

Press release

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GrInHy2.0: Sunfire delivers the world's largest High-Temperatur Electrolyzer to Salzgitter Flachstahl

Sunfire has successfully delivered the world's most powerful High-Temperature Electrolyzer (HTE) for highly energy-efficient hydrogen production to Salzgitter Flachstahl GmbH. Within the GrInHy2.0 project, Sunfire's HTE system with a rated electrical output of 720 kilowatts will be deployed in an industrial environment for the first time. GrInHy2.0 is another step by Salzgitter AG towards low CO₂ steel production within the framework of the innovation project SALCOS® - Salzgitter Low CO₂ Steelmaking. The electrolyzer is expected to be in operation for at least 13,000 hours by the end of 2022, while producing at least 100 tons of green hydrogen from renewable electricity.

"In the course of the recently adopted hydrogen strategies of the European Union and Germany, politicians pointed out the need for large scale electrolyzers for the production of sustainable steel products. Green steel requires green hydrogen and the implementation of GrInHy2.0 showcases the great potential of this energy carrier for energy-intensive industries" said Nils Aldag, Managing Director of Sunfire GmbH "At present, the steel industry is intensively developing new and low-CO₂ production routes. We are pleased to participate in this together with our partners. The technology is ready for hydrogen production on an industrial scale, and we are ready to significantly increase our production capacity for this purpose".

Salzgitter Flachstahl GmbH and Sunfire have already pioneered the GrInHy project in 2016. In cooperation with its partners Paul Wurth S.A., Tenova SpA, the French research center CEA and Salzgitter Mannesmann Forschung GmbH, GrInHy2.0 will now continue to build on the success of the initial project.

Dr. Benedikt Ritterbach, Managing Director of Salzgitter Mannesmann Forschung GmbH and responsible for research and development in the Salzgitter Group: "Green hydrogen is a central building block on our way to low CO₂ steel production. GrInHy2.0 will provide us with further findings in the industrial demonstration operation of a High-Temperature Electrolyzer. By integrating this world's most powerful plant into large-scale industrial processes, we are breaking new ground in energy-efficient hydrogen production".

This project has received funding from the Fuel Cells and Hydrogen 2 Joint Undertaking (JU) under Grant Agreement No 826350. This Joint Undertaking receives support from the European Union's Horizon 2020 Research and Innovation programme, Hydrogen Europe and Hydrogen Europe Research.



About Sunfire

Founded in 2010, Sunfire GmbH develops and manufactures High-Temperature Electrolyzers (SOECs) and High-Temperature Fuel Cells (SOFCs). The company employs a workforce of 170. High-Temperature Electrolysis is a process used to produce valuable hydrogen from water. It is particularly efficient and is powered by renewable electricity. In the latest version, High-Temperature Electrolysis can reactivate not only water but also CO₂ and thereby convert exhaust gases directly back into a clean raw material which can take the place of oil or natural gas. This means that the entire transport sector and many industrial processes which are currently dependent on oil, gas or coal can become uncompromisingly sustainable and CO₂-neutral.

For more information please visit www.sunfire.de

About Salzgitter

Salzgitter AG is one of Europe's leading steel and technology groups – with external sales of around 9 billion euro, a workforce of over 25,000 and just under 160 national and international subsidiary and associate companies. It is comprised of the Rolled Steel, Plate/Sections, Mannesmann, Trading and Technology business units. Salzgitter Flachstahl GmbH is the largest subsidiary, producing a broad range of high-quality special and branded steels for demanding customer segments such as the automobile industry. Salzgitter Mannesmann Forschung GmbH is the central research unit supporting the steel activities of the Salzgitter Group.

Details of the Salzgitter Group are available online at www.salzgitter-ag.com. Information about the GrInHy and SALCOS projects is available at <https://salcos.salzgitter-ag.com> and <http://www.green-industrial-hydrogen.com>

About Paul Wurth

Headquartered in Luxembourg since its creation in 1870, the Paul Wurth Group is an established technology provider for the global ironmaking industry. Paul Wurth is a leading market player for the design and construction of complete blast furnace and coke oven plants, Direct reduction plants, environmental protection solutions and recycling technologies complete Paul Wurth's product portfolio. Presently, the company is focusing on the development of innovative solutions for leading the decarbonisation of the metals industry. With more than 1500 employees, Paul Wurth is active worldwide, operating entities and affiliated companies in the main iron and steelmaking regions of the world.

For further information, please visit www.paulwurth.com

About Tenova

Tenova, a Techint Group company, is a worldwide partner for innovative, reliable and sustainable solutions in metals and mining. Tenova, including its TAKRAF affiliates, leverages a workforce of over 2,500 forward-thinking professionals located in 19 countries across 5 continents, who design technologies and develop services that help companies reduce costs, save energy, limit environmental impact and improve working conditions.

For more information please visit: www.tenova.com

About CEA

The CEA is a French public research organization, working in four main areas: energy transition (nuclear and renewable), digital transformation for industry, future health technologies, defense and security. Based on an excellent fundamental research, with its 20,000 employees and its research centers with impressive infrastructures, the CEA is a major player in European research.

Its Institute CEA-Liten, employing 1,000 people, is fully dedicated to the activities on new technologies for renewable energy and energy efficiency. It is involved in various national and EU research and demonstration projects related to high temperature electrolyzers and/or fuel cells (SOEC/SOFC) and their integration on the electric system in presence of large renewable energy sources.

Further information at www.liten.cea.fr

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