

Clean Logistics GmbH press release, no. 1, 2019

Clean Logistics Converts Heavy Diesel Truck to Hydrogen Hybrid Drive

With the notice of approval for a grant from the Federal Ministry of Transport and Digital Infrastructure, Clean Logistics has been given additional planning security for its innovative business idea: the conversion of heavy diesel trucks to hydrogen hybrid drives. In just one year's time, the first climate-friendly converted trucks will be able to get road approval.

Clean Logistics has found a contemporary solution for reducing the high quantities of CO₂ emitted by heavy diesel trucks in freight traffic. Through modular conversions, the company from Winsen an der Luhe will be producing HyBat trucks with emission-free fuel cell technology and high-performance batteries for energy storage. Clean Logistics has now received notice of approval of a grant for this purpose from the Federal Ministry of Transport and Digital Infrastructure (BMVI).

In the presence of high-ranking guests from business and politics, on 2nd October 2019, BMVI State Secretary Enak Ferlemann presented the notice of approval for the grant amounting to three million euros to the two managing directors of Clean Logistics, Dirk Lehmann and Dirk Graszt. "With a total volume of six million euros for the development of this new technology, we are now in a position to put the first converted vehicles on the road as early as the third quarter of 2020, much faster than expected," said Lehmann and Graszt at the festivities in Clean Logistics' new production hall.

The medium-sized Clean Logistics joint venture was founded by the companies Höpen, HARY and Proton Motors to promote the development, design and marketing of alternative drives for the logistics industry. Clean Logistics is also part of the North German Hydrogen Network under the supervision of Michael Westhagemann, Hamburg's Senator for Economics, Transport and Innovation.

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The forward-looking concept of Clean Logistics initially includes the conversion of existing heavy trucks into environmentally friendly HyBat trucks. "This is where we rely on the use of hydrogen fuel cells in conjunction with an electric rear axle drive," said the two managing directors, who have a great deal of entrepreneurial and technological experience. To achieve this, they have developed a conversion concept for heavy freight transport that will result in zero emissions when used on the road.

After dismantling the diesel and auxiliary units from the tractor-trailer and shipping the old parts to outsourcing partners, modular conversion to hydrogen operation takes place. "Conversion can also be carried out by certified cooperation partners," says Dirk Graszt, „which puts us in a position to handle larger volumes in future."

The first HyBat trucks have a range of 400 to 500 km, using onboard hydrogen tanks with a total capacity of 45 kg per truck based on H35 technology (H₂ gas at a pressure of 350 bar). Later on, series production vehicles will be able to achieve a significantly higher range depending on configuration and customer requirements. In addition to hydrogen, every HyBat truck also has a high-performance battery system that alone guarantees a range of over 100 km.

To produce the hydrogen needed, Clean Logistics is aiming for a proprietary, tax-exempt and independent supply of H₂ from wind energy alone. "From the end of 2020, thousands of older wind turbines will no longer be eligible for EEG (German Renewable Energy Law) funding" reports Dirk Lehmann, "and in northern Germany alone there's the potential for 1,500 to 2,500 systems for the production of hydrogen." For this, the wind turbine is taken off the grid and a PEM electrolyser with a battery system for supplying operating power independently of the wind is installed at the wind turbine.

Hydrogen will then be produced by wind power and filled into suitable tank trailers. They will be transported to the nearest depot and exchanged for an empty trailer. HyBat trucks will then be filled with hydrogen from the full trailers via a mobile tank system. From leasing, Clean Logistics and its partners will become operators of the wind turbines, meaning that hydrogen is produced by the company itself and is therefore fully tax-exempt.

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“Our company’s mission includes such essential topics as infrastructural supply, support during operation, economic applicability, issues relating to approvals in the respective markets, recycling scenarios for both components and the vehicles themselves,” say the two managing directors Lehman and Grasz. With this concept of alternative drive solutions, Clean Logistics is making a significant contribution to climate protection in commercial freight transport.

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Left: Production hall of Clean Logistics in Winsen (Luhe)
Middle, f. l.: Michael Grosse-Brömer (MdB), Council of State Dr. Torsten Sevecke, Managing Director Dirk Lehmann, Parliamentary Secretary of State Enak Ferlemann, Managing Director Dirk Grasz, Svenja Stadler (MdB)
Right: Managing Directors Dirk Grasz and Dirk Lehmann in front of heavy truck, ready for conversion

Press contact:

Ms Annett Heinrich, ah@cleanlogistics.de, Tel. +49 4171-6791300



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Press contact