FIVE BIOFUEL MYTHS DEBUNKED

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Biofuels help energy consumers reduce their carbon footprint. Yet myths about them persist. So, what's true and what's false?

Energy choices have never been more important. We consume 4.5 billion tonnes of fossil oil globally every year. Around a quarter of that is for transportation, and millions of rural, off-gas-grid households still rely on oil for heating. The choices we make now about how we fuel our cars, trucks, businesses and homes will be a key factor in how quickly the world reaches net zero [1].

DCC Energy has accelerated its bio roll out – making biofuel and biogases available to customers to help them reach their emissions reduction targets more quickly.

DCC Energy supplies several biofuels, among which is hydrotreated vegetable oil (HVO) – a second-generation biofuel that makes a convenient, drop-in alternative to fossil diesel.

As part of our strategy to double our profits and halve the carbon emissions of our customers by 2030, we aim to replace £30 million of our traditional fossil oil-based profits with £40 million from biofuels. Given that 72 per cent of our profits arising from the energy we provide to customers is currently fossil-based, [2]
HVO will be a key part of the journey.

Second-generation renewable fuels like HVO are often misunderstood, especially when they're confused with first-generation conventional biodiesel (FAME) or with biofuels produced from food such as soy or sugar cane.

Sounds complicated? Don't worry, help is at hand. Read on for the facts behind five common biofuel myths:

Myth 1: Biofuels aren't widely used and will never be a significant replacement for fossil fuels.

Fact: We're at the start of a biofuels boom. The fastest growing segment is renewable diesel, which analysts forecast to triple [3] over the next five years.

In 2019, renewable fuels replaced just four per cent of all fossil fuel used by transportation around the world. By 2040, forecasts suggest biofuels will replace 40 per cent of today's oil consumption for transport – although a significant percentage of that will be in maritime and aviation [4] where DCC's business is small.

In countries where there are incentives like clean fuel production tax credits and grants, production is soaring. The USA's landmark Inflation Reduction Act 2022, for example, has given the American biofuels industry a significant boost.

Many commercial fleets have already begun the switch to biofuels. Regulatory obligations on fuel suppliers to increase the mix of biofuels in petrol and diesel, with reduced energy taxes at the pumps in some locations, have also contributed to a steady reduction in the carbon intensity of transportation fuels in parts of Europe and the US. This is the direction of travel globally – it's likely that trucks and the minority of legacy cars still on the road in decades to come will run on low-carbon biofuels.

BIOFUELS IN NUMBERS

4.5
billion tonnes – amount of fossil oil consumed globally every year

40%
– amount of today's oil consumption for transport that biofuels will replace by 2040

90%
reduced carbon emissions delivered by HVO*

Myth 2: Biofuels aren't as good as fossil fuels – they're unreliable in extreme cold and may harm your engine.

Fact: Renewable fuels such as HVO can be dropped into existing diesel engines with no modifications required.

HVO is sometimes confused with first generation conventional biodiesel, or FAME, which stands for fatty acid methyl ester and is currently mixed with fossil diesel in a concentration of up to seven per cent. Second generation HVO has a different chemical make-up, it can be used in all diesel engines up to a 100 per cent concentration or be blended in any ratio with fossil diesel.

HVO performs well in extremely cold weather, better than either FAME or diesel. You can tell from the cetane rating, which plays a similar role for diesel as octane does for petrol. Fossil diesel has a cetane number of 51 whereas HVO has a cetane number between 70 and 90 [5]. The latter performs better when starting the engine and has less chance of 'waxing' (thickening up).

Myth 3: Biofuels don't reduce emissions.

Fact: Renewable diesels like HVO burn cleaner than fossil fuels, resulting in fewer greenhouse gas emissions.

HVO is sulphur, FAME and fossil free, biodegradable [6] and delivers up to 90 per cent reduced carbon emissions [7] over the full production life cycle when it's produced from waste material such as cooking oil.

Myth 4: It's expensive and difficult to switch from regular diesel to a biofuel like HVO.

Fact: HVO is comparable with fossil diesel, so switching doesn't require upfront investment in new equipment such as storage tanks for homes or businesses or modifications to vehicles.

You can use the same trucks to deliver the fuel to off-gas-grid tanks or for back-up power generation and it's easy to fill up trucks or cars on the go in the UK, Ireland, most of Europe, and North America.

HVO has a long shelf life. With good storage conditions, it will keep for 10 years, compared with regular diesel which can start to degrade after one year. There is a price-per-litre premium, and many businesses are happy to pay it for a drop-in energy that provides immediate sustainability benefits. This price premium is shrinking, however, and expected to reduce further as supply and demand increase.

Myth 5: Biofuels cannot be produced in large enough quantities to make a real difference without disrupting food (and feed) supplies.

Fact: Second-generation biofuels such as HVO are made from non-food biomass that would otherwise go to waste.

Feedstock options are increasing all the time and technology is progressing. Low-quality byproducts from farming or forestry like rice straw, wood chip or sawdust, and used vegetable fats and oils can be processed into high-quality biofuel. One of the best future feedstocks is municipal waste. Turning waste into fuel saves sending it to landfill – a win-win.

[1] The UN defines net zero as "cutting carbon emissions to a small amount of residual emissions that can be absorbed and durably stored by nature and other carbon dioxide removal measures, leaving zero in the atmosphere"
[2] DCC's financial position at 31 March 2023
[3] S&P Global **https://www.spglobal.com/commodityinsights/en/ci/products/biofuels-market.html** Accessed 8 March 2024
[4] **Neste** News and Insights Accessed 26 March 2024
[5] European Technology and Innovation Platform, Table 1.
https://www.etipbioenergy.eu/images/SAF_Study_Hydrotreated_Vegetable_Oil_HVO_as_a_Renewable_Diesel_Fuel.pdf Accessed 26 March 2024
[6] Neste Renewable Diesel Handbook **https://www.neste.fi/sites/neste.fi/files/neste_renewable_diesel_handbook.pdf** Accessed 26 March 2024
[7] GOV.UK, Greenhouse gas reporting: conversion factors 2023
https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023 Accessed 26 March 2024
*over the full life cycle when made from waste material

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