



11th annual sustainability report



The Society of Motor Manufacturers and Traders

2009 data

Chief executive's statement

From its environmental footprint to its economic contribution, sustainability remains a key priority for the UK motor industry. This report details the significant and ongoing improvements being made in the automotive sector and demonstrates why it is one of the clear leaders in sustainable development.

We are emerging from an unprecedented economic crisis and the progress made in cutting emissions, waste and energy use, particularly during the last 12 months, is a testament to the resilience of the UK motor industry and its commitment to acting responsibly. While there remain challenges ahead, this is a time of opportunity for our sector. We develop, produce and export products that are in demand across the world and therefore, we have a vital role to play in helping to re-balance the UK economy.



The UK motor industry is productive, home to more than 40 companies building cars, vans, trucks, buses and specialist vehicles as well as thousands more throughout the supply chain. We are a key delivery mechanism for the shift to a low carbon economy. We invest in R&D to deliver increasingly cleaner, safer and more fuel efficient vehicles and what's more, recent investments indicate that the UK is becoming an increasingly attractive proposition for multinational OEMs.

In July of this year, the coalition government published its strategy for sustainable growth. It highlighted the contribution the automotive sector is making to the economic recovery and delivering a sustainable future. With an increased recognition of the importance of manufacturing, we can help make economic growth sustainable. Automotive accounts for over 10% of the UK's total export values, reaching £23.8 billion in 2009. The Automotive Council, a strategic partnership between industry and government to secure future jobs and prosperity for the UK motor industry, is making real progress in establishing the UK as a leader in the transition to exciting ultra-low carbon vehicles and creating opportunities for the UK supply base.

Throughout this 11th annual report, you will see the progress made in environmental and social responsibility but the opportunity for further improvements is ever present. As we seek to grow our contribution to the UK economy, sustainable development will remain a core element of our business.

Paul Everitt
Chief Executive
The Society of Motor Manufacturers and Traders



Key vehicle and engine production sites in the UK

The list of signatories to the sustainability report is on the back cover.

Manufacturer	Product
1 Alexander Dennis	CV, bus and coach
2 Aston Martin	Car
3 Bentley	Car, engine
4 BMW/MINI	Car, engine
5 Caterham	Car
6 Cummins	Engine
7 Dennis Eagle	CV
8 Euromotive	Bus and coach
9 Ford	CV, engine, bus and coach
10 Honda	Car, engine
11 General Motors	CV
12 Jaguar	Car
13 John Dennis Coachbuilders	Bus and coach
14 Land Rover	Car, CV
15 Leyland Trucks	CV
16 Lotus	Car
17 LTI	Car
18 Mellor Coachcraft	Bus and coach
19 McLaren Automotive	Car
20 Minibus Options	Bus and coach
21 MG Motors	Car
22 Modec	CV
23 Morgan	Car
24 Nissan	Car, engine
25 Optare	CV
26 Plaxton	Bus and coach
27 Rolls-Royce	Car
28 Smith (Tanfield)	CV
29 Toyota	Car, engine
30 Vauxhall	Car, CV
31 Warnerbus	Bus and coach



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Our commitments

Sustainability reporting

1. Improve and enhance sustainability reporting and respond to stakeholder feedback (pages 4-5).

Production and distribution

2. Control and reduce the environmental impact of company operations (pages 8-11).
3. Affirm economic growth, turnover and investment toward securing competitiveness in the global economy (pages 6-7).
4. Add value to employment capital through development, skills and training (pages 22-23).
5. Improve the working environment, health and safety of employees (page 24).
6. Improve our understanding of the impact of pre and post production logistics on the environment (page 11).
7. Support development of a high quality and strong environmental supply and reverse supply chain network (pages 11, 28).

Use

8. Improve fuel efficiency of newly designed products (page 15).

9. Research, develop and bring cleaner technologies to the market to improve tailpipe emission standards and, where practical, to introduce vehicles with higher emission standards in advance of legislation (pages 16-18).

10. Improve the safety of new vehicles (page 19).

End of life























11. Provide facilities for consumers to return vehicles for disposal at the end of their life (page 20).
12. Design and build vehicles to ensure that at least 95% of the weight of materials used can be recovered at the end of their life (pages 20-21).

Engagement and information

13. Engage proactively with external stakeholders (page 27).
14. Provide information to consumers to enhance awareness and understanding of the vehicle's environmental and safety features (page 27).
15. Support strategies to reduce the environmental impact of road transport through fuel, driver and infrastructure development and an overall integrated approach (pages 14, 27-29).

Executive summary and key performance indicators




2009 performance

		2008	2009	Percentage change 2009 on 2008	
Number of signatories	(AS)	16	18	12.5	
Economic performance					
Automotive manufacturing sector turnover	(£ billion)	52.5	39.8	-24.2	
Total number of cars and CVs produced	(million) (UK) (WI)	1.65	1.09	-33.9	
Total new car and CV registrations	(million) (UK) (WI)	2.48	2.22	-10.5	
Number of jobs dependent on the sector	('000) (WI)	807	729	-9.7	
Signatories' combined turnover	(£ billion) (AS)	39.6	41.2*	4.2	
Total number of vehicles produced	(million) (AS)	1.18	1.02*	-13.5	
Combined number of employees	(AS)	63,749	65,003*	2.0	
Environmental performance					
Production inputs					
Total combined energy use	(GWh) (AS)	4491	3,765*	-16.2	
Energy used per vehicle produced	(MWh/unit) (VMs)	2.4	2.8	20.0	
Total combined water use	(000m ³) (AS)	5,688	4,758*	-16.3	
Water use per vehicle produced	(m ³ /unit) (VMs)	2.9	3.5	21.4	
Material outputs					
Total combined CO ₂ equivalents	(tonnes) (AS)	1,285,378	1,217,072*	-5.3	
CO ₂ equivalents per vehicle produced	(tonnes/unit) (VMs)	0.7	0.9	20.5	
Volatile Organic Compounds emissions (cars)	(g/m ²) (VMs)	38	40	5.3	
Volatile Organic Compounds emissions (vans)	(g/m ²) (VMs)	71	62	-12.7	
Total combined waste to landfill	(tonnes)(AS)	24,900	16,954*	-31.9	
Waste to landfill per vehicle produced	(kg/unit)(VMs)	11.9	10.8	-9.2	
Vehicle use					
Average new car CO ₂ emissions	(g/km) (AC)	158.0	149.5	-5.4	
Social performance					
Number of lost-time incidents	(AS)	287	284	-1.0	
Number of training days per employee	(AS)	2.9	3.4	19.0	
New car colour-coded label uptake	(% of dealers) (AS)	91	94	3.7	

* Figure includes data from two new signatories

The percentage change column is correct based on data to more decimal places than shown above.

Out of 22 key performance indicators over 2008-2009

-  Nine red, concern
-  Zero amber, static
-  13 green, progress

Data in the report is quoted in a number of ways:

Whole industry data	(WI)
All car sales in the United Kingdom	(AC)
All signatories	(AS)
UK vehicle manufacturing signatories	(VMs)



Signatories

- Two additional signatories: Caterpillar and Leyland Trucks, which produce heavy equipment and heavy goods vehicles.
- The additional signatories do not significantly affect the overall results and the report now represents 94% of vehicle production in the UK.

Economic performance

- In 2009, recession reduced demand for vehicles leading to a sharp fall in vehicle production and hence turnover.
- Employment in the sector has decreased, despite continued efforts to protect the vital industrial capability by introducing short-time working, time banking etc.
- Government introduced the Scrappage Incentive Scheme (SIS) to bolster production volumes and help the industry, its supply chain and retailers in the wake of falling sales during the recession. The scheme delivered almost 400,000 new car and van registrations, helping to stabilise the market.
- Average CO₂ emissions of a SIS new car were under 132.3g/km, 10% below the average for all new cars and 27% below the scrapped car's figure.
- Through 2010, and beyond, production is expected to recover. By 2014 output is projected to return to 2008 levels.

Environmental performance

- Average new car CO₂ emissions fell by 5.4% or 8.5g/km to 149.5g/km in 2009. This was the largest improvement since SMMT records began in 1997.
- Diesel penetration in the car market fell for the first time in a decade, largely due to the SIS.
- The European Commission proposed CO₂ targets for new vans are expected to be agreed in 2011.
- The market share of alternative fuel vehicles rose to 0.8% in 2009.
- Total van CO₂ emissions and distance travelled fell for the first time in 2008.
- Government withdrew the 20p/litre duty differential for biofuels from April 2010. The industry views this as unhelpful for such an embryonic sector which has seen high blends withdrawn from the market as they are uneconomical.
- Total CO₂ from production phase activities fell by 20% in 2009, but CO₂ per vehicle produced increased 21% as the 'baseload' of core energy consumption was spread over much reduced production volumes.
- VOC emissions from car painting rose slightly due to falling production volumes.
- Waste to landfill fell to an all-time low of 10.8kg per vehicle, down 9%.
- 12 times more waste was recycled than landfilled.
- The 85% EU recovery target was achieved for end-of-life vehicles (ELVs) across the UK in 2008, an increase of 67,500t over 2007.
- Vehicle manufacturers' contracted networks have achieved 85% recovery since 2006.
- Investments in ELV infrastructure are coming through to enable 95% recovery in 2015.
- Signatories recognise that their environmental impact extends beyond their manufacturing processes. Careful management of their inbound and outbound logistics is also important to reduce resource consumption and deliver cost savings.

Social performance

- The number of jobs dependent on the automotive sector declined by almost 10% in 2009.
- The industry continues to invest in training and development of its employees despite the difficult economic situation.
- Automotive manufacturing provides a safe, rewarding and progressive working environment, which is reflected in low staff turnover.
- Community involvement continues to be a vital part of the industry's corporate DNA.
- Managing their employees' travel patterns is also recognised as an important part of signatories' contribution to the local community.

Economic performance

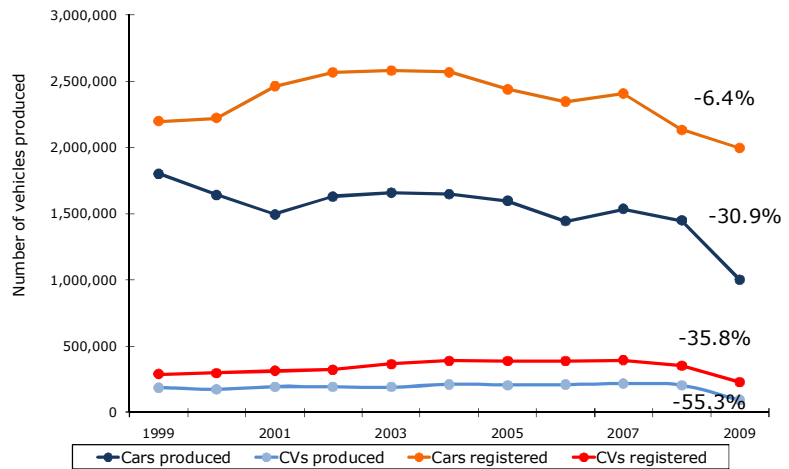
Key facts

- Serious effect of recession felt in 2009, with vehicle production down 34%, new registrations down 10.5% and number of jobs dependent on the automotive sector down by 10%.
- Government recognised strategic importance of motor industry with the Automotive Assistance Programme (AAP) and the Scrappage Incentive Scheme (SIS).

- Into 2010 and production is expected to recover. By 2014 output is expected to be back above 2008 levels.
- The SIS supported almost 400,000 new car and van registrations, helping to stabilise the market. Vehicle demand is expected to be broadly stable around two million units over the next three years.
- Average CO₂ emissions of a SIS new car was 132.3g/km, 10% below the average new car and 27% below the scrapped car's figure.

Production and registrations

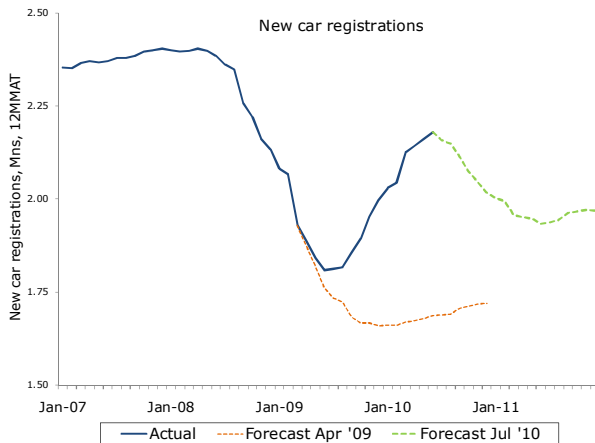
At the end of 2008 and more so in 2009 the world economy slowed sharply. UK GDP growth declined by 4.9% in 2009. Huge support measures were put in place to stabilise the economy and restore confidence and growth. There are still painful and uncertain times ahead, with significant constraints to come, as public spending is cut and taxes rise. Expectations are that a 'double-dip' recession will be avoided, with the UK economy to grow by some 1.5% in 2010 and post growth of over 2% in 2011-12.



The UK government recognised the strategic importance of the motor industry and took positive steps to support it with the introduction of the Automotive Assistance Programme (AAP) and the Scrappage Incentive Scheme (SIS). More widespread measures of low interest rates, a £200 billion quantitative easing programme, temporary cut in VAT and other support measures were also introduced. The net effect was recovery (see below chart) in the new car market in the second half of 2009, sustained into the first half of 2010.

The CV market (notably LCVs) fell further and took longer to recover but values are now forecast to rise to 2012 levels.

The positive impact of the UK and other SISs, notably the German scheme, helped UK vehicle production recover. However, automotive suppliers (and indeed



companies across a range of industries) continue to report difficulties obtaining finance from the banking sector for new investment projects.

Overcapacity and restructuring

The recent economic turmoil resulted in some restructuring, to deal with the overcapacity that has been evident in Europe for some time, but the scale of change has been less than anticipated. In the UK, LDV closed in 2008 and several suppliers ceased operations in 2009, including Visteon. Other volume manufacturers had short-time working or extended shut-downs, but are up and running again now.

Production outlook

Car and LCV production fell by over half a million units in 2009, or 33.5%, to 1.075 million units. Volumes are expected to recover to over 1.3 million units in 2010 and by 2014 be back above 2008 levels and more than 50% above the 2009 level, at 1.62 million units.

The UK has been very successful in attracting inward investment and looks set to become a major player in the low carbon field. Notably the electric Nissan Leaf and hybrid Toyota Auris are to be produced here. This should help ensure a robust future for vehicle production in the UK.

Production fell 34% in 2009, but is recovering – the CV market is taking longer to recover

Scrappage scheme delivers boost to sector

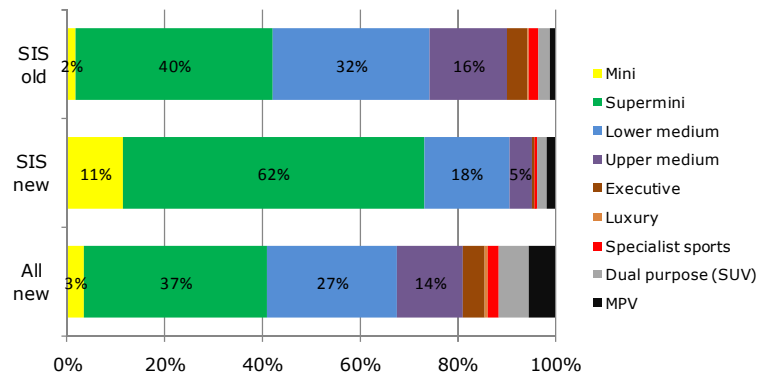
Following the significant decline in new car demand, the UK government introduced a Scrappage Incentive Scheme (SIS) on 18 May 2009. This gave a £2,000 incentive to anyone scrapping a car or van that was ten or more years old and buying a new one. The scheme was unlike others introduced across Europe as in the UK the automotive sector contributed half of the cost of the incentive. The scheme was far more influential than most imagined, delivering a major increase in vehicle demand. It has also helped reduce average new car CO₂ and other emissions.



The last orders under the scrappage scheme were placed at the end of March, although manufacturers had several months to then deliver those vehicles. Data from participants to July 2010 shows that some 392,500 new cars and 7,300 new vans were registered through the scheme. The SIS helped support the economy and played a vital role in providing a much-needed boost to the UK automotive industry.

The scheme, favouring lower cost vehicles, saw a downsizing of the market, with supermini and mini segments posting strong growth through the SIS (see chart).

Registrations, new and old SIS cars and all new cars, by sector



SIS boosted output and secured UK jobs

- Vehicles built or using an engine produced in the UK accounted for around a fifth of UK SIS sales.
- UK vehicle and engine production figures began to grow in November 2009 and into 2010 have recovered sharply, due in part to the success of the UK and other member state schemes.
- Ford said the SISs heralded the need for extra shifts at the Bridgend and Dagenham engine plants, which employ 4,000 people, as well as providing a positive knock-on effect for around 100,000 UK jobs in the sales, distribution and supply chain.
- Nissan said that production of the UK-built Micra and Note increased due to the SIS, protecting jobs at its Sunderland plant and its dealer network.
- Toyota said it adapted its workshare programme to fulfil orders incentivised by SIS.

SIS helped make the UK fleet safer

- The average age of a car scrapped through the scheme was 12.7 years. New cars have higher EuroNCAP ratings, more safety technology as standard and improved security features than the old vehicles they replaced.
- New cars are fitted with a host of active and passive safety features, such as better brakes, suspension, stability control devices, seat-belts, airbags and crumple zones. They are also designed to be more pedestrian friendly in the case of an accident.

SIS helped 'green' the UK fleet too

- While not a primary objective of the SIS, the scheme did help ensure a significant fall in average new car CO₂ emissions. New cars through the scheme emitted on average 132.4g/km of CO₂, almost 10% below the overall new car market average and 27% below the emissions of the old vehicle being replaced.
- Based on average mileage calculations, the replacement of old with new cars will reduce CO₂ emissions by some half million tonnes per year.
- Improved Euro standard engine ratings will also mean modern cars have more than 50% lower harmful emissions of NOx and PMs.

Scrappage boosted output, secured UK jobs and made the fleet safer and greener

Environmental performance

Production phase

Key facts

- Total CO₂ from activities such as manufacturing fell by 20% in 2009, but CO₂ per vehicle produced increased 21% as the 'baseload' of vital energy consumption was spread over much reduced production volumes.
- VOC emissions from painting vans fell by almost 13% in 2009.
- Waste to landfill fell to an all time low of 10.8kg per vehicle, down 9%.
- Twelve times more waste was recycled than landfilled.
- Signatories recognise that their environmental impact extends beyond their manufacturing processes. Careful management of their inbound and outbound logistics is also important to reduce resource consumption and deliver cost savings.

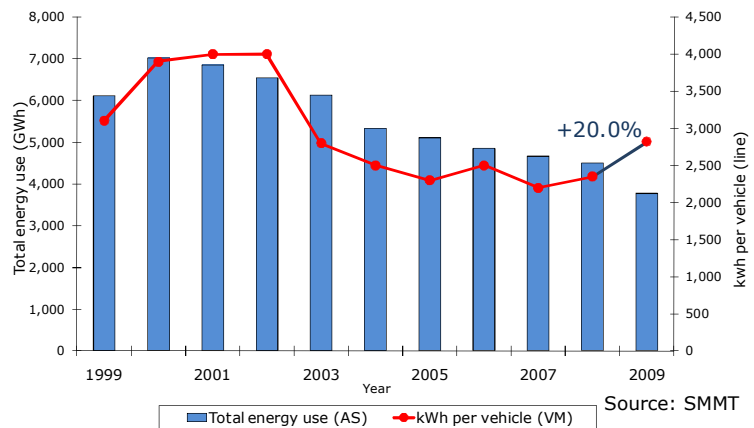
Environmental input

Energy use

Total energy use down 9%. Energy per vehicle up 20% as vital energy sources must stay on even when production volumes fall

Total energy consumed was down 9% in 2009 (GWh), but the much reduced volume of vehicles produced meant that energy per vehicle rose by 20%.

This latter relative performance is contrary to the trend over the previous decade, which saw energy consumption per vehicle produced fall by 24%. This is directly linked with reduced production volumes. When demand and production



volumes fall, vital energy sources need to remain operational, which means fewer vehicles to spread this baseload of energy consumption over.

See also CO₂ output on page 9.

Nissan reduced CO₂ output in office areas

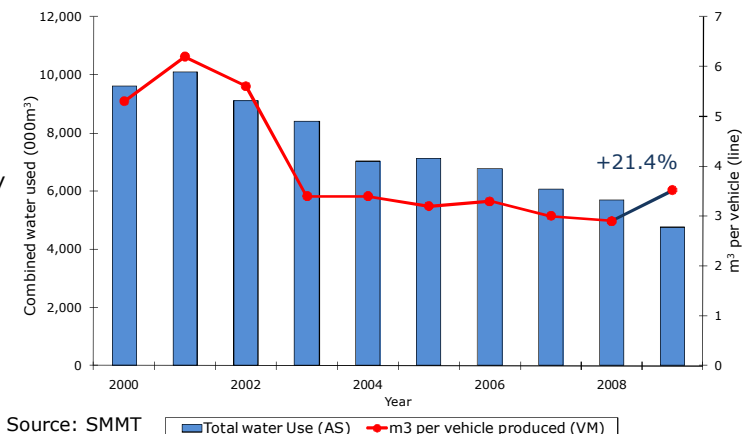
Nissan offices in the UK have reduced their combined CO₂ output by 26% over the past two years. Staff have adapted their working behaviour through a

'switch off and turn down' energy saving campaign, targeting areas such as lighting, air conditioning and heating.

Water use

Total water consumed by the signatories was down 34% in 2009 (litres) but, again, the much reduced volume of vehicles produced meant that water consumed per vehicle rose by 21%.

This latter relative performance is contrary to the trend over the previous decade, which saw water consumption per vehicle produced fall by 45%. As with energy, there is a relatively steady baseload of water demanded by the production processes, even when production volumes are reduced.



Environmental output

Carbon dioxide (CO₂)

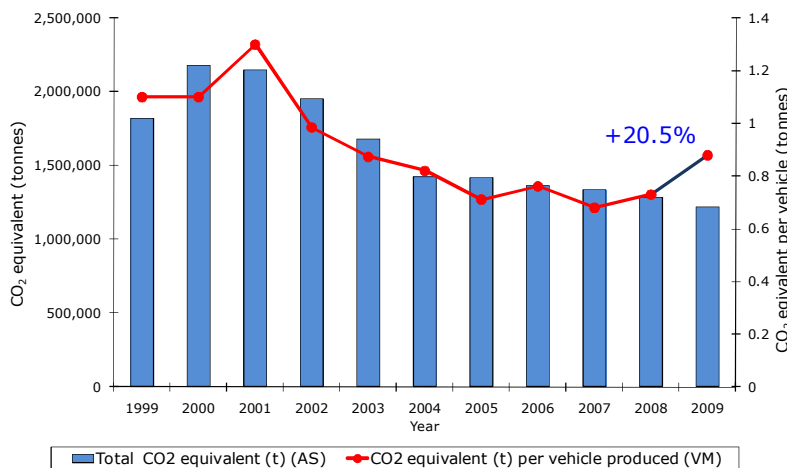
Similar to energy and water, total CO₂ produced (tonnes) from manufacturing and other operations was down 20%, but CO₂ per vehicle produced increased 21% due to the reduced volumes of production. The same baseload reasoning applies as for energy use.

Again, this is contrary to the downward trend for CO₂ per vehicle produced over the past decade (-41%).

The changing CO₂ intensity of electricity supplies

This year we have changed the way we calculate CO₂ emissions for the sector's manufacturing activities. We collect data from our signatories on their

Total CO₂ from manufacturing fell 20%, but CO₂ per vehicle produced rose by 21%



consumption of electricity, gas and other fuels each year and convert the electricity consumption into CO₂ emissions for reporting purposes.

Historically we have used a long-term marginal conversion factor published by the Department for Environment, Food and Rural Affairs (Defra) as this was a stable factor designed as the basis for justifying investments in energy efficiency projects. This factor was also used for Climate Change Agreement. In the 2009 edition of Defra's guidelines for conversion factors for company reporting, the long-term marginal factor was removed. Therefore, CO₂ emissions have been recalculated using the conversion factors relevant to each respective year.

Source: SMMT

Ford's green power saves 35,000t CO₂

Ford's Dunton Technical Centre is powered by electricity from renewable sources. Since 2008, electricity on the 270-acre site near Basildon, Essex, has come from GDF's renewables division. The majority is sourced from hydropower and the rest

from wind power and generation from waste, with sources based in the UK and on the continent.

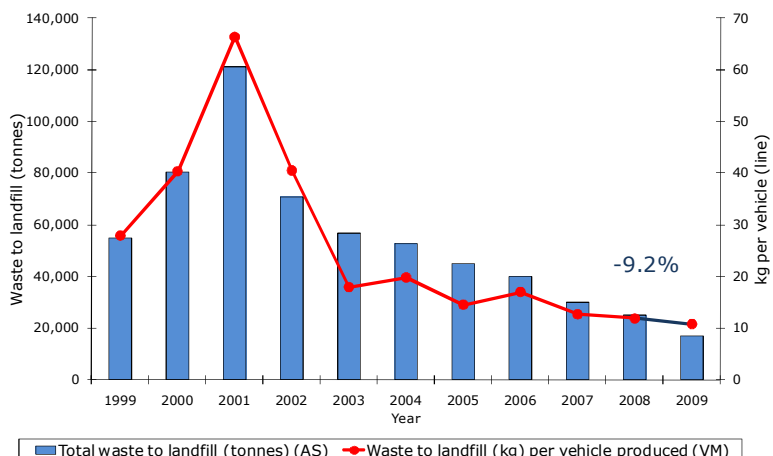
By sourcing renewable electricity, Dunton is replacing power from traditional sources that would have generated an estimated 35,000 tonnes of CO₂ emissions annually.

Waste to landfill

Waste sent to landfill in 2009 fell both in absolute terms (tonnes, -61%) and per vehicle produced (-9%), reaching an all-time low of 10.8kg per vehicle produced.

10.8kg of waste to landfill per vehicle - an all time low

Consistent with the trend, this year's progress was helped by reduced production.



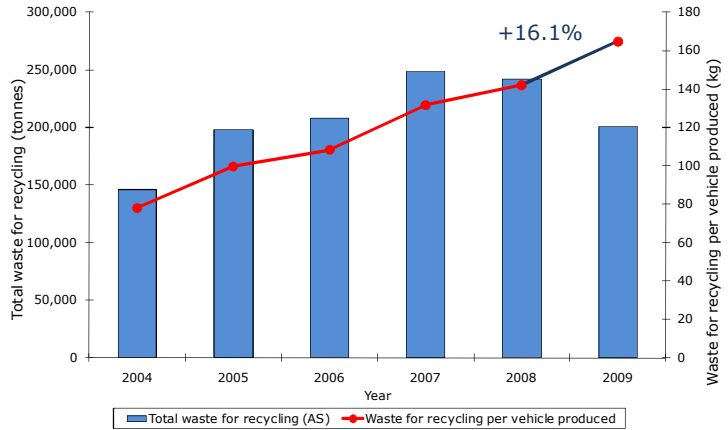
Source: SMMT

Recycling and recovery

In all of the six years since SMMT began collecting waste recycling data, recycling rates have increased and recycling per vehicle produced has increased by 110% over that period.

In 2009, the weight of waste sent for recycling increased by 23kg to reach 164kg per vehicle produced. The total volume of recycled waste fell by 17%, due to reduced production volumes in 2009.

In 2009, almost 12 times more waste was recycled than sent to landfill.



Source: SMMT

Rewarding information campaign at Jaguar Land Rover

Jaguar Land Rover won the Benchmarks Awards 2009 for its internal 'Environmental Innovation' campaign, used to engage all employees in the environmental challenges facing the business.

The company aims to reduce its CO₂ emissions by 25% and improve its green credentials by 2012. It was recognised that achieving it would require changing the attitudes of its 15,000-strong workforce.



Caterpillar gets greener

Operating from 200,000m² of buildings and serving a range of customers like Land Rover and AGCO, CAT Logistics transformed its performance in 2009.

- Gas usage was reduced by 1.8 million KWh and gave CO₂ emission savings of 330 tonnes per year through improved control of heating.
- Electricity consumption fell 37% by installing energy-efficient and sensed lighting.

- Waste to landfill was reduced by more than 75% to just over ten tonnes per month through steps like increasing waste segregation from six streams to 35 and consolidating material movements like cardboard from two to 24 tonne loads. This also reduced vehicle movements and lowered CO₂ emissions.
- Waste re-use and recycling increased to 89%.
- Water consumption was reduced by two million litres.

Toyota triumphs at leading UK business environmental awards

In 2009, Business in the Community (BITC) awarded TMUK a 'Big Tick' Award for Excellence in the Climate Change category. This is in recognition of its innovative approach to a low

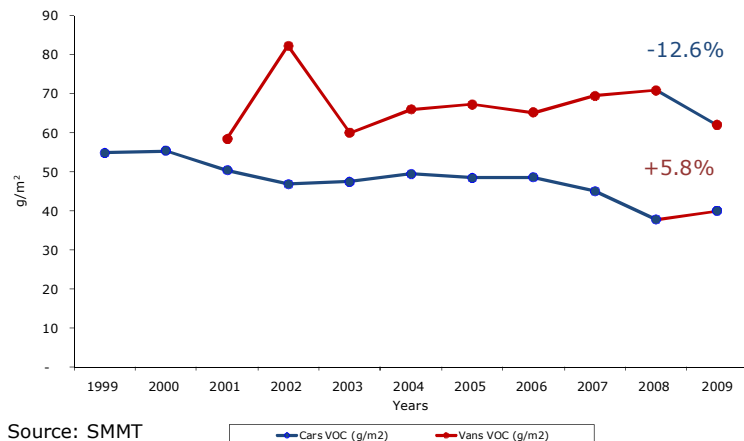


carbon economy, in particular the pioneering energy reduction project in the paint shop at the Burnaston plant, which resulted in a 40% reduction in paint shop CO₂ emissions. The activity was also awarded a BITC regional Carbon Positive Cutting Edge award, as well as a Business Commitment to the Environment (BCE) Environmental Leadership award.

Volatile organic compounds (VOC)

Long-term investments in technical solutions and process improvements over the last 11 years have resulted in sizable reductions in VOC emissions from vehicle painting operations across the sector. This is important as VOCs are a precursor of city smog.

Car paint shops have reduced their VOC emissions by 27% since 1999. A slight increase in VOC emissions per m² of coated surface in 2009 is thought to be linked to the temporary production shutdowns at many manufacturing facilities. This required additional solvent flushing of the systems,



Source: SMMT

increasing emissions. These increased emissions still meet the European VOC limit of 60g/m² for cars.

VOC emissions from vans decreased by almost 13% in 2009 and reached 61g/m², comfortably below the 90g/m² legal limit for vans.

VOC emissions from car painting rose slightly as production volumes fell

Supply chain logistics

SMMT and the industry are working to ensure that the UK is well positioned to capture the green economy and build a robust supply chain capable of competing globally (for further detail see page 28). An important part of those efforts is ensuring that effective management of the supply chain delivers environmental benefits by reducing resource consumption and, therefore, cost savings.

The industry has worked hard on the efficiency of its own and its suppliers' logistics operations for many years. Recent examples of supply chain efficiency improvement include:

- More efficient planning, resulting in the vehicle fill being increased by approximately 5%.
- Better route planning and volume reduction reduced the collection fleet by about 25%.
- Training in fuel-efficient driving.
- Increasing the use of biofuels.
- Installation of vehicle telematics and live de-brief at the end of each route, which led to moving from an average fuel economy of approximately 7.5 mpg to 8.5 mpg over the past four years.
- Monthly reviews with all suppliers where operational, financial, safety and environmental results are presented. Key countermeasures and improvement theme activities are agreed and followed up at the next meeting.
- Maximising the use of rail, river and short sea transport for inbound parts and materials to reduce fuel costs, emissions and road congestion.
- The pioneering of a number of new 'inter-modal' routes that use a combination of road and rail

transport to achieve the environmental friendliness of rail for long distances and the flexibility of road transport at either end of the journey.

- Piloting systems where road-going truck trailers can be physically lifted on and off suitably designed rail wagons.
- Trials for using driving speed limiters to improve fuel economy and using deflectors on new trailers to improve the vehicle's aerodynamics.
- Introducing more European, short-sea routes so that vehicles travel as near to the customer as possible by sea before final delivery by road. This led to reducing inland road-based transport within Spain by 29% through the expansion from three ports to six ports.
- Urging all new suppliers to sign up to Prince Charles' Mayday Network to encourage their own carbon monitoring.
- Working with suppliers on the packaging guidelines to ensure that a neutral or positive environmental footprint is sought through zero waste to landfill and use of 100% recycled, renewable or recyclable materials.

Efficient logistics and supply chains can deliver environmental benefits and cost savings

Ford green supply chain champion

Ford has been recognised by a 2009 Green Supply Chain award at the World Trade Group's European Supply Chain and Logistics Summit for its continuous efforts in 'greening' company's finished vehicle

logistics. This has been achieved by increasing sea and river transportation for finished vehicles and reducing miles driven by trucks to deliver vehicles and parts.



Jaguar Land Rover cuts supply chain emissions

Jaguar Land Rover has removed more than 17,000 tonnes from its supply and delivery chain's annual carbon footprint through efficiency measures over the past five years – a reduction of about 13%. The firm's

supply and delivery chain is a huge operation, clocking up some 65 million road miles a year, 35 million nautical miles and 700,000 rail miles, all to deliver some 250,000 vehicles annually.

GEFCO improved vehicle distribution

GEFCO, part of the PSA Peugeot Citroën group, reduced its vehicle storage and distribution compounds in the UK from three to two in November

2009. This reduced internal movements by around 23%, or 40,500 miles per year. It also plans to increase the volume of vehicles transported by its existing fleet of 4,200 rail wagons.

Mercedes-Benz and Norfolkline shipping partnership saves almost 500t CO₂ per year

Under a new shipping agreement with Norfolkline, Mercedes-Benz UK will now import vehicles destined for Scotland and the north of England via Rosyth, rather than to Killingholme, Lincs.

This is expected to save 245,556 road miles per year, which equates to 464 tonnes CO₂.



Use phase

Key facts

- The use phase is one of the most significant environmental, social and economic impacts in a vehicle's life cycle. 85% of a vehicle's life cycle CO₂ emissions arise from its use.
- Average new car CO₂ emissions fell by 5.4% to 149.5g/km in 2009.
- Diesel penetration in the car market fell for the first time in a decade, largely due to scrappage.
- The European Commission has proposed CO₂ targets for new vans, expected to be agreed in 2011.
- Alternative fuel or propulsion vehicles rose to a record high of 0.8%.
- Total van CO₂ emissions and distance travelled fell for the first time in 2008.
- Government withdrew the 20p/litre duty differential for biofuels except used cooking oil, which is unhelpful for such an embryonic sector and made high blends economically non-viable.

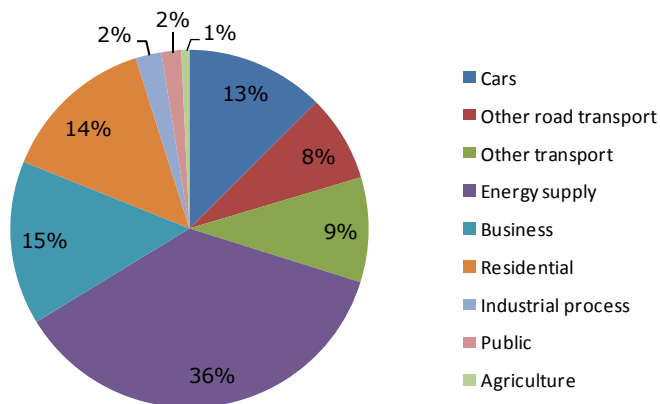
CO₂

Carbon dioxide (CO₂) accounts for about 85% of the man-made greenhouse gas emissions. Total UK CO₂ emissions were 572.4MtCO₂ in 2008, including international aviation and shipping bunkers. This is the latest available data and shows a fall of 1.9% on 2007 emissions.

Road transport emissions, at 117.2MtCO₂, represented 20.4% of total emissions from 20.7% in 2007.

CO₂ emissions from cars represent 12.5% of total emissions and 65.7% of road transport emissions in 2008. Car CO₂ emissions were down 3.1% between 2007 and 2008 ⁽¹⁾. The decline comes despite strong growth in the number of vehicles in use and the total distance travelled (see page 14).

UK CO₂ emissions by source, 2008 (DECC: includes bunkers)



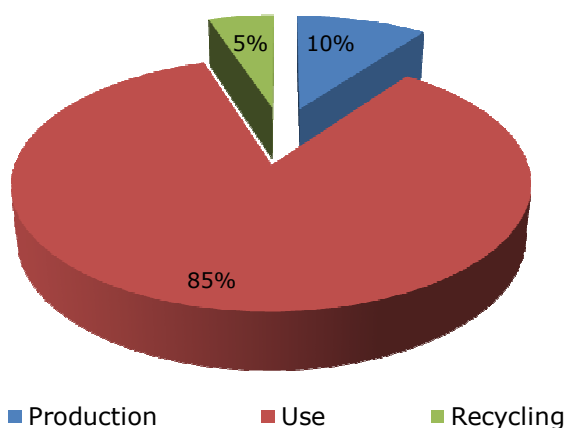
12

Life cycle CO₂ impact

The use phase is one of the most significant environmental, social and economic impacts in a vehicle's life cycle. The following chart gives a breakdown of CO₂ emissions throughout the life cycle of a typical vehicle.

It is based on SMMT data and various academic reports ^{(2) (3) (4)}. These proportions are expected to change as alternative fuels and propulsion technologies, such as hybrids and full electric vehicles, penetrate the market further.

CO₂ emissions through the vehicle life cycle



85% of a vehicle's life cycle CO₂ emissions arise from its use, mainly from the tailpipe

- Production
- Logistics
- Energy for sales and support functions

- CO₂ from distance driven
- CO₂ from servicing and after market functions

- CO₂ from managing end-of-life vehicles (ELV)

Note: Where scrap is used in remanufacturing, the CO₂ impact can be reduced versus traditional recycling and manufacture of a new product.

Life cycle assessment in practice

The automotive industry has applied a life cycle approach for many years to improve understanding of the full impact of the production, use and disposal of

the product. The following is a selection of applications of the Life Cycle Assessment (LCA) approach:

Jaguar XJ achieves environmental certification

Jaguar has received certification from the Vehicle Certification Agency for a comprehensive 'cradle-to-grave' study which analyses the environmental impact of its new lightweight XJ model. The detailed life cycle study will enable Jaguar to identify new opportunities to improve the sustainability of its vehicles, including developing the aerospace-inspired lightweight aluminium architecture.

The VCA certification involved an audit of each aspect of the life cycle assessment carried out on the XJ, addressing product development, manufacturing processes and vehicle performance. This took account

of the principles, requirements and guidelines for life cycle assessments as described in the International Standards on LCA ISO 14040:2006 and ISO 14044:2006. The audit also reviewed evidence of the integration of environmental aspects into the vehicle's design and development as described in ISO TR 14062:2002.

To give an accurate assessment of the environmental impact, the life cycle study was based on the creation, use and disposal of a typical XJ vehicle over an assumed 200,000 km life, including the materials used, material processing, assembly and transport during manufacturing.

Toyota uses life cycle thinking

Toyota uses life cycle thinking to take into account all resources consumed and the environmental/health pressures associated with the whole life cycle of a product. A 360° approach is taken from design, through production, driving and finally recycling, using data and methods complying with ISO standards 14040 and 14044.

The objective is to discover how much the new generation product has improved in comparison to the previous one. The findings are then integrated into new product design and development. For instance, LCA for the UK-built Auris Hybrid, the first Toyota hybrid mass produced in Europe, has identified that the life cycle CO₂ emissions of Auris Hybrid are 33% less than Auris petrol and 25% less than Auris diesel.

13

Ford's sustainable management tool

Ford has created a tool to measure its products' sustainability, known as Product Sustainability Index (PSI). The chosen PSI indicators are partly based on ISO 14040 (LCA) and the work of SETAC Europe on Life Cycle Costing. They include:

- Life cycle global warming potential
- Life cycle air quality potential
- Sustainable materials
- Drive-by-exterior noise
- Safety
- Mobility capability/capacity
- Life cycle ownership costs.

The first design team that used PSI from the beginning developed the new Ford Galaxy and Ford S-MAX. The environmental, economic and social performance has been compared to the previous Ford Galaxy.

PSI helped to:

- Set vehicle targets that lead to improvements in all areas of sustainability.



- Visualise trade-offs between conflicting sustainability vehicle attributes.
- Track the progress along all gateways of vehicle development.
- Relate the vehicle performance relative to the vehicle segment as well as to all passenger vehicles.

Environmental commendations for Volkswagen

Volkswagen makes direct comparisons between selected current models and their predecessors by performing an LCA for each vehicle. If the LCA demonstrates that the environmental goal has been met, the current model receives an environmental commendation. To date, such commendations have been awarded to the Polo, Golf, Passat and Transporter models.

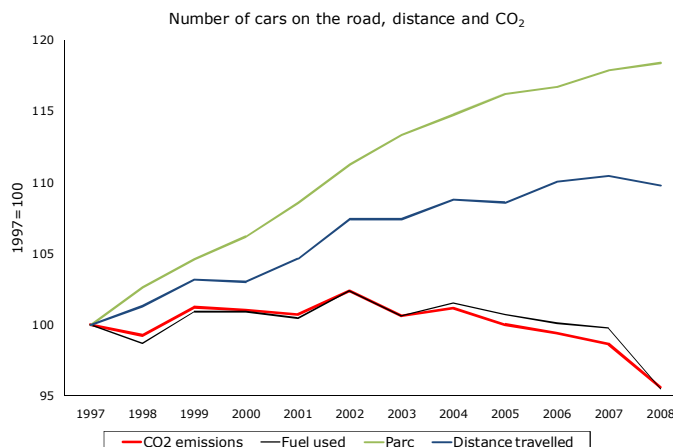
VW also performs LCA for specific technologies, with the aim of reducing fuel consumption and CO₂ emissions. Most notably, they include VW's most energy efficient range of BlueMotion Technologies, such as the TSI and TDI engines and the innovative six- or seven-speed DSG dual-clutch gearbox. DSG can be combined with a variety of petrol and diesel engines from all model series.

Cars

Total CO₂ emissions from all cars on the roads have fallen in each of the past four years, but in 2008 showed a much larger decline than in previous years, down 3.1%. This recent improvement in performance meant that over the past decade, emissions from cars have fallen by 4.4%. This net change is very similar to net change in fuel consumed by cars.

This performance was achieved despite the increases in parc size and distance travelled over the past decade, up by 18.4% and 9.8% respectively. The net gains reflect the general improvement in efficiency of the cars in use.

The 2008 performance reflects the impact of the recession; reduced distances travelled, as well as people driving more conservatively as fuel prices rose. These trends are unlikely to unwind when the 2009



Source: SMMT data is announced and further progress in total CO₂ emissions from all cars is expected.

BMW and Ford are Energy Saving Trust fleet heroes

Ford won the 2009 innovation prize for its low carbon EConetic diesel vehicles and EcoBoost petrol range. The Ford EcoBoost engine delivers fuel consumption and emission reduction of 20% compared with conventional petrol engines, thanks to direct injection, turbo charging and variable valve timing.

In 2009 **BMW Group** won the Industry Supplier Award for the second year running. In 2009, BMW Group won over 20 awards from the fleet sector, with EfficientDynamics technologies playing a major factor in all of them. Some notable accolades include Fleet News and Business Car awards, Fleet World honours, Green Fleet awards, as well as the FN50 Reliability Survey 2009 Most Reliable Manufacturer.

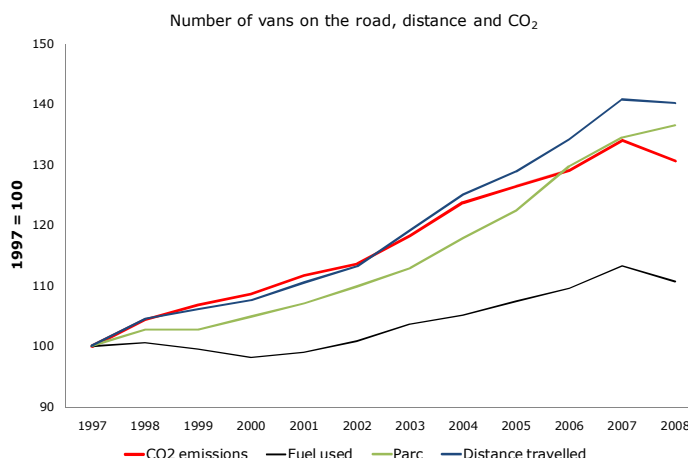
Vans

The commercial vehicle market is also an important part of the automotive industry in terms of jobs, technological input, impact on society and CO₂ emissions.

Over the past decade, total CO₂ emissions from vans have risen sharply as the number of vehicles in use and distances travelled have increased. However, emissions fell for the first time in 2008, as the recession took its toll. Total CO₂ emissions, fuel used and distance travelled all show similar trends (see right).

Total van CO₂ emissions fell for the first time in 2008

In October 2009, the European Commission proposed CO₂ targets for van manufacturers. Fuel efficiency of individual vans is thought to have been stable or improving for many years. Van buyers have



Source: SMMT

different requirements compared to car buyers with running costs being a main concern.

Integrated approach

The integrated approach remains a cornerstone of the pathway to achieving the desired move to a lower carbon transport system with the minimum cost to society. It requires a sharing of responsibility between all stakeholders to achieve these goals.

The integrated approach relies upon:

- The automotive industry to develop, deliver and promote the use of lower carbon vehicles. We know this is vital, but it cannot deliver all the CO₂ savings alone.
- Fuel suppliers to deliver the necessary infrastructure - traditional oil derived, alternative fuels and electricity at lowest emission levels possible.

- Consumers to understand and accept change in the vehicles they buy and to use them efficiently.
- Government to help tackle emissions reductions from transport with taxes, incentives and regulations aimed at users and suppliers. Government should also encourage low carbon energy.

Further details regarding transport-related CO₂ can be found in SMMT's *New car CO₂ report 2009*.



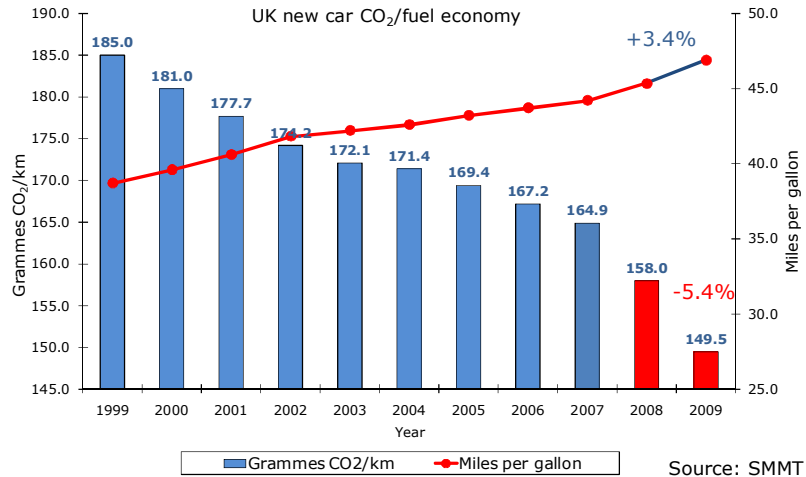
Fuel economy

The combination of major investment, sustained improvement in vehicle technology, government policy and consumer behaviour have ensured continuous improvement in UK average new car CO₂ emissions. The 2009 performance also benefitted from a number of temporary measures, such as the introduction of the Scrappage Incentive Scheme (see page 7) and the impact of the recession.

Average new car CO₂ emissions fell by 5.4% or 8.5g/km to 149.5g/km in 2009. This was the best improvement since SMMT records began in 1997.

**New car
CO₂ fell
5.4% to
150g/km
in 2009**

Fuel efficiency has improved by 21% over the 11 years since 1999 and CO₂ emissions from new car produced have reduced by 19.2%.



Diesel vehicles

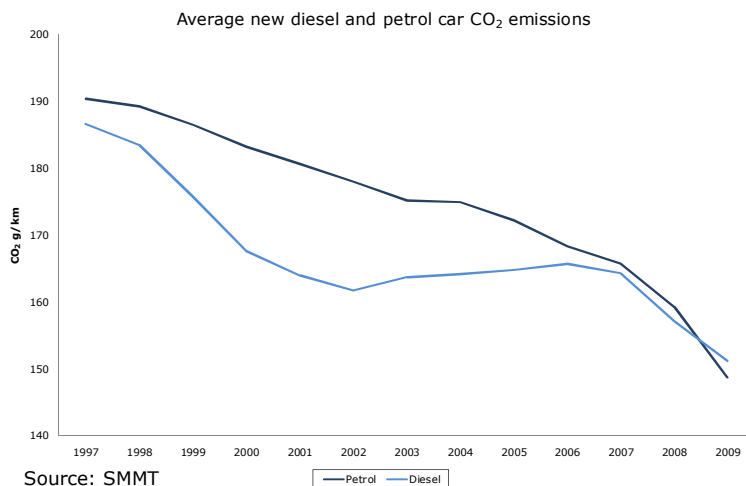
SMMT's 2008 CO₂ report showed that diesel variants, on a like-for-like power rating, emit 10-20% less CO₂ than petrol-fuelled variants.

Since 2000, a key trend in the UK market has been the shift towards diesels. However, in 2009, diesel penetration fell for the first time since 1999. An important factor is the Scrappage Incentive Scheme (SIS). Diesels only accounted for 16.1% of cars bought through the SIS in 2009, compared to 41.7% of all registrations.

On a sales-weighted basis the performance was very similar, with CO₂ emissions from petrol cars averaging 0.5% lower at 148.7g/km, than diesel's 151.2g/km in 2009. The graph shows that the gap has closed in recent years, but 2009 was the first year with average CO₂ emissions from petrol cars below the diesel average. This can also be explained by the SIS, which saw consumers favouring petrol models, especially from the mini and supermini segments.

Average new car CO₂ emissions of petrol and diesel cars fell by 6.6% and 3.8% respectively in 2009.

Since 1997, petrol car emissions have come down by 21.9% and diesel cars by 19.0%.



**16% of cars
bought
through the
scrappage
scheme
were diesel,
compared to
42% of all
registrations**

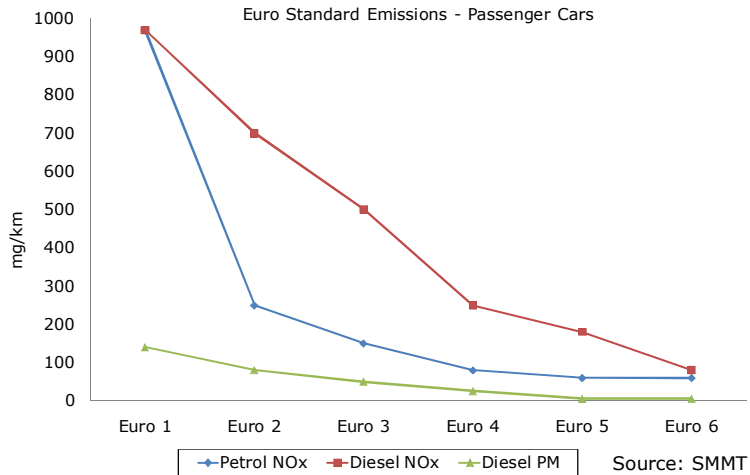
Other tailpipe emissions

Passenger car emissions

On 1 September 2009, the Euro 5 emissions standard for cars came into force for new type approvals. It will be mandatory for all new vehicles from 1 January 2011. This standard reduces oxides of nitrogen (NO_x) emissions by nearly 40% and particulate matter emissions by 80% for diesel vehicles compared to the Euro 4 standard and continues the trend of substantial emissions reductions over the last 17 years.



The next Euro standard (Euro 6) has also already been agreed and is to be implemented from 2014, with a further 55% reduction in NO_x emissions for diesel engines and particulate number limits for gasoline engines.



Euro 5 diesel cars have 40% less NO_x and 80% less particulates

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£30m green bus fund

The UK's low carbon bus industry was given a boost in 2009 by a £30 million fund to encourage the purchase of low carbon buses in England. The fund is part of the Department for Transport's wider strategy to encourage a radical shift to low carbon transport and improve air quality in our cities.

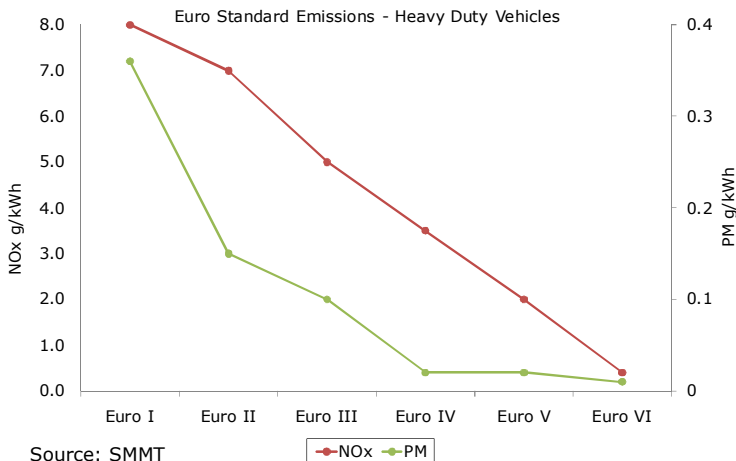
To qualify, the low carbon buses must use at least 30% less fuel and emit nearly a third less carbon than an equivalent conventional bus. The green buses must also meet the most stringent air quality emission standards (Euro V) to help improve air quality.

A new £15 million second round was launched in July 2010.

Heavy duty truck emissions

Heavy duty vehicle emissions have also been substantially reduced with the Euro V standards becoming mandatory for all new registrations from 1 October 2009. Euro V represents a 43% reduction in NO_x emission compared to Euro IV.

Euro V trucks have 43% less NO_x



Development of the next standard, Euro VI, is well under way with new type approvals complying from the end of 2012 and all new registrations from the end of 2013. The proposed emission levels at Euro VI will require a further 80% reduction in NO_x and a 50% reduction in particulates.

Euro VI is also expected to be conducted over the new World Harmonised Heavy Duty Cycle (WHDC), developed by United Nations Economic Commission for Europe (UN-ECE).

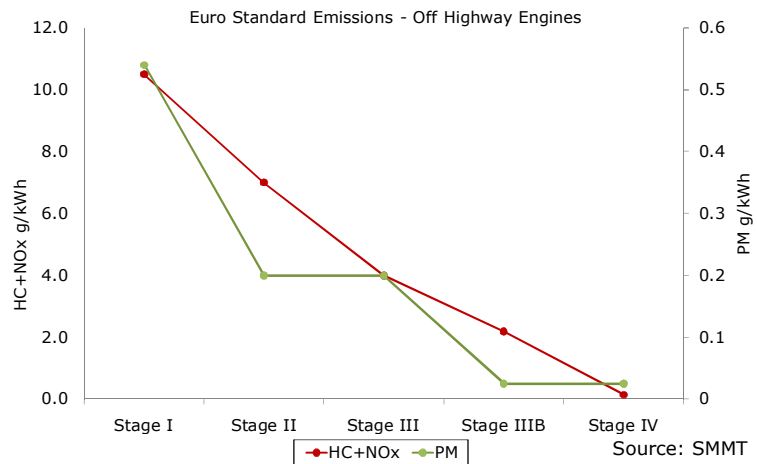
Note: Euro I and II NO_x limits were combined with hydrocarbons.

Off highway emissions

Emissions limits for engines used in off highway vehicles such as construction equipment and agricultural tractors have also been significantly reduced. The latest Stage IIIB emissions that came into force for new type approvals at the end of 2009 represent a 79% reduction in HC+NO_x emissions and a 63% reduction in particulates for the 130-560kW engine



class compared to the original Stage I limits of 1998. The next level, Stage IV, will require a further 80% reduction in NO_x emissions and will come into force for new type approvals at the end of 2012.



Caterpillar and Energy Technologies Institute

Caterpillar is the automotive member of the ETI, which brings together global industries (oil and energy companies), the UK government and research councils. ETI demonstrates technologies; develops knowledge, skills and supply-chains; informs the development of regulation, standards and policy and accelerates the commercial deployment of a focused portfolio of affordable, secure, low-carbon energy

systems from 2020 to 2050. This will increase energy efficiency, reduce greenhouse gas emissions and help achieve energy and climate change goals.

Caterpillar is a partner in a project, which started in 2009, looking at heavy duty vehicle efficiency and identifying deployable technologies, to assess their impact on fuel consumption and move towards full-scale development and demonstration.

Alternatively fuelled and advanced propulsion vehicles

Biofuels

The Renewable Fuels Agency published its second report on the Renewable Transport Fuels Obligation (RTFO) covering the first full year of the obligation to April 2009 in the UK⁽⁵⁾. The report highlights that 1,284 million litres of biofuel were supplied during the year, amounting to 2.7% of transport fuels and ahead of the target for 2008/9 of 2.5%. For the next year the target increases to 3.25%.

Biofuels save 46% CO₂ on average. High blends need a long term plan to make them viable

Of the biofuel supplied, 82% was biodiesel and the biofuel had an average greenhouse gas saving of 46% over fossil fuel, ahead of the 40% target. 99% of feedstocks sourced from the UK met the approved environmental sustainability standard. Unfortunately only 24% of the total feedstocks used met the standard, behind the target of 40%. The main feedstocks were soy (35%),

oil seed rape (25%) and sugar cane (14%), with the majority of supplies coming from US (32%), Brazil (15%) and Germany (10%).

The Treasury announced that from April 2010, the 20p/litre duty differential for biofuels would be removed for all biofuels, except used cooking oil. This made it uneconomical to continue supplying high blend fuels such as E85 and B30 and they have been withdrawn from the market entirely. It is expected that prices for standard road fuels, which contain up to 5% ethanol or 7% biodiesel, will also rise as a result of the increased cost of the bio-content.

SMMT considers this to be an unhelpful development given the importance of biofuels to the fight against climate change and the embryonic state of the supply industry.



Alternative powertrains and fuels

Registrations of alternatively fuelled vehicles and advanced propulsion technology vehicles (termed AFVs in this report) saw a proportional rise to a record high of 0.8% in 2009, from 0.7% in 2008. However, volumes fell modestly by 5.5% to 14,963 units. This compares well with the 31% decline in sales of conventional vehicles, especially considering the price premium AFV vehicles tend to command.

Hybrid cars sold well in spite of economic conditions

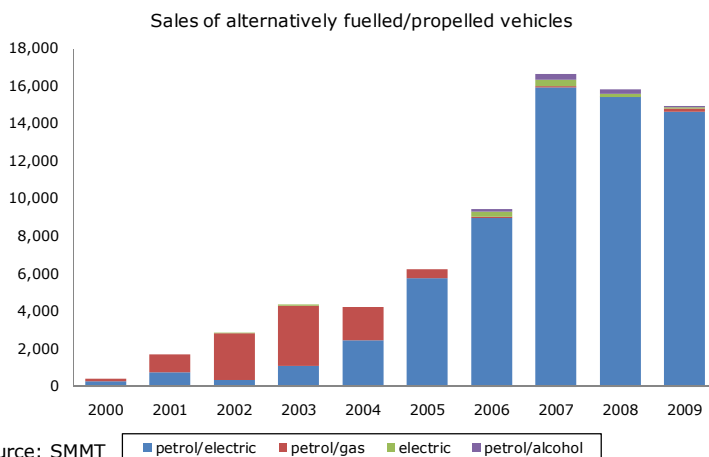
Petrol/electric hybrids continue to dominate the AFV market, accounting for 97.9% of 2009 volumes.

Further government investment was promised for low carbon transport, which included a fund for green buses, a grant of up to £5,000 for the purchase of electric vehicles and support for European Investment Bank loans to UK automotive companies for low carbon projects.

Interest continues to grow in a broad range of alternative fuels. The Low Carbon Vehicle Partnership report on 'Opportunities for high blend liquid and

gaseous biofuels', found that bio-methane offered a particularly cost-effective route for reducing CO₂ emissions from heavy goods vehicles, whereas low blend and advanced biofuels were the preferred option for cars and light goods vehicles.

In the commercial vehicle sector, manufacturers are looking at a variety of alternative powertrain options including hybrids and pure electric vehicles for medium to long term introduction. In the near future, a number of manufacturers intend to release natural gas powered vehicles, that can use methane derived from waste sources.



£5,000 government kick start

Government has confirmed it will provide a 'Plug-In Car Grant' to individuals and businesses purchasing electric, plug-in hybrid or hydrogen fuel cell cars. The Office for Low Emission Vehicles (OLEV) scheme will

start in January 2011, offering grants worth 25% of the list price of the eligible car, up to the value of £5,000. The cars must meet safety, reliability, performance and warranty standards set by OLEV.

Nissan LEAF, another UK-built electric vehicle



Nissan has announced a £420 million investment to produce both the LEAF electric car and to build a new battery plant at Sunderland.

From 2013 about 50,000 LEAFs will be built there each year.

Meanwhile, Toyota began building a full hybrid Auris, at Burnaston, Derbyshire, adding to the list of UK-built electric-capable models from Allied Vehicles, Modec and Smith Electric.

Volkswagen vans run on gas from food waste



Sheffield City Council is trialling seven Volkswagen EcoFuel Caddys which run on gas made from food waste. The vehicles are equipped with engines designed to

run on compressed natural gas (CNG or methane), but instead of using mains gas, Chesterfield BioGas is to build digesters which convert solid organic waste to free fuel.

The greatest environmental benefit of using CNG is the reduction of exhaust gases - 50% lower carbon monoxide, 97% less NO_x and zero particulates, compared with the equivalent diesel vehicle.

SMMT's Electric Vehicle Group

In June 2009, SMMT set up an Electric Vehicle Group to act as a forum for the UK industry to ensure that it is well represented and kept informed of political and technical discussions.

Currently the group focuses on six key priorities:

1. Policy - negotiating eligibility criteria for the new Plug-In Car Grant.
2. Infrastructure - working with Plugged-In Places and infrastructure providers.
3. Technical - working through technical issues and making sure members are supported.

4. Investment - with particular focus on private investment to communicate the opportunities.
5. Overcoming consumer/media perception barriers - improve the general understanding of EVs.
6. Commercial facilitator - to be the UK's central hub of EV activity and facilitate any new partnerships.

To find out more please contact:
EVGweb@smt.co.uk



Road and vehicle safety

Britain's roads are among the safest in the world. In 2009, the number of people killed in road accidents reported to the police fell by 12%, from 2,538 in 2008 to 2,222 in 2009⁽⁶⁾. Innovations at national and regional levels have helped achieve this. New vehicles, with increasing levels of passive and active safety features, have played a major role in reducing deaths among car occupants, where there has been a 16% reduction between 2008 and 2009⁽⁶⁾. Continual vehicle safety enhancements are set to reduce these casualty levels even further.

This rapid improvement of primary safety systems using new technology, as well as enhanced crash protection, has already been an important contributor to casualty reduction. One of the most effective and now widely available is electronic stability control (ESC), which regulates a vehicle's braking to prevent skidding and enable accident avoidance, and can prevent 40% of crashes. It is an enabling technology, as it supports many other new lifesaving electronic safety (eSafety) technologies, including warning and emergency braking systems.

Other systems designed to inform drivers and prevent or mitigate crashes include:

- Blind spot monitoring.
- Lane support systems.
- Automatic speed alert.
- Adaptive headlights.
- Tyre pressure monitoring systems (TPMS).



The automotive industry has led the way in improving vehicle safety by bringing these technologies to market. As a result, manufacturers are enabling fleets to adopt these technologies well ahead of legislation. For example, ESC is now widely available, but does

not become mandatory in new models until 2012, and in every new vehicle produced by 2014. However, there remains a low level of customer awareness of these systems despite investment in promotional campaigns supported by the industry.

Of the many factors affecting road safety, driver behaviour is key. Despite improvements in driver training and testing, young drivers remain 'high risk'. One in five novices crashes within the first six months of driving⁽⁷⁾. Young drivers remain a concern for the industry, and many manufacturers are involved in measures to increase awareness, improve skills and reduce casualties. Those who drive for work also pose a high risk, as up to one third of all crashes occur when the driver travelling for business. Through RoadSafe, the industry also supports the government-backed Driving for Better Business Campaign, to raise awareness of the importance of work-related road safety in the business community and public sector, by using advocates drawn from these communities to promote the business benefits of managing it effectively.

ROADSAFE

RoadSafe is acknowledged as a leading forum for promoting and devising solutions to road safety problems. Its mission is to reduce road deaths and injuries by supporting and encouraging partnerships between the motor industry and related companies, traffic engineers, the police, public health authorities and road safety professionals. Through these partnerships, RoadSafe promotes the safe design and use of vehicles and roads by sharing knowledge and encouraging innovation.

PSA Peugeot Citroën uses telematics to improve user safety

At end-2009, 630,000 Peugeots and Citroëns on the road were equipped with an emergency call system in the nine European countries where the service is available. If the vehicle's airbags or pyrotechnic seat belts are triggered, it automatically transmits an



emergency call. PEUGEOT CONNECT SOS then locates the car, contacts the passenger by phone in his/her own language and arranges for the appropriate emergency assistance to be despatched as required.



Peugeot plans to have one million vehicles on the road in Europe with the emergency call system in 2011.

General Motors is first manufacturer to join at-work driving safety campaign

GM has become the first motor company to join the government-backed 'Driving for Better Business' campaign, which is delivered by RoadSafe.

After boosting its occupational road risk management measures five years ago with the launch of its 'Safe Driving Programme', the company has introduced a string of initiatives that has resulted in halving the number of road crashes involving vehicles on its 600-strong fleet and a 20% cut in annual insurance premiums.

GM's 'Safe Driving Programme' covers its 600 employees who drive around 20-25,000 miles a year in company cars. Additionally, many of the initiatives also extend to the company's 5,400 other employees who clock up private miles and are part of the company's Car Plan scheme.

In the future, GM is looking to introduce compulsory eye-sight testing for all drivers, an online driver training programme for families of all drivers, whether they travel on business or not, and to share its best practice with more customers and suppliers.

Vehicle end-of-life phase

Key facts:

- 85% recovery target achieved for ELVs across the UK in 2008, an increase of 67,477t over 2007.
- Vehicle manufacturers' contracted networks have achieved 85% recovery since 2006.
- A new vehicle registration document (V5C) will help reduce the number of scrap cars falling into the hands of illegal operators.
- Investments in ELV infrastructure coming through to enable 95% recovery in 2015.

85% ELV re-use, recycling and recovery

The latest data reported by government shows the UK achieved 85% re-use, recycling and recovery of end-of-life vehicles (ELVs) in 2008, representing an increase of 67,477 tonnes over the previous year (84.2%).

The UK's overall result of 85% is calculated from the recovery/recycling achieved by the networks

contracted to manufacturers and non-contracted facilities. Vehicle manufacturers' approved networks of authorised treatment facilities (ATFs) have achieved the 85% EU target each year from 2006 to 2009.

85% ELV recovery target achieved in UK for the first time



New registration documents

Having campaigned with several other ELV stakeholders for many years, SMMT welcomes the Driver and Vehicle Licensing Agency (DVLA) introducing a new vehicle registration document (V5C).

This removes the self-scraped 'tick box' and therefore closes the loophole that allowed vehicles to be deleted from the DVLA register without the need to have a certificate of destruction (COD) from a licensed Authorised Treatment Facility (ATF) that met strict environmental standards⁽⁸⁾.

This will reduce the number of ELVs falling into the hands of the illegal operators that risk the environment and undermine legitimate treatment and recycling businesses.

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95% recovery in 2015 - an integrated approach

The ambitious 95% re-use, recycling and recovery European target for 2015 can only be met with an integrated approach - where all stakeholders work together, in particular manufacturers, governments and the recycling industry. Car manufacturers accept responsibility for their products by complying with the RRR-Directive 2005/64/EC, which ensures the recyclability and recoverability of their products.

In addition, the following specific actions are required to ensure that the 2015 target can be met:

1. Harmonise legislation. National recycling definitions must follow the definition given by the waste framework directive. There should be no constraint for acceptance of applications with regard to definition of recycling throughout EU Member States. As an example, the use of plastic granules as a

reducing agent in a blast furnaces should be classed as recycling.

2. Harmonise and establish quota calculation systems. Use fixed assumptions for those fractions of ELVs which are constant, like metals, oils and other fluids, tyres and non-metallic re-use.

3. Use of existing infrastructure. Select most professional and efficient operators for ELV collection and treatment.

4. Enforce landfill ban. This will help directing shredder and post-shredder material streams into recycling and energy recovery routes. If it is prohibited to dispose of more than 5% in landfills there will be more pressure to build a recycling and recovery infrastructure and to increase the performance of the whole recycling chain.

5. Put pressure on unauthorised facilities. They increase the risk of non-achievement of quotas, by undermining the legitimate facilities.

Battery end-of-life

As electric-capable vehicles gain a bigger market share, manufacturers are aware of the importance of end-of-life treatment of their batteries. Battery regulations now require that vehicle manufacturers report the number of batteries placed on the market.

There are different responsibilities for portable, industrial (including electric vehicles) and automotive starter batteries. In all cases, the last owner will be signposted to the most suitable authorised treatment facility where batteries are disposed of in an appropriate manner, free of charge.

Investing for 2015

Preparing the ground for meeting the European Directive's 95% recovery target in 2015, a major metal recycler has been granted planning permission for two gasification plants in Bootle, Merseyside and Oldbury, West Midlands this year.

Each plant will have capacity to process nearly 140,000tpa of post-shredder residue, known as automotive shredder residue (ASR), each producing

30MWh of electricity. The Oldbury plant will be principally supplied by ASR delivered by rail.

The Bootle site is already home to one of the biggest shredders in the world. It would be able to recover 22,800 tonnes of recyclates, including copper, ferrous metals, glass, aluminium and aggregates using plastics and magnetic separation and much of the remainder will count as energy recovery⁽⁹⁾.

Ford's bumper recycling scheme re-uses thousands of parts

In 2009, Ford UK dealers collected 23,000 damaged bumpers from cars that had been in accidents. Some of the material from those bumpers is now back in action, having been turned into new bumpers and other plastic parts used in new Ford models.

The dealers are not doing this solely because it helps the environment. It makes commercial sense as they avoid having to dispose of those bumpers, which

translate into 70 tonnes of landfill saved. One dealer, Ford Ringways, saved around £15,000 in the first year.



CAT remanufacturing in the UK

CAT REMAN's European HQ is in Shrewsbury and remanufactures a wide range of Caterpillar and third party parts, components and products via the take back of existing items. They inspect, disassemble, clean, salvage and then remanufacture to the same specification as the original products.

This is a highly skilled, high technology business. The remanufactured product or component carries a full Caterpillar warranty and incorporates both genuine Caterpillar parts and relevant engineering upgrades.

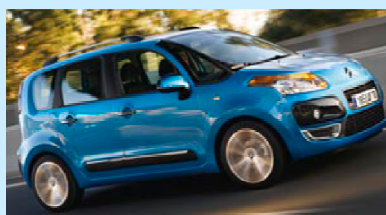
All remanufacturing activities are to the Caterpillar factory and quality standards. Remanufacturing returns end-of-life items to the same standard as new, and therefore retains the original item's added value, reduces waste and thus minimises the need for raw materials to produce new items. This is a major contribution to sustainable development – keeping non-renewable resources in circulation for multiple use.

PSA Peugeot Citroën aims to become a leader in green materials

PSA plans to reduce its environmental footprint by increasing the percentage of green materials used per vehicle to 20% of polymers by weight by 2011. PSA defines green materials as natural fibres and materials (wood and cotton etc) and biomaterials produced using renewable resources not coming from petrochemicals.

Using families of green materials contributes to:

- Reducing the use of fossil-fuel derived plastics to promote renewable raw materials.



- Cutting CO₂ emissions from plastics manufacturing.
- Promoting the plastics recycling industry.



To achieve the target PSA facilitated:

- Partnerships with suppliers to give new impetus to the recycled materials industry.
- R&D to develop the production of biomaterials and increase their use in the automotive industry.
- Efforts to select and approve the green materials providing the best technical-economic solutions for which supplies are reliable.
- Accelerated deployment in vehicle and sub-system projects.

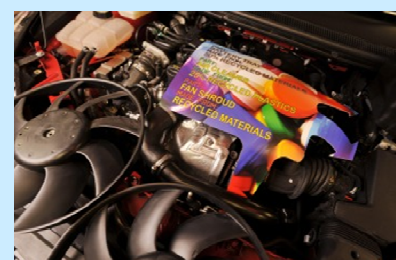
From carpet to car: focus on materials recycling

The Ford Focus is spearheading a comprehensive European recycling campaign, which has created over 300 separate parts formed with recycled material and diverts around 20,000 tonnes away from landfill each year.

Recycled components include:

- Heater and air conditioner housing: 25% recycled plastics.
- Replacement bumpers: 20% recycled bumpers.
- Interior carpets: 20% recycled carpet material.
- Battery tray: 50% mixed recycled plastics.

- Wheel arch liners made from up to 100% recycled polypropylene.
- Air cleaner assembly: 25% recycled plastics.
- Fabric seat option: 100% recycled material.
- Roof lining, parcel shelf, instrument panel, insulation and sound-proofing materials include recycled textiles.



Social performance

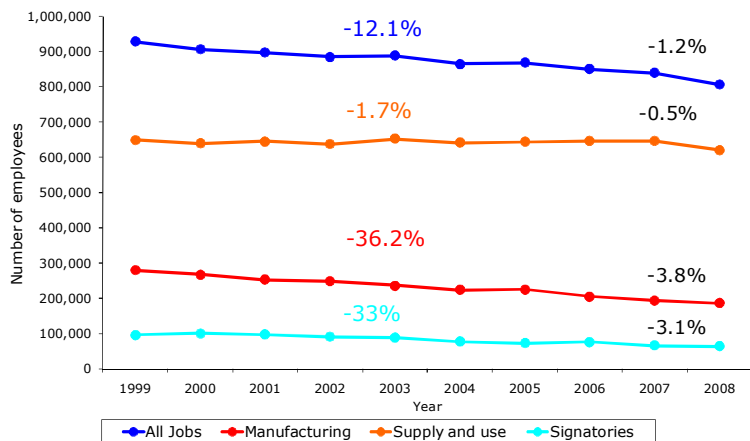
Key facts:

- The number of jobs dependent on the automotive sector dropped by almost 10% and jobs in manufacturing decreased by 21%.
- Training and development of employees up 19% despite the continuing difficult economic situation.
- Automotive manufacturing provides a safe and progressive working environment, which is reflected in low staff turnover.
- Community involvement continues to be an important part of the industry's corporate DNA.
- Managing their employees' travel patterns is also recognised as an important part of signatories' contribution to the local community.

Employment

The recession has had a serious effect on the global and UK economy, with spending down and unemployment high. The UK automotive sector responded quickly to the situation as companies made difficult decisions to protect vital industrial capability when demand for new vehicles dropped dramatically. These decisions included short-time working, pay freezes and redundancies.

Manufacturing jobs down 21%



Source: SMMT

Time banking at Honda

During 2009 Honda negotiated a Working Time Accounts and Demand Led Scheduling scheme to allow for employees to bank hours during non-production

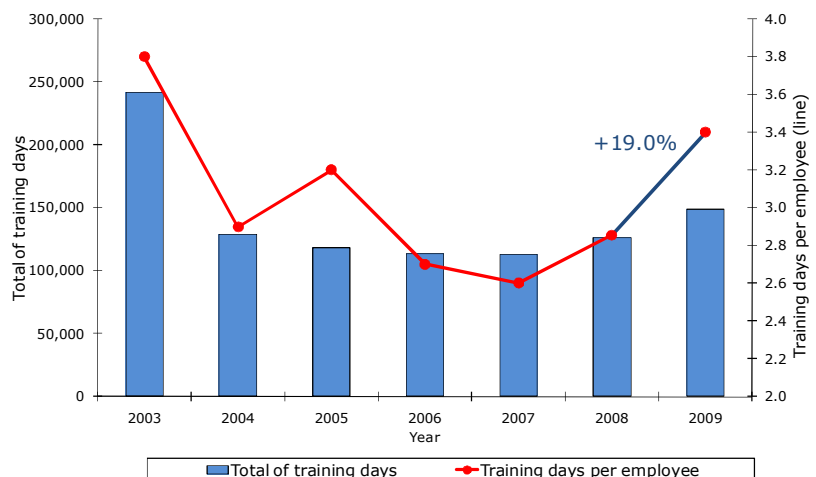
periods, but to receive full pay on the basis of unbanking those hours when demand increases in line with the market.

Employee development

The number of training days per employee and total number of training days increased by 19%. This is influenced heavily by inclusion of the new signatories, which account for 19% of all training days reported for 2009.

Although the recession took its toll on training budgets, the performance of all signatories confirms their commitment to employee development.

Training days up 19%



Source: SMMT

Jaguar Land Rover took on over 40 apprentices

Jaguar Land Rover continues its commitment to invest in the future of the automotive industry and the engineering talent of tomorrow with another recruitment programme offering over 40 Advanced Apprenticeships to enthusiastic 16+ year olds wanting a career within the automotive industry.

The apprenticeships consist of a 36-48 month programme, with the initial period at college. During this time each apprentice earns an NVQ2 in Performing Engineering Operations, an NVQ3 in the chosen trade pathway and a Technical Certificate, as well as developing wider key skills.

Bentley is apprentice employer of the year

Bentley Motors' successful apprenticeship programme was recognised at the National Apprentice Employer of the Year Awards for 2009.

The company was highly commended for its commitment to developing its workforce through apprenticeships.

Bentley Motors employs 51 apprentices who follow a three to four year training programme across a number of disciplines.

Apprentices undertake day release to a local college to complete the necessary academic qualifications and develop the required underpinning knowledge.

Apprentices join the Rolls-Royce success story

In 2009 Rolls-Royce Motor Cars offered permanent positions to nine of the company's first year apprentices. All nine successfully completed three-year apprenticeships at the head office and manufacturing plant at Goodwood, West Sussex.

The company's apprenticeship programme was successfully launched in 2006 and has received applications from around the world. The programme provides people aged 16-24 with the opportunity of

an apprenticeship lasting for up to four years, which combines on-the-job training with studying for nationally recognised qualifications.

The programme has been designed in conjunction with the Learning Skills Council (LSC), South East England Development Agency (SEEDA) and Chichester College.



Nissan trains long-term unemployed

In 2009, a pre-employment training course for the long-term unemployed was launched at Nissan in Sunderland. The five-week course forms part of Nissan's commitment to the Local Employment Partnership signed last year with the UK government.

It provides individuals with the skills needed to apply for a manufacturing position at Nissan, or at one of its local suppliers. To date around 180 people have started work at the plant with a further 160 people on hold for an available position.

Professional development at Volkswagen Group

VWG has a number of staff undertaking soft skills and technical training, professional qualifications (CIMA, AAT) and language courses across the organisation. VWG also offers an Institute of Leadership and Management (ILM) qualification after a Management Development Programme and a Professional Field

Force Award (PFFA) after completing a Field Force Development Programme.

Over the last three years over 100 employees have attended the field force programmes and 39 have already successfully achieved the PFFA award.

New Ford workshop for dealership apprentice technicians

Since February 2009 Ford apprentice technicians in the South East can now learn the skills of their profession in a new Ford Workshop at Central Sussex College. Around 120 technicians on the Ford Masters Apprenticeship Programme will be trained in the new workshop while on block release at the college.

Ford has supplied three vehicles, engines, transmissions and tools to aid apprentices' instruction in the workshop, where apprentices will be trained for four annual two-week blocks throughout their course.



Toyota leading the way to award success

Once again Toyota UK has won a regional award in the National Training Awards – the 2009 UK's premier awards for training and development. The award, presented in recognition of our leadership training programme, recognises excellence and success through training. The leadership training programme

was developed together with an external training company to strengthen Toyota UK's leadership capability. The ultimate aim was to provide supervisors with the opportunity to develop their soft skills and knowledge, enabling them to support teams, give direction and create a supportive environment.

Leyland Trucks upskilling workforce

In 2009 around 125 assembly workers at Leyland Trucks had their skills and qualifications improved under the contract placed with Preston College. Each of the employees had a minimum three month programme of training and assessment leading to an NVQ Level 2 in Performing Manufacturing Operations or in Warehousing, Handling and Storage.

Assessors from Preston College had been at the Farington plant on a full-time basis to ensure that the key tasks covered by the chosen NVQ subject is to the required standard. This 'on the job' assessment had been complemented by other knowledge-based learning. Each employee is required to submit written evidence of his or her competence and knowledge of key factors related to their work.

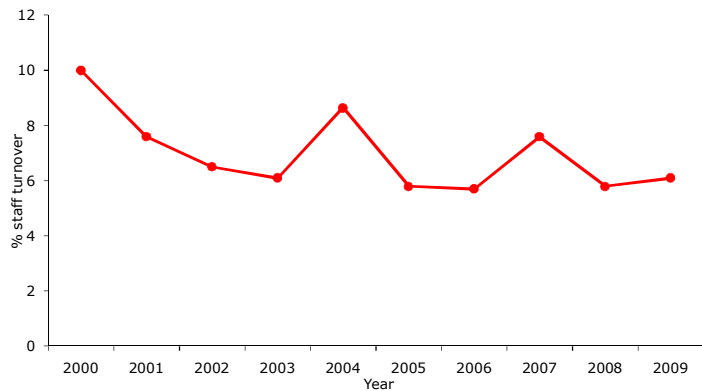
Staff turnover

Over the last decade staff turnover decreased by almost 40% and remains low at 6.1% in 2009.

Employees' satisfaction with remuneration, the working environment and social prestige of working in the automotive sector is reflected in the overall downward tendency in staff turnover.

Staff turnover remains low at 6.1%

Source: SMMT



Health and safety

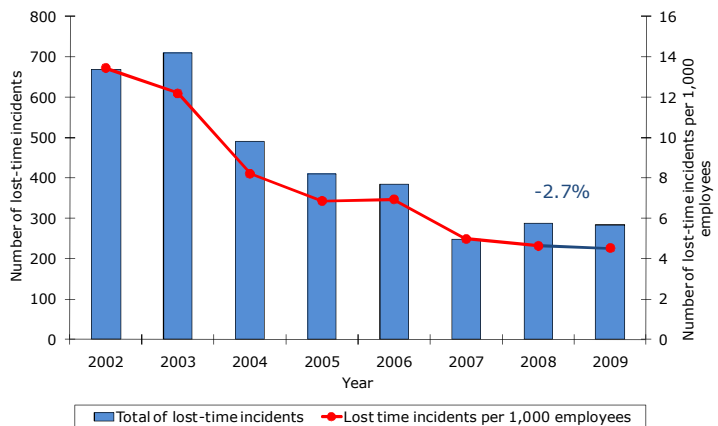
Continuing to improve health and safety is a priority for the automotive sector.

The number of lost-time accidents fell by 60% over the last eight years, which confirms effectiveness of a concerted campaign by signatories to improve safety and safety awareness of employees.

In 2009 the total number of lost-time accidents remained static, although the per employee figure decreased by 2.7%. This is due to the

Accidents reduced by 2.7%

increased number of employees as a result of adding two new signatories.



Source: SMMT

Leyland Trucks wins major safety award

Leyland Trucks has won a top UK award for its health and safety performance from the Royal Society for the Prevention of Accidents (RoSPA).

The RoSPA President's Award 2009 marks 14 straight years in which the truck maker has won gold medal status for consistently meeting the highest standards

in protecting the health and safety of its 1,000 workers and of visitors to the Lancashire plant.



Nissan's zero injuries programme

Nissan's Sunderland plant has introduced its zero injuries programme (ZIP) to increase the safety of staff and visitors to the plant and reduce the number of incidents. ZIP was applied to everyone across site, and many safety improvement activities have taken

place to increase the safety of line-workers, office staff, suppliers, drivers and pedestrians.

Since 2005 there has been a massive 68% reduction in the overall accident rate, and 74% less accidents resulting in lost time.



Toyota's safety success commended once again

At the Royal Society for the Prevention of Accidents 2009 Occupational Health and Safety awards, Toyota was commended in the Manufacturing Industry Sector in recognition of providing a safe

working environment at all its UK manufacturing plants.

This continues the company's long history of winning awards in recognition for its efforts in safety management and driving down accident rates.

Honda's functional restoration programme

Honda operates a very successful functional restoration programme through its in-house physio service providers, 'RehabWorks'. Occupational health

holds regular meetings with long-term sick employees and the business ensures that they are kept informed of all business notices through both the post and an internet portal.



Community involvement

The industry has a strong tradition of engaging with local communities by supporting community projects, employment opportunities and improving education. This is made up of direct and indirect donations as well as engagement in environmental and educational projects. Many companies encourage their employees to volunteer and contribute their time to the charitable causes of their choice.

In 2009, charity donations to the Motor Industry and Allied Trades Benevolent Fund (BEN) reached over £1,240,000 in direct contributions (not including BEN Ball contribution).

Donations to BEN reached £1.24m

Some examples of the initiatives undertaken by the industry in 2009 are set out below.

BEN ball raises £200,000

Thanks to the support given by the industry, BEN, the automotive industry charity raised £200,000 during its

75th BEN Ball held in 2009. The money raised at the Ball will be used to provide care and support for employees and their dependents in time of need.

Bentley unveils world's most luxurious bus in aid of St Luke's Hospice

A former London Routemaster bus has been luxuriously restored by Bentley Motors, in response to an appeal from the St Luke's hospice.

The bus, named Luke, will be used as a charity shop to help the hospice raise funds while on the road. The travelling shop will visit colleges and universities as well as the bus being used as an education and awareness base to visit schools and other events.



Bentley Motors has supported the hospice for the past three years, when it helped renovate one of the hospice's charity shops and rejuvenated the hospice garden during a production shutdown at its Crewe factory. This latest project has taken 2,000 hours to complete with 59 Bentley workers involved.

25

Charity champions

Mercedes-Benz developed a network of charity champions throughout the business who are working on a project called 'giving something back' Working with a local charity called Food Bank, Mercedes has special collections at Christmas and Easter. They also work with the Laureus Foundation to help under-privileged children. The Foundation hosts

groups of children throughout the year and takes them go-karting in the morning and then they spend the afternoon at Mercedes head office.

The company also supports Children in Need, Comic Relief, Sports Relief, Jeans for Genes and Breast Cancer Wear It Pink campaigns.

Tree o'clock at GM

Participating in the Woodland Trust's 'tree o'clock' world record attempt towards the end of last year, GM employees volunteered to join in the attempt at Heartwood Forest, Hertfordshire. The previous record stood at 18,124 trees planted and although the 100 volunteers at Heartwood Forest managed to plant

20,326, another 100 volunteers in Gransha Park Northern Ireland managed to plant 26,000 trees in the hour.



Toyota employees dig deep

Teams of employees from Toyota's Burnaston plant have been back to school to help transform the gardens of local schools. Employees swapped production tools for shovels to help create outdoor

learning environments at Borrow Wood Infant and Nursery School in Spondon and Hilton Primary School. Phoenix After School and Holiday Club in South Derbyshire now have a garden for children to learn how to grow and cook their own vegetables.

Swindon Academy

Honda is continuing its support for the local academy, Swindon Academy, both financially to support the development of the new building and also in practical terms to support the Academy specialisms in business and science. This is being achieved by visits to the factory in Swindon and also Honda's UK training centre in Langley to match the teaching with real engineering and manufacturing. The most recent

example is a visit to the Honda paint department to understand the electro-deposit process and colour control. Also, Honda associates visit the Academy to support lessons along with other specific activities such as the Honda School of Dreams, Prepare for Work and even demonstrating an actual robot operation.



Greener commuting and business travel

Employee travel patterns are an important environmental aspect too

Vehicle manufacturers recognise that the impact of their activities is not just about 'greening' their production processes. Managing the travel patterns of their employees can have

an important contribution to reducing the social and environmental impact of travel in the local community.

Our signatories have developed and supported systems to allow their employees and visitors to their facilities to choose between various modes of transport and minimising the need to travel.

Some of the many initiatives undertaken in 2009 are listed below:

- Coaches commuting daily between the major sites and nearest airport.
- Covered racking and parking for cycles/motorbikes and showers available for cyclists.



- Pool cars for travel within the sites and between other facilities in the area.
- Alternative and low emission vehicles used as pool cars.
- Provision for tele-working and other forms of flexible office working arrangements.
- Relocation packages to allow new recruits to live locally, where appropriate.
- Advice available to staff on sustainable travel issues using the most appropriate media to develop awareness and encourage car sharing, cycling, walking or other alternative methods of commuting.
- Business travel options: clear business travel policy, phone/e-mail and video conferencing.



- Encourage suppliers to locate close to production plants to minimise transport associated with deliveries.
- Car sharing
 - Run by 234car.com - internet-based car sharing system that utilises ordinance survey technology to match journeys of employees registered in the system. A secure e-mail communicates potential matches to employees. The system is now in its seventh year of usage.
 - Potential incentives to encourage lift sharing at a number of sites are being reviewed.
 - Another system run by liftshare.com, an on-line system that matches partners based on post code and time.
 - Emergency taxi cover (for home emergencies).
- Eco-driving
 - Sponsoring UNEP Greener Driving Program (www.greener-driving.net).
 - Launched a smarter driving challenge together with the Energy Saving Trust at six UK locations. Nearly 500 people participated and the challenge achieved an average 33.4% improvement in mpg.
- Promotion and incentive schemes, which include:
 - Intranet site and newsletters.
 - Token based incentive scheme.
 - Prize draw card and sticker system.
 - Weekly prize draw for £50 gift voucher.
 - Monthly prize draw for £100 gift voucher.



BMW and MINI have Drivesense

BMW and MINI have partnered with the Energy Saving Trust to provide a fleet of cars to support its 'Smarter Driving' programme.

Smarter Driving is a course that lets organisations teach their employees the skills needed to drive more efficiently, for just £25 per person. By following the advice from the Energy Saving Trust, delivered through DriveSense, this smarter driving style can

save on average £250 per person per year in fuel and slash an individual's CO₂ emissions (based on annual average of 12,000 miles).

The fleet of BMWs and MINIs is expected to help teach up to 26,000 people more economical driving techniques.



Stakeholder engagement

During 2009, the industry was involved with a number of innovative programmes and campaigns aimed at improving sustainability of the supply chain, raising

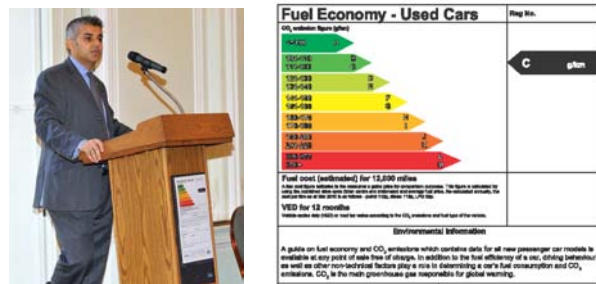
awareness of CO₂ labelling among customers and customer rights.

Used car economy label

The Low Carbon Vehicle Partnership (LowCVP), Retail Motor Industry Federation (RMIF) and SMMT have developed the used car fuel economy label. This voluntary initiative for dealers was launched in November 2009 by the minister of transport, Sadiq Khan.

The label builds on the success of the new car fuel economy label and provides buyers and consumers with important environmental information about their purchase such as estimated running costs, fuel consumption and environmental performance data for used cars registered since March 2001.

By August 2010, nearly 20,000 labels a month were being downloaded by the 2,300 participating dealers.



Best Practice Principle for environmental claims in automotive marketing to consumers



The Best Practice Principles, launched in July 2010, increase both consumer understanding of the environmental performance of vehicles and their confidence in the claims made. They are jointly endorsed by SMMT, the LowCVP and ISBA (Incorporated Society of British Advertisers) and are accessible for marketers and consumers. They set a framework without restricting creativity and they enhance and support existing codes.

Environment Minister, Lord Henley, said "I welcome this initiative... Good environmental information is important to help consumers choose genuinely better products and for businesses to gain fair recognition of their achievements."

The Principles apply to all areas of marketing covered by the existing Advertising Codes and additionally they extend to showroom advertising, marketers' editorial content, press releases, corporate reports and marketing information on corporate websites, where CO₂ information should be readily accessible. Also, if only one drive cycle is quoted for fuel economy/CO₂ in advertising headlines, then the combined cycle data should be used instead of motorway data.

The Principles ensure that marketing and claims are legal, decent, honest and truthful, that consumers can access information to make good purchase decision; and that environmental claims are:

- Specific
- Not misleading
- Capable of substantiation
- Transparent and unambiguous

The full set of Principles is available at www.smmt.co.uk/downloads/SMMT-Best-Practice-Environmental-Claims.pdf



What is Motor Codes?

Motor Codes is a wholly-owned subsidiary of SMMT and operates three Codes of Practice for the UK automotive industry. Supported by government, industry and consumer bodies, the Codes raise standards across the industry and provide motorists with advice, support and a structured complaints process where required.

The **New Car Code** is fully approved by the Office of Fair Trading and has been in operation for five years, it covers 99% of the new car market, providing reassurance and protection to buyers of new cars.

The **Vehicle Warranty Products Code** regulates the majority of the warranty market for vehicles and has seven of the UK's top ten providers acting under the Code, administering over three million warranty products.

The **Service and Repair Code** operates to raise standards across the garage sector and has a growing database of over 6,200 subscribing garages nationwide. It helps motorists to identify responsible garages, offers a structured complaints procedure and promotes good customer service at its subscribing garages.

It offers motorists a free consumer advice line (0800 692 0825), an online search facility allowing consumers to locate their nearest subscribing garage, free conciliation and low cost, legally binding, arbitration.

The future strategy

Key facts

- The Automotive Technology Strategy is being developed to ensure that the UK leads the global automotive industry in the transition from conventional to low carbon vehicle technologies.
- The industry focuses on building a stronger and more resilient supply chain capable of competing globally.
- Low carbon vans and more efficient dealerships are becoming the next focal point for the industry.
- The automotive sector is heavily regulated with many environmental pieces of legislation coming into force in the next few years.

Background

The shift to low carbon vehicles

The Technology Strategy Board, at the request of the New Automotive Innovation and Growth Team (NAIGT), has published a report outlining the areas of automotive technology capability⁽¹⁰⁾. The report looks at where the automotive industry thrives in the UK, and where capability could be developed, giving government and businesses a detailed view of the current state of the industry and its ability to take advantage of the transition to low carbon technologies. Designed to be used as a basis by which business can make future decisions about the development of the automotive industry, it is envisaged that the report will help the UK to take advantage of the market opportunities that the development of low carbon vehicles brings. It forms part of a three-phase plan to introduce an automotive technology strategy to the UK.

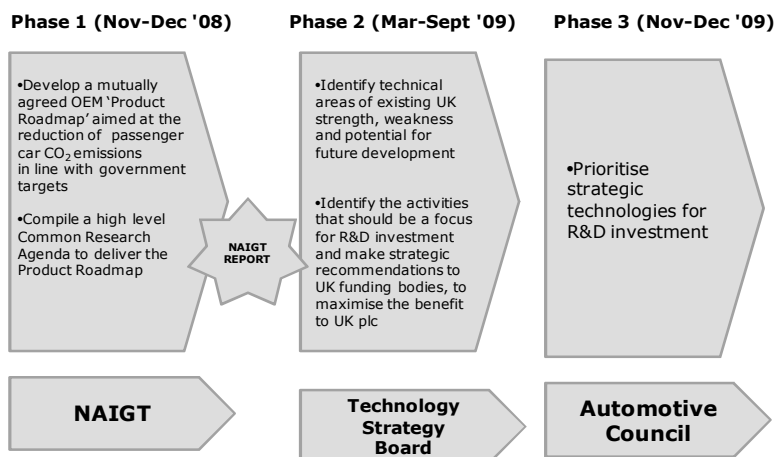
Phase 1's aims were to identify high level technology requirements to deliver a product roadmap and the associated research activities.

Phase 2, funded by the Technology Strategy Board, sought to broaden consensus, identify specific areas of UK capability and opportunity and develop a structured evidence base for the prioritisation of UK support.

During Phase 3, the Automotive Council set up the Supply Chain Council which has been tasked with building a consensus on the challenges facing the UK supply chain and to develop the conditions to encourage further investment in the UK automotive industry. The primary focus of the group is to improve the core competitiveness of the UK supply chain and protect the interests of the UK automotive manufacturing sector, specifically covering R&D, design engineering, power train and component assembly. Since its first meeting in December 2009, the Council has been working to enhance the dialogue between original equipment manufacturers (OEMs) and Tier 1 suppliers on future business opportunities.

SMMT, together with the industry, has carried out several projects to facilitate meeting the Automotive Council's objectives, some of which include:

- Supply chain mapping and an economic survey of the West Midlands automotive community.
- Production of *The UK automotive supply chain report* - aiming to identify supply gaps in the UK automotive industry, both for current and future technology to be used in electric vehicles (EVs) and hybrids. The report also looks into ways vehicle manufacturers and Tier1 suppliers can increase their levels of UK sourcing.
- The automotive components trade event organised by SMMT, a networking event between VMs and suppliers, was set up to promote and encourage sourcing from more locally-based suppliers. The day was supported by major OEMs including Aston Martin, BMW Group, Ford, General Motors UK, Jaguar Land Rover, JCB, Leyland Trucks and Nissan.
- SMMT's Automotive Supplier Finder (ASF) database (www.autosupplierfinder.com), a tool designed specifically to match buyers to suppliers.



SMMT low carbon truck strategy

Heavy goods vehicle manufacturers (HGVs, above 3.5 tonnes), importers, aftermarket and operators are committed to CO₂ reduction and have developed a strategy in 2010 through the SMMT, based on the need for a holistic approach.

The strategy aims to provide the necessary focus on HGVs and their role in driving down CO₂ emissions. The strategy recommends:

- Government action to provide an incentives package for promoting the uptake of Ultra-Low Carbon (ULC) technologies by industry from 2011.
- Clearly defined measurement of HGV CO₂ emissions must be established to determine the true 'well to wheel', 'well to tank' and 'tank to tail pipe' emissions.
- Whole life accountability - technologies must be proven to have positive benefits in a life cycle

context, before the industry is encouraged to adopt them.

- All policy options should be objectively considered before selecting preferred options. Alternative fuels, emissions trading and road user charging must not be overlooked.

In parallel to the focus on long-term low carbon technical solutions, industry needs to identify and develop bridging technologies that are commercially viable.

All operators can help to reduce their CO₂ emissions but a clear strategy for the next ten, 20 and 50 years needs to be established and then applied. Policies that focus only on the next three to five years are not helpful as it takes longer than this to develop new vehicles and engines.

Industry is keen to be an active and central stakeholder along the way.

Dealer efficiency project seeks 50,000 tonnes CO₂ savings

The automotive industry has made significant improvements to the efficiency of the products it sells and how it manufactures them. Industry is now turning its attention to improving the energy efficiency within dealerships.

SMMT and RMIF have combined to take forward a project to reduce dealers' energy use. The project will see industry working with the Carbon Trust to assess and then disseminate ways dealers can use less energy. Improving energy efficiency will help reduce costs for dealers and so provide additional benefits beyond the carbon savings.

The project is timely given the move to implement the Carbon Reduction Commitment, which is a UK-based scheme to encourage energy efficiency amongst medium to high energy users whose emissions are not covered by the Climate Change Agreements or the EU Emissions Trading Scheme.

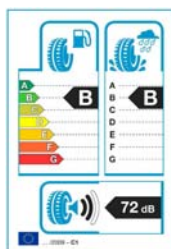
Carbon Trust typically finds it is able to recommend energy savings potentials of 10-20% for zero or minimum investment in energy efficiency. If 30% of dealers took action then savings of 50,000tons of CO₂ per annum could be generated through the project.

The project is due to begin in the second half of 2010.

Positive step changes

Forthcoming changes and dates by which all manufacturers must comply (please note that some will adopt these measures early, where possible):

- Carbon Reduction Commitment (CRC) – from April 2010 relatively medium to large emitting companies need to report their energy consumption and pay for the CO₂ they emit. Revenue from the sale of CRC allowances is recycled back to participants on the basis of their emissions reduction performance.
- Mobile Air Conditioning (MAC) - from 2011 all new vehicle types must use refrigerant with a low global warming potential (from 1 January 2017 for all new registrations).
- EU New Car CO₂ Regulation - 2012 start of phase-in for 130g/km EU fleet average by 2015.
- EU Emissions Trading Scheme Phase III – from 2013 there will be much tougher allocations for existing industrial installations and therefore they must reduce their CO₂ emissions or pay for credits where other installations can do so more cost effectively.
- Xenon headlamp bulbs– from 2011 new lower power 25w bulbs with reduced light output will negate the need for the headlamp washing



system, currently a legal requirement. This will reduce weight by removing the water tank and pump, so improving the vehicle's overall CO₂ performance.

- EU whole vehicle type approval (EWVTA) April 2010 applies to all vehicle models. Approval allows the vehicle to be registered across all EU member states without the need for further testing in each country but without it, the vehicle cannot be sold. (SMMT has launched SENTA - a web-based guide on type approval for vehicle manufacturers and bodybuilders).
- LED lamps Heavy Goods Vehicles (HGV) - 2010, much lower energy consumption than traditional bulbs, so less CO₂ .
- Tyre labelling for fuel efficiency, wet grip and noise performance –2012.

Safety technologies mandated:

- Tyre pressure warning systems (TPMS) - 2010.
- Gear shift indicators (GSI) - 2010.
- Lane departure warning systems - around 2011.
- Advanced emergency braking systems (AEBS) 2012 (note that ABS was standard from 2001).
- Electronic vehicle stability control (EVS) - by 2016 all vehicle categories will be covered.

Appendices

Appendix Table 1. Sector fact sheet	1999	2000	2001
Automotive manufacturing sector turnover (WI) (£ billion)	44.1	42.2	42.6
Share of total transport manufacturing turnover (UK turnover) (%)	64.4	64.5	64.1
Total net capital investment (WI) (£ billion)	2.1	2	2.1
Automotive sector value added (WI) (£ billion)	9.7	8.4	9.4
Value of exports (WI) (£ billion)	19.3	19.8	18.0
Percentage of total UK export (%)	11.5	10.5	9.5
Sector value added share of UK GVA (%)	4.0	3.5	3.8
UK sector share of global passenger car production (%)	4.5	4.0	3.7
Number of UK volume passenger car manufacturers (WI)	-	9	9
Number of UK commercial vehicle (CV) manufacturers (WI)	-	10	10
Cars on the road (UK) ('000)	27,391	27,807	28,447
LCVs on the road (UK) ('000)	2,710	2,768	2,824
Truck on the road (UK) ('000)	563	574	570
Bus and coach on the road (UK) ('000)	96	98	98
Vehicle on the road (UK) ('000)	30,760	31,247	31,939

Appendix Table 2. Economic indicators	1999	2000	2001
Signatories' combined turnover (£ billion) (AS)	20.1	21.0	24.4
Total UK number of new cars produced (AC)	1,799,004	1,641,452	1,492,365
Total UK number of new CVs produced	185,905	172,442	192,872
Total UK number of new vehicles produced (AV)	1,984,909	1,813,894	1,685,237
Total number of new vehicles produced by signatories	-	1,572,642	1,470,659
Total number of new car registrations (AC)	2,197,615	2,221,647	2,458,769
Total number of new CV registrations	288,100	298,043	313,411
Total number of new vehicle registrations	2,485,715	2,519,690	2,772,180

Appendix Table 3. Employment indicators	1999	2000	2001
Number of jobs dependent on the sector	929,000	907,000	898,000
· Automotive manufacturing	279,000	267,000	253,000
· Automotive supply and use	650,000	640,000	645,000
Signatories' total combined employees (AS)	95,214	100,036	96,357

Data in the report is quoted in a number of ways:

Whole industry data	(WI)
All car sales in the United Kingdom	(AC)
All signatories	(AS)
UK vehicle manufacturing signatories	(VMs)



2002	2003	2004	2005	2006	2007	2008	2009
44.7	46.3	46.9	48.2	49.3	53.5	52.5	39.8
67.6	68	67.1	67.7	66.7	67.0	70.0	59.0
1.3	1.2	1.4	1.3	1.4	0.9	1.4	0.8
9.4	9.2	9.4	9.4	9.9	10.3	11.2	8.5
20.9	21.9	22.5	23.7	24.1	26.1	28.0	23.8
11.2	11.6	11.8	11.2	9.9	11.8	11.8	10.5
3.7	3.7	3.4	3.3	3.2	3.3	2.6	2.4
4.0	3.0	2.9	2.7	2.4	2.4	2.9	1.8
9	9	9	8	7	7	7	7
9	9	9	9	9	9	9	8
29,155	29,721	30,090	30,477	30,817	31,105	31,252	31,036
2,898	2,980	3,110	3,227	3,421	3,456	3,600	3,535
579	587	580	586	595	598	589	558
100	101	103	103	102	104	96	89
32,732	33,389	33,883	34,393	34,935	35,263	35,537	35,218
2002	2003	2004	2005	2006	2007	2008	2009
35.7	39.2	34.6	39.4	41.9	43.7	44.7	41.30
1,629,744	1,657,558	1,646,750	1,595,697	1,442,085	1,534,567	1,446,619	999,460
191,267	188,871	209,293	206,753	207,704	215,686	202,896	90,679
1,821,011	1,846,429	1,856,043	1,802,450	1,649,789	1,750,253	1,649,515	1,090,139
1,441,794	1,731,894	1,614,981	1,769,810	1,597,921	1,708,048	1,608,911	1,002,678
2,563,631	2,579,050	2,567,269	2,439,717	2,344,864	2,404,007	2,131,795	1,994,999
322,258	363,687	389,923	385,969	386,968	392,481	351,384	225,455
2,885,889	2,942,737	2,957,192	2,825,686	2,731,832	2,796,488	2,483,179	2,220,454
2002	2003	2004	2005	2006	2007	2008	2009
886,000	889,000	866,000	869,000	851,000	840,000	807,000	729,000
248,000	236,000	224,000	225,000	205,000	194,000	186,000	146,000
638,000	653,000	642,000	644,000	646,000	646,000	621,000	583,000
89,455	87,625	76,327	72,337	75,789	65,761	63,749	65,003

*The macroeconomic estimates for the UK automotive sectors are based on data and surveys from Office for National Statistics (ONS), SMMT and other private sources. The estimates are referenced to the Standard Industrial Classification (SIC) codes of sectors where activities are wholly or substantially automotive-related. Inevitably, there is some estimation where series are discontinued and for directly and wholly linked sectors.

Appendix Table 4. Production and distribution inputs

	1999	2000
Total combined energy use (GWh) (AS)	6,110	7,013
Energy use per employee (kWh) (AS)	64,175	70,108
Energy use per £1million turnover (kWh) (AS)	303,828	309,717
Energy use per vehicle produced (MWh/unit) (VMS)	3.1	3.9
Total combined water use ('000m ³) (AS)	-	9,620
Water use per employee (m ³) (AS)	-	96.2
Water use per £1million turnover (m ³) (AS)	-	457
Water use per vehicle produced (m ³) (VMS)	-	5.3

Appendix Table 5. Production and distribution material outputs

	1999	2000
Total combined CO ₂ equivalent (tonnes) (AS)	1,821,586	2,182,926
CO ₂ equivalent per employee (tonnes) (AS)	19.3	21.8
CO ₂ equivalent (tonnes) per £1million turnover (AS)	90.6	95.3
CO ₂ equivalent per vehicle produced (tonnes) (VMS)	1.1	1.1
VOC emissions (cars) (g/m ²)(VMS)	55.0	55.0
VOC emissions (vans) (g/m ²)(VMS)	0.0	0.0
Total combined waste to landfill (tonnes) (AS)	54,954	80,399
Waste to landfill per employee (tonnes) (AS)	0.6	0.8
Waste to landfill per £1million turnover (tonnes) (AS)	2.7	3.7
Waste to landfill per vehicle produced (kg) (VMS)	-	40.3
Total combined site waste for recycling (tonnes) (AS)	-	-
Site waste for recycling per employee (kg) (AS)	-	-
Site waste for recycling per £1million turnover (kg) (AS)	-	-
Site waste for recycling per vehicle produced (kg) (VMS)	-	-
Total combined site waste for recovery (tonnes) (AS)	-	-
Site waste for recovery per employee (tonnes) (AS)	-	-
Site waste for recovery per £1million turnover (tonnes) (AS)	-	-
Site waste for recovery per vehicle produced (kg) (VMS)	-	-

* Large vehicle manufacturer excluded from 2004 data

Data in the report is quoted in a number of ways:

Whole industry data	(WI)
All car sales in the United Kingdom	(AC)
All signatories	(AS)
UK vehicle manufacturing signatories	(VMs)



2001	2002	2003	2004	2005	2006	2007	2008	2009
6,857	6,540	6,126	5,337	5,104	4,851	4,672	4,491	3,765
71,166	74,685	69,912	69,923	70,559	64,007	71,051	70,446	57,926
281,036	186,943	156,419	154,062	129,602	115,847	107,010	100,478	91,198
4.3	4.0	2.8	2.5	2.3	2.5	2.2	2.4	2.8
10,105	9,108	8,404	7,037	7,127	6,779	6,053	5,688	4,758
104.9	101.8	95.9	92.2	98.5	89.4	92.0	89.2	73.2
414	255	215	203	181	162	139	127	115
6.2	5.6	3.4	3.4	3.2	3.3	3.0	2.9	3.5

2001	2002	2003	2004	2005	2006	2007	2008	2009
2,149,771	1,954,295	1,679,832	1,447,900	1,417,129	1,363,189	1,338,244	1,285,378	1,217,072
22.3	23.9	19.2	19.0	19.6	18.0	20.4	20.2	18.7
88.1	59.9	42.9	41.8	36.0	32.6	30.6	32.4	29.5
1.3	1.2	0.7	0.7	0.6	0.7	0.6	0.7	0.9
50	47	47	50	48	49	45	38	40
59	82	60	66	67	65	69	71	62
121,207	70,897	56,743	52,842	44,910	39,862	30,004	24,900	16,955
1.3	0.8	0.6	0.7	0.6	0.5	0.5	0.4	0.3
4.9	2.0	1.4	1.5	1.1	1.0	0.7	0.6	0.4
66.4	40.5	17.9	19.8	14.5	17.0	12.8	11.9	10.8
-	-	-	145,797	197,752	207,832	248,437	241,630	200,335
-	-	-	1,910.2	2,733.8	2,742.2	3,777.9	3,790.3	3,082
-	-	-	4,208.7	5,021.4	4,963.3	5,689.9	6,100.1	4,852
-	-	-	78.2	99.7	108.2	131.6	142.0	164.8
-	-	-	3,373	2,506	1,566	3,019	2,988	3,259
-	-	-	0.04	0.03	0.02	0.05	0.05	0.05
-	-	-	0.1	0.1	0.0	0.1	0.1	0.1
-	-	-	2.2	1.5	0.9	1.7	1.9	3.3

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Report coverage

Unless otherwise stated:

- The data in this report relates to the 2009 calendar year.
- Sector data was provided by SMMT and relates only to the UK automotive sector activities.
- Signatory data reported for 2009 relates to the signatories listed above.
- Case studies are based on initiatives introduced 2009.

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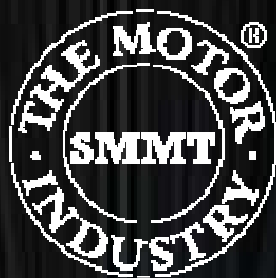
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