

-HyTraGen-

The latest generation of hydrogen streetcars

Implementation period:	12/2023 - 11/2026
Funding provider:	Federal Ministry of Transport and Digital
Infrastructure Programme coordination:	NOW GmbH National Organization
Hydrogen and	Fuel cell technology, Project Management Jülich
Project partners:	Hörmann Vehicle Engineering GmbH HeiterBlick GmbH Flexiva automation & Robotik GmbH Chemnitz University of Technology Görlitzer Verkehrsbetriebe GmbH (associated partner)

Europe's first hydrogen-powered streetcar can be implemented - Group of companies awarded contract for research project

Under the leadership of Hörmann Vehicle Engineering GmbH, the "HyTraGen" (**Hydrogen-Tram** for next Generation) research project was launched on December 1, 2023. With the project partners HeiterBlick GmbH, Flexiva Automation & Robotik GmbH and Chemnitz University of Technology, the Saxon consortium is developing and building Europe's first hydrogen-powered streetcar. The streetcar is being tested in cooperation with the Görlitzer Verkehrsbetriebe (GVB). The project is being funded by the Federal Ministry of Transport and Digital Infrastructure as part of the "National Innovation Program Hydrogen and Fuel Cell Technology Phase 2 (NIP II)".

"Hydrogen drives will be an integral part of new vehicle developments in the future," said Dr. Volkmar Vogel, Senior Vice President of Hörmann Vehicle Engineering GmbH, years ago. Companies such as Siemens and Alstom were already working on H2 regional trains. Hydrogen-powered buses and municipal vehicles were about to enter the market. Hydrogen is particularly worthwhile in passenger, heavy goods and freight transport, where long ranges and high transport masses are required.

With an eye on Asia, Hörmann therefore developed the project idea for an overhead line-free, hydrogen-powered streetcar in 2019. The hydrogen streetcar should not be in direct competition with existing overhead lines, but rather represent an alternative for new routes that cannot be equipped with overhead lines for economic, ecological and urban planning reasons. Another positive aspect is the elimination of high infrastructure costs for the installation and maintenance of overhead lines. In a holistic hydrogen concept with a large number of different consumers, an additional energy supply system would also be created for the cities using it, which is not dependent on the grid and can store surplus electrical energy in the form of hydrogen.

In the "H2-TRAM" research project, the project partners HeiterBlick GmbH and Flexiva Automation & Robotik GmbH laid the foundations for the upcoming prototype realization between 2020 and 2022. The resulting vehicle concept, a virtual prototype for vehicle simulation with new energy management and solutions for air conditioning, component cooling, energy use and safety, among other things, now form the basis for the development and construction of the HyTraGen streetcar prototype. The prototype will be manufactured in Leipzig by HeiterBlick GmbH and then tested in the GVB's operating environment. A planned new line also offers good prospects for the use of a small series of hydrogen streetcars.



The project results will pave the way for the construction of new, innovative rail vehicles in Saxony. Both vehicles and system components will generate new added value, as the project results will also be used for other rail vehicle types such as e.g. tramtrains can be used.