

Shared Hydrogen Campus: MAN joins forces with Nuremberg universities on plant premises

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- **Working together on research, development, and initial and further training**
- **Foundation for successful transformation of what is currently the diesel engine site in Nuremberg**

MAN Truck & Bus, Friedrich-Alexander Universität Erlangen-Nürnberg (FAU), and Nuremberg Tech (THN) have signed a cooperation agreement on the research and development of hydrogen-based vehicle drive systems. The unusual thing about this collaboration? For the first time, university academics and students are running a laboratory and test rigs for researching hydrogen technology jointly with a vehicle manufacturer's developers directly at its plant premises. With this Hydrogen Campus, what right now is the MAN diesel engine plant is laying the foundation for a successful transformation towards alternative drives.

This concept has obvious advantages for all partners: researchers and engineers joining forces right at the MAN plant makes direct collaboration possible within the project team. Working together at the Hydrogen Campus and the infrastructure that is already available there also facilitate hands-on and applied research and development. The mutual transfer of expertise is set to speed up the research into hydrogen drives considerably.

The partners' competencies fit together perfectly as part of this process: FAU will focus on basic research, THN will use its strengths in the field of applied research, while commercial vehicle manufacturer MAN will ensure that the research findings are integrated into the production of hydrogen fuel cells and combustion engines installed in trucks and buses. They all share the same goal: the Nuremberg Metropolitan Area is to become a European center of competence for hydrogen drives within the framework of the Hydrogen.Bavaria (H2.B) strategy formulated by the Bavarian government. In addition to FAU and TH, the list of important institutional research partners

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MAN Truck & Bus is one of Europe's leading commercial vehicle manufacturers and transport solution providers, with an annual revenue of some 11 billion euros (2019). The company's product portfolio includes vans, trucks, buses/coaches and diesel and gas engines along with services related to passenger and cargo transport. MAN Truck & Bus is a company of TRATON SE and employs more than 37,000 people worldwide.

in the region also includes the Helmholtz Institute for Renewable Energy (HI-ERN), Energie Campus Nürnberg (EnCN), the Nuremberg Campus of Technology, and two Fraunhofer Institutes: IIS (Institute for Integrated Circuits) and IISB (Institute for Integrated Systems and Device Technology).

The work taking place at the Hydrogen Campus will span the entire value chain of this type of drive system: from eco-friendly hydrogen generation through distribution, infrastructure, and converting it back into electricity all the way to technology application in customer vehicles.

Another important goal of the cooperation agreement is collaboration in the fields of teaching and vocational training. The advantages for MAN are twofold: on the one hand, the Hydrogen Campus gives the commercial vehicle manufacturer the opportunity to identify potential candidates from FAU and TH early on and convince them that MAN is an innovative employer. On the other, the structural transformation of the commercial vehicle industry goes hand in hand with an enormous need for further training and continuous professional development: this way, MAN can draw on FAU and TH's research and teaching strengths, for instance when the time comes to train a diesel engine developer to become a fuel cell expert. In return, researchers and students benefit from MAN's many years of experience in the field of hydrogen drives and from infrastructure such as test rigs.

Dr. Frederick Zohm, Executive Board member for Research & Development at MAN Truck & Bus SE, says: "As a commercial vehicle manufacturer, we are facing our industry's biggest transformation since the invention of the diesel engine. Back then, MAN gave Rudolf Diesel the money and equipment he needed to develop his engine. These days, it is all about successfully industrializing alternative drive systems like battery-electric drives, fuel cells, or hydrogen combustion engines. We are once again getting involved in the basic development of new drive forms. I am really looking forward to working together with FAU and THN on the development of hydrogen drives."

Prof. Dr. Joachim Hornegger, President of Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), explains: "Our society needs new, sustainable forms of mobility — this transition to environmentally friendly transport can only succeed if scientists and the industry work closely together. In recent years, FAU scientists have made a decisive contribution to shaping research in the field of innovative hydrogen technologies. Now, the cooperation between MAN, FAU, and TH brings together three important partners — ultimately driving the whole region forward."

Prof. Dr. Niels Oberbeck, President of the Nuremberg Tech, says: "The cooperation between MAN, FAU and Nuremberg Tech is the ideal type of



cooperation along the entire innovation chain, from basic research to application-oriented research and transfer into practice. With this model, we will make an important contribution to the implementation of the Bavarian hydrogen strategy and to the success of the technological change in propulsion technology and thus jointly generate added value for society. The Joint Lab has the potential to set a widely visible signal in the Bavarian research landscape. We are also pleased to be able to intensively accompany this innovation process in teaching and further education".