



Rethink. Replace.

**Refuel.**

Swap your fossil diesel for Crown HVO fuel and reduce up to 90% of your net CO<sub>2</sub> emissions.



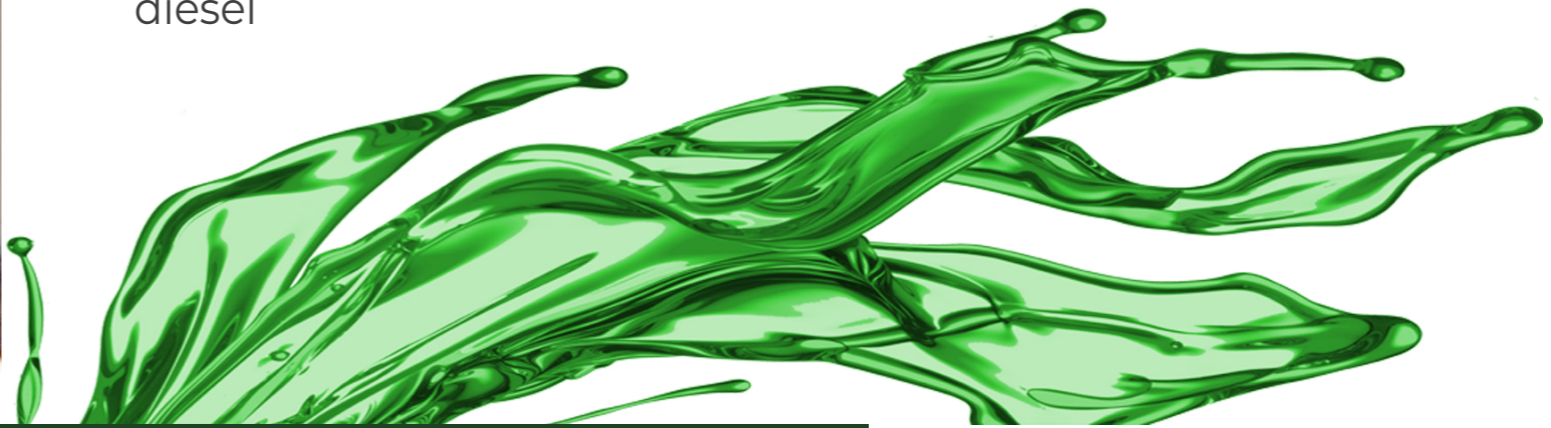
**Crown Oil**  
Fuels and Lubricants

0330 123 1444



# Sustainable fuel for a sustainable future

Reduce your net CO<sub>2</sub> emissions by up to 90% and improve your Corporate Social Responsibility with our advanced renewable diesel



Up to 90% reduction in harmful net CO<sub>2</sub> emissions

All our delivery tankers are fuelled by HVO with any remaining emissions offset - at no extra cost to you

Safer handling, reduced emissions and cleaner burning

Simply top up your existing stocks and go

**HVO (hydrotreated vegetable oil) is invaluable in helping the UK achieve its 2050 net zero target for greenhouse gas emissions.**

Our renewable diesel fuel is available for delivery to any site in the UK within 48 hours. We can even have it with you on the very same day if needed, made possible with our emergency delivery service.

With a fleet of over 80 tankers and strategically located depots across the UK, we're ready to help you reduce your carbon footprint with HVO whenever you are.



# What is HVO?

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 net greenhouse gas emissions by up to 90%

HVO eliminates up to 90% of net CO<sub>2</sub> and significantly reduces nitrogen oxide (NOx), 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 fuel is a FAME-free and fossil-free environmentally-friendly alternative to mineral diesel with a wide range of OEM approvals for use in modern vehicles, rail and inland waterways, generators, construction machinery and industrial power systems.

HVO is part of the paraffinic family of fuels. Paraffinic diesel is a high-quality and clean liquid fuel with zero sulphur or aromatic content.

It's synthetically made through the hydrotreatment process from vegetable oils or animal fats which allows it to significantly reduce harmful emissions when used in diesel vehicles and machinery.

There's no need to modify existing infrastructure – you can simply top up and go.



# What do our customers think?



**James Matthews, Operations Director at BunzlCatering Supplies said:**

"We are delighted to switch to HVO fuel to service the catering and hospitality industry in London and feel proud to be one of the first UK distributors within our sector to do so. Our sustainability strategy in operations is to reduce our environmental impact and look for new ways to improve our performance and therefore reduce our carbon footprint.

We are committed to switching further vehicles in our national distribution network to HVO fuel in the future."

**Councillor Mike Greene, Portfolio Holder for Transport and Sustainability, BCP Council commented:**

"This partnership with Crown Oil provides us with the opportunity to explore the environmental benefits and operational impact of this alternative fuel within a large municipal fleet, and is another initiative alongside electric vehicles and Hydrogen technology that must be considered as part of our longer term fleet strategy.

This will be the start of our transition to a cleaner, greener fleet which I am very excited to be part of."



**David McCreath, Simpsons Malt Transport Manager, said:**

"At Simpsons Malt, we're passionate in our quest to reduce our carbon footprint and I'm delighted that we've been able to contribute towards this in the Transport Department by switching our 28-strong fleet based out of Berwick-upon-Tweed to HVO, significantly reducing the level of harmful emissions we produce.

We have been very impressed with the performance, with no change in the miles per gallon of the vehicles, while refueling has also been made simple through our on-site HVO tank supplied and regularly restocked by Crown Oil."

# Start reducing your carbon footprint today

HVO 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

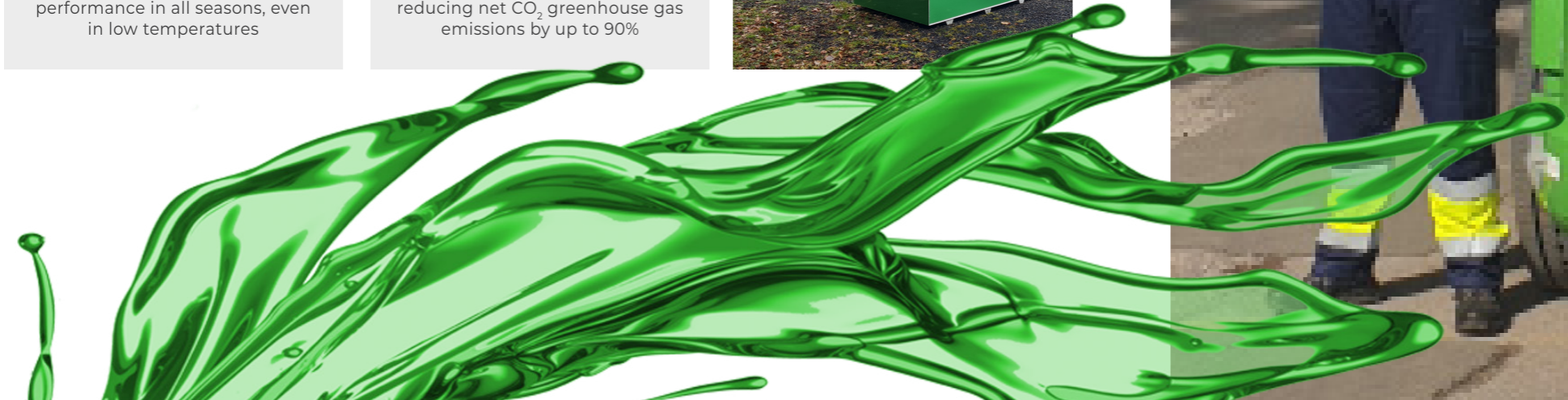


## Sustainable

Improve your green credentials by reducing net CO<sub>2</sub> 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

Change is coming, so why not lead the way?

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 Crown 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

CATERPILLAR



DAF



RENAULT



PEUGEOT

AGCO



JOHN DEERE

IVECO



Mercedes-Benz

STEYR



\* Crown Oil 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.



# Crown HVO is revolutionising businesses



## Why choose HVO fuel?

### A tried and tested alternative to mineral diesel

Ease of use is a primary concern when considering a new fuel. With Crown 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. Crown HVO eliminates up to 90% of CO<sub>2</sub> and significantly reduces NO<sub>x</sub> and PM emissions.

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

### All-year-round performance

Crown 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

Crown 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.

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



Fast and simple step towards "net zero" strategies



All-year-round performance even in high/low temperatures



Approved drop-in alternative to mineral diesel



100% Biodegradable FAME-free and non-toxic fuel



## Zero FAME, sulphur and fossil content

Crown 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, Crown 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 Crown HVO?

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.

### Crown HVO is commonly used in:

- Commercial boilers
- Agricultural tractors and machinery
- Boats and vessels operating within inland waterways
- Rail, haulage and transport
- 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	mm <sup>2</sup> /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/m <sup>3</sup>	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 Crown HVO offer an immediate opportunity to accelerate the decarbonisation of road transport.

**Help shape the future of sustainability and switch to Crown HVO today. As one of the largest distributors of Crown HVO fuel in the country, we can supply HVO to wherever you are, with some of the quickest delivery times in the industry.**

**Find out more about the paraffinic diesel and start reducing your carbon footprint right away and call us today on 0330 123 1444.**





# Our own fleet is now running on HVO fuel

We're thrilled to announce that our fleet is now run on HVO fuel with a predicted saving of 3080 tonnes of CO<sub>2</sub> every year. That's the equivalent to driving around Earth 51 times!

**UKIFDA**  
GREEN Award 2021

We've won the UKIFDA Green Award which showcases our commitment to pioneering change for a decarbonised future



## We practice what we preach...

We can't expect others to make a change without leading by example, and we're proud to be the first and only fuel supplier to run our entire delivery fleet on HVO fuel. We hope this move will showcase the fuel's ability to perform faultlessly as a viable diesel alternative.

Our tanker fleet comprises 25 DAF vehicles which are all approved to run on HVO fuel without technical adjustments or any reduction in vehicle performance. The paraffinic diesel fuel delivers up to a 90% reduction in net CO<sub>2</sub> emissions 'from well-to-wheel' compared to conventional diesel, as well as up to a 27% reduction in nitrogen oxide and up to 84% reduction in particulate matter – all key components towards improving air quality.

## How is Crown HVO better than diesel?

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

- Net CO<sub>2</sub> Greenhouse gas emissions are 90% lower compared with mineral diesel
- 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
- For every 1,000 litres of diesel burned, you will produce 3.6 tonnes of greenhouse gas CO<sub>2</sub>, compared to just 195kg GHG CO<sub>2</sub> for every 1,000 litres of HVO burned

# An easy step towards your Net Zero strategy

Crown HVO fuel offers a fast and simple step towards “net zero” rather than the leap needed for electrification. With a large number of OEM approvals, HVO can be used without changes to infrastructure or capital expenditure, removing cost barriers and enabling a practical step towards decarbonisation. Make the right choice and switch to an advanced renewable diesel fuel today.

## What’s more, by using Crown HVO fuel in your business, you will:

- Improve your brand image and reputation
- Make your business more attractive to potential partners and investors
- See year-on-year improvement in annual CSR reporting
- Be doing your bit for the environment!

*“According to a recent global survey, 62% of executives consider a sustainable strategy necessary to be competitive in today’s world of business and 22% think it will be in the near future.”*

## Are you ready to reap the benefits of HVO?

If you'd like to experience the benefits of using a renewable fuel at your business, we'd be delighted to offer HVO fuel in our range of transportable fuel stations. The tanks come in either 5,300-litre, 10,000 litre or 20,000-litre capacity and offer superior security for stationary fuelling. Simply take delivery of a tank to your site and fill up and go!

Featuring a full-height lockable cabinet and secure hose access, these bulk storage units are perfect for long or short term projects. With a 110% bunded design that complies with BS799 Part 5, the CrownCube ensures an environmentally safe solution for bulk fuel storage.

We can also offer a flexible trial package which includes a sustainable fuel station loan. Call us today on 0330 107 1329 to discuss the various options available to you.



**London Borough  
of Hounslow**

Hounslow Council is using HVO fuel in place of fossil diesel to significantly reduce net CO<sub>2</sub> emissions in their fleet. Moving towards a cleaner fuel throughout their operations will bring them closer to achieving their goal of net zero carbon by 2030 as well as help them improve local air quality and emission levels.

We installed a dedicated 10,000-litre CrownCube sustainable fuel station at their Lampton360 depot which is operated by Hounslow Council. Although HVO is fully miscible with fossil diesel, using a fuel station also allows Hounslow Council to start with a fresh batch of HVO to ensure that any sludge or contaminants from their diesel tank do not compromise the fuel's benefits.





T: 0330 123 1444 | E: [sales@crownoil.co.uk](mailto:sales@crownoil.co.uk) | W: [crownoil.co.uk](http://crownoil.co.uk)