

A Pollution Solution



It is unlikely that any new vehicle technology will ever provide us with a pollution solution. No car, or the fuel it runs on, is truly clean from an ecological point of view, and new technology will not give us a clean car for several years, if ever. All cars pollute and some more than others. Likewise, all fuels pollute and some more than others. No one can recommend any specific car or fuel - each has its own benefits and drawbacks that vary according to the circumstances under which it is used. The environmentally aware motorist must assess the implications that his/her choice of car and fuel type will have on the environment, and make that choice accordingly.

How you drive, how far you drive, and how often you drive are equally important points to bear in mind - unnecessary car journeys can be reduced; and why not walk, bike, bus or train the necessary ones?

Good Driving Practice

There are a number of simple steps you can take, regardless of the type of car you drive, that can help lessen your vehicle's impact on the environment:

Maintain your car regularly (service at least once a year or 10,000 miles). Tuning, tyre pressure, emission control should all be checked.

Cut your speed, keeping your speed below 60mph (40-55mph is the most efficient speed) will reduce emissions, save fuel and have the obvious safety implications.

Don't race: erratic braking and acceleration increase fuel consumption

Drive less: use your legs, bike, bus or train at least one journey a week. Short journeys with a cold engine produce more emissions and use more fuel - even in hot weather a petrol car is not fully warmed, and thus efficient, until driven for 6 miles in an urban area. 58% of all car journeys are less than 5 miles.

These measures will also help prevent your car from breaking down.

Vehicles with lower fuel economy create more carbon dioxide than vehicles with higher fuel economy. Every gallon of petrol your vehicle burns puts 20 pounds of carbon dioxide into the atmosphere as a result of the combustion process.

The average American vehicle gets 23 miles per gallon and in the EU this is slightly higher, average mileage then, would consume 1748 gallons of fuel per year.

Mile for mile, most emissions from a vehicle trip occur during the first 15 minutes a car is running - the time when the emissions control devices are not fully warmed up. At that rate, 15 minutes at 35 mph equals almost 9 miles and that means that more than 60% of our trips happen when the emissions are the worst.

Fuel Efficiency and Miles Travelled

Since the amount of carbon dioxide released from fossil fuel combustion is directly related to the amount of fuel burned, fuel efficiency is an important determinant of overall emissions of greenhouse gases. Today's cars and trucks burn fuel 35% more efficiently and with 95% less emissions of pollutants – excluding carbon dioxide – than 30 years ago, but the continuing increase in vehicle miles travelled has slowed our progress towards environmentally sustainable transportation.



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In fact, carbon dioxide emissions from the transportation sector increased approximately 10% between 1990 and 1997. This growth is a result of two trends:

- 1) average fuel economy of the new personal vehicle fleet has declined, and
- 2) the number of miles driven continues to rise.

The drop in fuel economy is largely a result of a shift toward larger vehicles; such as sport utility vehicles and 4 x4's that have lower gas mileage than cars.

There is a view that owners of older cars (which are typically less fuel-efficient than their modern counterparts) are worse polluters than drivers who regularly buy the latest, "cleanest" models available. But the green-minded older-car owner who maintains his vehicle in peak condition and minimises his annual mileage is likely to be doing at least as much to protect the environment as the new car driver. Obviously any comparison would be dependent on exact mileage figures and the exact emissions of the cars in question.

Furthermore, it has been estimated that a car uses 20% of its total lifetime expenditure of energy before it even reaches the showroom - the manufacture of motor vehicles is enormously demanding on energy and raw material resources. This is a strong argument for keeping old cars on the road for as long as possible, always assuming they are maintained in tip-top condition.

Indirect and direct carbon taxation

CO2 Based Company Car Tax

CO2 Emissions and Company Car Tax Rules

Since April 2002 company car tax has been based on a car's list price and official CO₂ emission figure.

Car Tax Calculations before the April 2002 Changes

For tax years up to and including 2001/02 the taxable benefit was based on business mileage. For 2001/02 the car benefit was:

Taxable benefit up to 2001/02

Business miles in tax year	Percentage of price of car
less than 2,500	35%
2,500 to 17,999	25%
18,000 or more	15%

The price of the today's car is calculated as before but the percentage used to calculate the benefit is based on carbon dioxide (CO₂) emissions measured in grams per kilometre (g/km).

A minimum charge of 15% of the car's price will apply to cars emitting CO₂ at or below a specific level, measured in (g/km). This charge rises in 1% increments for every 5g/km over the minimum level (there is an upper ceiling of 35%).

Diesel cars: there is a supplement of 3% up to the maximum charge of 35%. This supplement is waived for cars that meet the EC emissions standard known as Euro IV. The Euro Standard is shown on the registration document for cars first registered after 01 March 2001 and is also included in information available in The Car buyers Guide.

The table below shows the relationship between CO₂ emissions and percentage charge before any discounts are applied. The 2005 budget included the announcement that the threshold for the minimum percentage charge rate will be frozen at 140g/km up to, and including 2007-08.



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Percentage charge relative to CO₂ emissions (before discounts)

CO ₂	2002/03		2003/04		2004/05		2005/06	
	Petrol	Diesel	Petrol	Diesel	Petrol	Diesel	Petrol	Diesel
135								
140							0.15	0.18
145					0.15	0.18	0.16	0.19
150					0.16	0.19	0.17	0.20
155			0.15	0.18	0.17	0.20	0.18	0.21
160			0.16	0.19	0.18	0.21	0.19	0.22
165	0.15	0.18	0.17	0.20	0.19	0.22	0.20	0.23
170	0.16	0.19	0.18	0.21	0.20	0.23	0.21	0.24
175	0.17	0.20	0.19	0.22	0.21	0.24	0.22	0.25
180	0.18	0.21	0.20	0.23	0.22	0.25	0.23	0.26
185	0.19	0.22	0.21	0.24	0.23	0.26	0.24	0.27
190	0.20	0.23	0.22	0.25	0.24	0.27	0.25	0.28
195	0.21	0.24	0.23	0.26	0.25	0.28	0.26	0.29
200	0.22	0.25	0.24	0.27	0.26	0.29	0.27	0.30
205	0.23	0.26	0.25	0.28	0.27	0.30	0.28	0.31
210	0.24	0.27	0.26	0.29	0.28	0.31	0.29	0.32
215	0.25	0.28	0.27	0.30	0.29	0.32	0.30	0.33
220	0.26	0.29	0.28	0.31	0.30	0.33	0.31	0.34
225	0.27	0.30	0.29	0.32	0.31	0.34	0.32	0.35
230	0.28	0.31	0.30	0.33	0.32	0.35	0.33	0.35
235	0.29	0.32	0.31	0.34	0.33	0.35	0.34	0.35
240	0.30	0.33	0.32	0.35	0.34	0.35	0.35	0.35
245	0.31	0.34	0.33	0.35	0.35	0.35		
250	0.32	0.35	0.34	0.35				
255	0.33	0.35	0.35	0.35				
260	0.34	0.35						
265	0.35	0.35						



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Government policy is torn between hating diesel cars, because their better economy means that they produce less revenue from fuel taxation, and pretending to love them because they produce less of the CO₂ that is blamed for global warming. So extra taxes are applied to diesel cars - £10 extra on annual vehicle tax for all the lower pollution bands, and £5 extra (£165 instead of £160) for those emitting more than 185 g/km in exhaust gases. There is also an additional 3% to be added to the car benefit charge for those provided with a free company car, which is assessed as a percentage of what the car cost when new. However you examine it a more interesting fiscal point is that the UK Government and many European ones are collecting taxes based on CO₂ and not offsetting the revenue within the spirit of the Kyoto agreement. Those of us paying voluntary contributions and Congestion charges are effecting paying twice.

	Dies TC 4	Petrol Car TC 48	Alternative Fu TC 59
6 mo rate £			
			-
			-
			49.50
			63.25
			77.00
			99.00
Vehicles registered on or after 23rd March 2006			
			110.00

Employers have 3 big reasons to encourage company car drivers to choose a car with lower car tax. After basic salary, company car tax is likely to be the largest factor in determining net pay and tax.

Improve Employee's Take Home Pay

This is obvious, but for many employees who begrudge paying tax on a car that is required for their job, it is less obvious how they go about finding out about the implications of the new tax regime. Airmax Remote can help them choose the best car for their needs, with the minimum tax. Many company car drivers will not be able to opt out for the cash alternative because their job requires it, or they see difficulties in managing the problems of financing, maintaining and insuring their own vehicle. For those who see the company car as a mixed blessing, Airmax Remote can be a useful tool in providing the information to improve the mix.

A car chosen now could be subject to increasing levels of company car tax over the next three years. From April 2003 those drivers with free private fuel have also seen that benefit taxed according to the car's CO₂ emissions.

Reduce Employer's National Insurance Costs

Class 1A NICs are calculated using information reported on P11Ds. If drivers are helped or encouraged to choose cars with lower tax, there will be a large saving on the fleet's Class 1A NI bill. With the increase of Employers NI to 12.8% this saving is even more important. Fuel scale charges also depend on the car's emissions levels since 6.4.03.



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Reduce Car Running Costs

Generally the total costs of cars will vary in line with the tax. This is a broad assumption, but largely true because cars need to run more efficiently to achieve a lower emissions rating.

Tax Changes - Seen to be Clean

Diesels are now looking like a more affordable company car option as the 3% excess charge on them has been scrapped for compliant cars with reduced emissions. Now the major manufacturers are turning out clean and green diesels that, if chosen by fleet decision-makers, could secure long-term savings for both company car drivers and their businesses.

Opting for a growing range of the cleanest, diesel-engined cars could minimise drivers' tax bills for years to come and ensure employers' National Insurance payments remain under control as well. The reason lies in rules set down when carbon dioxide became the key to cutting tax bills with the introduction of CO₂-based company car tax in 2002.

Since then, company car drivers have paid tax on a percentage of the value of their vehicles, defined by the amount of CO₂ their car produces.

The tax band starts at a minimum of 15% for 155 grammes of CO₂ per kilometre and rises by 1% for every full 5g/km increase to the 35% maximum rate at 255g/km. However, when the system was launched, concern over particulate emissions from diesel engines persuaded the government to impose a 3% tax supplement on them. So, while a driver of a petrol car producing 155g/km pays tax on 15% of the car's P11D price, the diesel driver pays 18%, even though his vehicle has the same CO₂ figure.

This provoked a storm of protest from the motor industry and, by way of a compromise, the government said the 3% supplement would be waved for diesel engines which met stringent standards, known as Euro IV, which all new diesel cars must meet by 2005.

At the time of the announcement, there were no vehicles that met the Euro IV benchmark, but drivers still turned to diesel engines in their droves, as their low carbon dioxide emissions cut tax bills, despite the 3% supplement.

Last year, nearly 30% of fleet sales were diesel cars and the percentage is set to grow even further this year. Indeed, when more than 100 fleet industry executives were asked, 'Will the link recently established between diesel and respiratory diseases alter the standing of diesel-powered cars and vans on your fleet?' 92% responded 'No'.

Among the models that now offer a Euro IV-compliant option are the Vauxhall Astra, Audi A3, Audi A4, Audi A6, Fiat Punto, Toyota Corolla, Toyota Avensis, Volkswagen Touran and Volkswagen Passat. And the list is set to get longer over the next few months, following a series of significant announcements at the Frankfurt Motor Show.

For example, Ford has announced a Euro IV-compliant engine for the Mondeo.

Vauxhall also has a series of diesel engine launches planned that meet the benchmark, including Vectra, Astra and Signum. This creates an ideal opportunity for fleet decision-makers to plan ahead and save money. By encouraging a driver to choose a Euro IV-compliant Toyota Avensis 2.0 D-4D, the driver is certain to be in the lowest 15% tax band. But even if the driver opted for the £18,000 T4 specification model, the tax bill would still only be £90 per month for a 40% taxpayer.

If the vehicle were not Euro IV-compliant, the tax bill would rise to £108 per month, an £18 per month rise, equal to an extra £648 over a three-year period, or £64,800 for a 100-vehicle fleet. More importantly from a fleet decision-maker's point of view, the company has to pay Class 1A National Insurance on a fleet driver's tax liability. Therefore, the driver's reduced tax can also save the company money as well.

Summary Company Car Tax

Where a car is made available for an employee's private use a taxable benefit arises. Company car tax was reformed in April 2002 and is now calculated by applying a percentage to the list price of the car. The percentage is related to the CO₂ emissions of the car and ranges from 15% to 35% (in 1% increments) for a petrol car. Diesel cars that do not meet Euro IV emissions standards attract a 3% supplement on the petrol percentages (capped at 35%). The 2004 Pre-Budget Report announced that from April 2006, the waiver of the 3% supplement for diesel cars meeting Euro IV standards will be withdrawn for all cars registered from 1 January 2006.

The CO₂ emissions qualifying for the minimum petrol percentage charge have been set as follows:

- 2005/06 140 grams per kilometre of CO₂
- 2006/07 140 grams per kilometre of CO₂



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For 2007/08 the level of CO₂ emissions qualifying for the minimum petroleum percentage (15%) will be frozen at 140 grams per kilometre of CO₂.

Recognising the importance of an early move is vital, because if a company car driver opts for a non-Euro IV diesel now, they could be stuck with it for at least three years - the traditional replacement cycle for company cars. *"The industry is at a transition point, where Euro IV diesel vehicles will take more of the market,"* stated Nigel Fletcher, Operations Director for ALD Leasing. *"Some fleet decision-makers are switched on to this, but I don't think the implications have been made clear."*

Lance Hicks, head of customer relations at Arval PHH, wonders how a solus arrangement with a manufacturer will impact the choice list companies are offering drivers said, *"It is very much down to customers to ensure drivers understand the issues, but we are helping with an online tax calculator that is being updated to include Euro IV models."*

The issue highlights the need for fleet decision-makers to ensure they are fully trained to tackle the issues they face in their jobs, according to Stewart Whyte, director of the Association of Car Fleet Operators.

"There is far too little information about to identify which vehicles qualify," he is reported to say. *"For drivers, it just as important to know the benefit-in-kind liabilities on a car as it is to ensure the upholstery is the right colour. Everyone has a duty to inform on this, but manufacturers are strangely quiet."*

"Opting for a Euro IV diesel instead of a Euro III model could equate to a saving of 20% as some drivers move from an 18% to a 15% tax band."

A PENNY SAVED ... As one of the world's most well-known charities, Oxfam knows the importance of keeping spending to a minimum to ensure that all available funds are channeled to aid. As such, it is switching drivers to Euro IV-compliant diesel models to cut benefit-in-kind tax bills.

The charity has awarded the contract to manage its fleet to ALD Automotive. As vehicles come up for renewal, car drivers will be moved from Ford Focus into Vauxhall Astra 1.7 CDTi models, which are Euro IV-compliant.

They emit 124 grammes of CO₂ per kilometre and incur a 15% benefit-in-kind bill. Furthermore, they will remain in the lowest tax band next year, when the vehicles have to emit 145g/km or less to qualify for the lowest tax band. They will remain in the lowest band until 2006.

ALD has taken over the management of the charity's existing fleet from the previous supplier and will replace vehicles as they reach the end of their three-year, 60,000-mile contracts.

Changing the Way we Think

Airmax Remote has developed new in-car Black Box technology that reads data from the vehicles onboard diagnostics port and beyond. Data from the engines cluster is now available remotely via GSM. Thus not only driver style is monitored and engine faults but also fuel data and consequent co2 out-puts. Interestingly most of the vehicle manufactures claims are wrong and steady divers or newly labeled eco drivers will pollute less. There is a base argument here for taxation to be measured against true figures and not on a broad brush. This argument has recently been accepted by London's Mayor Livingstone that will adopt the polluter pays principle in the next round of congestion charging reviews.

Airmax believes that driver style does alter the fuel consumption figures by up to 25% from the published figures. Early trials monitoring factors such as speed, cold engine start, fast acceleration, harsh breaking, and gear ratio have a major impact on fuel burn. CO₂ is directly related to fuel burn and not mileage. Taxation, either in the form of PLLD, car tax, and capital allowances are calculated against figures published by the manufactures. There calculations are based on 'ideal' testing procedures and are used for tax calculations. Clearly by recording the real data there is a case for lowering the band for CO₂ and paying accurate taxation based on emissions and not mandated ones. There is massive over taxation on the part of the Inland Revenue and some lobbying is necessary.

Airmax Remote is able to calculate the CO₂ emission by extracting the data from the vehicles on-board Electronic Control Unit (ECU's). Other data such as fuel consumption and mileage driven are added to the driver profile, vehicle faults, GPS and real- time video capture.

