



Press information

Volvo in unique Bio-DME project

Volvo Trucks is now taking the next concrete step towards carbon dioxide-neutral road transport. Within the framework of a broad-based joint project, field tests are being conducted with 14 trucks running on Bio-DME – a fuel that combines a low environmental imprint with high energy efficiency.

In August 2007, Volvo Group unveiled seven demo trucks from Volvo Trucks each running on a different type of biofuel, one of which was DME (Di-Methyl-Ether). This initiative showed that Volvo has the technical solutions for running the efficient diesel engine on virtually all existing renewable fuels.

Today, in a joint project with actors including the EU, the Swedish Energy Agency, fuel companies and the transport industry, Volvo Trucks is investigating the potential for large-scale investment in DME produced from biomass, a fuel known as Bio-DME.

Unique field test with 14 customers

Volvo Trucks is participating in the project by contributing 14 Volvo FH trucks that will be tested by selected customers at four locations in different parts of Sweden between 2010 and 2012. The first field-test truck is being shown today in Piteå, where the production of Bio-DME will take place in Chemrec's plant. The Volvo Group, of which Volvo Trucks is a part, is one of the co-owners of Chemrec via its subsidiary, Volvo Technology Transfer.

From a facility beside the Smurfit Kappa Kraftliner pulp plant, the project will produce four tonnes of Bio-DME per day. The raw material used is black liquor, an energy-rich, highly viscous by-product of the pulp industry. Through gasification of the biomass in the black liquor, what emerges is a particularly clean and energy-efficient fuel. The plant is being inaugurated today by the King of Sweden, who is renowned for his keen interest in environmental issues.

“From the holistic viewpoint, Bio-DME is one of the most promising second-generation biofuels. Bio-DME provides both high energy efficiency and low emissions of greenhouse gases. We value these two properties particularly highly as we analyse various possible alternative fuels,” says Lars Mårtensson, environmental affairs director at Volvo Trucks.



Compared with a conventional engine, Bio-DME as a fuel in a diesel engine provides the same high efficiency rating but also a lower noise level. In comparison with diesel fuel, Bio-DME generates 95 percent lower carbon dioxide emissions. What is more, the combustion process produces very low emissions of particulates and nitrogen oxides. All this makes Bio-DME an ideal fuel for diesel engines.

The entire chain

The field test gets under way in 2010 and encompasses the entire technological chain from biomass to fuel in trucks, in other words including distribution and filling stations. Fuel company Preem will build filling stations so the trucks can be used in regular regional and local operations. The other companies involved in the project are Chemrec, Delphi, ETC, Haldor Topsoe and Total who are contributing as partners.

Inspections and evaluations of the fuel, truck technology, customer perceptions and distribution system will provide answers as to whether Bio-DME may emerge as one of the fuels that can partially reduce dependence on diesel oil.

The project will continue for a specific period and its evaluation as well as the long-term decisions of the authorities will determine whether full-scale industrial production will become reality. The challenges facing new fuels lie primarily in taking a long-term view, producing sufficiently large quantities of biofuels, and handling distribution via a suitably large number of filling stations.

“The field test will give us valuable new insight into the potential of Bio-DME as a future vehicle fuel. The project still requires many tests, larger-scale fuel production and an extended infrastructure. And, perhaps most of all, clear guidelines from the authorities on how they view the fuel,” says Volvo Trucks’ President and CEO, Staffan Jufors.

FACTS

This is DME (Di-Methyl-Ether)

DME is a gas but it is transformed into liquid form at a pressure of just 5 bar. It is straightforward to handle in a process similar to that required for liquefied petroleum gas (LPG). The most common application today is as a propellant in spray cans. DME can be produced from natural gas and also from various types of biomass, in which case it is known as Bio-DME.



Bio-DME - future potential

From an EU perspective, Bio-DME has the potential for replacing just over 50%* of today's diesel oil in heavy road transport by 2030. The biggest challenge lies in creating an infrastructure for distribution of the fuel.

*Source: EUCAR/CONCAWE/JRC 2005, European Commission, Volvo

Environmental facts, Bio-DME:

- 95% lower carbon dioxide emissions than diesel, zero emissions of soot particulates
- Generally low emission levels
- Five times better utilisation of land area for fuel production than, for instance, biodiesel
- High energy efficiency compared to other biofuels

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