Cars, costs and carbon

Cutting fleet costs through targeted CO_2 reduction

Rising energy costs will present UK businesses with critical challenges in the next four or five years.

Several influential studies published in 2010 have warned that UK road fuel prices could surge to record levels. This will severely affect fleet operators – whose leeway for dealing with structurally higher fuel prices is already rapidly dwindling.

Businesses are no longer able to count on continual improvements in vehicle fuel efficiency to keep themselves ahead of rising fuel costs. That trend has now run its course. Although cars' fuel efficiency, as reflected by the average CO_2 rating of fleet registrations, is still improving steadily, the cost of fuelling them is no longer falling.

Carbon is the key element in this equation. Fuel prices, the tax regime and vehicle mileage all determine how much fleets pay for carbon. In turn, mileage levels influence other variable costs such as depreciation, wear and tear and accident damage.

Cutting these 'carbon costs' does not require you to make expensive and uncertain investments in ultra-low-carbon cars. You can reduce them very effectively by controlling your fleet's fuel and mileage bills.

Annual company car CO_2 in numbers[1]

Emissions: **15.7m** tonnes

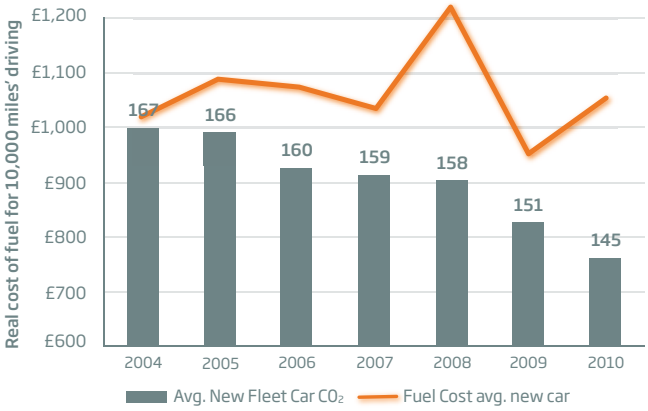
Fuel cost: **£7,200,000,000**

Fuel volume: **6bn** litres

Cutting CO_2 by 5% per year for the next five years would save UK fleets **£450 million** at the pumps (despite rising fuel prices), eliminate up to **13 million** discretionary miles of car travel and prevent **4 billion** tonnes of CO_2 emissions

[1]Based on three million vehicles, total annual mileage of 20,000 miles per vehicle, fuel consumption of 45mpg and fuel price at £1.20 per litre. Five-year savings shown assume a 1% annual improvement in fuel consumption and a 5% annual increase in fuel prices.

Real fuel cost vs. average new fleet car CO_2 2004-2010



Source: SMMT and National Statistics

The chart above shows the inflation-adjusted cost of fuelling new cars, based on the average CO_2 rating of new cars registered by fleets and businesses each year. Costs were responding to the improving fuel efficiency of new cars until fuel prices spiked in 2008 but better fuel consumption is no longer holding fuel costs in check.

The message is clear; businesses can no longer rely on more efficient cars alone to offset the rising cost of fuel. To avoid having to allocate substantially larger fleet fuel budgets in the next few years, organisations need to take action to reduce their fuel and mileage expenses.

How Carbon Reduction Works – A Case Study

International support services and construction company Interserve Project Services is confidently tackling its vehicle fleet's carbon emissions with help from TMC's Mileage Audit service.

As part of its commitment to minimising emissions, Interserve aims to reduce the CO_2 emitted by its 1,200 business cars by 5% each year.

To do this, it needed a benchmark to measure progress against. In 2009, IPS introduced TMC's Mileage Audit solution – a move that has not only delivered the CO_2 data but also provided other important benefits for the company and its drivers.

TMC Mileage Audit captures drivers' private and business mileage reports electronically, via PC, text message or telephone. TMC's audit team, based at its Nantwich centre, proactively ensures that reports are complete and accurate. The system combines mileage and fuel data, providing customers with a wealth of data about costs, consumption, travel patterns, tax liabilities and CO_2 emissions.

Since CO_2 emissions are directly proportional to the distance driven and volume of fuel used – and TMC holds data on both volume and distance for IPS – TMC can calculate each individual driver's carbon footprint. The reports allow each driver to benchmark their CO_2 emissions each quarter, so they can work towards reducing them in subsequent quarters by driving more efficiently or travelling fewer miles.

"Mileage Audit has given us much more comprehensive, accurate and visible carbon figures for our car fleet," said Sean Walshe, Business Systems Implementation Manager for IPS.

"We now have a complete picture of our drivers' mileage profiles – business, commuting and private. Together, these measurements will enable us to formulate and develop effective initiatives to reduce fuel consumption and therefore carbon emissions."

Why target CO_2?

Converting fossil fuels into CO_2 is expensive. Carbon-linked taxes (e.g. fuel duty, company car BIK and capital allowances) then magnify the conversion cost. In addition to the question of cost, many companies today are also looking for ways to cut their emissions in order to meet their own and their customers' targets for sustainability and environmental protection.

If you set a business goal to reduce carbon emissions from vehicles, your organisation will have to find ways to consume less road fuel. If the volume you buy goes down faster than prices go up, your fleet's overall fuel bill will get smaller.

The benefits of cutting CO_2 emissions do not stop there. In order to emit less CO_2 your drivers will have to drive more efficiently and avoid making unnecessary journeys. This calls for better driving standards and business decisions, which, in turn, reduce wear and tear on vehicles and lessen the risks of accidents.

For example, 13,000 van drivers have now taken the Government's Safe And Fuel Efficient Driving (SAFED) training course. The results include a 16% improvement in average fuel efficiency and a 33% reduction in gear changing. The new driving behaviour has had a negligible impact on journey times but delivered substantial cost savings to businesses.

On top of fuel and mileage savings, introducing an annual CO_2 reduction target will also directly improve your fleet's tax efficiency by encouraging user choosers to select more fuel-efficient cars. This will reduce their benefit-in-kind bills, since BIK is determined by CO_2. More importantly from a business perspective, it also will cut your business's Class 1A National Insurance contributions.

Whole Life Costs

The Whole Life Costs of low-CO_2 vehicles are lower than those of less efficient models. This is due to lower road tax, insurance and depreciation – if fuel prices spike again, demand for thirstier used cars will plummet, reducing the residual values of these cars.

Employers can take advantage of the Whole Life Cost (WLC) factor by tailoring their choice list to incentivise drivers to pick highly-efficient cars. For example, thanks to low running costs and depreciation, a low-CO_2 prestige car such as BMW's 3-Series 320d ED has a more competitive WLC than many of the alternatives from volume manufacturers.

A WLC-based choice list can deliver more attractive, 'greener' cars that help drivers meet their CO_2 targets, at lower costs for everyone – a true win-win situation.

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CO_2 targeting strategies

Fuel and mileage costs need to be controlled by active measures designed to bring about a reduction in CO_2. Remember that the only way that drivers can reduce emissions from their current car is to be more frugal with fuel – either by driving more carefully, or covering fewer miles, or both.

The two main options for reducing fleet CO_2 are:

- imposing a cap on the CO_2 rating of cars allowed on choice lists and
- setting drivers a target to reduce their measured CO_2 emissions by a certain amount each year

The first option, a CO_2 cap, is comparatively easy to implement but if used in isolation it has important drawbacks. Firstly, fleets usually only replace a third or so of their vehicles every year, so progress on lowering overall emissions is slow and uneven. For the same reason, a cap sends drivers a signal that CO_2 is something they only need to think about when their car is due for replacement. Lastly, it doesn't address the two factors influencing drivers of daily fuel and mileage costs – how well and how far each vehicle is driven.

Annual targets add up to big savings

A strategy based on individual annual CO_2 reduction targets goes straight to the heart of the issue. Setting each driver a target focuses their attention on efficient and productive driving all the time, not just when it's time for them to order a new car.

Targets also reinforce the message that the company is serious about curbing fleet costs and emissions. They help to instil a culture of continual improvement into workplace driving.

Savings don't happen by themselves

Since 2005, the average CO_2 rating of new cars registered by fleets and businesses has fallen by 2.7% per year while fuel prices have risen on average by 2.9% a year, allowing for inflation.

As a result, most fleets have not seen their fuel costs go down. However, if a business had set itself a target to reduce total CO_2 emissions from its fleet by 5% a year, starting in 2004, it would have saved £1,000 per vehicle on fuel alone (in real terms) by 2010.

The total saving when taxes and employer's NICs were included would be even higher. For example, on a three-year, 60,000-mile leasing contract, a driver who chooses a BMW 320d ED that emits 109g/km of CO_2 instead of a 320d SE emitting 140g/km will save themselves over £2,000 in company car tax. Their employer also saves over £700 in Class 1A National Insurance Contributions.

Efficiency or Volume?

Which is the more important measurement, the efficiency of your vehicles (expressed in miles per gallon or g/km of CO_2) or the total volume of fuel they use?

The answer depends on the amount of discretionary mileage the driver covers. If they have little scope to reduce their business mileage, then fuel efficiency is what matters because you want them to use as little as possible to cover each business mile.

Where drivers have reasonable discretion over their total mileage, it's the total volume of fuel that matters. Indeed, giving more efficient cars to such drivers often leads them to clock up more miles, because fuel no longer seems so expensive.

To save money and CO_2, you want these drivers to use less fuel. Driving frugally and choosing efficient cars is a good start but the fastest way for them to hit their target is to find ways to cut down on mileage.

CO_2 reduction step-by-step

1. Voluntary or compulsory?

Think carefully about whether to make the scheme voluntary or compulsory. Some company cultures favour the compulsory approach while others most certainly don't. If you make participation voluntary, consider offering drivers an incentive to take part.

2. Establish the baseline

To establish the scheme's starting point, you need to know the total amount of CO_2 emitted by each vehicle over the previous year. The figure is calculated from the volume of fuel used. The Carbon Reporting System available through TMC Mileage Audit calculates each driver's baseline emissions from historical fuel card data.

3. Set the target

Most companies set a target of 3% to 5% per year. This is high enough to deliver significant savings relatively quickly - a 19% cut in annual fuel volume after five years - without overstretching drivers or adversely affecting service delivery.

4. Communicate to drivers

Communication is the key to the success of the programme. Explain why the business has to cut CO_2 emissions (to combat rising costs, maintain profitability, safeguard jobs and protect the environment). Offer tips on how drivers

can go about cutting their CO_2 emissions, including advice about fuel-efficient driving techniques; using alternatives to driving, such as teleconferencing or sharing lifts to meetings, and the benefits of choosing low CO_2 replacement cars when the time comes. For example, by ordering a 125g/km car instead of a 150g/km model, a driver would achieve three years-worth of 5% emissions reductions in one go and cut his or her company car tax by one third as well.

5. The business mileage question

At this stage, you need to decide whether to apply the programme to all mileage or only to business mileage. To begin with, it is often best to work the total annual CO_2 emissions from all journeys. It's true that the primary financial interest of the business is in the cost of travel for work, because it pays for it, but counting private as well as work mileage – at least to start with – simplifies the process and gives drivers more room to make savings. CO_2, of course, has the same impact on the atmosphere irrespective of why it was emitted.

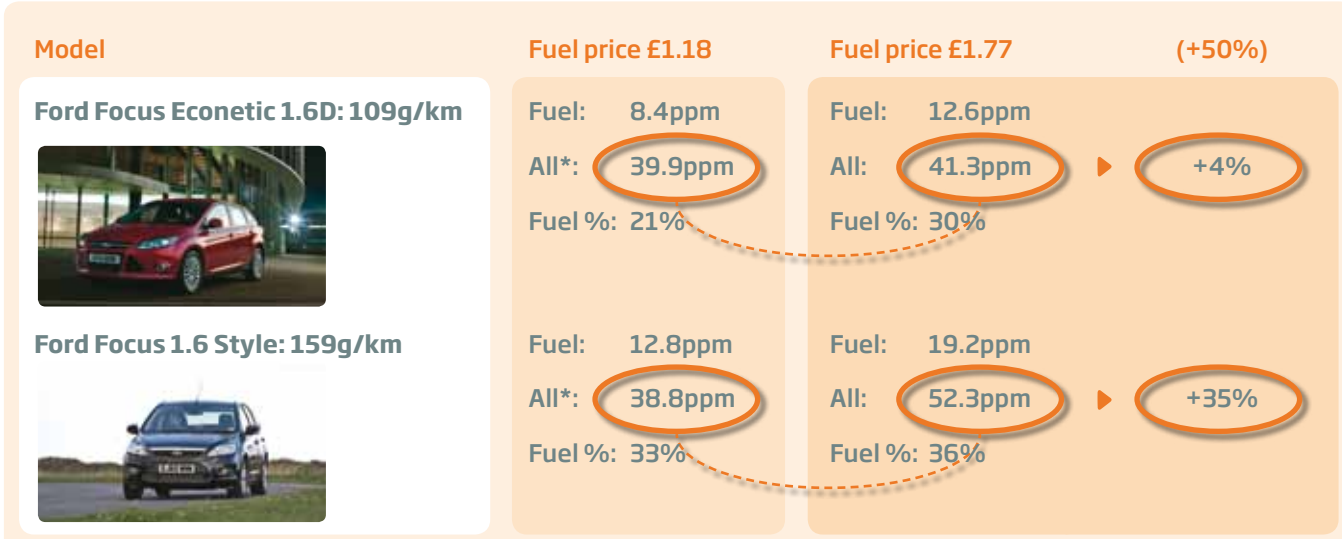
6. Run the programme

To help drivers manage their fuel use, TMC provides a quarterly report for each individual, telling them how much CO_2 they emitted last year; their target in the current year and their emissions to date (see "How Carbon Reduction Works – A Case Study"). TMC's management reports enable the business to track the progress of the programme and produce their own updates on projected reductions in fuel costs and emissions.

7. Refresh and review

Behavioural change needs to be encouraged and reinforced. Ensure that the scheme receives plenty of publicity within the company to keep it fresh in people's minds. Highlight successful drivers and winners of incentives. Try to translate the value of CO_2 savings into measurements that employees and managers will identify with – e.g. "it's saved the company enough to pay for four full-time heads." TMC can help with communications ideas and with producing supporting materials.

Keep the reduction target under review. A 5% target will achieve dramatic results at first but the resulting boost to your fleet's efficiency will make future savings proportionally harder to deliver. Smaller annual reductions of 2% or 3% may be more realistic after the first few years.



Although a sudden 50% increase in fuel prices is unlikely, it is not without precedent. This diagram models the impact of a 50% increase in fuel prices on two comparable models of differing CO_2 rating. Even after such an increase in pump prices, the low-CO_2 version's fuel cost is lower than the higher-CO_2 model cost before the price rise (12.6p per mile vs. 12.8p per mile). In the scenario, the low-CO_2 model's residual value increases as fuel prices rise, as buyers compete for stocks of fuel-efficient cars. The high-CO_2 model's RV falls because of the relatively high cost of refuelling.

The difference in running costs after the fuel price 'spike' is dramatic. The high-CO_2 car's fuel, depreciation and SMR costs leap by 35% while the eco model's cost rise by only 4%.

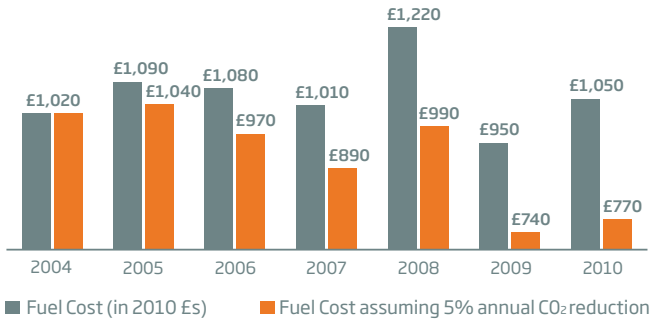
Oil price spikes tend to happen very fast and without warning. Businesses that take action now to tackle their vehicles' CO_2 ratings AND fleet mileage – the principle driver of total emissions – would find themselves relatively well-protected from the impact of an oil price shock on their fleet operations. Those that do not, risk having to take drastic steps to mitigate a sudden leap in running costs.

* All = Depreciation + fuel + SMR costs based on 36 months/60,000 miles. Source: Fleet News

How much will I save?

Several factors affect the performance of CO_2 reduction schemes – such as whether participation is compulsory or voluntary; the nature of the business and fleet, and the ratio of business to private mileage.

Chart 2: Impact of a Carbon Reduction Programme on the cost of fuel for 10,000 miles' driving



The chart shows the impact of a hypothetical CO_2-reduction programme on fuel costs for driving a typical car for 10,000 miles (orange bars) vs. the cost of doing nothing to reduce CO_2 emissions (grey bars), over six years. The orange bars assume that the fleet achieved a 5% reduction in CO_2 (equivalent to a 5% cut in fuel used) each year, starting in 2004. The figures allow for inflation, fuel price changes and improvements in new-car fuel economy.

Notes:

- By the sixth year of operation the scheme has reduced emissions, fuel volume and fuel costs by over 25% compared with doing nothing.
- The cumulative fuel cost saving is over £1,000 per vehicle.
- The cumulative saving in CO_2 emissions is more than 2 tonnes per vehicle.
- Although fuel prices spiked upwards by 20% in 2008, the scheme would have held the fleet's total fuel bill below 2004 level.

Based on the foregoing example, such a programme would deliver the following real-terms cost savings at fleet level over the next five years – even in the face of rising fuel costs:

Fleet size	Fuel cost saving	CO_2 saving
50 cars:	**£95,000**	**180 tonnes**
100 cars:	**£190,000**	**360 tonnes**
500 cars:	**£950,000**	**1,800 tonnes**

And the cost savings shown are for fuel alone. As already shown, the reduction in Whole Life operating costs including tax, National Insurance, maintenance and repairs would add significantly to the final total.

CO_2 and your fleet's costs

Carbon dioxide (CO_2) is a colourless, virtually odourless gas. Nearly all plants and animals and many processes such as fermentation produce it. It is also continuously absorbed by plants, the oceans and even rocks.

Carbon dioxide in the atmosphere acts as a greenhouse gas, preventing heat radiating back out into space from the Earth's surface. For this reason, the increasing concentration of atmospheric CO_2 is an important environmental concern. For businesses, however, the financial cost of emitting carbon dioxide is an equally pressing issue.

A fleet is essentially a production facility for carbon dioxide – between a fifth and a quarter of UK CO_2 emissions come from road transport. Drivers put fuel into their vehicles' tanks and for every litre of diesel or petrol they burn, about 2.6 kilograms of CO_2 comes out of the exhaust pipe.

It takes nearly £450-worth of diesel (at £1.20 per litre) to produce a tonne of CO_2 from a typical car. You also have to pay the driver and the car's other operating costs, of course. Depending on how efficiently the vehicle and driver perform, a tonne of CO_2 is equal to between 2,700 and 6,000 miles of travel.

On top of fuel costs, you also incur a range of CO_2-related tax burdens including drivers' benefit-in-kind tax, Vehicle Excise Duty, employers' National Insurance contributions and the impact of capital allowances and lease rental disallowances, which have been linked to emissions since 2009.

The carbon-related tax cost of every vehicle your business puts on the road is 'locked in' for the duration of its time on fleet. Moreover, taxes will unquestionably increase every year, driven by tightening BIK scale bands and scheduled increases in fuel duty and road tax.

Irrespective of your vehicles' fuel economy, you only pay for converting fuel to CO_2 while your drivers are clocking up miles. That is why it is vital to make sure that every business mile they cover is both productive and necessary.

Summary and conclusion

Fuel costs will continue to challenge fleet budgets. Pump price rises are outstripping improvements in fuel economy.

Total CO_2 emissions (calculated from mileage and fuel card data) are a precise measure of fleet activity and efficiency.

Mileage is the primary driver of CO_2 emissions, followed by vehicle fuel economy.

Drivers have three options for reducing their annual CO_2 emissions.

- Covering fewer miles
- Driving more efficiently
- Choosing low-CO_2 cars

Each option will reduce fuel costs and help to protect the environment, with mileage reduction delivering the largest and most rapid benefit.

CO_2 reduction is neither difficult nor costly to implement, yet it offers fleet operators a highly effective as well as fully sustainable way to mitigate the effects of higher fuel prices in future. TMC offers all the necessary tools via our Mileage Audit system, whose cost starts at only 99 pence per month per driver.

About TMC

TMC is Europe's leading Mileage Audit specialist. We provide online, automated systems that cut costs by ensuring company car and grey fleet drivers record their business and private mileages accurately. Our solutions also reduce administration costs, support compliance with Occupational Road Risk requirements and are recognised by HMRC.

Evidence shows that organisations typically pay out 24.7% more in fuel and mileage expenses than they need to. TMC can help you cut your fleet mileage bill down to size.

We deliver savings painlessly and quickly, with low impact on resources and infrastructure. We are flexible, nimble and willing to enhance our process and solutions to help you achieve your goals.

Discover the difference TMC could make to your company: call us on +44 (0) 843 222 6000.

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