

Fuelling opinion

Six years ago biofuels were held up as a silver bullet solution to addressing mounting energy needs; subsidies were ramped up, mandates were set, their standing as a competitive fuel looked secure. Today the picture is far from clear-cut. Charlotte Owen explores retailers' relationship with the opinion-splitting fuel

Despite a number of technical, regulatory and socio-economic challenges, the biofuels industry is still experiencing rapid growth. Currently six billion litres, almost 5% of European transport fuel, now comes from these renewable sources. The figure is set to more than triple by 2020 as the EU courses towards meeting a 10% target of biofuels used in transport fuel by 2020.

However in the UK specifically, although one type, biomethane from anaerobic digestion, has been harnessed for many years, it is yet to be used on a wide scale, providing only 0.01% of renewable transport fuels, according to a 2011 report from the Parliamentary Office of Science and Technology.

Moreover, while many retailers and businesses continue to make biofuels available at their own fuel stations or use them as fuel for their transport fleets, some have shunned the fuel entirely due to uncertainty of the legislative and economic landscape such as the EU's failure to come forward with a plan to deal with indirect land use change (ILUC), the net carbon loss thought to occur when forests and grasslands are cleared for food production that has been displaced by biofuels. The 'Food versus Fuel' debate is also adding fuel to the fire due to the perceived adverse effect of biofuel feedstock cultivation on world food availability and affordability.

A UK Department for Transport (DFT) report found between April 15 2012 and January 14 2013 of the 965 million litres of renewable



fuel supplied to the UK under the Renewable Transport Fuel Obligation (RTFO), 632 million litres (66%) “has so far been proven to be sustainable”.

However, putting aside question marks over sustainability, food pricing and poverty, the emissions saving from biofuels can prove to be a compelling argument in favour of choosing the green fuel. Although the figure excludes emissions from ILUC, an aggregate greenhouse gas saving of 68% compared to fossil fuels could be achieved over a one year period, according to the DFT. It is this reason that some retailers, despite the uncertainty, have opted to pursue biofuels.

Uptake

Biomethane, a naturally occurring gas produced by anaerobic digestion has been used by several freight companies and retailers including the John Lewis Partnership. The Partnership’s 280 Waitrose stores alone currently produce a total of 6000 tonnes of food waste per year which could yield over 420,000m³ of biomethane. Sainsbury’s currently use several trucks running on biomethane that originated from landfill.

Bio-LNG provider Gasrec is supplying B&Q fuel for 50 dual fuel lorries mixed with 60% biomethane. The change in fuel mix is part of the home improvement retailer’s commitment to reduce its CO₂ emissions from business travel and haulage to 50% by 2023. Currently B&Q has reached a 36% reduction.

As part of its ‘F Plan’ Tesco is working with the UK Government’s Technology Strategy Board to explore how combining diesel with biogas can reduce emissions. Helen Fleming, Tesco sustainability director, says: “We now have 35 lorries running on dual fuel six days a week. By working with the government to apply this breakthrough technology at scale, we hope to use our scale for good and help create a refuelling network across the country.”

In 2007, Waitrose started a six month trial to power five of its lorries by rapeseed oil. The company said that despite the engine and fuel tank modifications it would have to make it had opted to trial rapeseed oil as opposed to more conventional biodiesels because it boasts a cleaner production process and can be sourced from UK and German farms as opposed to tropical plantations that may have contributed to deforestation. At the time the company aimed to roll the technology out across its fleet of 300 vehicles if proved successful. Waitrose has said since that its “lorries used in delivery have the most environmentally friendly engines available under EU standards, and some are even fuelled by rapeseed oil to cut back on carbon emissions.”

Biodiesel

Biodiesel produced from straight vegetable oil, animal oil/fats, tallow and waste cooking oil, has also been used as an alternative as it produces 60-100% fewer greenhouse gas emissions compared with petroleum diesel, depending on what oil or fat is used. Leading online retailer Ocado, for instance, introduced biodiesel to its fleets a few years ago “when studies proved that it was one of the most efficient fuels available”.

However, the retailer says: “Following recent negative reports, we are now investigating the benefits of biodiesel and other fuels in relation to their overall environmental impact. 🔄

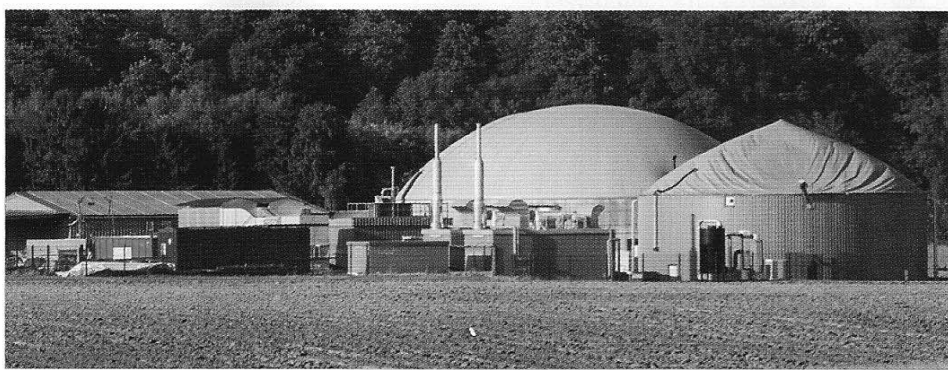
"In the meantime, we'll keep using biodiesel and working hard to source it in a sustainable way. We go to great lengths to ensure that we do not use biodiesel fuel from land that would be otherwise used to raise food crops; we're also vigilant in avoiding palm oil derivatives and committed to buying biodiesel from vegetable fats produced by growers in the UK."

Across the Atlantic, Safeway supermarket plans to become the first major retailer in the US to convert its entire fleet of delivery trucks to the use of biodiesel fuels. McDonalds, too, are using hauliers that use biodiesel derived from their own used vegetable oil.

Forecourts

Tesco has a 25% stake in renewable fuel company, Greenenergy. There have been trials in the use of Greenenergy biodiesel for their customers at Hatfield store and for trucks from the Thurrock distribution centre. The retail giant in 2002 bought a 25% share in Greenenergy Fuels Ltd which produces fuel oil from waste oil and rapeseed oil. They appear to be the only UK supermarket which, as a shareholder in an agrofuel company, has invested in an agrofuel refinery. Tesco was one of the first UK supermarkets to start selling biodiesel blends in 2003, a 5% blend.

By 2006, the company was selling biodiesel and ethanol blended into standard petrol and diesel at more than half its forecourts. Ofgem in 2011 granted Tesco a Renewable Obligation Certificate (ROC) that confirms the bioethanol contains no traces of fossil fuels and enables Tesco to benefit from a subsidy for every megawatt hour (MWh) generated by the renewable power source. Tesco said it will now roll out the green fuel to other stores



across the UK and described the certification as a "key part" of its plans to cut its carbon emissions by 50% by 2020 and become a zero carbon retailer by 2050. In December 2006, Tesco announced plans to run 75 of its 2,000 trucks and vans on a 50% biodiesel blend from January 2007.

Morrisons began retailing bioethanol E85 in 2006, a fuel blend consisting of 85% bioethanol and 15% petrol, but later withdrew it, it is thought due to government plans in the budget to scrap the 20p per litre fuel duty differential which designed to act as an incentive to supply biofuels.

The grocery giant said their projections have predicted a substantial drop in demand for biofuel in the near future, which means continuing to stock E85 wouldn't be a viable option.

Phil Maud, petrol director at Morrisons, at the time said that the retailer was proud to be the country's first petrol retailer to open Bioethanol E85 refuelling pumps, stating that it reinforced Morrisons' position as the 'UK's largest forecourt retailer of alternative fuels'.

However unclear the future of biofuels is, one thing is certain: their introduction onto the energy landscape represented – and represents – a shift in traditional fossil-fuel based thinking – an obvious prerequisite to helping the world slow down and mitigate the effects of climate change. Despite many retailers implementing a range of efficiency measures to reduce diesel consumption by their fleets, they are unlikely to reduce large amounts of emissions as long as they continue to rely on diesel as fuel for conventional engines.

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(Below left) Currently 6 billion litres, almost 5% of European transport fuel, now comes from these renewable sources

Under the Renewable Transport Fuel Obligation, which came into force in April 2008, all road transport fuel has to be blended with 2.5% of biofuels and fuel suppliers that do not meet that quota have to pay a penalty.

The introduction of the new Renewable Heat Incentive (RHI) in November 2011, offers a new opportunity for wider use of biomethane for HGVs. Upgraded gas from AD plants can now be injected into the gas grid, providing the guaranteed payment associated with the RHI, with the equivalent mass of gas taken out of the grid at fuelling depots. The Green Gas Certification scheme has been devised in order to track the biomethane from producer to end user using a digital system.

