

Alternative fuels made simple

LPG

LPG (liquefied petroleum gas) is a mixture of propane and butane. With 25,000 LPG-powered vehicles in the UK it is the most popular alternative fuel.

Which vehicles can run on LPG?

In theory it is possible to convert any engine to run on LPG, but in reality only non turbo petrol engines can currently be converted. Most LPG vehicles are actually dual fuel, with the ability to switch between LPG and petrol even when on the move.

An increasing number of manufacturers are offering vehicles with an LPG option, rather than requiring an aftermarket conversion. Vauxhall offers the Astra, Vectra and Zafira in dual fuel form and Volvo factory fit bi-fuel engines in the S40, V40, S70 and V70.

Dual fuel versions of the Ford Transit, Mercedes Sprinter, Vauxhall Astravan, Vauxhall Combo are all available new from the manufacturers.

How much does it cost to convert?

The typical cost of converting a car or van to run on LPG is around £1,500. Factory built dual fuel vehicles have a similar premium. A Powershift grant may be available to cover part of the additional cost.

Potential fuel savings

Forecourt prices for a litre are on average 82.8p for unleaded petrol, 81.8p for diesel and 39.2p for LPG.

A litre of LPG allows a vehicle to travel approximately 75% of the distance that it could travel on a litre of petrol, so to travel the same distance a slightly higher volume of LPG will be required.

A vehicle covering 20,000 miles per annum, averaging 35 miles per gallon, would use 571 gallons of petrol giving an annual bill of £2,045.

The same vehicle would require 762 litres of LPG, giving an annual bill of £1,355 - a saving of £690.

Where does the tank go?

A second fuel tank is required, which can be one of two types. A cylindrical tank can be fitted in the boot or load area, or alternatively a "terroidal" or "donut" tank can be fitted in the spare wheel space. The useable capacity of LPG tanks is limited to 80% for safety reasons as the fuel is held under pressure.

Terroidal tanks are more popular in cars as they are less obtrusive (though they do require the spare wheel to be located elsewhere). Cylindrical tanks are more common in vans as they are significantly cheaper and offer greater capacity.

Where can I buy LPG?

There are now over 1,200 LPG refuelling sites in the UK. Many of the latest are petrol stations.

Site details and maps are available at http://www.powershift.org.uk/ps_lpgmap.cfm

Alternatively, if vehicles regularly return to a base (vans to a depot for example) it may be possible to bunker fuel at even greater savings.

As a driver will I pay less tax?

A 1% discount in car and fuel BIK taxation is available to drivers of alternative fuel cars. For manufacturer bi-fuel vehicles an additional 1% is available for every 20g/km that the LPG CO₂ emissions are below the minimum band for the year (155g/km for 2003/4).

Vehicle Excise Duty

From 1st May 2003 Vehicle Excise Duty rates will be based on CO₂ emissions. Vehicles running on alternative fuels qualify for discounts.

Special considerations for vans

It is important to look at whole life costs, not just potential fuel savings as other costs can actually be higher than for conventional fuels. As a rule of thumb LPG becomes the cheapest option at between 20 and 25,000 miles per annum.

Electricity

Apart from milk floats and other specialist vehicles there are only a few hundred electrically powered cars and vans in the UK. Batteries are currently large and heavy and take a long time to fully recharge.

What is a hybrid?

Hybrids such as the Honda Insight and Toyota Prius can run on both petrol and electricity. This is useful as a typical electric vehicle can only travel around 50 miles on a single charge.

Contract Hire and electric vehicles

Electric vehicles are expensive to lease because residual values are set very low - rapidly changing technology means that today's electric vehicles are likely to be obsolete by the end of their contract.

Fuel cells

Fuel cells are predicted to be the future of alternative fuels, with a number of manufacturers investing heavily in their development. Fuel cells work by reacting hydrogen with oxygen to produce electricity and the sole waste product, water.

There are currently no commercially available fuel cell-powered cars or vans, but they are predicted to be in large-scale manufacture by 2010.

Natural gas

Natural gas, the same as used domestically, is available in 2 forms to fuel vehicles; compressed (CNG) and liquified (LNG). CNG and LNG are predominantly used in buses and large commercial vehicles due to the size and weight of tank required to hold a practical fuel load. Their use in the car and van market is limited and is likely to remain so, especially as the number of public filling points is very small.

Congestion charging

Alternative fuel vehicles which achieve a 40% improvement over Euro IV emissions standards are eligible to a 100% discount provided they are registered with TfL and an annual £10 charge paid. For full details contact Transport for London on 0845 900 1234 or visit www.cclondon.com

Powershift grants

Powershift is a programme run by the Energy Saving Trust which offers grants towards the purchase/conversion of approved clean fuel vehicles. Funding comes direct from the government, with a current budget of £11m per annum.

What level of grant is available?

The size of the grant is related to the improvement in emissions over the petrol vehicle.

		Clean fuel		
				40% better
Petrol	Euro II	30%	40%	50%
	Euro III	0%	30%	40%
	Euro IV	0%	0%	30%

New cars and vans from vehicle manufacturers and manufacturer-approved conversions (covered by their warranty) are eligible for an extra 20%. In addition to this, if the vehicle has been type approved by the manufacturer on gas a further 10% is available.

For example, a new bi-fuel Vauxhall Astra which achieves Euro-IV emissions on petrol, and which achieves 40% better than Euro-IV (for NOx and HC) on gas would qualify for a 30% base grant plus a 20% manufacturer bonus plus a 10% type approval bonus giving a total grant of 60%.

Electric vehicles have zero tailpipe emissions and so attract a 75% grant. A fixed grant of £1,000 is available for hybrid vehicles.

Please refer to the Powershift Register at www.powershift.org.uk for details of the grants. If a vehicle does not appear on the register it means that a conversion has not been approved and so no grant is available.

How do I apply?

For full details and an application pack call Powershift on 0845 6021425 or visit www.powershift.org.uk