

Is LPG about to make a comeback?

The time may have finally come for liquefied petroleum gas as a fuel

Whatever happened to liquefied petroleum gas (LPG)? In the post-Dieselgate era, when many cities are pondering banning diesel-engined vehicles and air quality is becoming a top-line political issue, surely a low-CO₂ fuel that is inexpensive and extremely low in tailpipe pollution should be enjoying a revival?

Yet that's not proving to be the case for a fuel that, despite many advantages, has long been an oddball choice and failed to gain traction in the UK. With this in mind, Autocar recently ran a 'bi-fuel', left-hand-drive Dacia Sandero Stepway equipped with a factory-fitted LPG system to see if it was feasible to live with here (see story, opposite).

LPG specialists say the UK market has never recovered from a government's U-turn in the early 2000s, which, after initially supporting a push towards the adoption of LPG as a mainstream fuel, effectively pulled the rug from under it. However, the most recent UK government budget in November last year announced the removal of the fuel duty escalator for LPG-fuelled cars, one positive sign for the fuel.

Across Europe today, LPG is still a minority fuel. It's most popular in Poland, followed by Italy, where some 5% of the country's cars and trucks are powered by LPG, which equates to around 2.2 million vehicles in all. Air quality concerns have encouraged regional governments to incentivise the use of cars converted to run on



LPG in Italy and Spain, which has had a notable growth in the adoption of the fuel.

According to Holly Jago of Autogas, a joint-venture LPG supply company owned by Shell and Calor, around 120,000 vehicles are converted to run on LPG in the UK, and about 4000 are converted each year, but that amounts to just 0.2% of road fuel use.

As Jago points out, the new emphasis on air quality should make LPG relevant again. She cites "Independent tests" of a TX4 London cab converted to use LPG in which tailpipe pollution was slashed, with particulates down by 99% and NOx down by 88%.

The UK is way behind the global curve for moving urban mass transit to cheap and

UK: LPG VS PETROL

Cost of LPG

64 pence/litre

Cost of petrol

121 pence/litre

Number of LPG pumps

1250

Number of petrol pumps

50,000*

*estimate

effective LPG and away from diesel. Hong Kong converted its 20,000-strong taxi fleet to LPG more than 15 years ago. And the new Toyota Japan Taxi, which uses the company's hybrid drivetrain, is fuelled by LPG rather than petrol.

So is LPG due for a revival? In the UK, it's not looking good. At the moment, there are no factory-converted LPG cars on sale in this country. Worldwide, says Jago, around 15 car makers offer around 100 different bi-fuel models, with LPG tanks in addition to the petrol tank.

In the EU, there's a reasonable choice, including a wide range of Dacia and Opel models, as well as unexpected offers such as the Subaru range and the Alfa Romeo Mito. These bi-fuel cars are more expensive than the

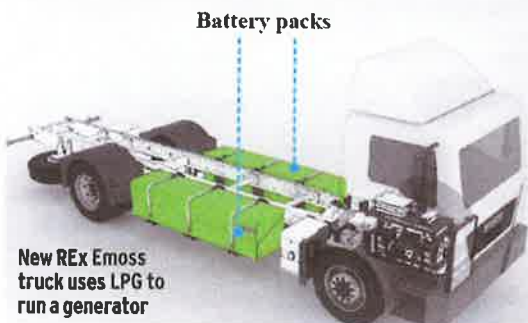
Tisshaw found that filling up with LPG could be a challenge

standard models, and even with LPG prices at 64 pence per litre (compared with petrol at £1.21), it will still take around 10,000 miles of driving to break even on the purchase price.

A Dacia spokesman said: "Dacia offers an LPG powertrain in some continental Europe markets. In line with all other manufacturers in the UK, this option is not available here due to the lack of significant LPG infrastructure and current customer demand."

Jago said Autogas was frustrated because car makers are reluctant to build factory-fit right-hand-drive bi-fuel cars without much more in the way of government guarantees that a UK LPG market will be properly encouraged. However, the UK's PCP-dominated new car market is a massively tough nut to crack for something as off-beat and unfriendly to short-term ownership as LPG.

Nevertheless, a new opening for LPG in the UK is looking ever more hopeful in the commercial sector. Calor says





New London cab has a range-extender set-up and could use LPG

It thinks range-extended (REx) hybrids are looking like a good bet for taxis and commercial delivery vehicles, which need to be as low pollution as possible.

Indeed, the new London TX black cab is a REx and it will soon spawn a delivery van. The London Routemaster bus also has a REx transmission, as does Ford's prototype plug-in Transit van.

Dutch truck maker Emiss, which produces full-electric delivery vehicles and REx semi-trucks, has developed a

new REx model that, it says, is the world's first "range-extended electric LPG truck".

It uses a 2.0-litre steady-state engine running on LPG and driving a generator, which drives an electric drive motor. "Military-grade" lithium ion batteries are hung at each side of the chassis frame, offering 40 miles of EV-only range.

The claimed emissions figures for the Emiss design are remarkable. A standard-issue truck running on LPG emits "48 tonnes of CO₂ per

annum", but Calor claims the REx prototype reduces that to just 8.6 tonnes of CO₂, a remarkable 82% drop.

Using bioLPG, that drops to 94% less CO₂ than the standard LPG truck. NOx pollution is claimed to be 94% under the current EU6 limits and particulate emissions are "virtually eliminated".

Load-carrying vehicles will find it almost impossible to move to battery power, due to the sheer cost of the very large battery packs needed, the reduction in load capacity caused by heavy batteries and the difficulty of charging very large packs quickly. Most important, the REx solution is likely to be far cheaper.

LPG's extremely clean-burning nature may yet have its day with the race to clean up commercial vehicles. In the longer run, it may even spark a revival of LPG-driven REx passenger cars if CO₂ outputs are as low as 40g/km and the EV revolution fails to take hold. **HILTON HOLLOWAY**

OUR SIX-MONTH EXPERIENCE WITH LPG

Autocar's six-month stint with a Netherlands-registered LPG-fuelled Dacia Sandero Stepway (because there are no factory-fitted LPG car models on sale in the UK) proved that LPG is a credible and cheap motoring option, despite the poor refuelling infrastructure.

Now we've returned the Sandero, editor Mark Tisshaw says what he misses most is that the cost of

filling up a tank with LPG is low enough to be paid with a contactless credit card (usually a £30 limit).

Our main struggle was the sometimes cumbersome filling-up process, which isn't as easy as with a conventional petrol or diesel pump. That aside, if there were LPG-powered cars to buy here, the low running costs make for a very compelling argument.

