The Society
of Motor
Manufacturers
and Traders Ltd.

UK New Car Registrations by CO_2 Performance

Report on the 2004 market

April
2005

UK New Car Registrations by CO_2 Performance

Quick Facts

	2004	*2003*	*1997*
Average new car CO_2 emissions	**171.4g/km**	**172.1g/km**	**189.8g/km**
% reduction by 2004		*-0.4%*	*-9.7%*
Share of cars under 140g/km	**15.5%**	**14.9%**	**3.9%**
Total new car market	**2,567,269**	**2,579,050**	**2,170,725**
Diesel penetration	***32.5%***	***27.3%***	***16.2%***

	2002	*2001*	*1997*
CO_2 emissions – road transport*	**32MtC**	**32MtC**	**32MtC**

	2003	*2002*	*1997*
Total volume fuel consumed*	**37.6Mt**	**37.7Mt**	**37.2Mt**
% diesel	***47.1%***	***44.9%***	***40.2%***
Total UK car parc	**29.90mn**	**29.32mn**	**26.32mn**
Total UK car & CV parc	**33.59mn**	**32.91mn**	**29.63mn**

MtC = Million tonnes Carbon (abbreviation used throughout report)

Mt = Million tonnes

Mn = Million (abbreviation used throughout report)

Sources

All data sourced from SMMT unless otherwise stated

* Transport Statistics Great Britain, 2004 edition (www.tso.co.uk/bookshop)

Contents

Overview

- Fourth review of UK new car market by CO_2 performance.
- Annual average new car CO_2 emissions have improved each year.
- 2004 performance shows 0.4 per cent improvement over 2003 level.
- Continued shift to diesels is a key factor in the overall improvement.
- Pace of CO_2 gains moderated by trends in market preferences.
- Industry strives to make further gains, government and consumers need to act too.

SMMT's fourth annual review of the new car market by CO_2 performance shows the trend since 1997. Average new car CO_2 emissions have steadily improved each year over this period, although in recent years the pace of improvement has been tempered by a shift in the marketplace away from smaller CO_2-efficient models.

The average new car in 2004 emitted 171.4g/km of CO_2, 0.4 per cent less than the 2003 level and almost 10 per cent below the 1997 rate. The gains in 2004 stem from the further shift in the marketplace to diesel-powered cars - which accounted for a record 32.5 per cent of the UK market.

Industry pan-European CO_2 voluntary agreements, and then the UK government using CO_2 numbers as the basis for vehicle excise duty and company car tax since 2001 and 2002 respectively, has created a considerable emphasis on a car's CO_2 rating.

Manufacturers are striving to develop and bring to the market vehicles that have lower CO_2 ratings. In addition, they are encouraging the education of consumers and the take-up of low-emitting vehicles, eg through the introduction of a colour coded environmental label this year. However, the automotive industry cannot act alone and actions should include the full engagement of both consumers and government. The government should act on a range of challenges; such as incentives to promote the take-up of cleaner and alternative technologies; stable environmental and safety policies; improved transport infrastructure and intelligent transport systems; strategies to reduce congestion, and increase infrastructure utilisation and vehicle occupancy. Consumers should be encouraged to invest in fuel-efficient vehicles and use automotive products in a responsible manner.

Accuracy of data

Data is sourced from manufacturers' own CO_2 figures (supplied on the first registration document) and checked with type approval data from the VCA to ensure accuracy. For 2003 and 2004 any missing data was estimated by using other models in the range or using models of a similar segment/engine size and type.

Number of vehicles with fully checked CO_2 data

	CO_2	All Registrations	% of total
1997	1,742,251	2,170,725	80.3%
1998	1,993,301	2,247,402	88.7%
1999	2,125,465	2,197,615	96.7%
2000	2,212,786	2,221,647	99.6%
2001	2,457,368	2,458,769	99.9%
2002	2,562,764	2,563,631	100.0%
2003	2,579,050	2,579,050	100.0%
2004	2,567,269	2,567,269	100.0%

SMMT believes the database it has compiled is the most accurate and reliable on offer and therefore gives the best source for analysing the UK's performance over the past seven years.

The data is collated by SMMT's Motor Vehicle Registration Information Service (MVRIS). It links vehicles' CO_2 levels to the MVRIS new car registration database. The information in this report looks at the overall new car markets and does not differentiate for individual manufacturers or groups of manufacturers (eg ACEA, JAMA or KAMA members).

For specific tailored reports by CO_2 performance contact co2@smmt.co.uk.

Average new car emissions

- In 2004 a new car on average emitted 171.4 g/CO_2 per km.
- This level has dropped 0.4 per cent on 2003 and 9.7 per cent since 1997.

Average new car CO_2 emissions in the UK (1997-2004)

Year	Average CO_2 g/km	y/y % change	y/y % ch on 1997
1997	189.8	-	-
1998	188.4	-0.7%	-0.7%
1999	185.0	-1.8%	-2.5%
2000	181.0	-2.2%	-4.6%
2001	177.6	-1.9%	-6.4%
2002	174.2	-1.9%	-8.2%
2003	172.1	-1.2%	-9.3%
2004	171.4	-0.4%	-9.7%

In 2004, average new car CO_2 emissions in the UK posted a seventh successive annual decline. The pace of decline was strongest around the turn of the millennium, as the early advantages were made and into 2002 as the private sector of the market, with consumers' preference for small cars, grew strongly. In 2003 and again in 2004 the year-on-year reductions have slowed. Nevertheless, the trend continues to be in the right direction.

The proportion of cars under 140g has risen almost four-fold between 1997 and 2004, while the share over 200g/km has almost halved over the same period. The increased share of diesels over this period has also played a significant role in the net improvement.

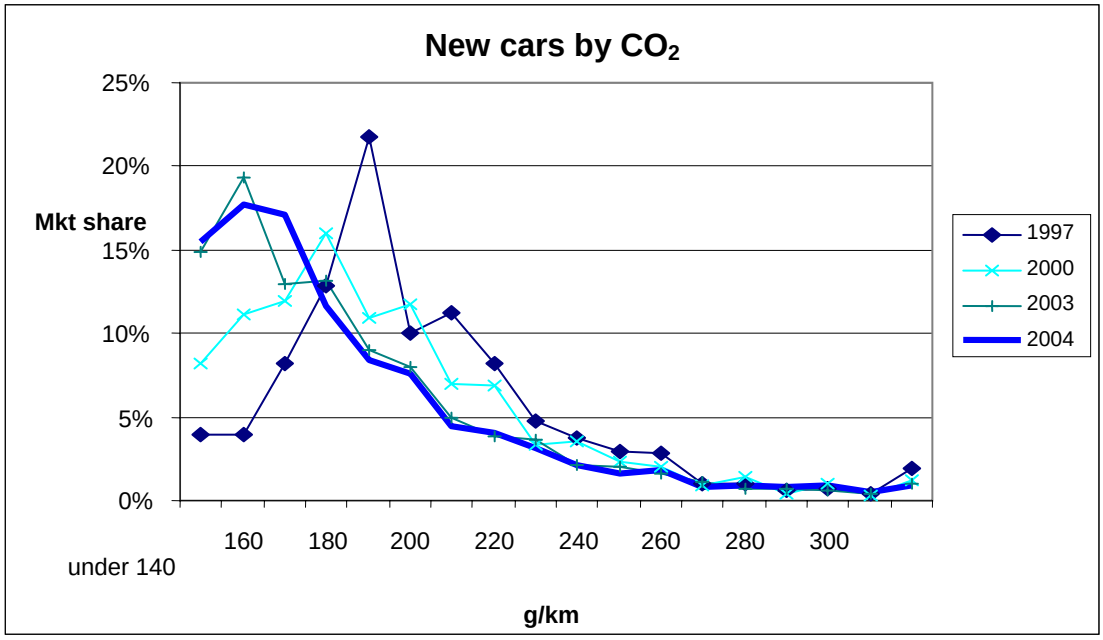
While advances in lower emission technologies continue, the benefits can be off-set by other design considerations, including safety and consumer demands for higher specification models. These can add weight which impacts negatively on the car's CO_2 performance. In addition, the weaker private demand and recovery in the fleet sectors have seen the market shift from smaller to larger vehicles. The sustained growth of niche segments has also impacted.

CO_2 profile of the new car market

- The proportion of the market under 140 g/km has risen to 15.5 per cent.
- The distribution curve is moving to the left, as market consists of lower CO_2 emitting-vehicles. There is more even spread of 165g and below cars than in 2003.
- 3.2 per cent of market was under 120g/km, but only 481 cars were sub 100g/km.

A larger proportion of cars were under 140g/km than ever before – 15.5 per cent, compared with 14.9 per cent in 2003, nearer 10 per cent in 2001 and less than five per cent in 1998. The chart below shows the shift in the distribution over time and reveals how the market has moved the line ever more to the left, indicating the lower average new car CO_2 emissions. However, in 2004 – compared with 2003 – the proportion between 141-150g fell away. Some moved into the sub-140g range and others moved into the 151-160g/km level. The chart also shows little change in the proportion of vehicles over 260g/km. In addition, the number under 100g/km fell from 590 cars in 2003 to 481 vehicles. This reduction, in part, reflects changing model cycles. The share of the market over 200g/km fell to its lowest level ever in 2004 – 22.1 per cent, compared with 22.7 per cent in 2003 and 39.2 per cent in 1997. The volume under 120g/km rose 5.3 per cent to over 81,000 units.

CO_2 distribution of new car registrations in the UK (1997 – 2004)



Vehicle Excise Duty profile of the new car market

- CO_2 based VED scheme in place since 1 March 2001.
- VED provides a signal to the market, but it remains a blunt policy instrument.
- Market has moved towards the lower CO_2 bands.
- VED bands changed in 2005 to mirror new environmental label band names.

Since March 2001 the UK has had a VED scheme based upon CO_2 emissions for new cars, although engine size is still used for existing cars. In 2004 the rates were unchanged from 2003. They ranged from £55 - £165 and are shown in the table below. Alternative-fuel cars get a discount, whilst diesel cars face a penalty compared with petrol cars. Since 2001 two further categories were introduced below the A band. In the March 2005 Budget the AAA – D bands were reclassified to A – F, in line with the new CO_2 label (see later in report). The top two bands saw a £5 increase in the 2005 Budget, with other rates frozen again.

Annual VED payable on new cars *(brackets indicate bands revised in 2005 Budget)*

	AAA *(A)*	AA *(B)*	A (C)	B (D)	C (E)	D (F)
CO_2 g/km	**Up to 100**	**101-120**	**121-150**	**151-165**	**166-185**	**Over 185**
AFV	£55	£65	£95	£115	£135	£155
Petrol	£65	£75	£105	£125	£145	£160
Diesel	£75	£85	£115	£135	£155	£165

The UK is the only country within Europe to have a taxation system based on CO_2 emissions. Whilst VED remains a crude policy instrument, it does increase awareness amongst buyers of the importance of CO_2 emissions and helps send signals to the market. However, with the government choosing to invoke differing rates for the fuel type used, this could confuse consumers into thinking that CO_2 emitted by diesel is somehow worse than that emitted by petrol, while alternative-fuel cars are cleaner still. The system of 18 bands itself is complex.

There has been debate over introducing more bands or widening the differentials between the bands. SMMT remains unconvinced of the benefits of this, especially upon drivers of older vehicles, where higher VED rates may preclude some sectors of society having access to vehicles which best suit their needs.

The table below shows the new car market differentiated by VED band since 1997. There has already been rapid movement into the lower bands during the late 1990s. Those trends have continued and, to some extent, accelerated post-2001 and the launch of the CO_2-based VED system. However, it is not clear if the new VED system caused the changes, whether they were a reflection of the voluntary agreement and improvements in technology, or the result of other market shifts.

New car market distributed by VED band

Band	1997	1998	1999	2000	2001	2002	2003	2004
AAA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AA	0.0%	0.0%	0.0%	0.1%	0.6%	2.0%	3.0%	3.1%
A	7.8%	8.9%	11.8%	19.2%	23.1%	25.8%	31.2%	30.1%
B	15.1%	18.0%	25.0%	23.8%	23.8%	24.3%	21.2%	23.6%
C	32.0%	31.2%	25.8%	22.7%	20.6%	19.0%	17.8%	17.2%
D	45.1%	41.9%	37.4%	34.3%	31.8%	28.8%	26.8%	25.9%

In 1997 the D band contained 45.1 per cent of the all new vehicles and was the largest sector. By 2003 the A band had become the largest within the market, taking a 31.2 per cent share. The A sector remained the largest band in 2004, although its share dipped slightly to 30.1 per cent. B band cars took some share away from the A band in 2004, but also from the C and D bands. In 2004 the C and D segments both took their lowest ever share of the market. Collectively they accounted for 77.1 per cent of the market in 1997, but in 2004 took just a 43.1 per cent share.

Cars in the AA band continued to grow – taking a 3.1 per cent share in 2004, up from zero in 1999. Volumes in the AAA band remain extremely low – 481 units were registered in 2004.

Company car tax profile of the new company car market

- Company car taxation has been based on CO_2 emissions since 1 April 2002.
- A driver is taxed (at 23 or 40 per cent) on 15 – 35 per cent of the vehicle's list price, depending upon which CO_2 band it sits in (diesel is 18-35 per cent).

Car benefit charges for cars with an approved CO_2 emissions figure

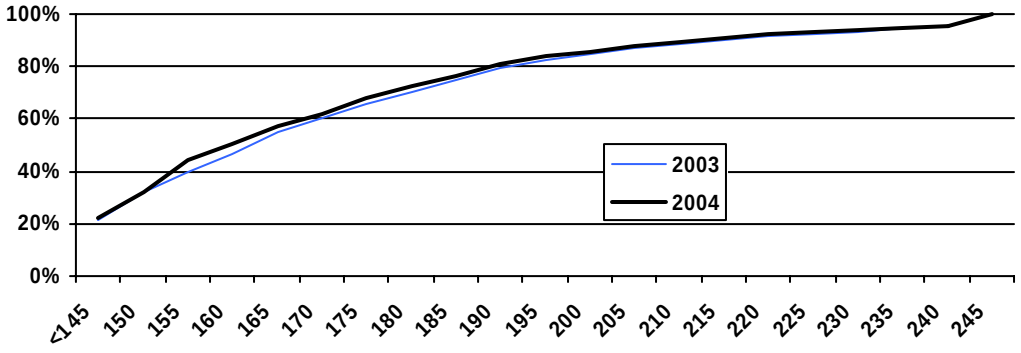
% of cars price to be taxed	CO_2 emissions g/km			
	2002-2003	2003-2004	2004-2005	2005-2006
15%*	Up to 165	Up to 155	Up to 145	Up to 140
16%*	170	160	150	145
17%*	175	165	155	150
18%*	180	170	160	155
19%*	185	175	165	160
20%*	190	180	170	165
21%*	195	185	175	170
22%*	200	190	180	175
23%*	205	195	185	180
24%*	210	200	190	185
25%*	215	205	195	190
26%*	220	210	200	195
27%*	225	215	205	200
28%*	230	220	210	205
29%*	235	225	215	210
30%*	240	230	220	215
31%*	245	235	225	220
32%*	250	240	230	225
33%**	255	245	235	230
34%***	260	250	240	235
35%****	261+	251+	241+	236+

Diesel supplements (note these only apply to cars first registered in 1998 or later which run solely on diesel and are not approved to Euro IV emission standards)

* - add 3%, ** - add 2%, *** - add 1%, **** maximum charge, no diesel supplement

- SMMT's large fleet and business sectors are used as the company car market.
- Company cars account for over half of the UK new car market.
- There is difficulty placing a diesel car in a specific band due to issues defining its Euro emission standard specification within the registration data.

New company car market by CO_2 level – cumulative total



- 2004 line slightly above 2003 level – showing improved performance.
- Over 300,000 or 22 per cent of the 2004 fleet market emits 145g/km or less, compared with 21 per cent or nearer 280,000 units in 2003.

New company car market by CO_2 tax bands

CO_2 bands	2004 petrol	2004 diesel	2003 petrol	2003 diesel
Up to 145	15.2%	32.2%	15.5%	33.1%
150	8.3%	12.0%	10.1%	12.7%
155	9.1%	17.7%	2.4%	16.3%
160	6.1%	7.1%	7.7%	5.6%
165	7.9%	4.9%	11.4%	4.0%
170	5.7%	3.2%	5.4%	3.5%
175	7.8%	2.8%	6.6%	4.4%
180	5.5%	2.7%	5.4%	3.1%
185	6.3%	1.0%	5.4%	1.7%
190	4.8%	3.3%	4.9%	3.4%
195	3.7%	1.5%	4.7%	1.0%
200	2.6%	1.3%	2.8%	1.4%
205	1.8%	1.9%	2.2%	2.2%
210	2.0%	1.9%	1.5%	0.6%
215	2.1%	0.6%	2.3%	0.6%
220	1.7%	0.1%	2.1%	0.6%
225	1.1%	0.5%	1.0%	0.4%
230	1.0%	0.7%	1.3%	0.5%
235	0.9%	0.1%	1.1%	0.4%
240	1.2%	0.5%	1.2%	0.5%
241+	5.0%	4.2%	5.1%	3.9%
Total volume	825,057	539,488	881,888	438,701

** 2003 bands started at 155g/km, but 2004 bands used for demonstration purposes. AFVs excluded.*

New car CO_2 emissions by sales type

Sales type	2004	2003	% change	Mkt sh '04	Mkt sh '03
Company	169.0	170.6	-1.0%	53.3%	51.3%
Private	174.2	173.6	0.3%	46.7%	48.7%

- Company cars 3.0 per cent lower emitting than private vehicles in 2004.
- Company cars improved their CO_2 performance in 2004, private cars' deteriorated.

The Inland Revenue interim assessment on Company Car Taxation (April 2004) reported that:

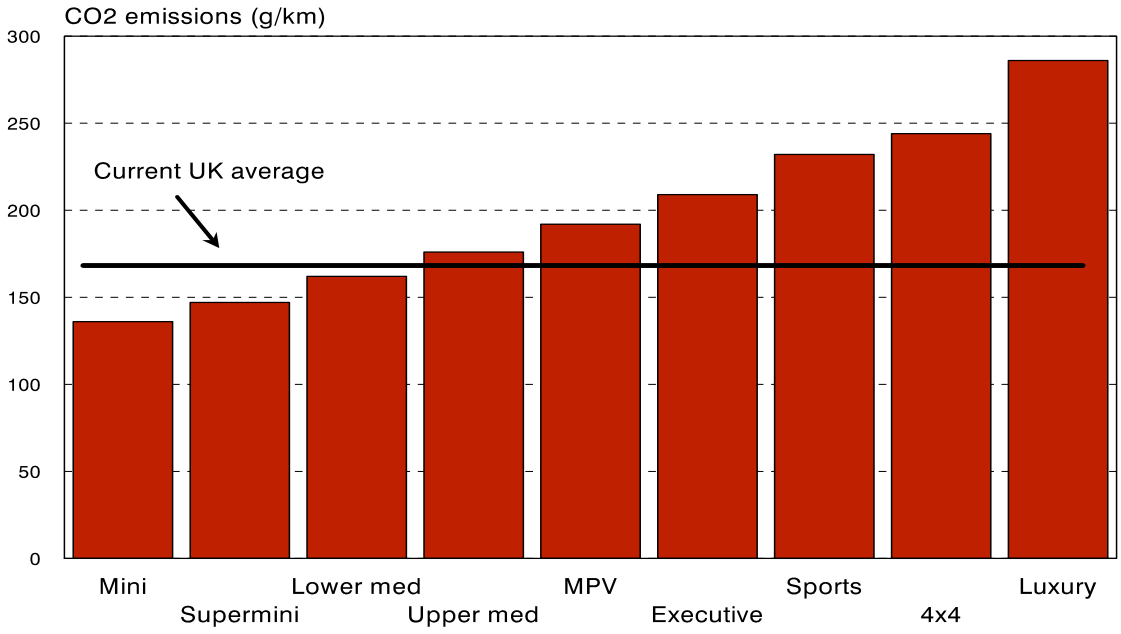
- New scheme is meeting expected CO_2/carbon reduction from road transport. In 2003 'saved' 0.15 - 0.2 MtC and on track to save 0.5–1 MtC per year in the long run.
- Eliminated unnecessary business journeys by 300-400 million miles per year.
- Now 25 per cent fewer company cars – at 1.35 million.
- Scheme had provided a big boost to diesel car sales, estimating that by 2005 50-60 per cent of all company cars would be diesel-powered.
- Only very modest effect on increasing the use of AFVs – weak or confused incentive or commercial issues? Estimate only about one per cent of company cars are AFVs.
- £3.5bn car and fuel revenue take in 2000/01.
- Scheme had created a cumulative £270mn revenue loss 02/03 – 04/05.
- Assessment suggested more may need to be done on (how to improve) awareness and understanding of new rules.
- Further reviews of role of fuel benefit and authorised mileage payments - as making cash and car too generous.
- No other comprehensive independent surveys or analysis available. Average company car CO_2 rating 182g/km at 2002 (*note this is different from SMMT data*).
- It should also be noted that at 1.35 million in total, the annual new replacement market is likely to be about 450,000 to 550,000 units.
- Company cars are defined as cars that employees use and pay income tax on.

CO_2 performance by segment

- Smaller cars tend to have lower CO_2 emissions, due to their lighter weight.
- Mini segment cars have lowest average CO_2 emissions – at 136g/km in 2004.
- The supermini sector remains the largest in the UK and their average CO_2 levels were 14 per cent below the UK average in 2004 at 147g/km.
- Lower and upper medium segment cars made the best gains in 2004 – with 2.0 and 2.5 per cent year-on-year improvements.
- Luxury and sports cars saw rises of over four per cent in their average CO_2 performance in 2004. This reflects changes in model mix.

CO_2 profile of the UK 2004 new car market, by segment

examples of models in each segment are available on page 14



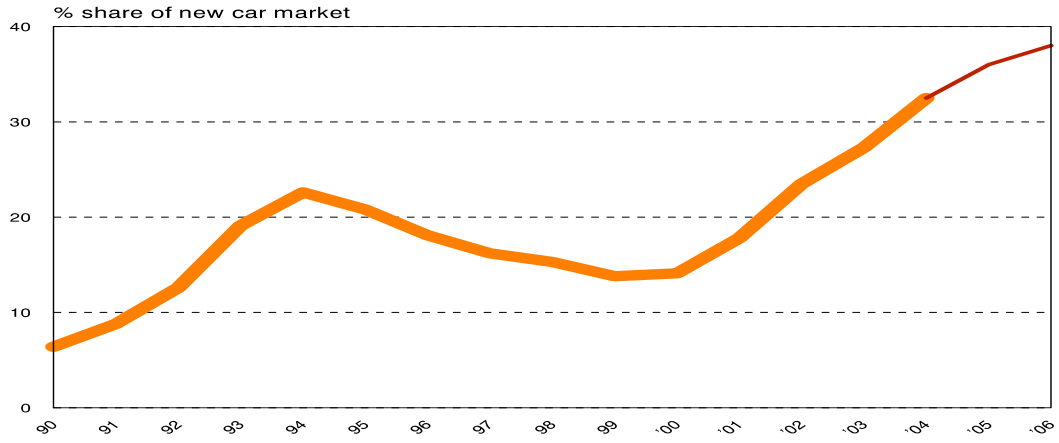
- Between 1997 and 2004 the overall market reported a 9.7 per cent reduction in average CO_2 emissions. MPVs reported the largest reduction at 19.4 per cent.
- 4x4 dual purpose sector witnessed a 14.6 per cent reduction over the same period.
- The sports car segment is the only one to report a net rise in average CO_2 emissions since 1997. This follows changes in the model mix within the sector.
- All other segments have reported improvements of at least 7.8 per cent.

New car registrations by market segment

Market Shares (%)	1997	2000	2003	2004
Mini	0.7%	2.3%	1.5%	1.4%
Supermini	26.5%	31.0%	33.9%	32.7%
Lower medium	32.4%	29.8%	27.9%	28.4%
Upper medium	25.2%	21.5%	18.6%	17.9%
Executive	5.8%	4.7%	4.6%	4.3%
Luxury	0.7%	0.5%	0.5%	0.5%
Sports	2.9%	3.0%	2.5%	2.9%
Dual purpose 4x4	3.8%	4.5%	6.2%	7.0%
Multi-purpose vehicles	2.0%	2.7%	4.3%	4.9%

- The supermini segment remains the largest in the UK, accounting for approximately a third of all new registrations. However, there was a 3.9 per cent drop in volumes in 2004 as private sector demand moderated.
- Demand for niche products – MPVs, 4x4s and sports cars – continues to remain buoyant. Volumes in these three segments rose by 14, 12.8 and 13.4 per cent respectively in 2004.
- Niche vehicles' share of the market has gone up dramatically recently, moving from 8.7 to 14.8 per cent of the total market between 1997 and 2004.
- The market shift has affected the UK's overall CO_2 performance. However, the niche sectors have made some of the best gains in CO_2 performance during the monitoring period – reflecting downsizing within the segments, the introduction of new technologies and wider take up of diesels.
- The net effect of the reduced 'small' car market and growing 'large' market in 2004 has moderated the progress being made on CO_2 reductions.
- Forthcoming new models should boost the mini sector.
- Large cars, particularly MPVs, offer additional seating and other space. Merely looking at the tailpipe CO_2 emissions is not always representative of the vehicle's efficiency – an MPV carrying seven people may well be more efficient than two smaller cars carrying the same number of passengers.

Diesel new car market



- Increased diesel penetration of the UK market has been a key feature of the improving average CO_2 emission rates.
- Demand for diesels continues to rise rapidly. Volumes showed double digit growth for the fourth year in succession in 2004. The market hit 835,334 units in 2004 making it 138 per cent larger than that in 1997.
- Diesel penetration hit 32.5 per cent in 2004, up from 27.3 per cent in 2003 and 16.2 per cent in 1997. Penetration passed 36 per cent in the final quarter of 2004.
- The diesel market has recorded sustained growth due to a number of factors, such as improved availability across a wider manufacturer base, improved technology for quieter, better performance, tax changes to favour CO_2 emissions, media acceptance and focused marketing by manufacturers.
- Diesel penetration is forecast to hit 36 per cent in 2005 and 38 per cent by 2006.
- Diesel penetration is also climbing across Europe as a whole and in 2004 averaged 49 per cent, but in several countries was between 60 - 70 per cent. Penetration levels are much higher in mainland Europe as the duty rates on diesel are well below those for petrol, whereas in the UK they are the same. If diesel prices were lower the UK would likely see far higher diesel penetration.
- Government policy will remain a key determinant in diesel penetration levels.
- There is already concern that removing the waiver on the three per cent surcharge placed on Euro IV spec diesels for company car tax in 2007 could unsettle the diesel market, or at least affect the timing of future diesel sales.

CO_2 performance by fuel type

- Diesel car CO_2 levels were 6.2 per cent lower than the average petrol car in 2004.
- Between 1997 and 2004 diesel cars made a 12.1 per cent reduction in average CO_2 levels. Petrol cars have achieved an 8.1 per cent decline over the same period.
- For the second year running, however, the average CO_2 value for diesels increased, rising by 0.2 per cent in 2004, after a 1.3 per cent increase in 2003.
- Petrol cars made a 0.1 per cent improvement in their CO_2 performance in 2004.
- Petrol/electric cars continue to offer very low CO_2-emitting performances, but registrations of alternative fuel vehicles remain very low.

Average CO_2 emissions by different fuel types – volume weighted

Fuel type	1997	1998	1999	2000	2001	2002	2003	2004
Diesel	186.7	183.5	175.8	167.7	164.0	161.7	163.8	164.2
Petrol	190.4	189.3	186.5	183.2	180.6	178.1	175.2	175.0
Petrol/gas	-	-	-	-	170.3	166.4	166.4	177.0
Petrol/elec	-	-	-	107.8	109.1	109.2	113.2	108.9
Market share								
Diesel	16.9%	15.9%	13.8%	14.0%	17.6%	23.5%	27.3%	32.5%
Petrol	83.1%	84.1%	86.2%	85.9%	82.4%	76.4%	72.6%	67.3%
Others	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.2%

For dual fuel vehicles the lower CO_2 figure is used.

- Lower CO_2 emissions from diesel cars combined with further market shift towards diesels have been instrumental in bringing down the overall market's figures.
- The rise in diesels' average CO_2 levels over the past two years reflects the growth in the niche segments. However, these segments have increasingly switched to diesel power, improving their overall performance.
- Diesel powered variants have helped enhance demand for MPVs and 4x4s, allowing consumers to change to a different vehicle style but in many cases without a CO_2 penalty.
- If the government's fuel duty policy was similar to that in the rest of the EU, where diesel duty is lower than on petrol, then diesel penetration in the UK would be higher and average new car CO_2 emissions would fall more rapidly.

Regional new car market by CO_2 performance

Appendix 1 lists the new car market by region, by CO_2 performance. It should be noted that the regional information is based upon where the vehicle is first registered and is therefore influenced by a number of factors (eg where some large companies have their headquarters or distribution points as well as levels of wealth and availability of public transport). Using first registration data means that the information is not accurate as to where the vehicle is actually being used.

The data reveals that:

- West Glamorgan and Northern Ireland tied as having the lowest average new car CO_2 emissions in 2004, at 164.8g/km – 3.9 per cent below the national average.
- West Glamorgan took the top slot for the second year in succession, but its performance slid by 0.7 per cent in 2004.
- Northern Ireland returned share top honours, having had the lowest average CO_2 emissions in 2002. In 2003, however, they had slipped to 35th (out of 66 counties), but bounced back with the best improvement of any county in 2004 – with a 3.6 per cent reduction.
- Average CO_2 emissions were highest in Warwickshire in 2004 at 185.2g/km. They were 8.1 per cent above the national average.
- The largest region, Greater London, recorded average new car CO_2 levels of 180.0g/km in 2004.
- West Midlands – which accounted for 7.7 per cent of the 2004 market – saw emissions average 167.5g/km in 2004, a 1.2 per cent improvement on its 2003 performance and 2.3 per cent below the national average.

Into the future

- There are a host of potential influences on future CO_2 emissions, including standards, regulations, technology, substitution, taxation and incentives.
- Further improvements in emissions are due, as lower CO_2 emitting models arrive, diesel penetration continues to climb, downsizing, and government taxation become increasingly emission-focused.
- Higher diesel penetration or a higher take up of AFVs would help reduce average new car CO_2 levels further.

The table below shows the 10 lowest emitters registered in 2004.

Top 10 lowest CO_2 emissions models registered in 2004 (lowest emitter in range)

	Model	Fuel type	CO_2 g/km
1	Honda Insight	Petrol/Electric	80
2	Toyota Prius	Petrol/Electric	104
3	Citroën C2	Diesel	107
4	Citroën C3	Diesel	109
5=	Renault Clio	Diesel	110
6=	Peugeot 206	Diesel	113
6=	Toyota Yaris	Diesel	113
6=	Smart Fortwo	Petrol	113
9=	Daihatsu Charade	Petrol	114
10=	Vauxhall Corsa	Petrol	115

Note: Axiam, Ligier & Microcar (@80g/km) not included as only type B1 approval.

- The two lowest CO_2 emitters are hybrid models. Diesels took the next five places while petrol-powered cars filled the remaining places in the top 10.
- The Honda Insight has the lowest CO_2 emissions - just 80g/km – less than half the UK average. However, only two were registered in 2004.
- Axiam, Ligier and Microcar ranges also emit 80g/km of CO_2, but they have a different type approval to mainstream cars. 479 such cars were registered in 2004.
- The new Toyota Prius saw its volume more than treble in 2004 to 1,588 units in 2004, compared with the old model.

The table below shows that lower CO_2 emitting alternatives exist in each segment and compares that performance to the segment average.

Lowest CO_2 emitting models in each market segment in the UK in 2004

Segment	Model	Fuel	CO_2 g/km	Seg ave	Difference
Mini	Smart Fortwo	Petrol	113	136	-17%
Supermini	Citroen C2	Diesel	107	147	-27%
Lower medium	Honda Civic	Petrol/Electric	116	162	-28%
Upper medium	Toyota Prius	Petrol/Electric	104	176	-41%
Executive	Audi A6	Diesel	151	209	-28%
Luxury saloon	Mercedes S320	Diesel	204	286	-29%
Sports	Honda Insight (Vauxhall Tigra)	Petrol/Electric (Petrol)	80 (146)	232	-66% (-37%)
4x4	Toyota Rav4	Petrol	175	244	-28%
MPV	Fiat Doblo	Diesel	147	192	-23%

- If the lowest CO_2 emitting vehicles in each segment were only bought within the segment then average CO_2 emissions would fall by 32 per cent to 117g/km.
- Hybrids tend to offer the lowest CO_2 emissions in the segments they are available.
- Typically the lowest emitter in each segment is around 30 per cent below the segment average – the hybrids in the sports car and upper medium sectors offer the biggest reductions from the segment averages.
- If the market segment volumes from 2003 were applied to the 2004 segment CO_2 values, then emissions would be 170.4g/km or 0.6 per cent lower than actually recorded.
- If the average CO_2 values for the segments in 2003 were applied to the 2004 market structure then CO_2 emissions would have been 173.1g/km or 1.0 per cent higher than actually recorded. If the 1997 CO_2 values were used, the market average would have been 191.7g/km – or 11.8 per cent higher.

Weight

The weight of a vehicle is crucial in terms of its relative CO_2 performance. The heavier the car the more energy is consumed to move it about. Manufacturers have strived to bring weight saving to motor vehicles, but often those savings have been more than offset by safety, comfort and even environmental features.

The use of alloy, aluminium, plastics and carbon fibre has all risen in recent years, replacing traditional steel components. These materials can be very expensive and so tend to find their way into high value products first, but as they prove their advantages and use becomes more widespread, the economies of scale help to bring the prices down.

Data on the average weight of new cars is not currently held by SMMT. The weight of the average car would clearly depend upon the type of car being bought. However, anecdotal evidence suggests that the weight of cars is on the increase, in some cases by over 60 per cent in the past 25 years. ACEA reports that between 1995 and 2003 cars have reported a 12.2 per cent rise in weight.

Cars are also getting bigger, in line with growth in the physical size of consumers. European population statistics show the average height has increased by 40mm in the last 30 years. Models are also made to fit a global market and must meet the size of the largest population type. Increasingly, manufacturers are also striving to introduce models that improve on the previous model. Often offering more space is one such way. In 2004 the shifts in the segment profile of the market also tended towards larger cars.

The desire to enhance the safety features of a car can add weight. Side impact bars, air-bags, crumple zones and the like involve putting additional materials into a vehicle, thus adding weight. Data shows that moving from a Ford Sierra to Ford Mondeo – equipped with safety bags, catalytic converter and so on saw the weight between the two models jump by some 25 per cent.

Once the weight of the vehicle increases, the size of the engine and fitment of bigger brakes, power steering and the like usually follows, which also adds further weight to the vehicle.

Consumers expect more creature comfort in new cars. For example DVD players, SatNav, air conditioning, cruise control, trip computers, cup-holders, and so forth. Some of these devices may actually reduce the mileage of a vehicle, such as SatNav, so saving fuel, but in terms of the test cycle, they would not have a positive impact.

Some technologies introduced to help the environment can also have a negative impact on CO_2 emissions. This relates to the complex interaction between different emissions. For example catalytic converters help cut NOx, hydrocarbons and CO emissions for petrol (hydrocarbons and CO only for diesels), but again add weight to a vehicle, making the vehicle work less efficiently in terms of CO_2 emissions.

Many of the above issues are unlikely to diminish moving forward, in addition new pedestrian protection regulations are likely to result in further weight gain in the future. Pedestrian protection is also expected adversely to affect the aerodynamics of vehicles, which will also have a detrimental impact on efficiency.

New fuel technologies

There are no easy routes to low carbon vehicles and manufacturers must balance their environmental responsibilities with other factors that exist in the global automotive markets in which they operate. Vehicles must be introduced to the markets which are saleable. It is important that all partners – manufacturers, government, consumers, media and the like – understand and appreciate the balance.

Since 1997 some of the major innovations in vehicle design to reduce CO_2 emissions have been:

- Enhanced direct injection diesel technology and turbo-charging
- Diesel technology across all vehicle types
- Gasoline direct injection (GDI)
- Electric power steering
- Improved engine management systems
- Improvements in gearboxes - more gears, auto and semi-automatics, dual-clutches
- Variable valve actuation

While major breakthroughs in alternative fuel vehicles are still being sought, much is being done to improve emissions over the short-term by developing vehicles using conventional fuels - petrol and diesel.

Some forthcoming technical developments include:

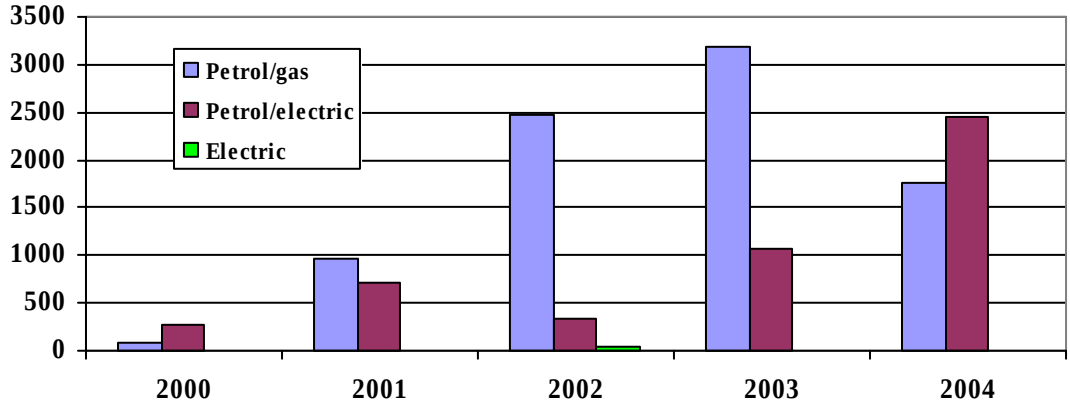
- 'Stop-start' engine development - engine shuts off in stationary position
- Developments in hybrid technology - mild hybrids, diesel hybrids, etc
- Intelligent valve actuation
- Gearshift change indicator
- Further gearbox development
- Zero sulphur fuel for direct injection petrol engines
- Biofuels (eg push to meet UK obligation)
- Greater use of lightweight materials
- Further reduction of rolling resistances
- Evolution of intelligent engine management systems

Sales of alternative fuel vehicles (AFVs)

- Volumes flat in 2004, after previous period of growth.
- Net volumes remain low – accounting for just 0.2 per cent of the total market.
- Enhanced environmental profile and exemption from congestion charge a boost.
- High price, poor infrastructure and uncertain tax structure limiting demand.
- PowerShift support ended during 2005.

MVRIS market data shows that new registrations of AFVs in 2004 showed virtually no change on their 2003 volumes, down 1.1 per cent or just 48 units to 4,218 units. The chart below tracks volumes of AFV registrations since 2000. The market grew rapidly between 2000 and 2003, and was stable in 2004.

Registrations of alternative fuel cars in the UK by fuel type (2000 – 2004)



Within the marketplace in 2004 there was significant growth for the new Toyota Prius. The model became more mainstream in terms of size and styling and moved from being classified in the lower medium segment into the upper medium sector. Its volumes jumped by 336 per cent to 1,588 units – equivalent to 37.6 per cent of the entire AFV market in 2004.

The MVRIS data shows the first registration of the vehicle, and so any after-market conversions are not reported in this system. The market for LPG-powered cars is therefore probably considerably understated. However, the market for gas-powered cars fell sharply in 2004 due to continued uncertainty over the PowerShift grant funding. MVRIS volumes during the year saw a 45 per cent reduction from 3,185

units in 2003 to 1,756 units in 2004. Vauxhall and Volvo saw their gas-powered cars decline dramatically in the year. Ford and new entrant Mitsubishi added some volume.

No zero-emission cars were registered in 2004. Only two Honda Insights were registered during the year.

Energy Savings Trust (EST)

PowerShift

PowerShift was launched by EST in 1996 to promote cleaner alternative fuels, such as LPG and natural gas, and new cleaner technologies, like electric vehicles and hybrids. Over time PowerShift became a very efficient grant-delivery programme, and was enhanced in August 2004 through the introduction of a new online grant application system (see www.transportenergy.org.uk for details). Emissions savings from grant-funded vehicles are shown below.

Transition to Low Carbon Car Programme

Following a consultation on TransportEnergy programmes, the PowerShift programme closed on 31 March 2005 and is set to be replaced by a new Low Carbon Car Grant Programme. This new programme will provide purchase grants to the very lowest-carbon passenger cars in the market that also meet an air quality threshold. The programme will be emissions-based and technology neutral, and will be an important measure to help the Government meet its Powering Future Vehicles target (10 per cent of new cars sold should be less than 100g CO_2/km by 2012). As a new programme the LCCG programme must be approved under European State Aid regulations before it can be launched. It is currently being assessed by the European Commission, and will be launched as soon as practically possible.

Consumer Advice and Information

In addition to grant programmes, EST provides impartial advice and information on cleaner, lower-carbon vehicles and fuels, both to the fleet sector and the wider consumer audience. EST also manages programmes on behalf of DfT providing free consultancy to businesses on workplace travel plans and vehicle fleet management.

PowerShift: Vehicle Lifetime Savings - UK Total

	2002-03	2003-04	1997-2004
LPG volume	2,194	4,774	16,664
Natural gas volume	11	104	395
Electric vehicle volume	34	91	471
Hybrid volume	8	564	1,273
Total volume	2,247	5,533	18,803
Carbon savings (tonnes)	-382	14,430	18,907

Low Carbon Vehicle Partnership

Accelerating the shift to low carbon vehicles and fuels

The Low Carbon Vehicle Partnership (LowCVP) is a partnership of over 160 organisations from the motor and oil industries, Government, environmental NGOs, academia and other stakeholders. Launched in January 2003, the Partnership is funded by UK Government as part of its Powering Future Vehicles Strategy.

The mission of LowCVP is to accelerate the shift to low carbon vehicles and fuels in the UK and develop opportunities for UK businesses from the shift. The Partnership works on issues related to low carbon vehicles (cars, vans, trucks and buses), future fuels, research and supply chain development.

A focus of the Partnership is the low carbon car target set out in the Government's Powering Future Vehicles Strategy (www.roads.dft.gov.uk/cv/power/pdf/strategy) which aims to achieve that by 2012 10 per cent of all new cars registered in the UK emit only 100g/km or less of CO_2. The new colour-coded fuel economy label for new passenger cars, due to be rolled out from July 2005, has been developed by the LowCVP. Further initiatives in 2005 will focus on addressing market barriers by enhancing the image and appeal of low carbon vehicles to car buyers.

To encourage the market for low carbon fuels, LowCVP published an important well-to-wheel study on bioethanol from wheat which shows that carbon savings from biofuels vary widely depending on the processing technology and bi-product use. The group is currently developing a sustainable biofuels standard to maximise the CO_2 benefits from biofuels in road transport and ensure their wider environmental and social sustainability. In parallel, LowCVP is undertaking a study to assess the feasibility of including carbon certification and wider sustainability assurance within the proposed Renewable Transport Fuels Obligation for the UK.

The Partnership has also been a strong advocate of the new Centre of Excellence for Low Carbon and Fuel Cell Technologies (Cenex) will be launched in summer 2005. The LowCVP's Research and Development Working Group has developed the blueprint and R&D agenda for the new centre. Cenex will provide a focus for collaboration in low carbon research, development and demonstration activities.

For further information: LowCVP - www.lowcvp.org.uk, Cenex – www.cenex.co.uk

Colour-coded fuel economy label

Appendix 2 shows an example of the label. The label was developed through the Low Carbon Vehicle Partnership, established to bring together stakeholders to accelerate the pathway to low carbon road transport.

The label recognises the role of the consumer in choosing a low carbon car in a similar way that consumers have recognised the importance of life cycle costs in the purchase of white goods.

Agreement was reached through the partnership and the voluntary initiative supported by the UK car industry will allow the label to be introduced from 1 July 2005, in time for registrations on 1 September.

The label is intended to:

- Provide information to the public in a new, recognisable format. This data was previously, and will continue to be supplied in tabular form as well.
- Be in a format that is similar to that used for the labelling of power consumption of white goods.
- Be clearly linked to existing fiscal policy, further highlighting the benefits of a lower carbon choice. The bandings on the label directly relate to Vehicle Excise Duty (VED).

In addition to the colour coded element the new label will:

- Display the VED rate on the label.
- Supply estimation on estimated fuel cost. This will enable the consumer to relate CO_2 to cost, the data, provided by the VCA represents 12,000 miles, or roughly one year's worth of motoring. The information can be used to allow a comparison of models of a similar type.

Full information on the label will be available from May 2005 on the VCA web site.

The industry will support the label campaign through training of the dealer network and an explanatory leaflet.

For more information go to www.vcacarfueldata.gov.uk

Pan-European industry commitment to reduce CO_2 emissions

The motor industry has made positive steps in reducing CO_2 emissions, and is committed to significant future reductions. In a groundbreaking voluntary agreement in 1998 members of the Association des Constructeurs Européens d'Automobiles (ACEA) agreed to reduce average new car CO_2 emissions across Europe by 25 per cent from their 1995 levels by 2008 to 140g/km. Members of the Japan Automobile Manufacturers Association (JAMA) and Korea Automobile Manufacturers Association (KAMA) members signed similar agreements in 1999.

There were also interim targets for ACEA members to reach 165-170g/km by 2003, for JAMA to reach 165-175g/km in 2003 and for KAMA to reach 165-170g/km by 2004.

SMMT has estimated that achieving these targets would will result in a saving of 14 million tonnes of CO_2 in the UK alone, equivalent to 3.8 million tonnes of carbon. This will represent over 15 per cent of the UK government's share under the Kyoto commitment.

European average new car CO_2 performance

Latest performance in average new car CO_2 emissions across Europe

	2003 CO_2/g/km	1995 CO_2/g/km	% ch 2003 vs 2002	% ch 2003 vs 1995
ACEA	163	188	-1.2%	-13.3%
UK market	170	191	-1.2%	-11.0%

- 2002 was the first time Member States (MS) reported performance to the Commission – figures previously came from ACEA members (including base year) and are were typically 2g/km below the MS's data (in 2002 ACEA said 163g/km, MS 165g/km).

- ACEA members across the 15 EU states showed a 13 per cent reduction since the 1995 baseline, after a further 2g/km improvement in 2003 on the 2002 level.
- ACEA members have improved their interim target of 165-170g/km by 2003.
- A further 14 per cent improvement is still necessary to achieve 140g/km by 2008.

- Portugal, once again, had the lowest CO_2 emissions of any MS, at 148g/km, ahead of Italy, France and Spain.
- The UK moved into 10th position, passing Luxembourg and the Netherlands in 2003.
- The UK's performance was four per cent above the EU average and 15 per cent above Portugal's.
- Sweden had the highest CO_2 emission figures in 2003, at 199g/km. In Germany they were 174g/km.
- It is noteworthy that the UK has the ninth lowest diesel penetration and the 10th highest average power across the fleet, according to ACEA data.

- JAMA and KAMA have yet to publish 2003 performance figures.

Commercial vehicles (CVs)

The principal focus of this report is cars. That is where CO_2 emissions data is available. Commercial vehicles also play a significant part in the vehicle parc and to society as a whole. New CV registrations rose by 7.2 per cent in 2004 to a record 389,923 units, with growth focused within the heavy van sector (2.6-3.5 tonne range).

No CO_2 emissions data is collated on CVs, as it is not included within type approval. It is expected that CO_2 data will soon be necessary for light commercial vehicles (LCVs - CVs under 3.5 tonnes load capacity). Many LCVs share the same engines and engine technologies as passenger cars. However, measuring CO_2 levels remains complicated by the vast array of different body styles and different pay-loads that CVs can adopt.

Due to the crossover of technologies LCVs will have benefited from the advances in passenger car CO_2 reduction measures. However, CVs tend to be bought and used for specific business purposes, rather than for some element of styling, etc that may dictate passenger car choice. It should be recognised that due to the functionality of CVs, creating emission reduction targets may well be at odds with the economic role these vehicles play.

Euro standards, which include environmental standards, apply to CVs – as well as cars. These ensure the introduction of new technologies. CV taxation is increasingly based upon these standards. Likewise some incentives are often applied to encourage the early adoption of higher standards. However, sometimes the Euro standards can have little, or even a detrimental effect, on CO_2 emissions.

CVs naturally lend themselves to alternative fuel use; their larger body structures can house the generally larger fuel tanks of gas powered vehicles or batteries for electric vehicles. The performance loss for using alternative fuels, compared to traditional internal combustion engines, is less of a concern. As they are typically run by specialist fleet operators they can be re-charged/fuelled and/or maintained more readily. As CVs typically cover a greater mileage, the AFVs' higher purchase cost can also be spread over a shorter payback period than a passenger car.

UK parc (vehicles in use) data

- The parc data helps put the new car market in a context of the total number of cars on the roads. New cars account for around a 10th of the overall car parc.
- The UK car parc rose by 2.0 per cent in 2003 to 29.9mn units.
- The 2003 parc was 13.6 per cent larger than in 1997, which had been 26.3mn units.
- Parc data shows the increased use of diesels, but also the low volume of alternative fuel vehicles, and raises further questions over reliability of AFV data.
- The scrappage rate and volume showed a big hike in 2003.

SMMT's Motorparc data shows the number of cars in use. In 2003 the data shows there were 29.9mn cars in use in the UK. This is an increase of 2.0 per cent or some 575,000 units from the 2002 parc. The pace of growth eased a little in 2003, but the parc has still shown a net increase of almost 14 per cent or 3.6mn cars since 1997.

New cars (less than one year old) accounted for 8.8 per cent of the 2003 parc. Cars registered since 2001, when taxes were first realigned to CO_2 values, represented just over a quarter of the 2003 car parc. By 2008 over 70 per cent of the parc will be of cars registered since the voluntary agreements were signed. However, 25.7 per cent of all cars were still 10 or more years old in 2003. This was slightly down on levels recorded in recent years and a peak of 31.4 per cent in 1999, reflecting the strong new car registration volumes post 2000. The net effect has seen the average age of a car in the UK fall to 6.78 years in 2003, from 6.88 years in 2002 and 7.3 years in 1997.

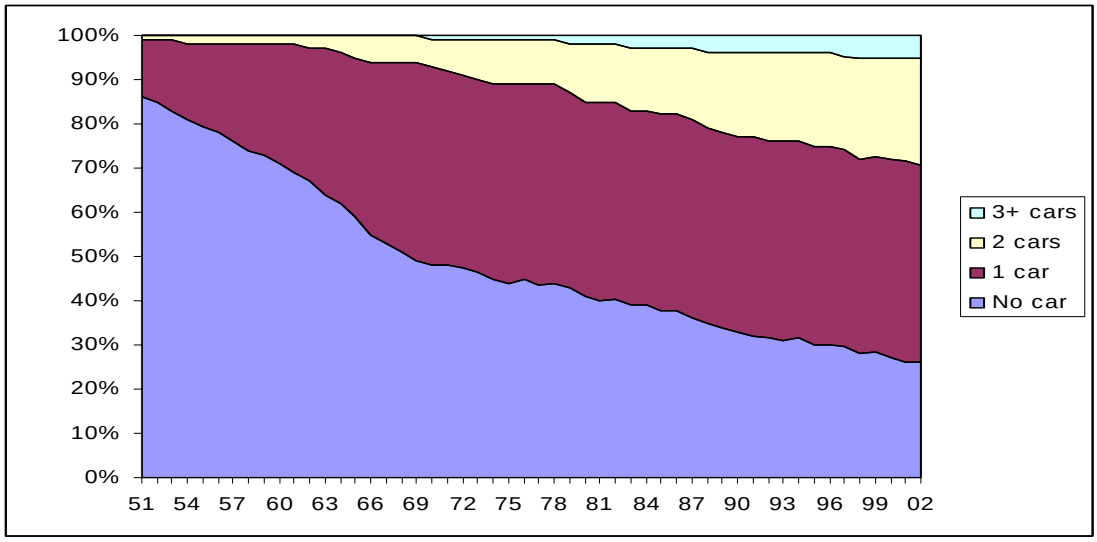
The growth in the parc can be viewed as the success of the motor car. The following chart shows how the number of households with regular use of a car has increased. By 2002 just 26 per cent of households have no access to a car, compared with 30 per cent in 1997. Growth has been significant in two and three plus car households.

Allied to new car registration data, the parc data can also be used to generate an implied scrappage rate – namely the difference between the change in the parc and number of new registrations, acknowledging some discrepancies for net imports. Once certificates of destruction come into effect, more accurate scrappage data will become available. The implied scrappage rate increased to 6.7 per cent of the parc in

2003 - its highest rate since 1986 and well above the 6.3 per cent rate recorded in 2002. The total number of cars scrapped in 2003 surpassed two million units for the first time, up 150,000 on the 2002 level.

Households with regular use of a car

Households with regular use of a car '51 – '02 (Source: Transport Statistics 2004)



Diesel penetration has risen, following rapid growth in the new diesel market. The penetration of the parc has been further fuelled by relatively low volumes of diesel cars being taken out of the parc through scrappage, due to the low registrations volumes of the past. In 2003 diesel penetration rose to 15.9 per cent, up from 14.3 per cent in 2002, 10 per cent in 1997 and just 2.8 per cent in 1990.

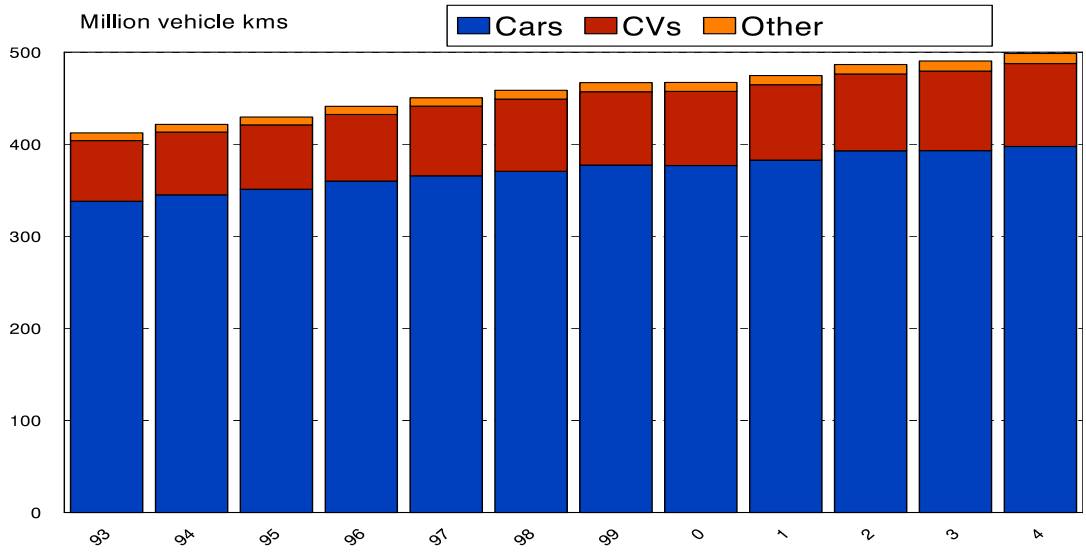
Using DVLA fuel codes a reported 37,949 cars in use in 2003 used alternative fuels. This was a 19 per cent rise on the 2002 level, and represented the second straight year of volumes up by a fifth. The vast majority - 98.6 per cent – used gas as their alternative fuel. Less than 450 cars were classified as using some form of electric power – which is at odds with SMMT data showing over 1,000 new registrations of such vehicles in 2003 (mostly Civic IMAs and Prius models).

The total UK vehicle market was 34.6mn units in 2003, with 90 per cent of these cars.

Alongside the parc size increasing there has also been growth in the distance travelled.

Road traffic growth

Road Traffic – 1993 – 2004 (Source: ONS)

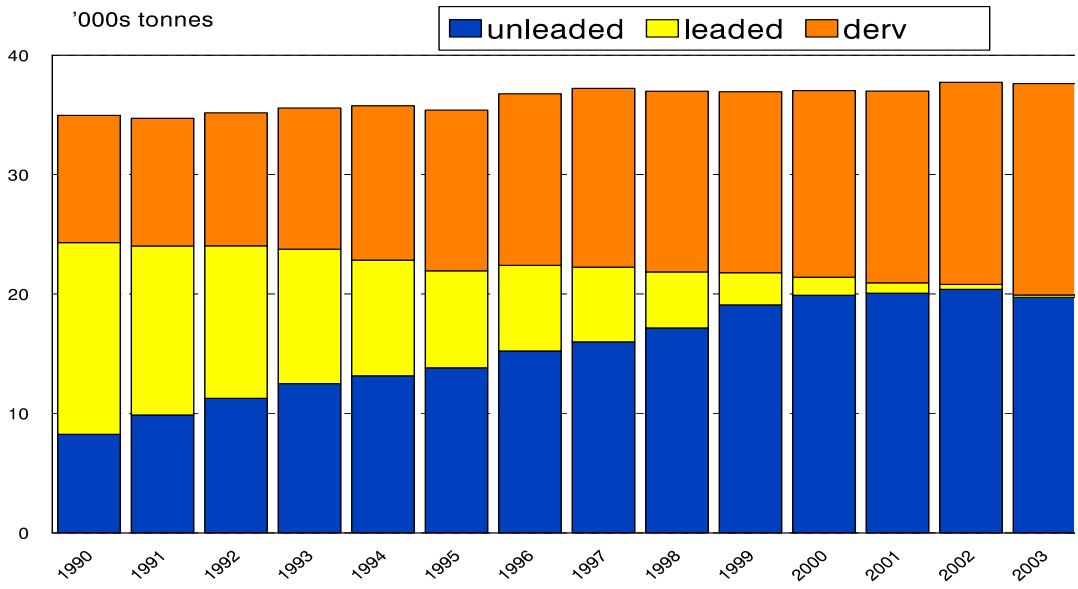


- Road traffic rose by 1.7 per cent in 2004, up 10.7 per cent on 1997 level.
- Cars account for some 80 per cent of all road traffic.
- The growth in out-of-town shopping centres and longer commuting patterns has been key to some of this growth in traffic.
- Just-in-time production techniques and increased home delivery services have added to the mileage covered by CVs.

Fuel used

The chart below shows that despite an increase in the volume of vehicles on the roads and distance travelled, total fuel consumption has remained constant.

UK Fuel Consumption – 1990 – 2003 (Source: Transport Statistics 2004)



- Overall motor fuel consumption dropped by 0.3 per cent in 2003, compared to 2002.
- Between 1997 (when this report has CO_2 data from) and 2003 fuel consumption in the UK increased by just one per cent.
- There has been a major shift from petrol to diesel fuel use in recent years. In 2003 diesels accounted for 47.1 per cent of all motor fuel consumption.
- The dieselisation of the fleet, growth of the small car market, and net improvements in vehicle efficiency has helped keep the amount of fuel used relatively stable, while the parc size and distance travelled has increased.
- High fuel prices in the UK (of which some 85 per cent is tax) will also have constrained higher growth.

Total emissions/other transport emissions

The net mix of changes in the vehicle parc, traffic growth and improvements in the environmental performance of new vehicles have combined to see little change in overall CO_2 emissions from road transport, according to UK government statistics.

CO_2 emissions in the UK, Million tonnes carbon, 1990 – 2002

	1990	1995	1997	2000	2001	2002
Road	30	30	32	32	32	32
All Transport	35	35	36	35	35	35
Non Transport	124	115	112	112	116	111
Total	159	149	148	148	151	146

(source Transport Statistics 2004)

- CO_2 emissions from road transport have been stable at 32MtC since 1997.
- Road transport accounted for 90 per cent of all transport CO_2 emissions in 2002.
- However, road transport's share of total emissions rose to 22 per cent after overall CO_2 emissions from the UK fell by three per cent in 2002 compared with 2001.
- Overall CO_2 emissions show little change from their 1997 performance.
- Despite the current stable emissions from road transport the DTI energy model suggests rapid growth in emissions from road transport in the coming years.

CO_2 emissions in the UK, Million tonnes Carbon, 2000 – 2020

	1990	1995	2000	2005	2010	2020
Road	30	30	32	35	38	42
All Transport	35	34	35	39	42	47
Non Transport	124	116	113	105	106	110
Total	159	150	148	145	148	157

(source Transport Statistics 2004 – forecasts based on DTI Energy Paper 68)

- Total CO_2 emissions forecast to return to 1990 levels by 2020 due to road transport
- CO_2 emissions from transport are forecast to grow by 30 per cent by 2020.
- This raises questions as to what the reasons for this major departure from trend?

While this report concentrates on CO_2 performance it is noticeable that other emissions from road users have fallen. The table below shows key pollutant emissions between 1990 and 2002.

Pollutant emissions in the UK, MtC, 1990 – 2002, by end user

	1990	1995	1997	2000	2001	2002
NOx – road	1.33	1.12	1.06	0.87	0.80	0.76
NOx – total	2.76	2.19	2.02	1.72	1.65	1.58
CO – road	5.26	4.09	3.73	2.57	2.20	1.94
CO – total	7.21	5.65	5.25	3.93	3.64	3.24
VOC – road	1.21	0.86	0.73	0.49	0.43	0.39
VOC – total	2.69	2.14	1.98	1.54	1.44	1.36
Lead – road	2.20	1.05	0.78	0.00	0.00	0.00
Lead – total	2.70	1.55	1.15	0.18	0.18	0.16
PM10 – road	0.07	0.06	0.05	0.04	0.04	0.04
PM10 – total	0.31	0.24	0.22	0.18	0.18	0.16

(source Transport Statistics 2004)

- All emissions listed in the above table show impressive reductions since 1990.
- Most emissions from road transport have halved over the period.
- Lead emissions have seen the largest drop – down to virtually zero.
- Despite increased diesel volumes emissions of particulates (PM10) have fallen by over 20 per cent since 1997.
- CO emissions almost halved between 1997 and 2002.
- By 2002 road users accounted for less than 60 per cent of total CO emissions, down from over 70 per cent in 1997 and over 75 per cent in 1990.
- Since 1997 VOC emissions from road transport have shown double digit reductions in each year. In 2002 they fell by 11 per cent.

Conclusions

This report demonstrates that further reductions are being achieved in the UK's new car CO_2 performance. The growth in the sub 120 or sub 140g/km markets and reduction in the volume of cars producing over 200g/km is particularly encouraging. The gains continue to reflect the dieselisation of the market. They have also been achieved despite greater weight being added to the fleet.

The decline in the private sector and subsequent reduction in supermini volumes has impacted on the overall CO_2 performance. The growth of the niche segments and timing of model cycles has also probably impacted upon the rate of improvement.

More environmentally-friendly cars are making it to the market, but demands for these products are often low, which hinders their success. Until alternative-fuel vehicles can successfully compete on price and specification then their role will remain limited. It may only take a mild change of thinking to create better market structures. Urgent government action is need in promoting the take-up of cleaner and alternative fuel technologies, particularly since the collapse of incentive programmes like PowerShift. Educating consumers to use their purchasing power could also enable the switch to more fuel-efficient vehicles and to help consumers use automotive products in a more resource efficient way.

This year's report has expanded the 'other data' section to contextualise the position of the new car fleet in the nation's overall environmental performance. All of the data is sourced from official government sources, most notably Transport Statistics.

While the size of the parc and the distance travelled have both continued to climb, overall fuel consumption and emission levels – for CO_2 and other emissions – have remained stable or fallen. The availability of cleaner new cars, with lower emissions and improved fuel consumption, has helped offset against the increased demand for motor vehicles.

With other forms of CO_2 emissions falling, the transport sector is likely to become of greater importance in the overall situation. However, the massive growth rates predicted for transport emissions seem at odds with past trends and industry commitment to make further gains in new car performance.

This report offers matters of fact, however, it appears logical that achieving the desired CO_2 reductions, be they automotive agreements or government national targets, will require further work. To achieve the best results it is necessary for all interested parties to work together to achieve solutions. The facts in this report should enhance that process.

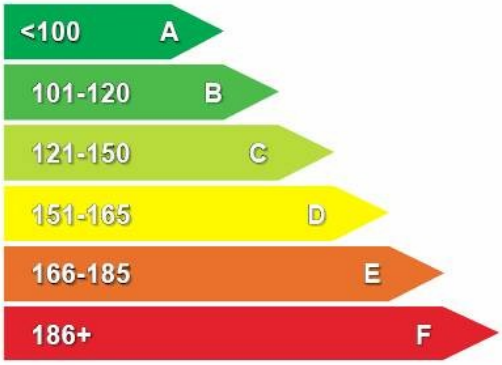
Appendix 1 – Average new car CO_2 emissions by county

	2001	2002	2003	2004	% ch '04 v '03
Avon	176.6	172.7	170.2	170.3	0.1%
Bedfordshire	179.0	176.1	175.5	174.5	-0.6%
Berkshire	188.3	182.1	179.1	175.4	-2.1%
Borders	173.8	172.2	170.8	168.3	-1.5%
Buckinghamshire	181.2	178.0	177.8	175.6	-1.3%
Cambridgeshire	181.1	175.9	174.1	171.0	-1.8%
Central Scotland	173.5	170.6	168.0	166.1	-1.1%
Channel Islands	179.8	174.4	168.2	168.1	-0.1%
Cheshire	180.7	174.8	172.2	171.7	-0.3%
Cleveland	170.5	168.8	167.4	167.6	0.1%
Clwyd	172.3	169.0	168.1	169.3	0.7%
Cornwall	173.4	169.6	169.5	168.9	-0.3%
Cumbria	176.6	172.2	169.4	168.8	-0.4%
Derbyshire	175.8	174.4	171.5	172.9	0.8%
Devonshire	176.6	173.7	172.8	171.2	-0.9%
Dorset	177.5	175.0	174.4	175.2	0.5%
Dumfries and Galloway	173.1	171.2	168.2	167.2	-0.5%
Durham	168.5	166.8	165.3	167.0	1.0%
Dyfed	171.3	169.4	167.3	167.8	0.3%
East Sussex	178.9	175.7	174.1	173.6	-0.3%
Essex	184.1	181.0	176.2	174.8	-0.8%
Fife	171.1	167.4	167.4	166.9	-0.3%
Gloucestershire	182.1	177.6	177.1	176.9	-0.1%
Grampian	177.7	174.1	171.4	171.4	0.0%
Greater London	184.8	181.9	179.4	180.0	0.3%
Greater Manchester	173.5	167.9	166.6	166.2	-0.2%
Gwent	173.4	171.0	169.5	170.5	0.6%
Gwynedd	174.4	170.8	170.9	170.4	-0.3%
Hampshire	179.3	176.5	174.1	172.0	-1.2%
Hereford and Worcester	180.9	176.7	167.7	166.4	-0.8%
Hertfordshire	180.0	175.9	173.8	174.1	0.2%
Highlands	174.1	171.4	168.6	168.1	-0.3%
Humbershire	173.1	169.8	170.5	171.5	0.6%
Isle of Man	178.5	174.5	171.8	173.8	1.2%
Isle of Wight	174.3	171.3	170.7	169.4	-0.8%
Kent	179.2	177.1	175.3	175.4	0.0%
Lancashire	171.6	169.6	167.3	167.5	0.1%
Leicestershire	174.4	172.6	170.2	167.9	-1.3%
Lincolnshire	176.3	174.0	172.9	173.2	0.1%
Lothian	177.9	175.0	172.2	169.2	-1.7%
Merseyside	170.3	167.7	166.8	168.2	0.8%
Mid Glamorgan	170.2	167.0	165.8	166.6	0.5%
Norfolk	176.1	174.1	171.8	171.2	-0.3%
Northamptonshire	179.2	173.0	172.4	171.7	-0.4%
Northern Ireland	169.7	166.1	170.9	164.8	-3.6%
Northumberland	170.4	169.4	163.8	168.1	2.6%
North Yorkshire	178.4	174.5	168.0	173.0	3.0%
Nottinghamshire	175.1	173.1	172.2	171.5	-0.4%
Oxfordshire	182.3	179.9	177.0	178.0	0.6%
Powys	177.5	173.2	173.0	172.7	-0.2%
Shropshire	177.5	173.0	172.5	173.0	0.3%
Somerset	177.8	174.4	172.2	173.3	0.6%
South Glamorgan	174.5	172.8	170.8	168.9	-1.1%
South Yorkshire	173.0	169.2	167.6	169.6	1.2%
Staffordshire	172.9	172.4	169.8	167.2	-1.5%
Strathclyde	170.5	169.2	166.7	165.8	-0.5%
Suffolk	177.5	175.8	174.0	172.9	-0.7%
Surrey	187.3	180.2	182.3	181.8	-0.3%
Tayside	173.7	171.4	169.8	168.3	-0.9%
Tyne and Wear	167.8	167.0	165.0	165.7	0.4%
Warwickshire	175.5	183.4	181.8	185.2	1.9%
West Glamorgan	170.2	166.9	163.7	164.8	0.7%
West Midlands	178.5	173.2	169.6	167.5	-1.2%
West Sussex	178.9	175.9	175.6	175.5	0.0%
West Yorkshire	174.8	170.8	169.0	168.5	-0.3%
Wiltshire	174.2	170.8	173.4	170.8	-1.5%
Total	**177.6**	**174.2**	**172.1**	**171.4**	**-0.4%**

Appendix 2 - the Label

Fuel Economy

CO_2 emission figure (g/km)



A g/km

Fuel cost (estimated) for 12,000 miles
A fuel cost figure indicates to the consumer a guide fuel price for comparison purposes. This figure is calculated by using the combined drive cycle (town centre and motorway) and average fuel price. Re-calculated annually, the current cost per litre is as follows – petrol 76p, diesel 78p and LPG 38p (VCA May 2004)

VED for 12 months
Vehicle excise duty (VED) or road tax varies according to the CO_2 emissions and fuel type of the vehicle.

Environmental Information

A guide on fuel economy and CO_2 emissions which contains data for all new passenger car models is available at any point of sale free of charge. In addition to the fuel efficiency of a car, driving behaviour as well as other non-technical factors play a role in determining a car's fuel consumption and CO_2 emissions. CO_2 is the main greenhouse gas responsible for global warming.

Make/Model:	Engine Capacity (cc):
Fuel Type:	Transmission:

Fuel Consumption:

Drive cycle	**Litres/100km**	**Mpg**
Urban		
Extra-urban		
Combined		

Carbon dioxide emissions (g/km):
Important note: Some specifications of this make/model may have lower CO_2 emissions than this. Check with your dealer.

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