

HVO - Renewable diesel

Sustainable & Reliable

B & NIEMEIJER
Energize your Business



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HVO RENEWABLE DIESEL



HVO stands for Hydrothreated Vegetable oil, a renewable fuel produced from vegetable oils and residual waste (animal) fats. This fuel is an eco-friendly alternative to diesel as it emits significantly less CO₂ and other pollutants when burned.

HVO can consist of different concentrations of HVO and fossil diesel, with the number indicating purity. HVO 100 indicates high-quality renewable diesel in its purest form (100%), i.e. not mixed.

With HVO, you easily contribute to a cleaner and greener future.

How is HVO made?

The production process of HVO starts with the collection of vegetable oils and fats, such as rapeseed oil, soybean oil, palm oil or animal fats. These oils and fats are then treated in a hydrogenation reactor where oxygen molecules are replaced by hydrogen. After this step, the fuel is further purified and treated to obtain the desired properties, such as the right viscosity, solidification point and oxidation stability.

The end result is a high-quality HVO fuel that exceeds the quality of fossil diesel and is similar in chemical composition. This makes it easy to use HVO as an alternative to fossil diesel fuel. Moreover, HVO can be blended with traditional diesel and basically no modifications to diesel engines are required.

The advantages of HVO100 Renewable Diesel

The use of HVO100 diesel offers many advantages in the sustainability. Such as reduction of greenhouse gases, CO₂ reduction of up to 90% and lower emissions of harmful emissions such as particulates, hydrocarbons, nitrogen oxides carbon monoxide and PAHs (Polycyclic Aromatic Hydrocarbons). This is better for local air quality and also good for the engine, as filters and injectors stay clean for longer. This also makes HVO100 ideally suited for work in enclosed spaces.

The advantages of HVO100 Renewable diesel:

- Made from 100% renewable raw materials
- Up to 90% greenhouse gas/CO₂ reduction compared with fossil diesel¹⁾

- Almost no diesel smell
 - Suitable for diesel engines²⁾. No adjustments needed.
- 1) The methodology used to calculate lifecycle and life cycle and emission reductions complies to the revised european renewable energy directive (RED2, 2018/201/EU).
 - 2) Despite the fact that HVO is in principle suitable for diesel engines, a manufacturer may still need to formally to grant approval. There are already many manufacturers who approve its application.

The disadvantages of HVO100 Renewable Diesel

- HVO100 Renewable Diesel is generally more expensive than regular diesel, about 30 to 40 euro cents per litre.
- HVO has a lower energy density than regular diesel, so fuel savings from use of HVO is not expected.

Brinkmann & Niemeijer

We too would like to contribute to reducing the environmental impact of our activities, which is why our self-built generators are tested with HVO Renewable diesel as standard and our diesel company cars also run on HVO Renewable diesel.

We will be happy to advise you on the application of HVO in your genset or other specific application.



HOW HVO WORKS FOR YOU

It is now clear what the pros and cons of HVO are, but how does it work in your application and how much CO2 reduction can be achieved by using HVO.

Basically, HVO Renewable Diesel can be used in any modern diesel engine be applied, whether 100% HVO or a solution where HVO is mixed with regular diesel. Diesel engines are, in most cases, suitable for applying HVO fuel. It is important that the HVO fuel meets the EN15940 standardisation for synthetic fuels. Should you consider using HVO, you can always contact us to check whether the diesel engine or diesel generator supplied by us is suitable for HVO.

Besides the fact that the use of HVO results in a considerable reduction of CO2, it simultaneously improves the reliability of the engine:

- Little to no hygroscopic effect, preventing/minimising water absorption and bacterial growth.
- It is good for the engine, as filters and injectors stay clean for longer;
- Lower emissions of harmful emissions, such as: particulates, hydrocarbons, nitrogen oxides, carbon monoxide and PAHs;
- Better local air quality and reduced nuisance.



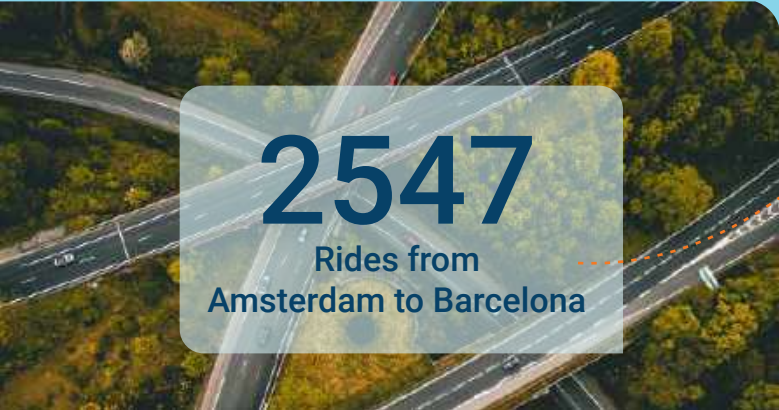
Example of possible CO2 savings

Calculation example:

- a rental set of 45 kVA runs for 8 hours at 70 % load every day. Fuel consumption in this situation is set at 7.04 litres per hour;
- Total 2,920 (365 days x 8 hours per day) running hours per year;
- Fuel consumption: 2,920 hours x 7.04 = 20,557 litres annually.

This means that in this calculation example, a rental set will consume 20,557 litres of diesel on an annual basis. By starting to use HVO100 Renewable diesel instead of fossil diesel, a reduction of 56.7 tonnes of CO2 can be achieved.

This reduction corresponds to 2,547 passenger car journeys from Amsterdam to Barcelona. At the same time, cleaner combustion of HVO also means a reduction of -33% particulate matter and -9% nitrogen oxide.



2547
Rides from
Amsterdam to Barcelona

CO2 savings

63 tCO₂eq
Emissions
with fossil fuels

VS.

6,3 tCO₂eq
Emissions
with HVO

=

56,7 tCO₂eq
Reduction
of CO₂e

- **33%**
particulate matter

- **9%**
nitrogen oxide

TOTAL SOLUTION

FROM ADVICE TO AFTERCARE



Brinkmann & Niemeijer is the specialist in (fixed and mobile) energy systems, such as emergency power supplies, generators, battery-, hybrid- and UPS systems.

We supply both standard and customer-specific solutions: from advice, development and engineering to production and installation. Plus everything that goes with it: commissioning, testing, service and maintenance.

We provide high-quality energy systems for:

- Back-up applications
- Riverbarge applications
- Mobile applications
- Military applications
- OEM applications



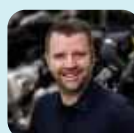
A SUITABLE SOLUTION FOR EVERY POWER DEMAND

OUR ENERGY SYSTEMS



OPEN GENSETS | SOUNDPROOFED GENSETS | BATTERY SYSTEMS | HYBRID SYSTEMS | UPS SYSTEMS | ENGINES | PTO GENERATORS

MORE INFORMATION?
Paul is happy to help



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