

Well oiled machines

Flying in the face of sceptics, two operators have made great improvements to their fleets, thanks to some innovative biofuel thinking. John Challen reports

In June 2007, food service specialist 3663 started an ambitious programme to switch its fleet from running on diesel to a 30% biodiesel blend (B30). The decision followed a six-month trial of 70 B30-fuelled Scania trucks covering three million miles. No detrimental effects were found, not even on the engine's unit injectors – components that have hitherto seen corrosion when subjected to high percentage biofuels.

The operator relies on its network of customers and suppliers for the fuel – used cooking oil that is reprocessed into biodiesel. Three years into the project and 60% of 3663's 1,040-strong fleet is running on this unusual hybrid fuel. What's more, according to Joanna Pegg, fleet manager at 3663, that percentage is set to rise even farther.

"It all depends on the volumes of oil we can get, but we are working to secure as many contracts as possible for used cooking oil," she reveals. "The goal is to have as much of the fleet as possible using biodiesel, although some of our trucks can't

operate on it [for warranty reasons]." The project hasn't all been plain sailing, though: Pegg explains that, following a cooking oil supply issue, the number of biodiesel-fed trucks had to be reduced. Currently, 14 out of the company's 27 depots are dependent on the cooking oil/diesel blend.

"To date [as at end of April 2010], we have used over 6.9 million litres of biodiesel, which equates to a saving of more than 15,000 tonnes of CO₂, compared with using traditional diesel fuel," asserts Pegg. And she estimates an average monthly usage between January and April this year of just less than 215,000 litres per month.

3663's fleet manager also believes that the scheme offers a win-win-win for customers, the environment and the food service distributor itself. "The biodiesel produced complies, as a minimum, to all relevant EN standards, such as EN14214, which sets out the requirements and test methods for FAME [fatty acid methyl esters – the most common type of biodiesel]," she states. "The project is also aligned with our long-standing focus on sustainability... It helps towards minimising food inflation and also helps us build a better relationship with our customers."

From an environmental point of view, the net carbon balance is near zero, says Pegg, because the CO₂ emitted through burning the biodiesel fuel is offset by the gas absorbed throughout the time that the vegetables used to make it are growing.

Maintenance upgrade

Meanwhile, the change in truck maintenance has been marginal, states Pegg, who explains the procedure for setting up a new depot running biodiesel-fed 3663 vehicles. "When a new depot is introduced to biodiesel and the trucks have never operated on biodiesel before, we complete specific maintenance on them, above and beyond that of a normal vehicle. The fuel filters are changed at 1,000km, 2,000km, 3,000km and 5,000km. The oil filter is also changed at 1,000km, because the biodiesel acts as a cleaning agent and will dissolve deposits left by diesel."

After this initial servicing is complete, the only additional maintenance on 3663's trucks is to double the frequency of the fuel filter changes from once to twice a year. "Any savings we have made in the cost of the fuel covers the expenditure on extra filters," she calculates.

For other operators thinking of venturing down the biofuel route, Pegg has some encouraging words. "It has been a pretty straightforward process for us. It has not had a major impact on any of the sites. The only issue has been getting enough of the [used cooking oil] to make sure you've got the volume to keep running the fleet."

Pegg also says the project has been cost neutral. "It is purely an environmental exercise.



Whether we save money in the future depends on fuel costs, the cost of chemicals and securing the used cooking oil in the first place," she explains.

Not content with a 30% blend of biodiesel, like 3663, Brighton bus and coach operator The Big Lemon runs a fossil-fuel free transport service. This organisation uses 100% used cooking oil, collected from chip shops, restaurants and hotels in the area. The oil is then processed to make B100 biodiesel in a factory in Eastbourne and transported back to Big Lemon HQ.

Big lemon, big savings

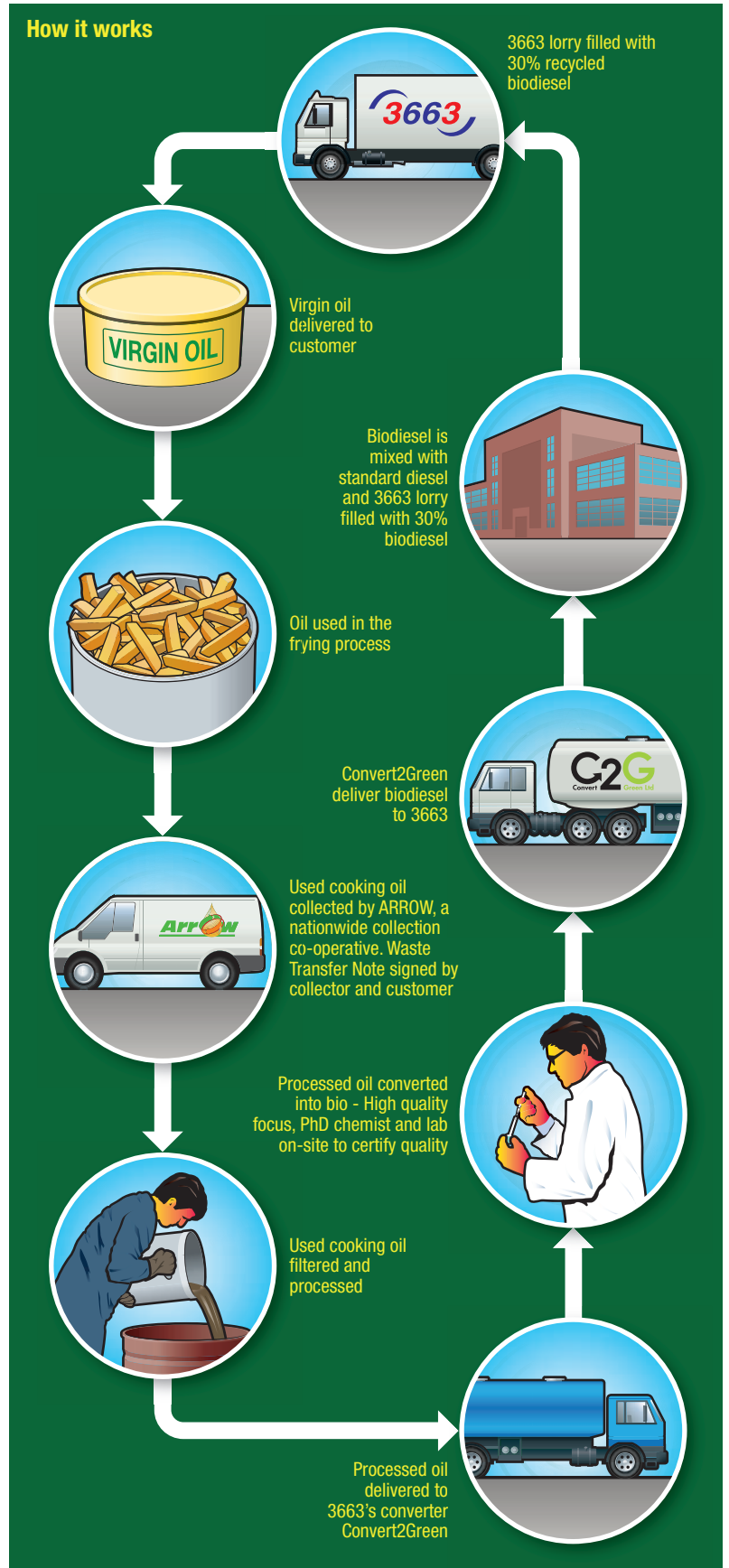
The Big Lemon's managing director Tom Druitt reckons that, by powering the vehicles with the oil instead of straight diesel, he is saving the planet, but also around £500 a month. "We use 2,000 litres a week and that costs us £1,930," he explains. "If we used regular diesel, it'd cost us £2,400. We didn't see the point in using a blend, unless 100% wasn't going to work, because our philosophy was to not use fossil fuels."

Problems with the oil have been relatively limited – although Druitt admits it hasn't always been straightforward. "Most of the time, used cooking oil works very well, but it can freeze. So last winter we had to put a wintering agent into the tank to stop it freezing. There are also thickening problems, if the fuel doesn't meet the right temperatures. Then we have to pay close attention to the seals on the injector pumps" he says.

Druitt also recalls problems when additives don't mix properly. "This is an evolving technology and not without its problems, but it is far better for the environment [than fossil fuels]," he reasons.

The Big Lemon buses fit into the same maintenance schedule as that used for other buses, says Druitt. Mirroring 3663's experience, he also says that the switch from a diesel-fed engine to cooking oil was relatively straightforward. "The only major change we had to make concerned the fuel filters. We ran biodiesel through all these filters on all the buses, and then changed the filters again to ensure that we had caught all of the diesel particulates," he explains.

Druitt does have a warning for fleet managers tempted to go the same route: watch where you get your fuel from. "It's not an exact science and some people are better at it than others," he muses. "We had one supplier whose fuel wasn't very good at all and we soon stopped using them. Now we have just one supplier and the fuel is good quality. As long as they keep the quality up and we are vigilant, it works well," he says. **TE**



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