

White Paper

Helping you make the right choices.

Advice and guidance on fuel strategy.



In these tough economic times, cost control has risen to the top of the agenda for companies of all sizes, across all industries. Fuel prices have seen significant fluctuation over the past 18 months, and the uncertainty seems set to continue for the foreseeable future.

This White Paper examines what decisions companies can take now to manage their future exposure to increasing fleet fuel costs.

Please note that while some reference is made to commercial vehicles, this paper is specifically written with company car fleets in mind.

Operating a fleet of cars is often one of the largest operational costs for a business, and fuel is a major part of these costs. A typical 500 car fleet could expect a fuel bill in the region of £1m to £1.25m every year, as the table¹ illustrates.

Concerns over the unpredictability and highly fluctuating price of fuel, as well as the fact that it is a finite resource, are very real. The beginning of 2008 saw unprecedented fuel price rises, and although pump prices eased in mid-2009, further price increases have followed in the latter part of the year, with petrol prices becoming almost at parity with diesel. The general belief now is that the age of cheap fuel is over.

Fleet Fuel Costs		
Fleet Size	Cost per annum (Diesel at 45mpg)	Cost per annum (Petrol at 45mpg)
250	£540,469	£688,394
500	£1,080,938	£1,376,789
1000	£2,161,876	£2,753,577
2000	£4,323,751	£5,507,154

Managing your organisation's exposure.

Many commentators suggest that alternative fuels might yield cost, environmental and sustainability benefits. Others point to traditionally-fuelled vehicles using new high-efficiency technology. So what is the answer?

The truth is that there's no single answer, but this paper sets out our thinking on the key options so that you may consider, in the context of your business, what fuel strategy might work for you.

¹The information in this table is based on Fleet News published national average UK pump prices. Further details available upon request.

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Sustainability.

Many industry commentators and governments talk about sustainability, but what's the truth about how much oil we actually have?

Reserves of oil are notoriously difficult to measure, but BP estimates that there are proven reserves of approximately 1.24 trillion barrels, and their 2008 Statistical Review of World Energy shows daily consumption running at around 85.2 million barrels, suggesting that the current proven oil reserves will only last around 40 years.

However, consumption levels increased by 1.1% in 2007, and emerging economies such as China and India are increasing this rate still further. New oil fields are being discovered, but they are typically in more remote areas or deeper seams, which has an impact on costs. All this indicates that the price of oil will continue to rise.

BP's 2008 Statistical Review of World Energy shows daily consumption running at around 85.2 million barrels.

The question is:

- How will your organisation react and manage its car fleet?
- Will it look to alternative fuels?

Alternative fuels.

Serious contenders or niche players? Alternatives to petrol and diesel fuels are now being vigorously pursued by governments and industry in an attempt to address the issues of sustainability, security of supply, the environment and increasing cost.

But are viable alternatives available now and how can fleet operators minimise these fuel-related risks? Over the following pages, we try to shed some light on the options currently available, using both existing and new, cutting-edge technologies.

Liquid Petroleum Gas.

Liquid Petroleum Gas, or LPG, has made several attempts to make inroads into the UK fleet market. LPG numbers peaked in 2003 but declined dramatically in 2004 following the removal of a Government grant scheme. This resulted in most vehicle manufacturers stopping production of LPG models.

The key benefit of LPG is reduced fuel costs (average UK pump price for October 2009 is 54 pence per litre) although there is a price premium for an LPG car, with the average cost to convert an engine typically falling between £1,000 and £1,800. The cost savings from the cheap fuel should provide an overall cost saving over petrol in the short to mid-term, dependent on mileage. Other benefits include reduced CO₂ and exhaust emissions.

Downsides of running LPG vehicles include; a limited refuelling infrastructure, limited availability of LPG model vehicles or engine converters, and some reliability issues.

The largest cost savings are available for depot-based fleets (on-site bunkering of fuel is even more cost-effective). LPG may be making a comeback due to high petrol and diesel prices, but will probably remain very much a niche fuel.

Hybrid.

Hybrid cars utilise two power sources, typically petrol and electricity.

They use traditional high efficiency internal combustion engines but have an electric motor to provide extra power when needed.

Regenerative braking means that the cars don't need to be charged or plugged in to an external electrical supply as they recharge the batteries when braking. Hybrids are most effective in urban stop-start driving environments and can drive in electric mode only at low speeds.

Plug-in hybrids are now coming to market that have larger battery packs and although they require plugging in, their range in electric mode is considerably greater.

Plug-in hybrids have a significant price premium, however Government grants are being introduced in 2011 which could offset this.

Due to their fuel efficiency, hybrids have some of the lowest CO₂ emissions of any car available in the UK. Significant cost savings are generated for employers through lower Vehicle Excise Duty, Class 1A National Insurance contributions, 100% writing down allowance and lower fuel costs. The employee can also benefit from lower company car tax and lower personal fuel costs.

Hybrids are becoming very cost-effective now as their numbers increase, and in the short to medium term look to be a very cost-effective solution.

You can expect to see greater model availability in the next few years, as their only real drawback is limited model availability. The current low emission hybrids available in the UK are the Honda Insight, Civic IMA and Toyota Prius.



Bio Fuels.

Bio fuels can be viewed as a sustainable fuel source, which could help move the world's reliance away from fossil fuels.

The CO₂ benefit of bio fuels is that the plant or crops that yield the bio fuel absorb CO₂ while they are growing, which offsets much of the CO₂ that is later emitted from the vehicle's exhaust.

The key issue with bio fuels is where the raw material is sourced. Bio fuels can come from many sources including recycled cooking oil, plant matter and crops. Bio diesel or bio ethanol is available through UK forecourts as low blend mixes with standard petrol and diesel. Using high bio-blends requires vehicle modification or a suitable vehicle to be obtained in the first place.

Bio fuels provide environmental and sustainability benefits, however their cost of production usually offsets the duty rate discounts provided by HMRC. This option therefore targets longer term sustainability and rarely provides cost saving opportunities for fleet operators, even though there is typically no cost premium for the vehicle.

Compressed Natural Gas.

Compressed Natural Gas, or CNG, is mainly used on commercial vehicles (usually HGVs) as the fuel tanks are typically heavy, large and expensive.

Limited light weight vehicles exist in the UK with the only manufacturer offering being Volkswagen's Caddy van. CNG has always had similar problems to LPG but on a larger scale. Essentially, users need to provide their own refuelling facility, making this option only really available for large "return to depot" fleets.

CNG is therefore not expected to make any significant inroads into the UK car market in the short to medium term.

Electric Cars.

Electric cars have been promoted as potentially being the environmentally friendly vehicle of the future as they produce no exhaust emissions, and recent improvements in battery and motor technology have made them more practical.

The UK is currently seeing an increase in interest in electric light commercial vehicles, but actual sales of electric cars declined in 2008.

Typically, electric cars cost more than traditionally-fuelled cars to operate, due to the high cost of the batteries. This is despite the fact that they benefit from cheap fuel, zero rate VED and other tax breaks. In London, however, a 100% discount from the London Congestion Charge, free parking and plug-in points (in some boroughs) can make them cost-effective, and explains why most of the UK's electric cars are operated there.

Electric vehicles are seen by many as the mid to long term environmental solution, although vehicle cost and range limitations mean these vehicles are only suitable for urban driving conditions, so again are very much niche players.

Government grants to promote electric vehicles are being introduced in 2011, which may help address the cost issues.

Hydrogen fuel cells.

For many years, hydrogen fuel cells have been a future dream, but now some vehicle manufacturers are getting tantalisingly close to a practical working solution.

Currently the cost of the vehicles is prohibitively expensive and there are still issues over range and reliability. The biggest issues to overcome, however, will be the provision of a suitable refuelling infrastructure, and the clean and efficient production of sufficient volumes of hydrogen.

In short, we believe it will be a minimum of 10 to 20 years before we can expect to see hydrogen powered vehicles on our streets in any significant numbers, although Honda has already released the 'Clarity' hydrogen fuel cell car in Japan and the US.

Traditional fuels.

So if most alternative fuels are niche players, what about traditional fuels?

Petrol.

Cars running on unleaded petrol have fallen out of favour in the UK fleet market due to the increasing focus on CO₂ for taxation, resulting in diesel cars being the fleet favourite.

However, recently there have been a number of advances in petrol engine technology that are challenging diesel's dominance, with a number of petrol cars actually reaching similar levels of fuel economy to diesels. This helps some petrol cars gain a cost advantage over diesels that often have a significant price premium.

However, towards the end of 2009, the difference in pump price of petrol and diesels has narrowed, meaning diesel still tends to hold its cost advantage over petrol for fleet cars.

Diesel.

Diesel has been the fleet champion for many years now due to high efficiency common-rail direct injection systems providing low CO₂ emissions and excellent fuel economy.

Whole life cost analysis usually reveals some of the cheapest car running costs. Diesels are much cleaner now than they have been historically, due to particulate traps and ultra low sulphur fuel, but petrol cars will typically produce lower exhaust emissions.

Diesels are still, in the main, the most cost effective no-compromise fuel type for company cars.

Traditional fuels – with cutting edge technology.

The focus on saving fuel and reducing CO₂ – and hence costs – is yielding a new breed of low emission, high fuel efficiency car.

Advances in engine technology are enabling smaller engines to produce increased power, hence replacing old larger units while improving fuel efficiency and emission profiles. This is being achieved through a combination of enhanced engine technologies, regenerative braking, engine downsizing, reduced vehicle weight, improved vehicle aerodynamics and optimised transmission systems.

Many view the combination of these approaches to be the short-term environmental solution, with most car manufacturers rushing environmentally-focused products onto the market. These include Efficient Dynamics (BMW), TDIe (Audi), BlueMotion (Volkswagen), DRIVe (Volvo), EOnetic (Ford), EcoFLEX (Vauxhall) and Ecomotive (Seat).

These are low risk options which minimise fuel consumption and hence reduce fuel costs and CO₂ based on taxation costs.



Whole life cost comparisons.

The best way to demonstrate the potential cost savings or variances between different fuel types and technologies is by using whole life cost (WLC) analysis.

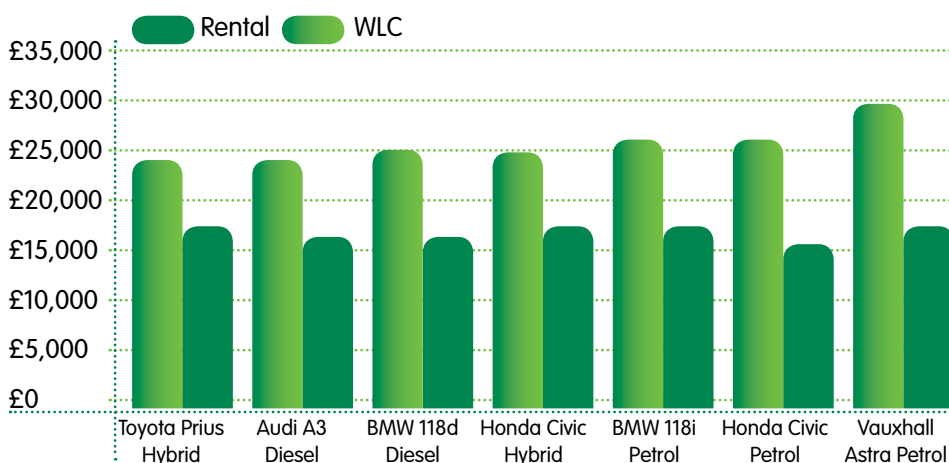
We define WLC as including monthly rental, disallowed VAT, Class 1A National Insurance, fuel and Lease Rental Restriction. Using the WLC basis ensures all costs associated with running the vehicle are considered. We have focused on petrol, diesel and hybrid, because the cost profiles of alternatively-fuelled vehicles often depend on how and where the vehicle will be used, how the fuel is sourced and whether bunkering is used. Also, vehicle

conversion costs can vary significantly, with many fuel options not available from car manufacturers.

As the charts below² show, the monthly running costs for seemingly similar cars vary significantly, with fuel efficiency and tax playing a significant part in the overall cost profile. The second cheapest car by list price has the highest WLC, and the car with the highest rental rate has the lowest WLC. While all the cars

have similar monthly rental rates there is nearly a £5,000 difference in WLC terms over the four years. Therefore the best advice for cost effective fleet management is to select vehicles using WLC principles. This naturally encourages vehicles which are more fuel and tax efficient. Focusing on CO₂ can reduce tax, fuel costs, VED and benefit the employee by reducing their company car tax bill.

Model (in ascending order of WLC)	Fuel type	CO ₂ (g/km)	List Price	Monthly rental	WLC (36 months) – 60,000 miles
Toyota Prius 1.8 WTi T3 Hybrid CVT Auto 5dr	Hybrid	89	£18,709	£407	£540,469
Audi A3 Sportback 1.6 TDi S Line 5dr	Diesel	109	£22,223	£393	£25,197
BME 118d SE 5dr (Dynamic Pack)	Diesel	119	£22,703	£393	£25,496
Honda Civic 1.4 i-Dsi IMA CVT EX Auto 4dr	Hybrid	109	£20,823	£405	£25,652
BMW 118i SE 5dr (Dynamic Pack)	Petrol	143	£22,192	£398	£27,357
Honda Civic 1.8i VTEC EX GT 5dr	Petrol	155	£20,542	£386	£27,359
Vauxhall Astra 1.8 1.8i VVT Life A/C Auto Estate	Petrol	186	£19,346	£403	£30,137



² The WLC examples shown above are based on a typical client to reflect some levels of manufacturer discount and have been run through Deloitte's Car Cost model. Further details available on request.

Summary.

There are no simple solutions to our future transport requirements, and there will probably be no single fuel solution, but a combination of different technologies for different applications.

The short term.

We anticipate petrol and diesel vehicles will maintain their pre-eminence in the UK fleet market, and the technology will become more efficient. The fossil fuel based infrastructure has taken years to build and will not be replaced quickly, nor will it be a cheap exercise.

New add-on technologies such as regenerative braking and stop-start transmission are likely to bring incremental benefits with the EU and governments legislating in favour of lower CO₂ emitting vehicles. We are also likely to see an expansion of hybrid technologies to complement traditional power sources.

The medium term.

As oil prices increase, alternative fuels such as bio fuels, electric vehicles and gaseous fuels are more likely to enter mainstream use. Electric vehicles might well be a viable alternative, as soon as battery range improves to allow the vehicles to become more suitable for use in everyday conditions (i.e. not just in urban areas). Bio fuels need to be produced from truly renewable sources.

The long term.

Technologies such as hydrogen might well become the norm, however at this stage it is too early to say how this fuel will be produced and distributed. Different manufacturers have differing opinions as to what will be the fuel of the future, but realistically it is likely to be a blend of various fuels and technologies.

So what can fleets do now to provide an effective way of minimising fuel bills, taxation and operating costs?

Focus on whole life cost.

This should naturally encourage lower CO₂ vehicles which use less fuel and are more tax efficient.

Educate drivers.

Correct vehicle maintenance, fuel efficient driving styles and only making car journeys when necessary will help reduce costs.

Ensure fuel is managed correctly.

A stable, robust and measurable method of fuel management will help cost control. This does not need to be complex but strong data collection and data management is required. Fuel cards can assist in achieving the initial data collection if used properly.



About our consultancy service.

The Lex Autolease consultancy team works with companies to identify how their fleets can better impact key business objectives.

Our consultancy covers cost reduction, policy, tax, the environment, duty of care and fleet delivery strategy. In addition to core fleet issues, we consult on related areas such as fuel and cash schemes.

Our consultants have depth and breadth of knowledge in a range of technical areas and have prior experience in major advisory firms or industry. We combine leading edge thinking with the operational experiences that come from being part of Lex Autolease, the UK's leading fleet provider.

To find out more,
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