Press release

Stuttgart, November 26, 2024

Consortium led by MAHLE develops hydrogen engines for off-road applications

- Federal Ministry for Economic Affairs and Climate Action provides funding of EUR 5.1 million
- The development objective is hydrogen-based powertrain concepts for construction and agricultural applications

To decarbonize the transportation sector, heavy commercial vehicles and non-road mobile machinery (NRMM) are also increasingly coming to the fore. Vehicle manufacturers, suppliers, and science, as well as small and medium-sized companies, including DEUTZ, KIT, The German Aerospace Center (DLR), Purem, Claas, Braunschweig University of Technology, Liebherr, Nagel, Umicore, NGK and Castrol, have therefore joined forces to comprehensively investigate the cross-application use of hydrogen-engine powertrain concepts for construction and agricultural applications. This three-year project is being funded with EUR 5.1 million by the Federal Ministry for Economic Affairs and Climate Action and supported by TÜV Rheinland. MAHLE has been commissioned to manage the project.

Bundled expertise: The project "PoWer" develops hydrogen engines for off-road applications / Note: (*Names of persons see page 2)

Hydrogen engines offer many advantages thanks to their inherent characteristics such as efficiency, robustness, and low raw emissions, which make them particularly suitable for applications in construction and agricultural machines. “At MAHLE, we have been working on the development of hydrogen engines for years and are delighted that we can now also contribute this expertise, together with strong partners, to the latest developments for the off-road sector,” explains Dr. Marco Warth, Vice President Corporate Research and Advanced Engineering at MAHLE. “Only the cooperation of such diverse partners and experts in the respective technologies enables a holistic approach and impressively shows the innovation potential of German research and industry in the mobility sector.”

Off-road applications will be demonstrated and analyzed in vehicle concept studies as well as in systemic fleet and infrastructure considerations. Exhaust gas aftertreatment concepts will also be developed and comprehensively tested on the test bench. By examining the influence of hydrogen on materials and the friction and wear characteristics, as well as qualifying these results in engine runs, all the fundamentals essential for achieving the extreme robustness requirements, taking into account future emissions guidelines of NRMM, will be developed.

MAHLE stands for technological diversity and, with its three strategic fields of electrification, thermal management, and highly efficient sustainable combustion engines, develops the best solutions for different applications worldwide. The automotive supplier is involved in all major hydrogen engine projects as well as development and series projects for fuel cell vehicles.

Help for editors: Photo material for this press release is available at https://newsroom.mahle.com/press/en.

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About MAHLE

MAHLE is a leading international development partner and supplier to the automotive industry with customers in passenger car and commercial vehicle sectors. Founded in 1920, the technology group is working on the climate-neutral mobility of tomorrow with a special focus on e-mobility and thermal management. The company's activities also extend to other technologies to reduce CO_2 emissions, such as fuel cells and highly efficient combustion engines that can run on hydrogen or synthetic fuels. Today, one in every two vehicles globally is equipped with MAHLE components.

In 2023, MAHLE generated sales of almost EUR 13 billion. The Group employs more than 72,500 staff at 148 production locations and in 11 major research and development centers in over 29 countries (Last revised: 12/31/2023).

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