

## Volvo Group North America

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## Volvo Group comments for CARB Symposium to Discuss California's 2030 Climate Commitments Cutting Petroleum Use in Half by 2030

Volvo Group understands and supports California's interest in making significant reductions in its petroleum use by 2030. We encourage the state to adopt an "all-of-the-above" technology approach to solving the challenge.

While electric drive is a desirable option in some platforms, and we are pursuing this technology aggressively, it is but one of many solutions that can be brought to bear in the effort to reduce petroleum use, including:

- Increased use of renewable diesel fuels
- Increased use of telematics and "smart" technologies
- Improvements to the roadway system to reduce traffic congestion and fuel waste
- Commercial introduction of innovative and advanced technologies (such as those showcased in the U.S. Department of Energy's Super Truck demonstration program).

In particular, we encourage the California Air Resources Board to broaden its focus to include near-term adoption of higher blends of renewable diesel fuels.

After extensive field testing of the renewable diesel HVO (hydro-treated vegetable oils) in Europe, Volvo Trucks has approved the fuel for all Euro 5 engines and is preparing certifications for Euro 6. The HVO acts as regular diesel and may reduce CO<sub>2</sub> emissions between 30 and 90 per cent.

While this testing was done in Europe due to the greater commercial availability of the fuel, our research findings together with the fact that HVO fuel meets the ASTM D975 standard for petroleum diesel leads us to encourage greater consideration by California policymakers of the benefits of HVO fuels in today's clean diesel engines to meet the state's environmental goals. This would result in an immediate gallon-for-gallon reduction in petroleum use.

In 2013, Volvo Trucks started a field test together with Renova, DHL Freight and OKQ8 to see how the use of 100% HVO affected engine performance and components. The six field test trucks were equipped with Euro 5 engines and covered approximately one million kilometers in commercial service over a two-year period.

That field test showed that the HVO works very well in our Euro 5 engines and can be used under the same conditions as regular diesel. It is also possible to freely mix diesel and HVO.

Volvo Trucks has now approved the use of HVO in all its Euro 5 engines with unchanged service intervals. In September 2015, there will be a global certification (WVTA) of HVO in the D5 and D8 engines for Euro 6. In parallel, work is underway to certify the engine variants D11, D13 and D16.

HVO is produced from renewable raw materials such as vegetable oils and animal fats. The fuel can be distributed via existing diesel depots and uses the same type of tanks and pumps as regular diesel. HVO reduces CO<sub>2</sub> emissions between 30 and 90 per cent, depending on the feedstock.

Sincerely,

Dawn Fenton, Director
Government Relations & Public Affairs
Volvo Group North America
2900 K Street NW
South Building / Suite 401
Washington, DC 20007
dawn.fenton@volvo.com