Tax concessions have boosted the cost competitiveness of methane against diesel, reports Richard Simpson

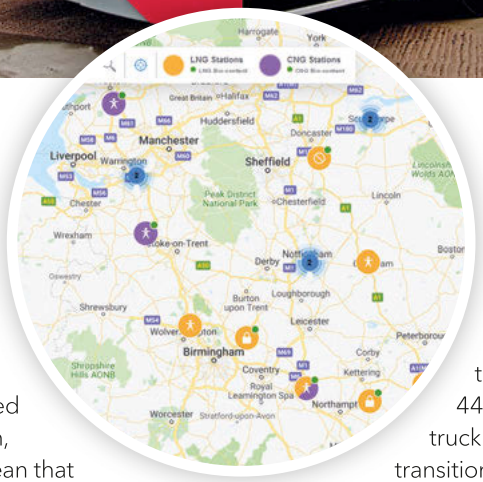
GAS UP AND GO

Using methane gas to replace diesel is a concept that has suffered many false starts, for both fiscal and technical reasons. However, diesel engine manufacturers now seem to have mastered most of the problems relating to gas engines (variable fuel quality, in particular) and the UK government has pledged to fix fuel duty on gas as a road fuel until 2032 at 24.7p/litre, in comparison with diesel at 57.95p/litre. This equates to a substantial saving on fuel cost, guaranteed for at least two vehicle replacement cycles.

Price stability has in turn encouraged a growing network of gas fuelling stations at strategic points on the UK road network, and the development of a wide range of gas engines for truck and city bus applications.

But some operators are still confused, particularly by the differences between liquefied natural gas (LNG) and compressed natural gas (CNG). Further confusion is generated by the labelling of some gas as 'natural' when it comes out of the ground like any other fossil fuel, and 'bio' when it is made from organic (waste) matter.

CNG is gas as we know it as a domestic fuel, pumped around the country via the mains grid. It is compressed and pumped into the vehicles' tanks. LNG is gas cooled to -162°C, at which point it becomes liquid, and is stored and transported in insulated tanks. LNG is far more dense than CNG and gives a longer range for a given storage volume on a vehicle, but the challenges presented by its transportation, storage and use mean that it is taking only a minority of the vehicle fuel market.



Scania's specialist sales executive David Burke estimates that CNG is taking 90% of sales to date, pointing out that CNG filling stations are opening in the UK at the rate of one a month, and CNG vehicles are less complex in their construction and management.

"For instance, you need to get an LNG vehicle below half full before you can top it up," he says. "But you can get more 'miles' of LNG into the same space on a vehicle. Typically, on a standard wheelbase [3,750mm] 4x2 tractor, LNG can take you 600 miles, where CNG will only cover 350 miles. If you increase wheelbase to 3,850mm, then you can cover over 500 miles on CNG."

Supplier Gasrec, however, is seeing faster growth in LNG. It operates the UK's largest network of natural gas refuelling stations for commercial vehicles, and recorded a 369% rise in demand for gas during the first half of 2019, versus the previous six months.

Gasrec expects this growth will be sustained across the second half of 2019.

Gasrec projects that a third of the UK's 44-tonne heavy truck market will have transitioned to natural gas by 2027, with approximately 39,000 gas-powered LGVs on UK roads. It believes this will be key to meeting the government's voluntary target of reducing greenhouse gas emissions from LGVs by 15% by 2025.

For buses, the outlook is more confused. In a 2017 report, Transport for London rejected the technology, saying it offered little advantage over Euro VI diesel buses in terms of tailpipe emissions, and bus depots lacked space for gas tanks or compressors.

Opinions differ in the provinces. Nottingham City Transport runs 120 double-deck gas-powered Scanias, making it the biggest operator of biogas buses in the world. With a 250-mile range, the buses can run all day without refuelling, far exceeding the performance of an electric bus. Bristol's HCT group has recently bought 21 similar buses (pictured above).

A complete map of UK gas filling stations (pictured, inset) can be accessed via *www.is.gd/ulosex*. TE