

Construction Plant-hire Association

Frequently asked questions: HVO - Hydrotreated Vegetable Oil

1. What is HVO?

HVO stands for “Hydrotreated Vegetable Oil”. It is a substitute for ordinary diesel fuel, but is made from vegetable matter, rather than from crude oil (fossil fuel). It is made by reacting vegetable or other oils with hydrogen at high temperature and pressure. The process itself is fairly energy intensive and currently the hydrogen comes from natural gas. Although it is a fuel for diesel engines, it is commonly referred to as “HVO” and not as “diesel”.

2. Is it safe for my engines?

HVO from a reputable source in the UK is intended to be a “drop in” replacement for ordinary red or white diesel. You should confirm with either the equipment manufacturer or the engine manufacturer that your intended HVO supply is confirmed as being suitable for the engine and all its ancillaries. HVO does not contain FAME (Fatty Acid Methyl Ester) – the root cause of many of the fuel storage problems and fuel filter blocking issues.

3. Will HVO reduce emissions from my construction plant?

Trials on real machines in the workplace have indicated that ‘tailpipe’ emissions that are directly harmful to health, such as particulate and nitrous oxides, are reduced when HVO is used in older engines that are at Stage IIIB or earlier. Many studies however have shown few, if any, measurable benefits when used in Stage IV and Stage V engines.

4. Will HVO reduce my carbon emissions?

HVO has been shown to achieve large reductions in carbon emissions at point of combustion – up to 80%. It has a naturally high cetane number meaning that ignition is easy and combustion is complete – this reduces smoke and particulate emissions, However, the process of manufacturing HVO also creates carbon emissions, and this must be taken into account when calculating overall carbon footprint. Your supplier should be able to give you more information about this.

5. Is all HVO the same?

HVO sourced from reputable suppliers in the UK should meet comparable paraffinic diesel EN/ASTM technical standards and should also comply with good practice when manufactured and transported.

6. How can I choose HVO that is not going to cause problems at point of manufacture?

You can ask your supplier for information and conduct your own investigations. An independent fuel supply assurance scheme exists, run by Zemo, a collaboration between bodies working on zero emission mobility. See www.zemo.org.uk and the Renewable Fuel Assurance Scheme.

7. Is HVO a permanent replacement for ordinary diesel fuel?

At the current state of knowledge, there is no evidence that HVO cannot be used as a long-term replacement for ordinary diesel fuel in engines for which it is suitable. Although there may be an immediate issue in terms of supply, because finished fuel currently needs to be shipped to the UK from overseas, the situation is improving. However, alternative technologies are likely to emerge which will offer emissions and carbon reduction improvements over HVO.

8. Will HVO get the rebate that Red Diesel currently has?

No. Government sees that HVO only has a role to play to keep certain vehicles and machines running until a suitable alternative power source is available.

These questions and answers were prepared by the CPA. Please email any enquires on this subject to: enquiries@cpa.uk.net