

A large tugboat is shown from a low angle, moving through the water. The image is overlaid with a blue color filter. The text is positioned over the upper half of the image.

THE RTFO,
FAME
AND YOUR FUEL SUPPLY

A guide to recent legislative changes
and what they mean for your business

Both the EU and UK have been driving the use of biodiesel across the fuel supply chain. In the UK, this is supported by the **Renewable Transport Fuel Obligation (RTFO)**, which requires that a certain percentage of fuel is renewable to improve production sustainability and help to reduce emissions of greenhouse gases.

New biofuel targets came into force in 2019 under the RTFO, meaning that 8.5% of all fuel volume supplied must be derived from sustainable and renewable sources. Further increases are planned to gradually increase this target to 12.4% by 2032.

Suppliers are legally required to meet these targets. But how they get there is a matter of supplier choice. As a result, many suppliers are adding more FAME to gas oil and road diesel.

It's important that businesses are aware of the potential impact that increased FAME content can have on vehicles, machinery and fuel storage tanks.

What is FAME?

FAME is a biodiesel mostly made from recycled cooking oils, plant-based material and other renewable material such as animal fats and plant oils. The manufacturing process converts oils and fats from these feedstocks into long chain molecules known as fatty acid methyl esters – often referred to as FAME.

FAME has commonly been blended into UK road fuel since 2004 but has more recently been introduced to sulphur free gas oil. The 'ME' of FAME – the methyl esters - are hygroscopic, which means they absorb and retain moisture at a higher rate than conventional mineral diesels.

Why is it being used to meet the UK's RTFO?

Suppliers can meet the RTFO in a number of ways, such as by increasing ethanol in petrol, purchasing RTFCs (which demonstrate achievement of sustainability targets) to offset a shortfall in renewable content or increasing the volume of FAME in diesel and gas oil. However, the high price of purchasing RTFCs means that this is not a competitive option for suppliers.

FAME that is produced from waste-derived, sustainable feedstocks is worth double the RTFCs per litre or kilogram supplied. Adding FAME is also more economic for suppliers than purchasing RTFCs. As a result, increasing the amount of FAME in gas oil and road diesel is currently the most commercially viable option to meet the new targets.

What are the potential problems?

Most modern engines are compatible with fuel containing the proportion of FAME set out within British Standards. However, FAME's water absorbent, detergent and solvent properties can cause complications in older machinery or vehicles; as well as in bulk storage tanks.

The key FAME-related storage and operational issues businesses must be aware of include:

MATERIAL INCOMPATIBILITY

FAME's solvent properties can corrode fuel system and tank components. Many common rubbers, plastics and surface coatings will degrade from contact with FAME-containing fuels.



FILTER AND LINE BLOCKAGES

Blockages caused as a result of increased risk of water contamination, waxing, diesel bug and fuel separation could lead to fuel starvation in engines.



HIGHER WATER UPTAKE

Can result in poor fuel performance, higher fuel consumption and greater risk of diesel bug infestation.



FUEL SEPARATION

Fuel-water emulsion in tanks can lead to irregular fuel performance, early waxing of the bio component of the fuel plus blocked lines.



POOR COLD WEATHER PERFORMANCE

This can lead to more frequent waxing and precipitation problems.



SHORTER SHELF LIFE

The stability of FAME-containing fuels may degrade over time by oxidation and hydrolysis, leading to discolouration, gum formation and deposits in storage and damage to machinery in operation.



How can I prevent issues caused by FAME?

In the first instance, purchasing fuel from a reputable oil supplier will ensure that gas oil and DERV meets British quality standards and is on specification.

- 1** Check your tank carefully for signs of degradation in structure, material or coating
- 2** Any changes to the distinctive diesel smell could indicate fuel contamination that must be remedied immediately
- 3** Inspect pipework, seals, pumps and other components frequently for signs of actual or potential leakage. If leakage is found, it's vital to replace components immediately to prevent further damage.
- 4** Be sure to examine filters regularly and have fuel filters replaced regularly.
- 5** Consider how long the fuel has sat in the tank. To minimise the potential for water intake, we recommend limiting the storage time of FAME-blended fuels to a maximum of six months.

I have already been affected – what can I do?

For those that have already experienced the impact of the FAME increase in diesel and gas oil, there are a number of readily-available solutions on the market.

Certas Energy offers a wide range of high quality additives that can prevent or remedy issues caused by increased FAME content in DERV and gas oil:

Anti Bug

Tackles current and immediate microbiological infestation. Anti Bug is used to inhibit microbiological activity in clean tanks, and can be added directly into a vehicle or machine fuel tank.

- Broad spectrum additive
- Eliminates plugging of filters or engines
- Has an immediate effect
- Protects against tank and pipe corrosion

Gas Oil Conditioner

Provides an all-in-one treatment for gas oil to improve day to day running of diesel engines and will stabilise fuel during storage. The additive can counter any negative effects resulting from the reduction in sulphur content and the increase in biodiesel (FAME) content and will give improved fuel economy.

- Increases fuel shelf life
- Prevents microbiological growth
- Inhibits fuel tank sludge formation
- Maintains a clean fuel delivery system