

HVO FUEL

Say hello to cleaner air

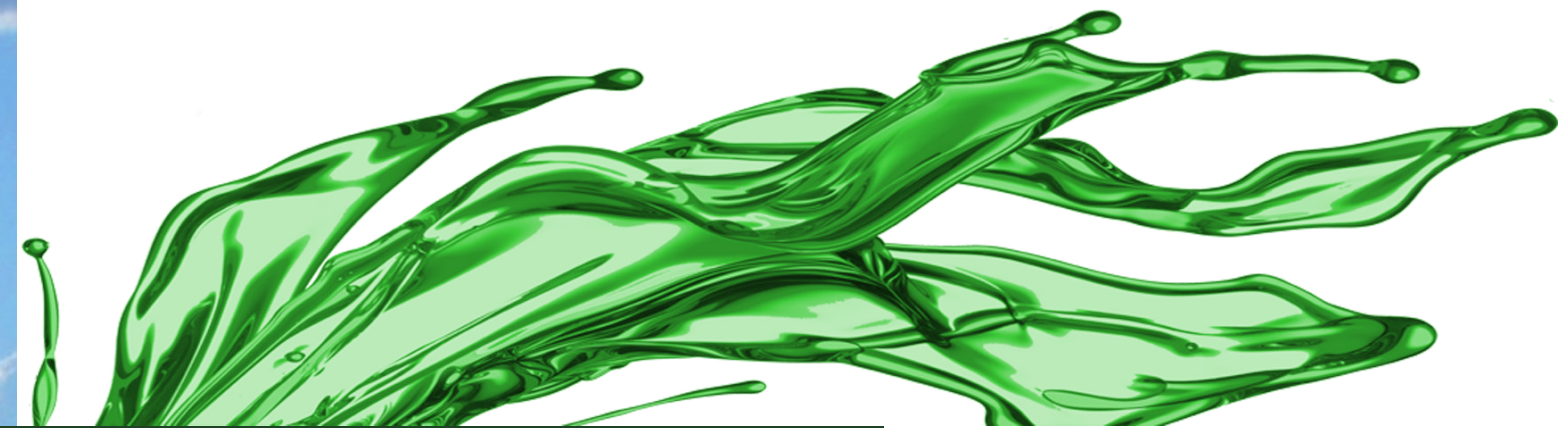


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Hydrotreated Vegetable Oil (HVO)

Reducing greenhouse gas emissions by up to 90%



Up to 90% reduction in harmful GHG emissions

Safer handling, reduced emissions and cleaner burning

Simply top up your existing stocks and go

Endorsed and approved by a wide range of OEMs

HVO fuel is an advanced renewable fuel that can lower your business's greenhouse gas emissions by up to 90 %.

Fossil fuel consumption is a direct source of greenhouse gas emissions. New legally binding environmental targets mean we must seek mineral diesel alternatives to generate power without compromising performance.

HVO fuel is an invaluable means to meet your environmental responsibility requirements.



What is HVO fuel?

Increase your corporate social responsibility, reduce your environmental impact



Extended 10-year storage lifespan

HVO has a reduced need for regular testing due to its renewable properties and has a much longer storage life than regular diesel.



Cut greenhouse gas emissions by up to 90%

HVO eliminates up to 90% of net CO₂ and significantly reduces nitrogen oxide (NO_x), particulate matter (PM) and carbon monoxide (CO) emissions.



Cleaner air with year round performance

Reduced particulate production during combustion reduces the ageing of engine oils.



Meets EN 15940:2016 specifications

Tried and tested product; it's clean, safe and endorsed by a wide range of OEMs.

HVO stands for Hydrotreated Vegetable Oil, a synthetic diesel alternative that's made from completely renewable raw materials.

HVO offers a significantly extended lifespan (up to 10 years compared to just 1 for diesel) and up to 90% lower emissions than diesel. As a pure paraffinic hydrocarbon, it doesn't contain the aromatic compounds which are present in conventional diesel.

HVO adheres to both the EN 15940 and ASTM D975 specifications, allowing it to be used as a drop-in alternative to diesel without modifying existing infrastructure.

With approvals from major OEMs and engine manufacturers, using HVO will have zero impact on warranties.



Did we mention that HVO also has a storage life of up to 10 years?

Say hello to a reduced risk of degradation and goodbye to the need for regular testing.

Start reducing your carbon footprint today

HVO fuel is invaluable in helping the UK achieve its 2050 net zero target for greenhouse gas emissions



Compatible

HVO fuel is a drop-in alternative to diesel and is compatible with existing fuelling infrastructures



Clean

Zero FAME, sulphur and fossil content. Free from aromatics, sulphur and metals



Approved

Tested and tried product; it's clean, safe and endorsed by a wide range of OEMs



Lifespan

Up to 10-year storage lifespan with a reduced need for regular testing



Performance

Unlock year-round performance in all seasons, even in low temperatures



Sustainable

Improve your green credentials by reducing greenhouse gas emissions by up to 90%



Say hello to safer handling, reduced emissions and cleaner burning – simply top up your existing stocks and go.



An immediate solution to reduce air pollution without costly engine modifications

Up to 90% reduction in harmful emissions

The road to a greener future is essential for many businesses, with 11,900 large UK corporations legally required to report their emissions. One of the main benefits of using HVO is the significant reduction in greenhouse gas emissions:

- =-30% of PM (fine particulates)
- =-30% of Hydrocarbons (HC)
- =-25% of Carbon Monoxide (CO)
- =-10% of Nitrogen Oxides (NOx)

Results based on more than 450 heavy duty emissions test on city driving cycle brought back to representative fleet (Euro II to Euro VI)

With the growing drive to tackle the root causes of climate change, both public and private sectors are under huge pressure to reduce their environmental impact. We're passionate about providing sustainable alternatives and we believe HVO fuel is invaluable in doing so, thanks to its plethora of green and operational benefits.

Hydrotreating vegetable oils is a modern way to produce high-quality diesel fuels from completely renewable materials which can be regrown when stock is needed.

The crops that are used to produce HVO fuel bypass damage to the environment, the natural ecosystem and the drive for global deforestation.

HVO fuel offers the best overall coverage between environmental, operational and performance parameters, providing the perfect platform to build a NRMM and MCP fleet that's fully compliant with all relevant legislation.



HVO is approved for use by a wide range of OEMs



HVO is revolutionising businesses

Why choose HVO fuel?

Just top up and go

Ease of use is a primary concern when considering a new fuel. With HVO, there's no need to modify existing infrastructure – you can simply top up and go – thanks to a wide range of OEM approvals.

HVO is 100% hydrocarbon (0% oxygen) and meets EN15940 standard for paraffinic fuels, ASTM D975 19B and Fuel Quality Directive 2009/30/EC Annex II, allowing it to be used and handled as a drop-in alternative to fossil diesel in most cases.

Cleaner and greener air

Air pollution is a key concern for our planet. Climate change and legally binding environmental commitments to reduce greenhouse gas emissions mean that we must look at alternative solutions for generating power. HVO eliminates up to 90% of CO₂ and significantly reduces NO_x, PM and CO emissions.

In addition, it's 100% hydrocarbon, biodegradable, sustainable and renewable. Reduced particulate production during combustion reduces ageing of engine oils and improves air quality.

All-year-round performance

HVO has excellent low temperature performance, with a high cetane number of up to 90 and low cloud point which provides certainty for year-round use, improved cold start performance, clean combustion and less chance of waxing in extreme temperatures.

Reduced maintenance and safer handling

HVO is produced using a highly controlled hydrogenation and isomerisation process. This removes impurities from the fuel and leaves a consistent, quality and paraffinic product. With no bio, FAME or sulphur content, there's less chance of degradation, increasing its shelf life to up to 10 years.

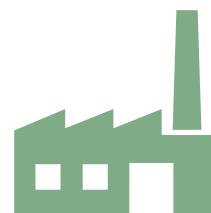
Thanks to its high purity and flashpoint, HVO has improved safety, storage and handling compared to regular diesel, meaning there's less need for regular fuel testing – with good storage and tank maintenance.



Offsetting inevitable
CO₂ emissions



All-year-round
performance



Approved drop-in
alternative to diesel



Biodegradable and
non-toxic



Zero FAME, sulphur and fossil content

HVO is a valuable product for businesses to meet their environmental and corporate social responsibility requirements. Its burn properties reduce particulate production, helping increase the lifespan of emission control systems as well as improving engine cleanliness.

Biodegradable, sustainable and non-toxic

Synthesised from waste fats and vegetable oils via hydrogenation and isomerisation, HVO is significantly less harmful to our planet than mineral diesel fuels, with reduced soot in engines and exhaust systems, lower emissions and more efficient burning than traditional diesel.

Tried and tested product

HVO is clean, safe and classified as readily biodegradable and non-toxic.

Many events and UK festivals, including Glastonbury, have already made the move to HVO to power their generators and transportation.



Who can use HVO Fuel?

With a paraffinic petrochemical structure, HVO is almost identical to fossil diesel and can therefore be used and handled as a drop-in alternative to fossil diesel without needing to amend infrastructure or clean out existing stock. However, while similar to regular diesel in terms of energy content, density, viscosity and flash point, HVO fuel presents many benefits over the fossil fuel.

HVO is commonly used in:

- Commercial boilers
- Agricultural tractors and machinery
- Boats and vessels operating within inland waterways
- Portable generators at events, festivals and film productions
- Construction equipment and machinery
- Industrial trucks and tankers



Technical specifications

Tried, tested and true to nature

Parameter	Test Method	Units	Specification	Typical Value
Appearance	ASTM D4176-2	-	Clear & bright	Clear & bright
Density	EN ISO 12185	kg/l	0.770 – 0.790	0.780
Viscosity	EN ISO 3104	mm²/s	2.0 – 4.0	2.8
Sulphur content	EN ISO 20884	mg/kg	5 max	<5
Flash point	EN ISO 2719	°C	61 min	>70
Ash content	EN ISO 6245	% m/m	0.001 max	<0.001
Initial boiling point	EN ISO 3405	C	180 min	>180
Recovered at 250°C	EN ISO 3405	% v/v	<65	<20
Recovered at 350°C	EN ISO 3405	% v/v	85 min	>98
95% recovered at	EN ISO 3405	°C	360 max	>95
Cetane number	EN 15195	-	70 min	80
Cetane index	EN ISO 4264	-	70 min	80
CFPP	EN 116	°C	Meets EN15940 Grade E requirements	-17°C
Carbon residue (on 10% distillation residue)	EN ISO 10370	% m/m	0.1 max	<0.01
Oxidation stability	EN ISO12205	g/m³	25 max	<5
Copper strip corrosion 3hr/50°C	EN ISO 2160	-	1 max	1a
Net heat of combustion	ASTM D4809	MJ/kg	42 min	44
Particulate matter	EN 12662	mg/kg	10 max	<1
Lubricity/HFRR	EN ISO 12156-1	µm	400 max	350
Lubricity/SL BOCLE	ASTM D6078	g		>3500
Renewable diesel	-	% v/v	100	100
Fatty acid methyl ester	-	% v/v	0	0
Total aromatics	EN 12916	% m/m	1 max	<1
Polycyclic Aromatics (PAH)	SS 155116	% v/v	0.02 max	<0.02
Biogenic carbon by C14	ASTM D6866 A&C/ EN16640A	% m/m	96% min	>96%

The decarbonisation of our roads

The decarbonising of our transport sector is increasingly urgent and important in the race to address climate change, with about 27% of UK greenhouse gas (GHG) emissions currently coming from this sector.

In addition, for the benefit of the population’s health, there is a need to improve air quality in many of the UK’s towns and cities, where road transport emissions are one of the biggest contributors to localised pollution.

The UK Government has already taken steps, with the launch of its ‘Road to Zero’ strategy: a long-term plan that will ultimately end the sale of new conventional petrol and diesel cars and vans by 2040.

The Institution of Mechanical Engineers believes sustainable and low carbon fuels such as HVO offer an immediate opportunity to accelerate the decarbonisation of road transport.

HVO fuel complies with BS EN 15940 being the British Standard for paraffinic diesel fuel which is a new generation of cleaner transport fuel for use in road vehicles.

If your vehicle is still within the manufacturer’s warranty or if you have taken out mechanical breakdown insurance, we recommend you check with the manufacturer or insurer that use of our product will not affect your cover. We cannot be held responsible for any issues with your vehicle connected to its age or pre-existing condition.





HVO versus fossil diesel

As a synthetic product, HVO's molecules are consistent and uniform which allows HVO to perform much better in several areas:

- Cleaner burn reduces emissions
- Improved cold temperature performance – improves cold start properties in winter
- Better combustion and filterability than other diesel products
- HFRR lubricity of around 350 microns represents “best in class” compared to EN590 diesel
- Drop-in alternative for regular diesel (conforming to EN15940) and approved by various OEMs
- Up to 10-year shelf life, depending on the storage conditions

HVO at a glance

- Greenhouse gas emissions are 90% lower than mineral diesel
- Manufactured from 100% renewable raw materials
- Delivery mileage is carbon offset
- Meets EN 15940:2016 specifications
- Tried and tested product; it's clean, safe and endorsed by a wide range of OEMs
- Free from aromatics, sulphur and metals
- Excellent cold-weather performance
- Reduced particulate production during combustion reduces the ageing of engine oils and improves cold start properties and air quality
- Fully biodegradable
- Suitable for a large number of engines, generators and machinery

Beesley Fuels can supply HVO fuel directly to your site, in whatever quantity you require – from bulk 36,000 litres to single IBC supplies. To learn more about the environmentally-friendly advanced renewable fuel, get in touch on **0330 123 1144** to start reducing your emissions today.



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