

Media Information
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HyCET research project: Consortium promotes sustainable transport logistics using hydrogen trucks

+++ Hydrogen Combustion Engine Trucks (HyCET) develops and tests hydrogen trucks with combustion engines for transport logistics
+++ Sustainable solution for long-distance transport +++ German Federal Ministry for Digital and Transport (BMDV) provides 11.3 million euros to fund research and development project +++

Munich. A sustainable transport project with long-distance potential: In September 2022, the German Federal Ministry for Digital and Transport (BMDV) approved the funding application for the consortium research project HyCET (Hydrogen Combustion Engine Trucks) led by the BMW Group. The other HyCET project partners are DEUTZ AG, DHL Freight GmbH, KEYOU GmbH, TotalEnergies Marketing Deutschland GmbH and Volvo Group.

The research project aims to demonstrate the sustainability potential of trucks with hydrogen combustion engines for transport logistics. The other issue for HyCET, alongside technology development, is the required infrastructure, such as publicly accessible hydrogen filling stations. Thanks to its shorter filling times, high payload and versatility, combined with its attractive range, hydrogen is regarded as a promising fuel for transport logistics. The use of green hydrogen produced from renewable energies will thus enable CO₂-free long-distance logistics in the future. Due to the low emissions from hydrogen combustion, the trucks are also considered as zero-emission vehicles under EU regulations.

Supported by partners, funded by BMDV

The HyCET research project will have an investment volume of 19.5 million euros, of which 11.3 million euros will be funded by the Federal Ministry for

Digital and Transport (BMDV). Over the course of the HyCET project, the BMDV also provided an additional 5.7 million euros in funding for construction of two public hydrogen filling stations mainly for heavy goods traffic.

Daniela Kluckert, Parliamentary State Secretary to the Federal Minister for Digital and Transport: "Hydrogen technology offers us the chance to rethink mobility. In particular, the varied demands of transport logistics call for suitable responses. Hydrogen is a good energy-storage solution for climate-friendly transportation that can supplement battery-electric mobility. The HyCET project supported by us assesses the use of hydrogen combustion engine technology for the transport of heavy goods. In this way, the results obtained from real-life operation will contribute to competition between alternative drive train technologies in the field of logistics."

Interdisciplinary cooperation is key to success

The network has set itself ambitious targets for the four-year project. The aim is to develop two 18-tonne trucks and two 40-tonne trucks with hydrogen combustion engines that will be tested in regular BMW Group and DEUTZ transport logistics. Two new hydrogen filling stations including for heavy utility vehicles will be built in Leipzig and Nuremberg to facilitate daily operation of these trucks.

Not only will research into development and use of hydrogen trucks continue, but filling standards for utility vehicles and implementation of the necessary infrastructure will also be advanced. Since this is one of the first research

projects in which vehicles of this class will drive in regular logistics traffic, the trucks will undergo a comprehensive technology assessment.

Consortium pools expertise

The consortia project brings together expertise from different disciplines. As an end-user, the **BMW Group** defines key requirements for series introduction of hydrogen-powered trucks into its transport logistics at a later date. As the consortium leader, the company also sets the framework for successful project implementation and is managing pilot deployment of an 18-tonne truck at BMW Group Plant Leipzig, as well as coordinating the technology assessment, which will compare the advantages and disadvantages of the hydrogen combustion engine with other innovative drive-train concepts for trucks.

Michael Nikolaides, Senior Vice President Production Network and Supply Chain Management BMW Group explains: "As the consortium leader for the project, the BMW Group is not only showing its pioneering spirit, but also its understanding of how to think about sustainability across all areas of the company. This includes testing technologies in transport logistics at an early stage and adapting products and infrastructure to new requirements."

As one of the world's leading engine manufacturers and a pioneer in the sustainable off-road sector, powertrain specialist **DEUTZ** has developed a 7.8-litre hydrogen engine. The initial application is already running successfully in a stationary generator. As part of the HyCET project, this

engine will be installed in an 18-tonne truck to demonstrate its practicality for mobile applications.

As a recognised hydrogen expert, **KEYOU GmbH** develops innovative hydrogen technologies, specific H₂ components and combustion processes that can be used in a cost-effective manner to convert conventional engines into emission-free hydrogen engines. In cooperation with the **Volvo Group**, KEYOU is developing a 13-litre hydrogen engine as part of the HyCET project. Volvo is integrating the engine and the hydrogen tanks in two 40-tonne Volvo trucks used by **DHL Freight** in transport logistics for the BMW Group. As one of the leading suppliers of road transportation in Europe, DHL Freight will bring its long-standing experience in road-freight transport and requirements from the user perspective to the project. In addition, as a transport partner of the BMW Group, the company will also use the first vehicles developed in field tests for shuttle traffic to supply BMW Group Plant Leipzig.

The global multi-energy company **TotalEnergies** intends to operate up to 150 hydrogen filling stations directly or indirectly in Germany, the Netherlands, Belgium, Luxembourg and France by 2030. The two new hydrogen filling stations that will be built under the HyCET consortium in Leipzig and Nuremberg will be an integral part of this European long-distance hydrogen network.

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