

P R E S S R E L E A S E

Powerful and fuel-efficient – meet Volvo’s future hydrogen truck

Volvo has begun on-road testing of heavy trucks powered by hydrogen combustion engines. Volvo’s hydrogen solution is industry-leading with a planned commercial launch before 2030.

Volvo is taking another step towards net-zero CO₂ emissions transport by starting on-road trials of heavy trucks with combustion engines powered by hydrogen.

Volvo’s hydrogen-powered trucks will have industry-leading performance with higher energy efficiency, lower fuel consumption and increased engine power compared to conventional hydrogen combustion engine technology.

This is due to High Pressure Direct Injection (HPDI), a technology where a small amount of ignition fuel is injected with high pressure to enable compression ignition before hydrogen is added. Volvo is already using this technology in its gas-powered trucks, with more than 10,000 units sold globally.

“On-road testing is an important milestone for our hydrogen combustion engine trucks. I feel confident that they will be the best in the industry if you look at fuel efficiency, power, torque and drivability. Customers will be able to operate them just like diesel trucks. Our experience with HPDI technology in more than 10,000 gas-powered trucks is strong proof of its performance,” says Jan Hjelmgren, Head of Product Management at Volvo Trucks.

Hydrogen combustion engine trucks will be especially suitable over longer distances and in regions where there is limited charging infrastructure or time for recharging of battery-electric trucks.

Volvo trucks with combustion engines powered by green hydrogen have the potential to deliver net zero CO₂ well-to-wheel when using renewable HVO as ignition fuel. They are categorized as “Zero Emission Vehicles” (ZEV) under the agreed EU CO₂ emission standards.

Volvo’s advanced hydrogen engine technology is derived from its diesel powertrain, delivering diesel-like performance while substantially cutting CO₂ emissions.

The hydrogen-powered combustion engine trucks will complement the company’s offering of other alternatives, such as battery electric trucks, fuel cell electric trucks and trucks that run on renewable fuels, like biogas and HVO (Hydrotreated Vegetable Oil).

“We see great potential for hydrogen combustion engine trucks and they will have a role to play in the transformation to zero-emission transport. Several technologies will be needed to decarbonize. As a global truck manufacturer we offer a variety of decarbonization solutions and help our customers choose the best alternative based on transport assignment, available infrastructure and green energy prices,” says Jan Hjelmgren.

Volvo’s trucks with hydrogen-combustion engine – facts:

- Volvo Trucks’ hydrogen-powered trucks will use the fuel-efficient HPDI (High Pressure Direct Injection) technology from Cespira, www.cespira.com
- Hydrogen-powered Volvo trucks will have an operational range exceeding many customers’ daily driving distance.
- Due to the low CO₂ emissions from hydrogen combustion, these trucks are categorized as “Zero Emission Vehicles” under the agreed EU CO₂ emission standards.
- Hydrogen can also be used to power fuel cell electric trucks, where electricity is produced on board the truck. Fuel cell electric trucks do not emit any tailpipe emissions, only water vapor. Volvo plans to launch fuel cell electric trucks in low volumes before 2030.
- Volvo Trucks’ three-path strategy to reach net-zero emissions consists of battery-electric, fuel-cell electric, and combustion engines using renewable fuels.

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[LINK](#) to high-resolution images

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Volvo Trucks supplies complete transport solutions for discerning professional customers with its full range of medium- and heavy-duty trucks. Customer support is provided via a global network of dealers with 2,200 service points in about 130 countries. Volvo trucks are assembled in 12 countries across the globe. In 2025 approximately 120,000 Volvo trucks were delivered worldwide. Volvo Trucks is part of the Volvo Group, one of the world’s leading manufacturers of trucks, buses, construction equipment and

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marine and industrial engines. The group also provides complete solutions for financing and service. Volvo Trucks' work is based on the core values of quality, safety and environmental care.

