

Hy4Smelt—AUSTRIA'S LARGEST CLIMATE ACTION RESEARCH PROJECT

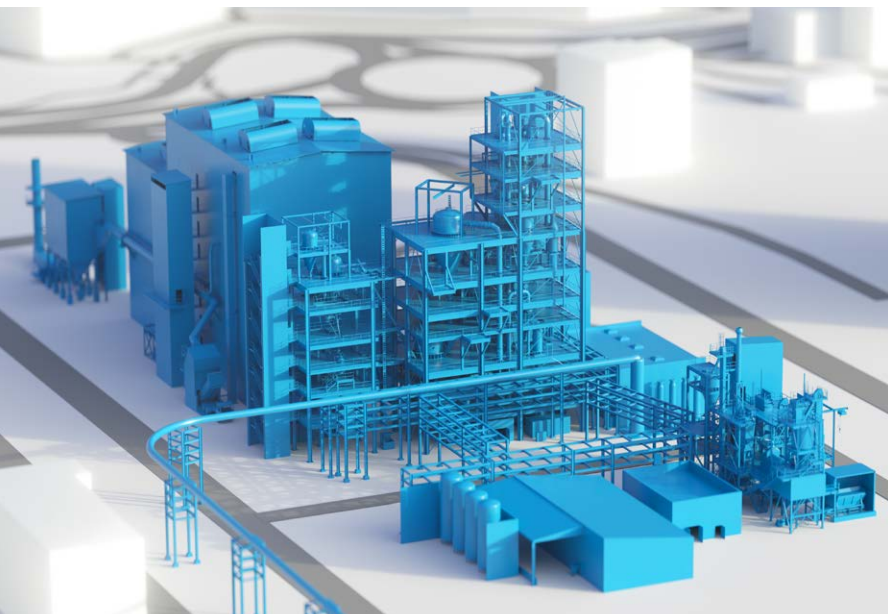
The world's first industrial demonstration plant, capable of combining hydrogen-based direct reduction for ultra-fine iron ores with an electric smelting process, is being built in Linz.

For many years, voestalpine has been considered an environmental benchmark in the industry and the company has a clear, modular phased plan to transform its steel production through greentec steel. The goal clearly remains: The company's long-term aim is steel production with net zero CO₂ emissions by 2050. To this end, the steel and technology group is already conducting research into several new processes and investing in pilot demonstration projects that demonstrate new steel production possibilities. The focus lies on carbon-neutral steel production with green hydrogen. Together with the international plant engineering company Primetals Technologies and Rio Tinto, one of the world's largest mining groups, voestalpine has now achieved the next milestone for greentec steel.



“WITH THE WORLD'S ONLY DEMONSTRATION FACILITY Hy4Smelt, WE ARE SETTING ANOTHER MAJOR MILESTONE ON OUR PATH TOWARDS STEEL PRODUCTION WITH NET ZERO CO₂ EMISSIONS BY 2050.”

Herbert Eibensteiner,
CEO of voestalpine AG



FURTHER DEVELOPMENT OF SUCCESSFUL R&D PROJECTS

With Hy4Smelt, voestalpine is further developing two successful R&D projects, setting a milestone on the path to “green” hydrogen-based steel production.

- » A pilot plant for the existing HYFOR process from Primetals Technologies has been in operation at the voestalpine site in Donawitz since 2021.
- » The hydrogen for direct reduction comes from the world’s longest-running PEM electrolysis plant H2FUTURE at the Linz site, which was commissioned in partnership with Verbund in 2019.

WORLD’S ONLY INDUSTRIAL DEMONSTRATION FACILITY

From fall 2025, the world’s first demonstration plant capable of combining hydrogen-based direct reduction for ultra-fine iron ores (HYFOR process) with an electric smelting process (smelter) will be built at the voestalpine site in Linz. The hot briquetted iron, produced in the HYFOR process, is melted in the smelter and the slag is separated in the process. This generates high-quality pig iron for further steel production, similar to today’s blast furnace process.

Hy4Smelt is scheduled to go into operation by the end of the 2027 calendar year, with the research project ending in 2030. The total costs amount to around EUR 170 million. Hy4Smelt is therefore not only voestalpine’s largest R&D project in history, but also the largest climate action research project in Austria. The European flagship project is partly funded by Austrian (aws/Twin Transition and KPC/Transformation der Industrie) and European (RFCS/Clean Steel Partnership and Clean Hydrogen Partnership/Hydrogen Valleys) funding institutions.



QUALITY AND TECHNOLOGY LEADER

Producing the best steel qualities using processes with the lowest CO₂ emissions is one of the major technological challenges in the transition to green steel production. voestalpine is once again taking the lead in quality and technology with an innovative raw material mix and efficient processes.

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ONE STEP AHEAD.