PORTLAND MARKET REPORT

MAY IN VIEW

AS A CURRENTLY HIGH-PRICED, NICHE FUEL WITH LIMITED MASS ENVIRONMENTAL IMPACT WHAT IS THE TRUE POTENTIAL FOR HVO?

Whether you live or breathe the world of energy or simply take a passing interest, there is no escape from the decarbonisation journey. Government legislation, consumer behaviour and societal interest have all taken the environmental agenda to new levels of intensity. As a result, numerous renewable fuel opportunities are now presenting themselves and one of the main areas of interest is low-carbon, "drop-in" fuels.

Unlike biodiesels such as FAME (Fatty Acid Methyl Ester), which have to be mixed into liquid fuels in small doses, drop-in fuels can be used inter-changeably with normal fossil fuels. Thus, low-carbon, drop in fuels can help deliver lower emissions, without requiring expensive capital expenditure to modify existing tankage, pipelines or fuelling systems. This is of particular interest to both "hard to decarbonise" sectors (eg, construction) and those sectors that are already well on their way to low-carbon

"NO DROP-IN PRODUCT HAS HAD MORE FEVERISH INTEREST THAN HVO."

solutions (eg, electric buses), but still have to operate with high carbon legacy equipment (ie, diesel buses). In simple terms, even if every bus depot in the land decided to go electric tomorrow, they would still have numerous diesel buses on the books that need to be depreciated (ie, used) over the next 5-10 years.

No drop-in product has had more feverish interest than Hydrotreated Vegetable Oil (HVO), which can reduce CO2 emissions by up to 90% versus normal diesel. Even better, HVO is a high-quality paraffinic liquid (ie, more akin to kerosene) which does not invalidate engine warranties. In effect, it is a high quality, finished grade 'fossil' fuel, that happens not to come from fossil fuels! Despite containing the words 'vegetable oil' in its title, the product is not necessarily made from vegetables at all. A small amount is made from decayed vegetable matter, but it is far more common to use virgin vegetable feedstocks (sunflower, rapeseed or, more controversially, palm oil), used cooking oil (see last month's report on the Suez blockage) or by chemically processing (hydrotreating) meat carcass tallow. Nice!

Emission reductions are at their least impressive when HVO production relies on virgin vegetable oils. Palm oil derived HVO only delivers 'well to tank' emission reductions of 26%. Used cooking oil performs much better at circa 60% CO2 reduction, but it is by using tallow (meat) where the greatest savings are made (90%). So far, so impressive, but when it comes to these high levels of CO2 abatement, the tempo of the positive mood music begins to slow. Suffice to say, renewable fuel is not necessarily the same as sustainable fuel and, when it comes to tallow supply, there are simply not enough waste animal carcasses being 'produced' globally to meet the kind of demand required to replace mineral fossil fuels. If we were to go down that route, a kind of downward circular spiral would be created, whereby people are encouraged to eat more meat (= more CO2), just so that more HVO could be produced! This was, in fact, exactly what happened with early green legislation, whereby European targets were responsible for accelerating tropical deforestation, in favour of palm oil plantations for biofuels.

A further problem associated with HVO comes with its high price. As industry veterans know only too well, consumers and businesses alike tend to be 'watermelons', ie, green on the outside ("that sounds a great product"), but red on the inside ("but I'm not willing to pay more for it"). With HVO, the cost issues around limited and expensive raw materials, are compounded by the undeveloped nature of production capacity. Only Neste (Finland / Netherlands), Total (France) and ENI (Italy) have material production capacity in Europe, whilst any product manufactured elsewhere typically gets hit by EU import tariffs designed to protect European manufacturing (US HVO for example gets whacked with a 440% tariff!). Put all of that together and you have a recipe for high prices.

In the UK, Renewable Fuels Transport Certificates (RTFCs = a form of subsidy) go some way to mitigate the high price of HVO, although it is still considerably more expensive than standard diesel, meaning that uptake for the product has been miniscule. Widespread consumption is also not helped by the RTFC system itself, which limits the use of HVO to road fuels only, whereas, in fact, it could be used in multiple different sectors. In Europe, only Scandinavia (direct government subsidy) and Germany (carbon tax) have extensive consumption of HVO. For the rest, it would seem that there are lots of 'watermelons' about, with the product's high price resulting in

"CONSUMERS AND BUSINESSES ALIKE TEND TO BE 'WATERMELONS'."

very low volumes. Such limited demand could all be about to change though, as covetous aviation bosses hungrily size up the fuel's huge potential. As a paraffinic liquid (ie, kerosene characteristics) drop-in HVO is aligned and interchangeable with kerosene Jet A1 and, with few options available other than liquid fuel combustion, HVO could possibly be the only game in town when it comes to low-carbon flying.

Until that point though, HVO remains a high-priced, niche fuel with limited mass environmental impact. Nonetheless, with few silver bullets available, a green source of energy that is immediately available, has universal usage and the potential for 90% CO2 reduction, does have a great deal going for it. In theory, prices should come down as manufacturing capacity grows, but equally if demand also keeps growing, then prices will still remain unattractively high. Which probably means that in the end, when it comes to HVO, Government subsidy and legislation will be the only ways to 'persuade' the watermelons…

For more pricing information, see page 26

Portland
www.stabilityfromvolatility.co.uk