

RWTH Aachen University demonstrates the world's first battery-electric truck with retrofitted pantograph system



Presentation of first prototype "Maja".

Persons f.l.t.r.: Clemens Schmidt (PEM), Eyk Bösche (VDI/VDE), Britta Sommer (VDI/VDE), Maximilian Heckert (VDI/VDE), Peter Kramer (DAF), Thilo Londong (PEM), Benedikt Siemons (PEM), Gordon Witham (ika), Roland Uerlich (DAF), © PEM

Aachen, 11. September 2024 – Researchers at RWTH Aachen University have successfully presented the world's first battery-electric truck with a retrofitted pantograph system and tested it on a test track. This system makes it possible to charge the vehicle battery while driving via an overhead catenary line, which can reduce battery size and increase operational flexibility.

As part of the "BEE – BEV Goes eHighway" research project, the Institute for Automotive Engineering (ika) and the Chair of Production Engineering of E-Mobility Components (PEM) are developing a retrofit concept for existing series trucks. In close collaboration with the vehicle manufacturer DAF Trucks N.V., two DAF XD Electric trucks as battery-electric base vehicles are being extended with the newly developed pantograph system. The first prototype was successfully presented and demonstrated on the Siemens eHighway test track in Groß Dölln on August 20, 2024.

The aim of the project is not only to develop an economical retrofit solution for pantograph systems, but also to analyse the existing interfaces for easy integration into standard electric

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trucks from various manufacturers and to address necessary adjustments as part of a standardisation proposal. Dynamic charging while driving creates an additional option alongside stationary charging. The project also evaluates the potential savings in battery size, the influence on the ageing behaviour of the batteries and the overall costs of the retrofit system as part of a total cost of ownership analysis.

Following approval of the system by the pantograph manufacturer Siemens and the successful test drives, the approval-relevant tests are now ongoing, which should lead to road approval for the vehicle later in the year. Extensive test drives are then planned as part of the ELISA, FESH and eWayBW field trials, during which the system's suitability for use on public roads will be demonstrated.

The research project "BEE – BEV Goes eHighway" is funded by the Federal Ministry of Economics and Climate Protection (BMWK) (FKZ: 16EM5003-1) and supervised by VDI/VDE Innovation + Technik GmbH.

Further information on the project can be found on the website: www.bee-ehighway.de

About ika

As part of RWTH Aachen University, the Institute for Automotive Engineering (ika) researches the entire vehicle, including its systems and their interactions. From the initial idea through innovative component and system concepts to vehicle prototypes, the Institute's employees are shaping the vehicle of the future. The ika makes a recognized contribution to solving current and future challenges both in public projects and in cooperation with automobile manufacturers and suppliers.

The basis of our intensive research work for large parts of the automotive industry as well as public funding bodies at EU, federal and state level is our extensive infrastructure, which ranges from drive, battery, chassis and tire test benches to acoustic, thermodynamic and servo-hydraulic test facilities to a complete vehicle crash facility and test tracks including state-of-the-art measurement technology. In addition, there is up-to-date software and hardware equipment for all necessary simulation disciplines. ika employs more than 135 permanent staff and around 200 student assistants. In addition, around 200 student research and development projects are carried out on a permanent basis.

www.ika.rwth-aachen.de

Press information

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We kindly request a specimen copy after publication. For further enquiries please contact:

Project coordinator:

Gordon Witham

Institute for Automotive Engineering, RWTH Aachen University

Group Leader Electric Powertrain

Phone: +49 241 80 23919

Email: gordon.witham@ika.rwth-aachen.de

Press contact:

Nikola Druce, M.A.

Phone: +49 241 80 25668

Email: nikola.druce@ika.rwth-aachen.de