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Minister of the Environment Olaf Lies visits the Wasserstoff Campus Salzgitter

At the Wasserstoff Campus Salzgitter, CO₂-neutral industry and mobility are becoming reality

Olaf Lies, Minister for Energy and the Environment for Lower Saxony, visited the Wasserstoff Campus Salzgitter on the premises of Robert Bosch Elektronik GmbH in Salzgitter on May 21st, together with Stefan Klein (SPD), Member of the State Parliament for Salzgitter.

“Clean hydrogen is the fuel of the energy transition – and central to the decarbonization of our industry. It is therefore important to drive forward research into the potential of this energy for the future. The Wasserstoff Campus Salzgitter shows how it can be done: It is the practical example for demonstrating that we do not only talk about climate protection but also find solutions for it. And we do this by dovetailing the world of science with the world of production and industry. As a result, a future hydrogen economy in Lower Saxony and climate protection will once again provide an opportunity for business and jobs in the region,” said Olaf Lies, Minister for the Environment, Energy, Building and Climate Protection in Lower Saxony, during his visit.

Stefan Klein, Member of the State Parliament for Salzgitter and First Mayor of the City of Salzgitter, welcomed the guests. “With our Wasserstoff Campus, we are blazing new trails into a climate-friendly age. Climate-friendly production is a key issue for Salzgitter as Lower Saxony’s third-largest industrial location. Hand in hand, we as a city want to work together with companies and science in order to develop Salzgitter and our region into a pioneer of hydrogen technology.”

State Commissioner Dr. Ulrike Witt emphasized: “The Office for Regional Development has been supporting the Wasserstoff Campus Salzgitter from the very beginning. Here at this location, we are addressing the structural change in industry by means of a highly innovative flagship project. The important participants in regional development – science, industry, the state and local authorities – have made a firm commitment: Together, we are confronting the challenges of climate change. The Wasserstoff Campus Salzgitter is consequently an anchor point for the climate-neutral transformation of our entire industrial region.”

Prof. Dr.-Ing. Christoph Herrmann, Director of the Fraunhofer Institute for Surface Engineering and Thin Films IST, sees Salzgitter as a beacon for the industrial, sustainable production and utilization of hydrogen: “As an institute within the Fraunhofer-Gesellschaft, we see ourselves as a guide and driving force for innovative developments. The requirements from the guiding principle of sustainability are an integral part of our

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research. With our technologies and expertise in coating and surface technology as well as process and manufacturing technology, we want to contribute towards creating marketable solutions. In the various projects, we develop technologies for a hydrogen economy and defossilization of industry. This is being performed along the entire value chain – from generation to utilization – taking into account economic and ecological aspects.”

The Minister was provided with an insight into the four projects which have already been launched on the topics of hydrogen mobility, storage of hydrogen in steel tanks, factory transformation to decarbonize the value chain, and the conceptual design of a green hydrogen supply for the Salzgitter region.

Dr. Raphael Hofstädter, Patent and Innovation Manager at Alstom Transport Deutschland GmbH, presented the company's activities in the field of hydrogen mobility.

The prerequisites for the use of hydrogen in practice include transport and storage. Hydrogen tanks made from steel are inexpensive to manufacture and also recyclable; the material costs are comparatively low and the manufacturing processes very economical. The use of ultra-high-strength steels for Type I tanks has until now been limited by so-called hydrogen embrittlement. “Together with the Fraunhofer IST, we are seeking to develop a barrier for the steel surface which prevents hydrogen embrittlement. The project promises considerable potential for increasing the steel strengths used and thereby for further reducing weight, costs and CO₂ emissions,” explained Dr. Benedikt Ritterbach, Managing Director of Salzgitter Mannesmann Forschung GmbH.

How can an economically viable supply of green hydrogen become a reality in Salzgitter? The Wasserstoff Campus aims to answer this question. For this purpose, a study led by MAN Energy Solutions and the Fraunhofer IST has been underway since May 2021. Local production, transport from the coastal regions and the import of hydrogen are being compared in technical and economic terms, and a relevant customer market is being identified and developed, for example in rail transport and steel production. “Salzgitter stands out above all due to the large number of customers for green hydrogen. The high demand and diverse application possibilities are a distinct locational advantage,” said Marc Grünwald, Head of Business Development Power and New Energies at MAN Energy Solutions. “It is, however, also crucial that these customers are supplied with large quantities of green hydrogen both cost-effectively and comprehensively. Our study will identify these pathways and in doing so will lay an important foundation for the establishment of an efficient supply of green hydrogen in the Salzgitter region.”

In the Factory Transformation project, the Fraunhofer IST is working in collaboration with Bosch at the Salzgitter plant to create a real hydrogen infrastructure in the form of a pilot factory. The aim of the project is to create a CO₂-neutral pilot factory in a real environment. In addition, there are further local projects. In cooperation with the local

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energy supplier WEVG, the Bosch location will be connected to the district heating network and will therefore draw on the already available waste heat from Salzgitter Flachstahl GmbH from the fall onwards. This will result in an annual CO₂ reduction of more than 95 percent compared with in-house heat generation using natural gas. "We are currently working simultaneously on a number of projects aimed at reducing CO₂ - the commissioning of solid-oxide fuel cells (SOFC), the connection to the WEVG district heating network, and the construction of a photovoltaic system. We are rapidly gaining speed," said Michael Gensicke, Managing Director of Robert Bosch Elektronik GmbH.

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Minister of the Environment Olaf Lies visits the Wasserstoff Campus Salzgitter: From left to right: Dr. Raphael Hofstädter, Patent and Innovation Manager, Alstom Transport Deutschland GmbH; Dr.-Ing. Benedikt Ritterbach, Managing Director of Salzgitter Mannesmann Forschung GmbH; Minister of the Environment Olaf Lies; Dr. Stefan Mecke, Senior Advisor for Environmental Protection and Energy Policy, Salzgitter AG; Dr. Ulrike Witt, State Commissioner, Office for Regional Development Braunschweig; Prof. Dr.-Ing. Christoph Herrmann, Director of the Fraunhofer IST; Dr. Markus Ohnmacht, SOFC Governance, Robert Bosch Elektronik GmbH; Stefan Klein, First Mayor of the City of Salzgitter; Wendelin Göbel, Executive Management at Allianz für die Region, Michael Gensicke, Managing Director of Robert Bosch Elektronik GmbH Salzgitter.
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