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Press release

Liebherr, MAN and Daimler Truck showcase the construction site of the future: low emissions thanks to hydrogen

- **Hydrogen Engine Alliance initiates joint H_2 use with Liebherr, MAN and Daimler Truck**
- **Hydrogen drive as an efficient, robust and largely CO_2-free alternative for demanding applications and long ranges**
- **Test deployment at gravel plant showcases zero-emission construction site of the future**

At a gravel plant in Munich, a Liebherr large wheel loader is loading trucks from MAN and Daimler Truck. What appears to be a routine operation is actually a milestone: all three machines are powered by hydrogen engines, operating largely CO_2-free and setting new standards for sustainable construction site logistics. The operation offers a glimpse into the future and proves that low-emission construction sites are already possible today. For this to become common practice, a comprehensive H_2 infrastructure network is needed. The joint effort by various European manufacturers proves that committed cooperation and the use of synergies can proactively drive the development of climate-friendly technologies.

Munich (Bavaria, Germany), January 2026 – The deployment at the gravel plant demonstrates impressively that hydrogen-powered drivetrains are in no way inferior to their diesel counterparts. The Liebherr L 566 H – the first prototype of a large wheel loader equipped with a Liebherr hydrogen engine, operates alongside the production-ready MAN hTGX truck and a development vehicle based on a Mercedes-Benz Arocs from Daimler Truck. All three machines successfully completed demanding earthmoving and material-handling tasks – reliably and with low emissions.

This joint operation was made possible by the Hydrogen Engine Alliance, a cross-industry interest group based in Karlsruhe (Germany). Hydrogen plays a decisive role in enabling low-emission mobility, particularly for heavy-duty machinery with high energy demands.

The L 566 H large wheel loader feeds rock material into plants and loads trucks. "What makes it special is that our wheel loader can be used in exactly the same way as a conventional diesel machine. No special deployment planning is required, as the wheel loader can work a full shift and be ready again

after a quick refuelling of just 10-15 minutes," explains Hans Knapp, Head of the Pre-Development and Drive Technology Department at Liebherr-Werk Bischofshofen GmbH. Liebherr presented the prototype and a new, in-house hydrogen filling station to an expert audience for the first time in Bischofshofen (Austria) in the summer of 2024. This was followed by the presentation of the wheel loader at the world's leading trade fair, Bauma 2025. The L 566 H is one of several hydrogen-powered wheel loaders of this type that Liebherr is testing with various customers.

Hydrogen: Energy source for work machines and demanding applications

Different technologies are suitable depending on the application and load profile. Liebherr pursues a technology-neutral approach in this regard. Hydrogen propulsion is particularly impressive due to its robust components, high storage capacity and suitability for demanding, heavy-duty applications make it particularly compelling for machinery with long operating cycles. As confirmed by the development team at Liebherr-Werk Bischofshofen GmbH, extensive studies have shown that hydrogen is the optimal low-emission alternative to diesel for heavy vehicles with high energy requirements. When green hydrogen is used, these engines enable largely CO_2-free operation with extremely low nitrogen oxide emissions - while also delivering impressive overall efficiency.

Hydrogen drive: prototype, series production and construction site practice

While the L 566 H is still in the development stage, hydrogen is already finding its way into the first series-production commercial vehicles. This low-emission energy source really comes into its own when it comes to long ranges and heavy loads. Alongside the MAN eTGX, the MAN hTGX is MAN's second zero-emission alternative, is already available to order and is being produced in a small series. Peter Albrecht, Senior Manager Engineering Vehicle & External Engines at MAN Truck & Bus SE, explains: "The engine's driving behaviour is comparable to that of a diesel engine. We also have the corresponding assistance systems and automatic transmission functions as in a conventional diesel vehicle." Daimler Truck is also represented at the gravel plant with a hydrogen-powered construction vehicle. Mirco Conitz, Lead Engineer H2 ICE at Daimler Truck AG, confirms the flexible usability of the hydrogen engine and adds: "Our development vehicle based on the Mercedes-Benz Arocs also runs more quietly than its diesel-powered counterpart."

Working together for a low-emission future

The test run at the gravel plant shows that low-emission construction sites are not a distant vision but are already possible today. European manufacturers Liebherr, MAN, Daimler Truck and the Hydrogen Engine Alliance are demonstrating how hydrogen can be brought into real construction site operations as a practical and largely CO_2-free energy source through committed cooperation and the targeted use of synergies. In order for hydrogen to reach its full potential in the future, Europe needs a comprehensive transport network and a fair hydrogen price, as is already being consistently pursued in Asia.

About the Hydrogen Engine Alliance

The Hydrogen Engine Alliance is an association of automotive companies, suppliers, engineers from various fields of specialisation and research institutes. It sees itself primarily as a communication platform with the aim of sharing knowledge with society. The Hydrogen Engine Alliance was founded in 2021 and combines expertise from industry and research.

About Liebherr-Werk Bischofshofen GmbH

Liebherr-Werk Bischofshofen GmbH develops, manufactures and distributes the wheel loaders of the Liebherr Group. Located in the province of Salzburg (Austria), the plant has grown steadily over decades thanks to sustainable innovations, creative solutions and high quality standards. The wheel loader range is constantly being expanded and includes models in various product groups: compact loaders and stereo loaders as well as medium-sized and large wheel loaders, which impress with their innovative drive concepts.

About the Liebherr Group

The Liebherr Group is a family-run technology company with a highly diversified product programme. The company is one of the largest construction equipment manufacturers in the world. It also provides high-quality, user-oriented products and services in a wide range of other areas. The Liebherr Group includes over 150 companies across all continents. In 2024, it employed more than 50,000 staff and achieved combined revenues of over 14 billion euros. Liebherr was founded by Hans Liebherr in 1949 in the southern German town of Kirchdorf an der Iller. Since then, the employees have been pursuing the goal of achieving continuous technological innovation, and bringing industry-leading solutions to its customers.

Images

liebherr-allianz-wasserstoffmotor.jpg
The L 566 H is the first prototype of a Liebherr large wheel loader with a hydrogen engine.

liebherr-hydrogen-engine-alliance-test-run.jpg
At a gravel plant near Munich, the hydrogen-powered wheel loader efficiently and powerfully loads an H2 truck.

liebherr-allianz-h2-engine-test-run.jpg
Working together: MAN and Daimler Truck commercial vehicles and the Liebherr wheel loader all run on hydrogen engines.

liebherr-test-alliance-hydrogen-engine-daimlertruck.jpg
A hydrogen-powered development vehicle based on the Mercedes-Benz Arocs from Daimler Truck is also being used in the test deployment.
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