



## **MAN Engines approves off-road engines for use with regenerative diesel/HVO**

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**Complete off-road portfolio; engines for agricultural, construction and railway applications in current and previous emission standards; approval also for R33; no modification of the motors necessary; reduction of emissions**

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According to MAN Engines, all off-road engines from the current product portfolio can be operated with regenerative diesel – also known as HVO (hydrogenated vegetable oil) – in accordance with the EN15940 standard in Europe or the US specification ASTM D975. The approval applies to all off-road engines for the current EU Stage V and EPA Tier 4 emission standards and below. Marine engines for regenerative diesel have already been approved. Customers can use it to replace – or mix – conventional diesel fuel and use MAN engines with so-called green or renewable diesel. This is obtained on the basis of waste and residues of animal and plant origin, cellulosic biomass materials such as crop residues, among others.

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"Sustainability is very important to us at MAN Engines. That's why we've approved almost our entire engine portfolio for the use of regenerative diesel," says Mikael Lindner, Head of MAN Engines. By burning regenerative diesel, engines emit up to 30% less particulate matter and up to about 10% less nitrogen oxides (NOx). "Above all, regenerative diesel ensures clean combustion with up to 90% less greenhouse gas emissions in the exhaust gas compared to conventional diesel," says Lindner. For Werner Kübler, Head of Engineering at MAN Engines, there are also other clear advantages: "There are no performance losses or disadvantages with regard to the service and maintenance intervals of our MAN engines, and the AGN also works without any problems." The use of said regenerative fuel has no negative effects

MAN Truck & Bus is one of Europe's leading commercial vehicle manufacturers and transport solution providers, with an annual revenue of about 11 billion euros (2022). The company's product portfolio includes vans, trucks, buses/coaches and diesel and gas engines along with services related to passenger and cargo transport. MAN Truck & Bus is a company of TRATON GROUP and employs approx. 33,000 people worldwide.



either on system components or on the efficiency of the drive system or any existing exhaust gas aftertreatment systems.

In addition, due to its similar chemical composition to fossil diesel, the use of HVO does not require any modification to existing vehicles or refueling station infrastructure. This can be refueled pure, i.e. 100% as HVO100, or with an admixture – at any mixing ratio – of conventional diesel fuel.

At the end of February 2023, the German government decided to include DIN EN 15940 in the "10th Ordinance on the Implementation of the Federal Immission Control Act" (BImSchV). This means that these synthetic fuels can be sold in their pure form at public filling stations.

In addition to the use of regenerative fuel/HVO, the aforementioned MAN off-road engines are also approved for R33 fuel, which contains 33 percent of regenerative components. Of these, 26 percent are hydrogenated vegetable oil (HVO) and seven percent are rapeseed methyl ester (RME). The remaining 67 percent is made up of high-quality diesel fuel in accordance with DIN EN590.

The current and former off-road engine series MAN D2862, D2842, D2868, D4276, D3876, D2676, D2876, D2866, D1556 LE, D0836 and D0834 have been specifically approved for use with regenerative diesel. This is the complete power range of MAN off-road engines from 160 to 1,110 hp (118 to 816 kW). These are operated in accordance with the emission guidelines of the US Environmental Protection Agency (US EPA – U. S. Environmental Protection Agency) or the European Union (EU).



*Off-road engines from MAN Engines are now approved for use with regenerative diesel/HVO.*