electric arc furnaces at four sites reduces CO₂ emissions by a factor of five compared to conventional blast furnaces. This also reduces the CO₂ footprint of the customers supplied by GMH. These include companies worldwide from the automotive industry, mechanical and plant engineering, railroad technology, power generation, transport logistics, aerospace, agriculture and construction machinery.

GMH Gruppe has set itself the goal of being completely climate-neutral by 2039.



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About Georgsmarienhütte

Georgsmarienhütte GmbH from Georgsmarienhütte in Lower Saxony is one of Europe's leading suppliers of crude steel, bar steel and bright steel made from quality and engineering steels. The company also manufactures pre-processed and, in some cases, ready-to-install components. Georgsmarienhütte is already one of the most climate-friendly steel companies in Germany. With its comparatively low CO₂ value chain, in which scrap is melted in the electric arc furnace and recycled into new steel, it makes an important contribution to the circular economy and is a pioneer in sustainable steel production. The methodology used by Georgsmarienhütte to calculate the product carbon footprint (PCF) has been validated by TÜV SÜD and is now used for more than a thousand steel variants.

In addition to the automotive industry and its suppliers, customers are served in particular in mechanical and plant engineering and the energy industry. Steel from Georgsmarienhütte is used wherever the load is greatest, where power is generated or transmitted and where safe and wear-resistant operation is important. Further information can be found at www.gmh.de.

About Schmiedewerke Gröditz GmbH

Schmiedewerke Gröditz GmbH, based in Gröditz, Saxony, produces open-die forgings, forged steel bars, tool steel and seamless rolled rings. The company is part of GMH Gruppe and supplies numerous industries worldwide with mechanically pre-machined or finished products according to customer specifications. These are used in particular in mechanical and plant engineering, power generation, rail technology and the consumer goods and food industries. The steel for this is produced by the company's own electric arc furnace on the basis of 100 % scrap. Already, Schmiedewerke Gröditz GmbH is one of the most climate-friendly steel companies in Germany. With its comparatively low-CO₂ value chain, which consists of melting scrap in the electric arc furnace and recycling it into new steel, the company is a pioneer in sustainable steel production, making an important contribution to the circular economy.

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