



THE FUTURE OF RED DIESEL
& New alternative fuels for standby diesel engines

WHY WE NEED TO GO GREEN

An aerial view of the London skyline, featuring the Shard skyscraper on the left and a large skyscraper under construction in the center. Several construction cranes are visible on top of the building under construction. The River Thames is visible in the background. The sky is hazy, suggesting air pollution.

In 2019, recognising that air pollution is one of the biggest ongoing threats to public health in the UK, the government launched an ambitious new strategy to clean up the air and save lives.

Red diesel accounts for around 15% of all the diesel used in the UK and is responsible for the production of nearly 14 million tonnes of CO₂ a year. Red diesel used in the construction and infrastructure building sectors was also estimated to have caused 7% of nitrogen oxide (NO_x) emissions and 8% of PM₁₀ emissions (a type of particulate matter) in London in 2018.

TIMELINE TO NET-ZERO

The UK Government is committed to tackling climate change and improving the UK's air quality and has already committed to an ambitious timeline to achieve its targets.

2019



The UK became the first major economy in the world to pass laws guaranteeing an end to its contribution to climate change by 2050.

At Budget 2020, the government announced its intention to remove the entitlement to use red diesel and rebated biodiesel from most sectors and entered into consultation.



2020

2021



With the details confirmed, UK red diesel users are given twelve months to switch to standard-tax white diesel or ideally, alternative sustainable fuels.

By the end of March 22, only a limited number of exceptions such as agriculture will be able to continue to use red diesel.



APRIL 1ST 2022

2050



If its target is met, the UK will have succeeded in bringing all greenhouse gas emissions to net zero, and will have exceeded WHO air quality goals

AFTER 1ST APRIL 2022

In order to achieve its 2050 net-zero target for greenhouse gas emissions, the Government will be encouraging the switch to renewable fuels by removing entitlement to use Red diesel for most applications.

From 1st April 2022, most applications across the UK using RED diesel (including for use in standby power systems) will need to use fuel taxed at the standard rate for diesel which more fairly reflects the negative environmental impact of the emissions they produce.

The Government recognises that this will be a significant change for some, and is taking steps to help manage the impact on those affected.



Businesses will have until 1st April 2022 to prepare before any changes take effect.



Accelerating the design and production of innovative clean energy technologies to help bring cheaper alternatives to market sooner

HOW DOES THIS AFFECT ME?

It is clear that the government knows that reducing the use of RED diesel is the right thing to do for the environment and for air quality, and makes sure that businesses pay fairly for the harmful emissions they produce.

The changes to RED diesel eligibility will affect all users of standby generators for critical power protection regardless of the size of their application.

Replacing or simply 'topping-up' your existing RED diesel with duty-paid white diesel might seem to be a convenient option, however, standard diesel contains FAME bio content, and increasing the amount of fuel containing this element could well have a detrimental effect on your engine, and ultimately affect reliability.

What is FAME?

FAME (Fatty Acid Methyl Esters) is the generic chemical term for biodiesel which is mostly produced from recycled cooking oils and renewable oil sources, and is added to diesel. As biodiesel, it holds a higher water content than other petroleum-based fuels which can increase the chances of fuel contamination and other serious complications such as:

- Material incompatibility, which can cause the degradation of rubbers, plastics, and surface coatings.
- Clogged filters due to residual deposits.
- Water contamination, which can lead to the growth of microbes in the fuel.
- Gradual degradation of fuel due to oxidation and hydrolysis, which can damage machinery.
- Cold flow premature waxing and precipitation issues.

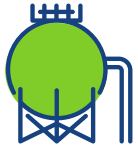
WHAT ARE MY OPTIONS?

As the April 2022 deadline draws closer, critical power consumers of RED diesel have a number of things to consider and some complex decisions to make to ensure compliance with the new legislation which best meets the needs of their individual applications.

As time moves on, we're advising our clients to also consider both the timescales involved and product availability for their fuel transition - in particular, our clients with large-scale fuel stores for mission-critical equipment.

Whichever route they choose to take, AVK can help our RED diesel clients with a number of solutions to help make the move towards a cleaner environment.

COMMITTED TO CARBON REDUCTION



Empty the fuel tanks of RED diesel; clean and replace with renewable fuels



- Replacing your existing diesel with renewable, alternative fuels now is the better choice for the environment long-term, and immediately reduces your carbon footprint.
- Storage capability (no FAME therefore reduces the risk of any contamination of tanks and reduces maintenance costs)
- Traceable and certified reductions in emissions and particulates
- Improved cold weather performance



- Short-term expenditure on replacing fuels and any potential disruption to availability whilst replenishing – but these can be minimised by the AVK fuel transition service.



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SOLUTION

AVK can manage your fuel transition journey from start to finish. Our fuel buy-back service can help off-set some of the initial costs of your transition, and our expert team of fuel specialists can guide and manage your move to renewable low-carbon fuels from initial assessment right through to recommissioning and handover.

COST-SENSITIVE CONVENIENCE



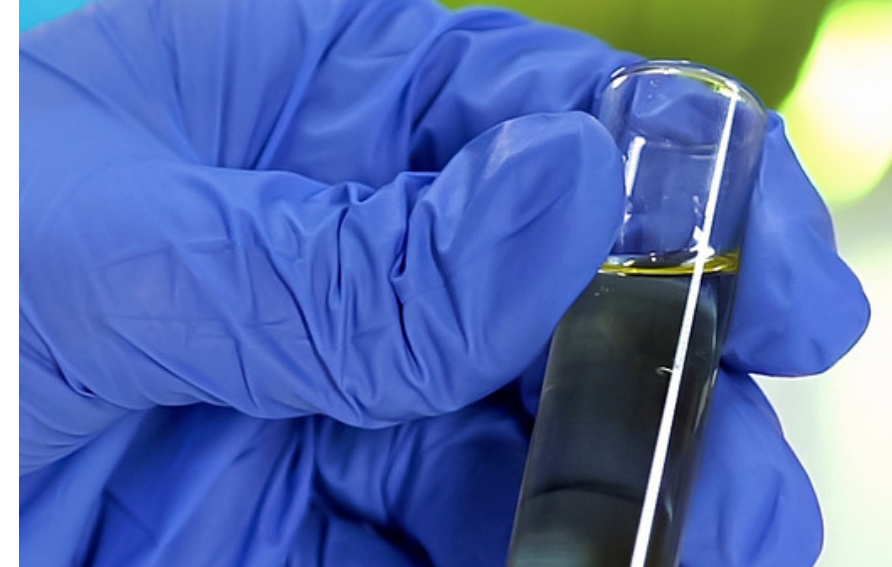
'Top up' with duty-paid white diesel after April 2022



- Saving cost on fuel replacement - no CAPEX or OPEX requirements
- Convenience



- Degradation of fuel quality due to contamination in the existing diesel compromises your equipment function
- The increased cost of continual monitoring and maintenance to minimise damage from adding FAME content white diesel
- Continued contamination of new diesel with red markers requires complex proof of compliance
- Unchanged emissions levels and high carbon footprint



AVK THE POWER PEOPLE SOLUTION

Naturally occurring bacterial growth within FAME content diesel can accelerate the degradation of fuel, requiring regular monitoring and the introduction of fuel maintenance equipment to keep the engines operating at optimal performance.

AVK can perform a fuel quality sampling assessment, test the complete fuel system, and advise further if this option is the most efficient for your application.

DEDICATED TO DIESEL



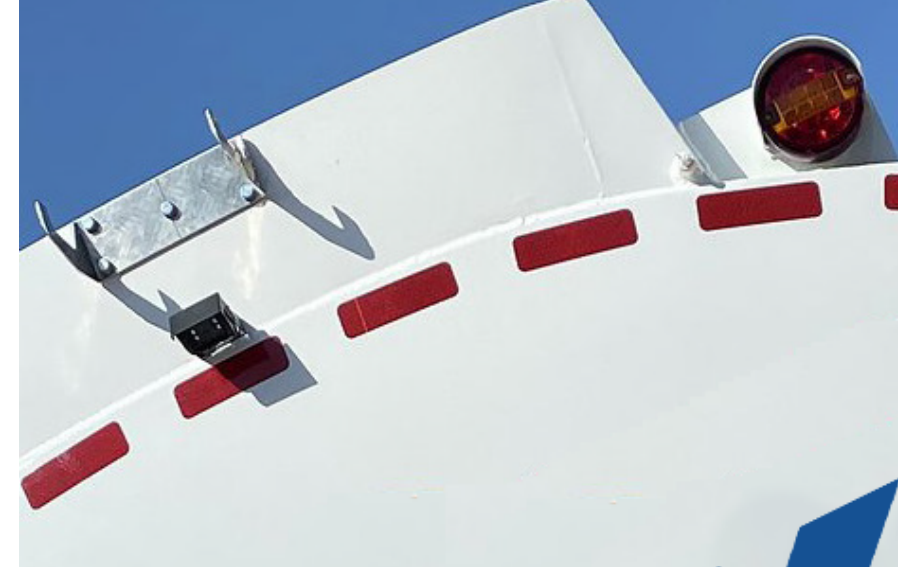
Empty the fuel tanks of RED diesel; clean and replace with new duty-paid diesel and install fuel maintenance equipment as required



- A full system clean (to ensure the existing fuel tanks are compliant) and new fuel will remain FAME contaminant free for as long as possible
- AVK's RED diesel buy-back service could off-set some of the costs of associated works and fuel replacement



- Replacing all the fuel (particularly in larger applications) with duty-paid white diesel can be cost-prohibitive for many
- Large scale use of fossil-derived fuels will continue to release carbon emissions and will load up your carbon footprint



AVK THE POWER PEOPLE SOLUTION

AVK's fuel transition service offers an end-to-end solution if you choose to replenish with white diesel. We offer a RED diesel buy-back, clean and replenish tanks with new fuel, provide temporary tanks and equipment to ensure availability, and recommission and test the full system.

We can also provide additional monitoring and maintenance services to ensure you're operating a clean and reliable critical power supply.

WHAT IS THE BEST SOLUTION?

Many large-scale consumers of RED diesel are already improving their Carbon footprints by switching to alternative fuels, and most engine manufacturers have now confirmed EN15940 compatibility utilising a synthetic biodiesel called HVO.

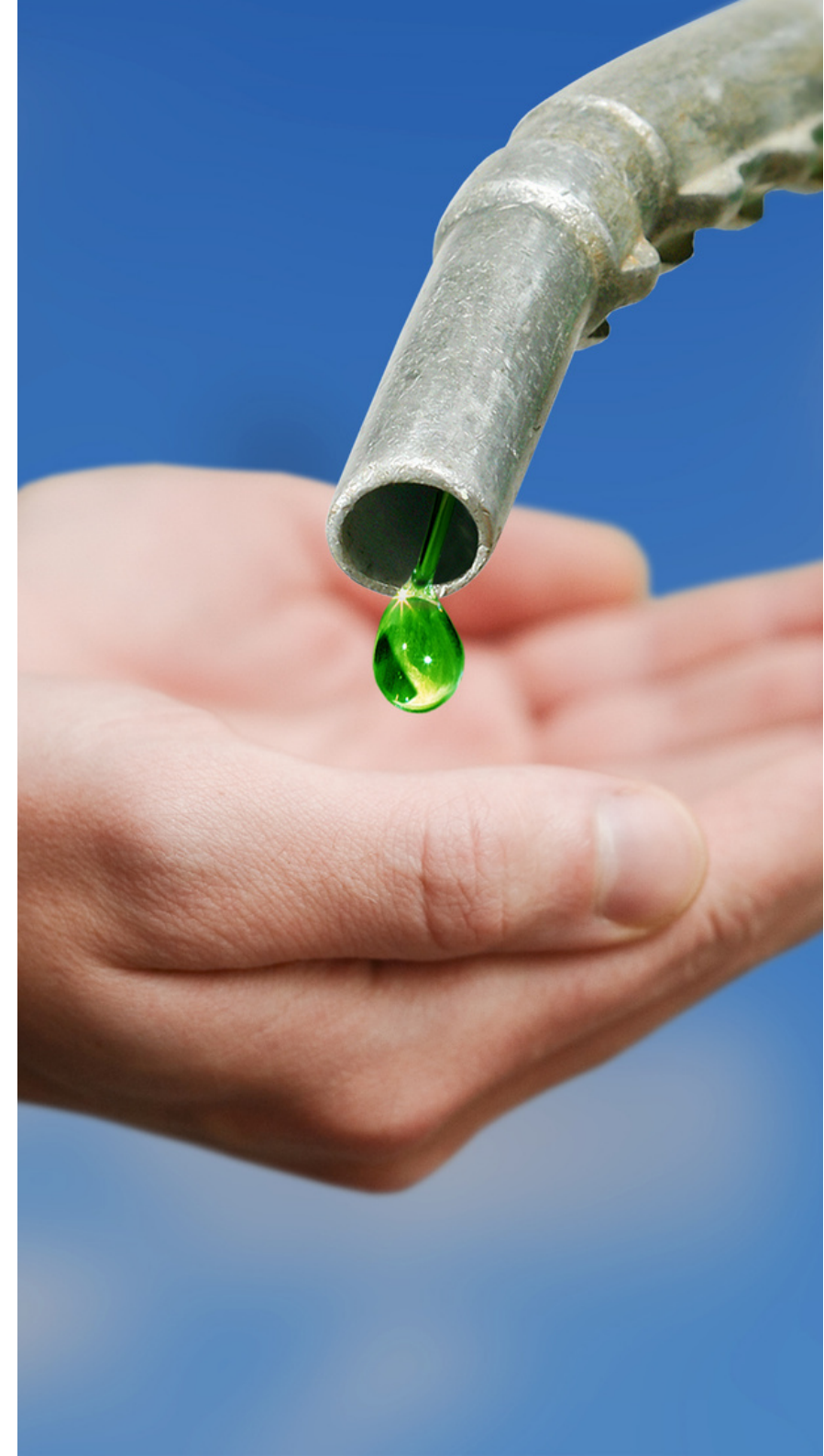


HYDROTREATED VEGETABLE OIL (HVO)

HVO fuel is a form of renewable diesel that has been produced from renewable and sustainably sourced vegetable fats and oils.

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,



BENEFITS OF USING HVO

In addition to lower emissions and particulates, HVO offers further advantages over RED diesel:



Cleaner burn reduces emissions and makes it ideal for use in urban “clean air zones”



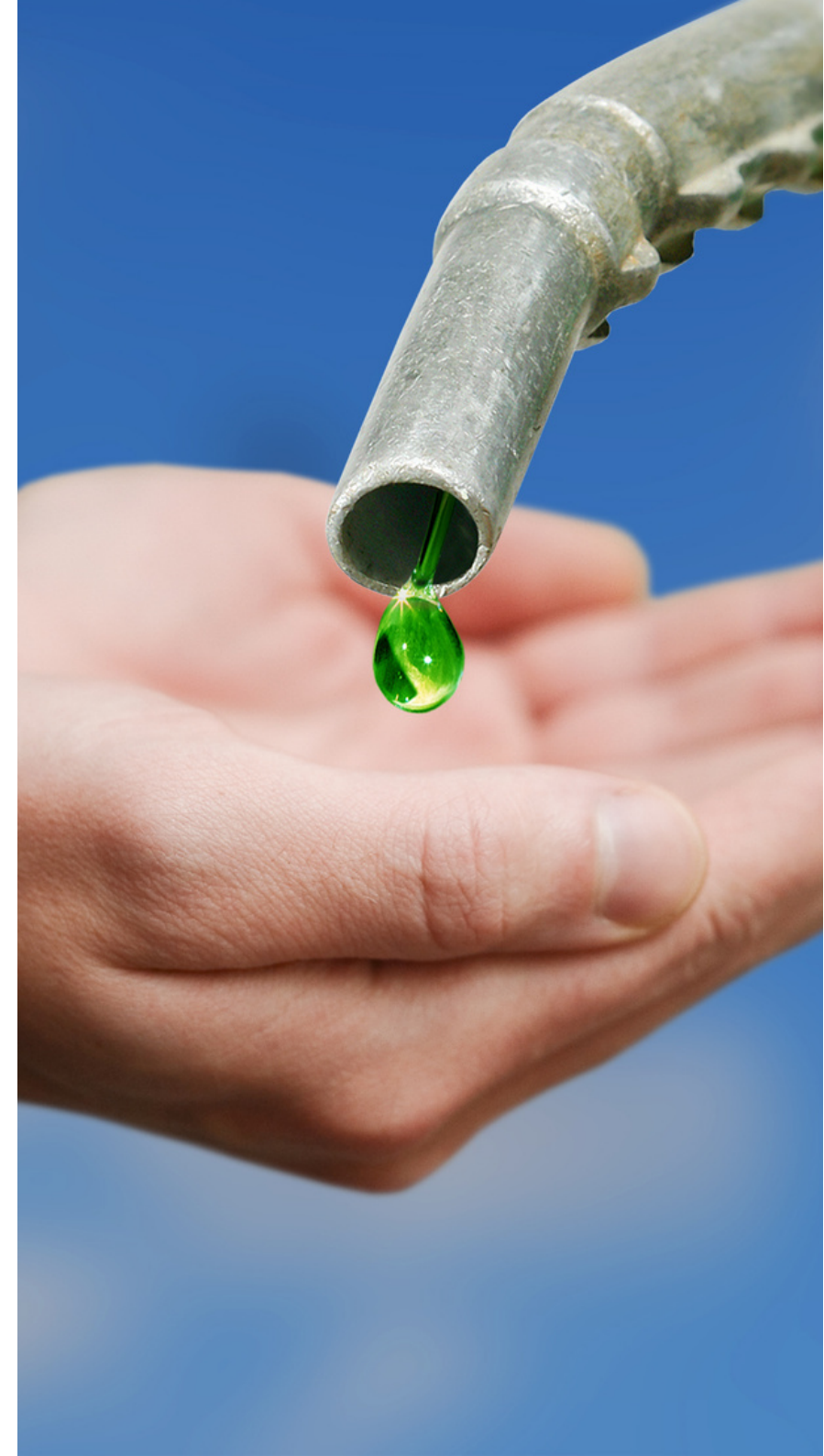
Excellent cold temperature performance – improves cold start properties in winter



Improved storage capability (no FAME reduces the risk of contamination of tanks)



Extended 10-year storage lifespan with a reduced need for regular testing and maintenance



HVO VS DIESEL

Aside from having advantages over traditional Diesel, replacing current fuel with HVO offers clear improvements in emissions

EMISSIONS SAVINGS	EN590 GAS OIL	HVO*
CO2 Saving	None	93%
Emissions reduction PM	None	30%
Emissions reduction NOx	None	35%
Emissions reduction CO	None	35%
Emissions reduction HC	None	20%
Water content	>200 ppm	<50 ppm
BIO Content	0	100
Sulphur Content	<10	<1
Stability from Oxidation	Average	Excellent

*Results based on control test conditions and may vary based on Model/Make/Manufacturer and operating conditions

HOW AVK CAN HELP



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At AVK we have been watching these legislative developments closely to best understand how our clients will be affected by the changes.

Our dedicated fuel system experts can help you to:



Navigate the changes to legislation and how it will affect your business



Understand the renewable fuel alternatives and their benefits








Help your business explore renewable fuel alternatives



Manage any necessary changes and upgrades to your standby power systems

FUEL TRANSITION SERVICE

We have been working diligently to develop a complete end-to-end service to support all of our clients make the switch to either duty-paid diesel or renewable fuel supplies. Whichever solution is best for your business, AVK's Fuel Transition Service can help you make the switch.

-  Buy back of existing RED diesel fuel
-  Cleaning of existing tanks to prepare for replenishment
-  Renewing and reviewing correct grade of filters on fuel polishers
-  Provision of temporary tank arrangements to ensure standby cover is available during refilling operations
-  Recommissioning and testing systems on the new fuel

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THE TRANSITION PROCESS

AVK can manage your fuel transition journey from start to finish. Our fuel buy-back service can help off-set some of the initial costs of your transition, and our expert team of fuel specialists can guide and manage your move to renewable low-carbon fuels from initial assessment right through to recommissioning and handover.



FUEL TRANSITION CAPABILITIES

Through our extensive Generator and Fuels Support Network, AVK can offer the most comprehensive HVO Transition service across the UK and Europe - from initial site audits to Fuel Transition and Commissioning.



United Kingdom

- AVK Fuel Specialists
- Fuel Transition Team - from Diesel to HVO
- HVO Supply Network



Europe

- In Country AVK Fuel Specialists
- Fuel Transition Team - from Diesel to HVO
- HVO Supply Network



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change for the better