

# 2013 Automotive Sustainability Report

The 14th edition - 2012 data



THE SOCIETY OF  
MOTOR MANUFACTURERS  
AND TRADERS LIMITED

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# IN SUMMARY

		2011	2012	Percentage change 2012 on 2011	
<b>ECONOMIC PERFORMANCE</b>					
Automotive manufacturing sector turnover*	(£ billion)	57.7	59.3	2.8	●
Expenditure on business R&D*	(£ billion)	1.5	1.7	9.2	●
Total number of cars and CVs produced	(million) (UK) (WI)	1.5	1.6	7.7	●
Total new cars and CV registrations	(million) (UK) (WI)	2.2	2.3	1.7	●
Signatories' combined turnover	(£ billion) (AS)	49.6	58.2	17.5	●
Total number of vehicles produced	(million) (AS)	1.4	1.5	9.4	●
<b>ENVIRONMENTAL PERFORMANCE</b>					
<b>Production inputs</b>					
Total combined energy use	(GWh) (AS)	5,010	4,628	-7.6	●
Energy used per vehicle produced	(MWh/unit) (VMs)	2.3	2.2	-4.8	●
Total combined water use	(000m <sup>3</sup> ) (AS)	5,481	5,765	5.2	●
Water use per vehicle produced	(m <sup>3</sup> /unit) (VMs)	3.0	2.9	-2.1	●
<b>Material output</b>					
Total combined CO <sub>2</sub> equivalents	(tonnes) (AS)	1,600,148	1,420,805	-11.2	●
CO <sub>2</sub> equivalents per vehicle produced	(tonnes/unit) (VMs)	0.68	0.66	-3.2	●
Volatile Organic Compounds emissions (cars)	(g/m <sup>2</sup> ) (VMs)	35.4	35.3	-0.2	●
Volatile Organic Compounds emissions (vans)	(g/m <sup>2</sup> ) (VMs)	61.4	60.5	-1.4	●
Total combined waste to landfill	(tonnes) (AS)	14,780	11,661	-21.1	●
Waste to landfill per vehicle produced	(kg/unit) (VMs)	7.1	5.9	-16.7	●
<b>Vehicle use</b>					
Average new car CO <sub>2</sub> emissions	(g/km) (AC)	138.1	133.1	-3.6	●
<b>SOCIAL PERFORMANCE</b>					
Number of jobs dependent on the sector*	('000) (WI)	746	731	-2.0	●
Combined number of employees	(AS)	79,641	83,308	4.6	●
Number of lost-time incidents	(AS)	185	178	-3.8	●
Number of training days per employee	(AS)	3.2	2.7	-14.8	●

(WI) Whole industry data; (AC) All car registrations in the UK; (AS) All signatories; (VMs) UK vehicle manufacturer signatories; (CV) Commercial vehicles; (CO<sub>2</sub>) Carbon dioxide.

The report has 19 signatories which represent 95.6% of vehicle production in the UK. This includes three new signatories and two signatories becoming a single legal entity – Jaguar Land Rover Ltd.

The 2011 and 2012 data have been adjusted to take into account new signatories and enable year-on-year comparison.

\*Sector turnover, R&D and jobs dependent on sector are compiled from several official sources using expert SMMT analysis.

The 2011 data has been revised with more up-to-date information since the previous report and the 2012 figures are based on projections.

## Economic performance

- Off the back of increased demand, particularly for export, UK vehicle manufacturing rose 7.7%, with volumes sent overseas reaching record levels. Meanwhile total vehicle registrations rose 1.7%.
- Signatories' turnover increased by 17.5% to £58.2 billion while the automotive sector's manufacturing turnover increased by 2.8%.
- Automotive sector expenditure on R&D increased by 9.2%.
- Volatile Organic Compound (VOC) emissions from manufacturing cars and vans fell 0.2% and 1.4% respectively.
- Average new car CO<sub>2</sub> emissions in the UK fell 3.6% to 133.1g/km.

## Social performance

- The total number of jobs dependent on the sector fell 2.0%, but signatories' employment rose 4.6%. The number of lost time accidents dropped by 4%.
- The number of training days remains stable at 2.9 per employee.

## Environmental performance

- Almost all environmental performance indicators for manufacturing improved in 2012, except absolute water use.
- Energy use dropped 7.6%, waste to landfill fell 21.1% and water usage per vehicle declined 2.1%, despite increasing 5.2% in absolute terms.




# FOREWORD

SMMT's 14th Sustainability Report highlights the significant progress achieved across the sector in 2012, as industry continues to improve resource efficiency, boost output, invest in people and lead the decarbonisation of road transport.

The strength and breadth of this report grows year-on-year and I am delighted to welcome three new signatories: two are important in the supply chain, Michelin and Unipart Automotive, and the very well known Alexander Dennis which is a British success story in the bus sector.

In 2012, UK automotive continued to prove its value to the economy, with turnover increasing to £59 billion, manufacturing output reaching its highest volumes since the economic downturn and the new car market bucking the trend in wider Europe, rising 5.3%. The recovery in production volumes and recent high-value investment announcements helped direct employment in automotive manufacturing rise last year for the first time in several years, up some 2% to 146,000 people. In total our sector is investing millions annually on apprenticeships and training programmes to attract, develop and nurture talent, so there has never been a better time to join the already 700,000-strong workforce.

A strong and thriving supply base is fundamental to the future prosperity of the wider industry, and SMMT is working alongside the Automotive Council to ensure suppliers can access the £3 billion worth of new business opportunities highlighted last year. Suppliers are involved in all aspects of sustainability and this report seeks to showcase their performance using supply chain specific case studies highlighted with this logo: 

This is an incredibly exciting time for industry with the ever-expanding range of low carbon options available to motorists helping to drive down average new car CO<sub>2</sub> emissions. It is also very encouraging to note that the bus sector is increasing the utilisation of new technologies to minimise CO<sub>2</sub> emissions, cut costs and increase fuel efficiency. By the end of 2012, there were more than 800 hybrid buses on UK roads, supported by government's Green Bus Fund, with most built by UK-based bus manufacturers.

But it's not just in our products that we continue to make fantastic strides in improving our environmental performance. A focus on efficient and sustainable manufacturing processes is helping radically to improve performance across almost all environmental indicators. Energy use, water use per vehicle and the volume of waste going to landfill all fell significantly last year; however, overall water use increased slightly owing to increased production levels.

It is clear that we are moving in the right direction and taking the necessary steps towards a sustainable and successful future. We have seen unprecedented levels of investment during the last two years and it is this commitment to the UK industry that will maintain our global competitiveness and the sustainability of our sector well into the future. The signatories to this report are targeting further improvements and will maintain their momentum, leverage their investment through the supply chain and ensure further growth across the industry. They know that improving sustainability performance translates into rapidly improving business results.

Further data and analysis is available at: [www.smmt.co.uk/sustainability](http://www.smmt.co.uk/sustainability)



**Mike Baunton CBE**  
SMMT Interim Chief Executive



## SMMT achieves ISO 14001 accreditation

In 2012, SMMT achieved the internationally recognised ISO 14001 Environmental Management Standard for its Westminster headquarters. The last report noted that SMMT had been awarded the RICS Bronze Ska Certificate for the environmental performance of its office fit-out project.

ISO 14001 accreditation recognises the measures put in place for waste minimisation, prevention of pollution and as a basis for continual improvement for the future. SMMT monitors numerous performance indicators from energy and water use to waste and recycling. These factors, in addition to standards in place to monitor contractor activity, report on progress and communication with staff, will now form part of the organisation's on-going management practices.

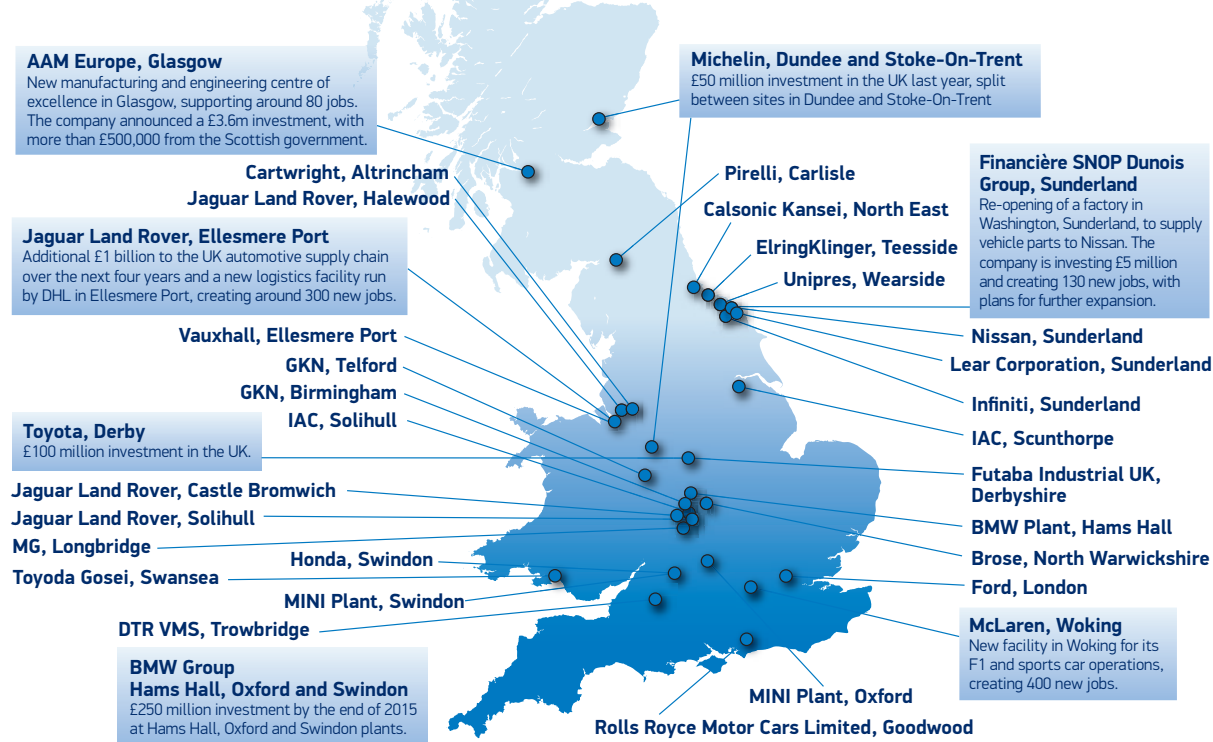
**SMMT joins 90% of report signatories that have an Environmental Management System in some or all sites.**

# BUSINESS PERFORMANCE AND INVESTMENT

The UK automotive sector recorded positive growth in the new car market and increased vehicle manufacturing in 2012. This helped boost sector turnover, despite the subdued domestic and European economic setting.

While vehicle markets have still some way to go to recover to pre-recession levels, vehicle and engine production is recovering more robustly. Industry anticipates further growth, although there are notable and significant challenges ahead.

## 2012 investment announcements



## Automotive investment - creating jobs, growth and new technology

Since 2011, global vehicle manufacturers have committed more than £6 billion to UK automotive, investing in facility expansion, new model programmes and R&D projects. This investment will secure and boost employment and production capacity in the UK for years to come. (See the graphic and visit [www.smm.co.uk/investment](http://www.smm.co.uk/investment) for details.)

strengths and opportunities for the UK that the forthcoming Automotive Sector Strategy will build on and exploit. One such opportunity is to encourage growth in the supply chain and tap into the £3 billion worth of opportunities identified by a recent Automotive Council report.<sup>1</sup>

Much of this investment will also ensure that the UK stays at the forefront of the transition to a low carbon economy. Through the Automotive Council, industry and government have set out a common agenda around the industrial

**£6 billion investments announced, creating a wealth of opportunities up and down the supply chain.**

## Nissan

### A record year for Nissan Sunderland plant

In 2012, total site investment reached £3.5 billion and the plant was awarded contracts to build the new Nissan Note, the next-generation Qashqai, and a new compact model under the luxury Infiniti brand.

The year began with a recruitment campaign to support future production of the 100% electric Nissan LEAF and its lithium-ion battery. The year ended with a headcount of over 6,000 staff for the first time in the Sunderland plant's 26-year production history.

Nissan's Sunderland plant built 510,572 cars in 2012; the first time a UK car plant has made more than half a million units in one year. Nissan's Sunderland facility remains the UK's biggest car producer for a 15th consecutive year, building one in every three cars produced in the UK. The plant has also been the UK's biggest car exporter for the past 13 years, and during 2012 exported its five millionth vehicle.





# BUSINESS PERFORMANCE AND INVESTMENT

## UK automotive manufacturing

Automotive manufacturing sector turnover increased 2.8% in 2012 to £59.3 billion, the highest ever reported, almost a 10% increase on the 2007 pre-recession level.

**Vehicle manufacturing, up almost 8% and car registrations up 5% in 2012, despite on-going challenges in the wider economy.**

UK vehicle production rose for a third successive year in 2012, with growth in car manufacturing leading the recovery. The UK was the only one of the big five producing nations in the EU27 to record an increase in car production in 2012.

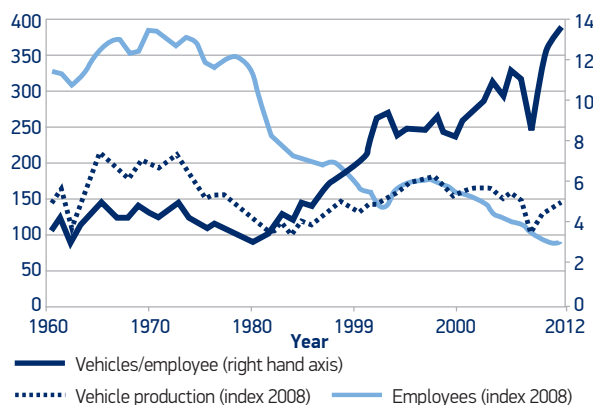
UK car manufacturing climbed almost 8% in 2012 with a 15.5% rise in output for the home market and a 7.7% increase in export volumes. Export growth was supported by increased demand in markets around the world, particularly China, Russia and the US. Production for the EU fell, but volumes still accounted for almost half of UK exports. Continuing economic instability in eurozone countries will affect the production outlook going forward, particularly for manufacturers that see the EU as their key market.

## Engine manufacturing

In 2012, the UK produced almost 2.5 million units, just 0.3% below the level produced in 2011, but still some 20% above the two million made in 2009. 70% of engines made in the UK were exported. Ford, the largest engine producer in the UK,

CV production continues to struggle against difficult economic conditions both in the UK and in Europe, with volumes falling 6.8% in 2012.

## Productivity in the UK motor industry (indexed to 2008)



**The number of vehicles produced per employee has quadrupled since 1970 due to consolidation, streamlining and automation of production processes.**

accounted for over 60% of volumes. With Jaguar Land Rover building its new engine plant in Wolverhampton and other manufacturers announcing investment in their plants, the outlook remains positive for domestic engine manufacturing.

**Table 1 - UK export, engine, vehicle production data and registrations, volumes in '000s**

	2007 (‘000s)	2009 (‘000s)	2011 (‘000s)	2012 (‘000s)	% ch 12 v 07	% ch 12 v 11
Export of UK-built vehicles	1,317	829	1,194	1,275	- 3.2	6.8
Engine Production	3,167	2,053	2,504	2,495	- 21.2	- 0.3
Car Production	1,535	999	1,344	1,465	- 4.5	9.0
CV Production	216	91	120	112	- 48.1	- 6.8
New Car Registrations	2,404	1,995	1,941	2,045	- 14.9	5.3
New CV Registrations	392	225	306	289	- 26.3	- 5.7

## New vehicle registrations

New car registrations rose 5.3% in 2012 to 2.045 million units, despite the subdued economic setting. CV registrations fell in 2012, having recovered in 2010 and 2011. Light CV registrations (up to 3.5 tonnes), which account for eight out of every 10 CV registrations, fell 7.9% in 2012 and were 29% below 2007 levels. The total bus and coach market increased 12.4% in the year, boosted by government incentive programmes and orders linked to extra capacity requirements for the London 2012 games.

## Taxation

UK automotive has voiced its concerns about proposed radical changes to current vehicle taxation programmes, as motorists and industry will not be able to react to modifications efficiently. For example, changes announced in

Budget 2012 to remove the electric vehicle exemption in the Company Car Tax regime had an immediate and unsettling impact on demand, although ultimately the sector grew after recovery later in the year. SMMT welcomed the subsequent announcement in Budget 2013 to continue to incentivise electric vehicles in the Company Car Tax regime, and the commitment to take a longer term and more pragmatic view on the wider motoring tax regime.

Encouraging the uptake of emerging ultra-low carbon technologies will help to drive UK manufacturers and supply chain companies to invest, research and, ultimately, deliver these products. At the same time the market for conventional fuels, and particular types of niche vehicles that contribute to a significant volume and value to the UK motor industry, should not be unduly penalised. Ensuring a balance between industrial policy and carbon targets will ensure a sustainable motor industry in the UK.

## MANUFACTURING PERFORMANCE

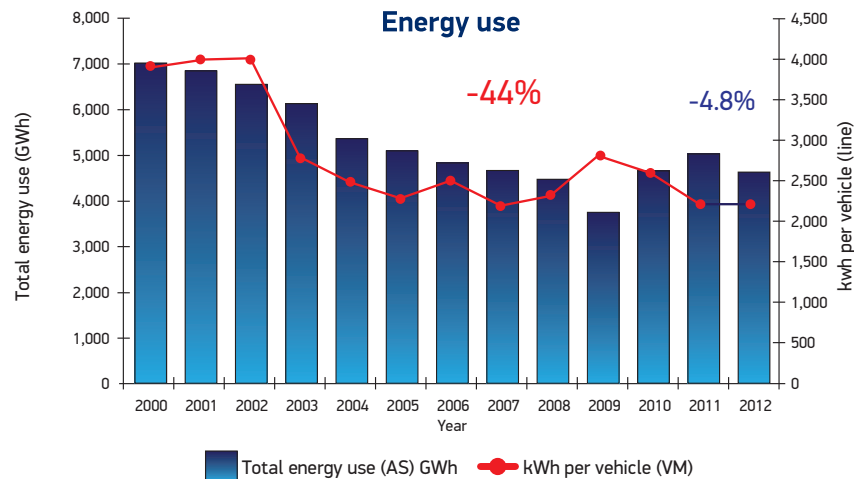
Automotive manufacturers continually strive to improve the production process and ensure vehicles are made as efficiently as possible, to reduce costs, improve competitiveness and to minimise the impact on the environment. Delivering efficiency gains can be costly, especially when some of the more energy intensive equipment has long replacement cycles, eg paint shops. However, the sector is dedicated to further reduction of manufacturing emissions.

**CO<sub>2</sub> from manufacturing fell 11.2% in 2012 and is down 40.3% since 2000.**

### Energy and CO<sub>2</sub>

- Energy consumption for all signatories dropped by 7.6%. Energy per vehicle manufactured reduced by 4.8%
- CO<sub>2</sub> emissions showed a similar trend, down 11.2% for all signatories and 3.2% per vehicle.
- Since 2000, energy consumption per vehicle has fallen 44% and CO<sub>2</sub> emissions have declined 40.3%.

*The 2011 and 2012 figures have been adjusted to take into account new signatories.*



### Renewable energy

The sector is looking to renewables further to reduce emissions from manufacturing. It has a strong track record in renewables, with 27,700 MWh generated by installations at automotive facilities in 2012, enough to power 6,700 homes. Signatories also purchased 242,000 MWh of green energy produced from renewable energy sources. With a wide range of renewable energy sources already utilised from solar panels and wind turbines to biomass, the sector looks to government to help further encourage the take-up of renewables.

#### Bentley

##### Bentley installs largest UK solar rooftop system

In 2012, Bentley began installing 21,000 solar panels, to reduce its carbon footprint and cut costs. The panels cover about 34,500m<sup>2</sup> of roof, equivalent to five-and-a-half football pitches, and have the potential to generate 5.1MWh of renewable electricity. When the solar array starts up, the company expects it will generate enough electricity to power approximately 1,000 homes.



#### Michelin

##### Michelin invests in renewable energy

In 2012, Michelin installed two wind turbines at its truck and bus tyre plant in Ballymena, Northern Ireland. It is now operational with capacity of 4.6MW, which will significantly reduce the company's dependence on conventional carbon-emitting fuels, and any surplus electricity will enter the local grid. Similar turbines were installed at Michelin's Dundee manufacturing plant in 2006, and since then they have produced 43MWh of renewable energy, enough to power more than 10,000 homes a year. The turbines currently provide around 30% of the electricity required for the factory.



## Energy efficiency schemes in the UK

SMMT members conduct extensive energy monitoring to comply with a range of schemes, such as the EU Emission Trading Scheme (EU ETS), the Climate Change Agreement (CCA) and Carbon Reduction Commitment (CRC). SMMT and its members remain concerned about rising energy costs and the complexity of the multiple schemes designed to encourage energy efficiency, which add regulatory burden, and consequently are detrimental to the UK's overall business environment. Ideally, automotive manufacturing sites would have the entire site covered by a single energy efficiency scheme such as the CCA, which would include, where applicable, compliance with the EU ETS element. This would enable sites to invest wherever is most effective across the whole site.

**The SMMT Climate Change Agreement will improve members' energy efficiency 15% by 2020, on top of a 51% reduction achieved under the original CCA**

## BMW

### Certification of BMW (UK) Ltd's GHG emissions

BMW (UK) Ltd has met the requirements of CEMARS® (Certified Emissions Measurement and Reduction Scheme) having measured its greenhouse gas emissions in accordance with ISO 14064-1:2006. As the automotive sector leader in the Dow Jones Sustainability Index, BMW Group is committed to managing and reducing its emissions from the operational activities of its UK sales subsidiary. This has been a complex process including the assessment of energy and resource use, waste production and the impacts of travel and vehicle distribution to the company's dealer network. BMW (UK) Ltd has committed to continue to monitor its total greenhouse gas impacts and to strive to reduce its emissions over the next five years, relative to the turnover of the business.



## GKN

### GKN Driveline's European Environment Team

GKN Driveline has formed a European Environment Team with representatives from each plant in the region. A workshop was held in Birmingham in February 2012 to share best practice, develop relationships and agree key actions for the coming year to reduce energy consumption. The focus was on quick wins to prove the benefit of this approach. A key outcome from the workshop was the identification of an opportunity to introduce 22 or 30 W LED lighting to replace the T8 fluorescent lamp technology, enabling up to 70% reduction in energy usage. The lights can also be retrofitted, which means that existing lamp holders and fittings can be used, enabling the economic replacement of T8 tubes.

Consequently the retrofit LED lighting project across all plants started in 2012 and will be completed in 2013. The completed project for the UK Birmingham plant will have an annual saving of over 1,000 MWh, which equates to heating over 200 homes for a year or a £100,000 cost saving.



## Guidance for reporting freight GHGs within the automotive industry

Greenhouse gas (GHG) reporting is becoming an increasingly important topic for the vehicle manufacturing industry's own freight activities due to enquiries from external customers and public bodies, and because vehicle manufacturers are keen to account for all aspects of their GHGs.

Building on existing methodologies, Odette, the automotive industry's standards organisation, developed reporting guidelines specifically for the sector in 2012. It aims to help companies adopt a consistent approach that will support recent and future standards as well as legislative requirements.

The overriding principle must be that methods used are transparent and should be based on publicly recognisable approaches. Odette's six steps to success are:

- Identify your reporting objectives.
- Understand the sources of your emissions.
- Gather data as accurately as you can.
- Use publicly acknowledged calculation methods and emissions factors.
- Record the methodology used and assumptions made within your report.
- Align as much as possible with general recommendations given in the Odette Guidelines.

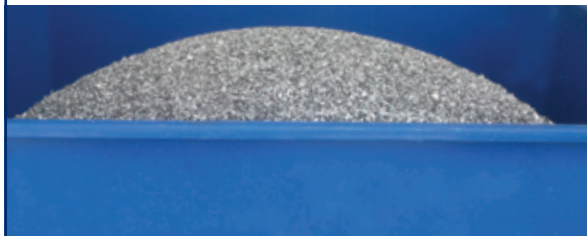
See <http://odette.org>

## Toyota

### Toyota further improves its resource efficiency and carbon footprint

Following its zero waste to landfill achievement in 2002 and zero waste to incineration in 2008, Toyota's UK Manufacturing operation continues to focus on resource efficiency as part of its sustainable manufacturing activities. Toyota recently studied the aluminium machining swarf (shavings) that it was sending offsite for recycling into ingots, which could then be re-melted into engine blocks and components. By reducing coolant contamination, drying the swarf with heat recovered from the furnace and re-melting it on site, the aluminium yield increased from 70% to 93% and 10% of the coolant waste was recovered. Consequently reprocessing costs decreased by 40% and energy intensity of its activities were improved.

Toyota (GB) also set a formal target to reduce the carbon footprint of its retailers by 20% by 2014 compared to a 2009 baseline. To meet the annual reduction targets, Toyota (GB) developed a formal Carbon Reduction Action Plan, resulting in the majority of sites being equipped with smart meters and monitoring systems. By the end of 2012, Toyota and Lexus Centres reduced the carbon footprint of their facilities by 15%.



## Perkins

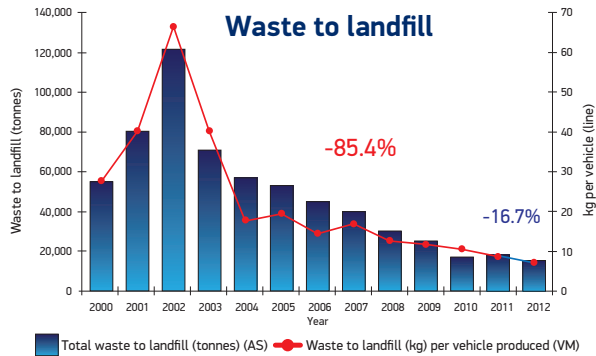
### Zero to landfill from Perkins, Peterborough

In recent years, Perkins has run a global project to increase recycling at all its sites. The Eastfield facility near Peterborough has actively led the way in increasing recycling rates and in 2012 successfully achieved 100% diversion from landfill, almost eight years ahead of the corporate 2020 target. A number of programmes have been put in place at the facility to support recycling efforts and drive down an overall reduction in waste, such as the introduction of an effective waste segregation system; diverting food waste for composting and sending any non-recyclable waste to be converted to fuel. Work is already under way at the Peterborough site to reduce the overall amount of waste produced across the business. Further improvements in segregation are targeted through waste stream mapping.

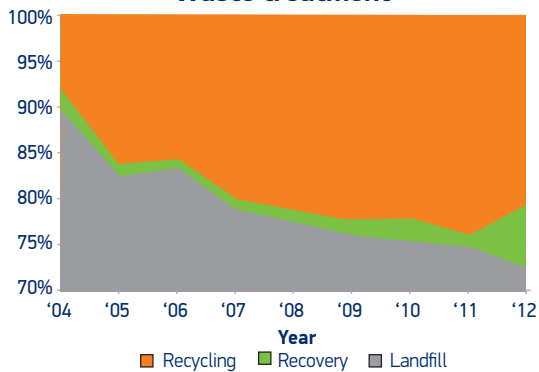


## Waste

Signatories also reduced waste to landfill per vehicle by 16.7% on 2011 and 85.4% since 2000. The absolute amount of waste to landfill also dropped by 21.1% in 2012 for all signatories and 9.7% for vehicle manufacturers, despite a significant increase in vehicles produced.



## Waste treatment



This impressive performance has been driven by a number of signatories' sites meeting their zero waste to landfill targets (Honda, Leyland Trucks, Perkins, Toyota and VW Group) but also by implementation of recycling, recovery and waste minimisation practices to move waste up the hierarchy of waste management options (see right). In 2012, only 2% of signatories' waste was sent to landfill (falling from 20% in 2004) and the remaining 98% was recycled or recovered.

## UK waste hierarchy



**Water use fell 2.1% and waste to landfill declined 17% per vehicle.**

## Water

Water use per vehicle dropped 2.1%. However; due to a significant rise in vehicle manufacturing, absolute water use increased 5.2%.

## VOCs

Optimisation of car and van painting processes resulted in a 0.2% and 1.4% drop in respective VOC emissions to bring further below the legal requirements.



## Leyland Trucks

### Leyland Trucks moving towards paperless production system

Leyland Trucks produces over 500 different model variants of DAF LF, CF and XF model ranges on one assembly line, with countless minor options adding to the enormous complexity and variation in build specifications. Until recently, assembly operators were reliant on a paper-based system of build instruction broadcasts, sequence queue reports, training aids and build quality records. These paper systems are now being replaced by an Electronic Work Instruction (EWI) system.



During 2012, over 100 EWI stations have been implemented with touch-screen monitors configured to display real time build details and enable the operators to record any defect and material shortage information instantly. So far, approximately two-thirds of the required 176 touch-screen terminals have been installed, with the remainder planned for completion by summer 2013. This is a major step towards the realisation of the vision of a truly paperless factory.

See also the SMMT Dealer Energy Efficiency Guide, which includes tips for saving energy, water and waste management: [www.smmt.co.uk/industry-topics/environment/dealer-energy-efficiency](http://www.smmt.co.uk/industry-topics/environment/dealer-energy-efficiency)



## RE-USE, RECYCLING AND RECOVERY OF END-OF-LIFE VEHICLES (ELVS)

The UK automotive industry is not only committed to sustainable manufacturing, but also to be responsible for a vehicle at the end of its life cycle. Vehicle manufacturers' recycling networks have achieved the 85% (by weight) recycling/recovery target imposed by the End-of-Life Vehicle Directive since its introduction in 2006.

### Recent investments pave the way towards 95% recovery of ELVs from 2015.

The automotive industry also supports the recycling industry's recent progress towards implementing the new post-shredder processes that will meet the challenging 95% ELV recycling/recovery target by 2015, 10% of which can be met through energy recovery. As a result of cooperation between automotive service providers Autogreen and CarTakeBack and the recycling industry, the following projects have been developed:

- a 40MW gasification facility at Oldbury in the West Midlands by Innovative Environmental Solutions (a joint venture between Chinook Sciences Ltd and Autogreen's ally EMR). The plant, the first of its kind, has been designed to achieve recycling rates beyond the impending 95% target and will be operational well ahead of the 2015 deadline.
- automotive shredder waste advanced processing plant (SWAPP) in Manchester – developed by Axion Polymers with a multi-million pound investment from CarTakeBack shareholder S Norton & Co Ltd. This can achieve the 95% target today, thanks to bespoke UK research and development in post-shredder technology, with potential for closed loop recycling.

Further detail is on the SMMT website.

*All data and graphs are available online for 2012 performance in energy, CO<sub>2</sub>, water, VOC and waste to landfill and recycling.*

## Audi

### Audi develops sustainable showrooms

Audi UK is developing new showrooms with sustainability at the heart of the design to go beyond mandated requirements. During 2012, new Maidstone and Swindon Audi showrooms opened, both boasting a range of features that include the use of A-rated materials, low impact paints and varnishes, rainwater harvesting for use in WCs and landscape watering, permeable paving and sustainable drainage system (SUDS) as well as solar thermal water heating.

The Swindon site also incorporates photovoltaic panels and LED lighting, whereas Maidstone aims to increase its biodiversity through a green roof and wall and manage more of its own waste on site through a water treatment plant and on-site composting.

Audi UK and the Building Research Establishment (BRE) have developed an Efficiency Guide for existing Centres as well as a Design Guide for new or refurbished ones.



## VEHICLE PERFORMANCE

### Widening vehicle choice

The most significant impact of a vehicle's life cycle is when it is in use, rather than the production or end-of-life phases. Therefore, vehicle manufacturers have invested heavily to bring more efficient, lower CO<sub>2</sub> vehicles to market. This ensures manufacturers remain competitive, meet consumer expectations and deliver the EU New Car CO<sub>2</sub> Regulation targets.

In 2012, UK average new car CO<sub>2</sub> emissions fell by 3.6% to 133.1g/km. These improvements have come from significant R&D expenditure in both internal combustion engines (petrol and diesel) and alternative power trains (electric, hybrid, etc), as well as improvements in aerodynamics, weight-saving, energy recovery systems and more efficient components.

Improvements in CO<sub>2</sub> performance have had to be achieved alongside measures to reduce other regulated emissions and improve vehicle safety, performance, comfort, refinement and reliability. These attributes are difficult to progress in unison but have been achieved nonetheless.

The table below demonstrates an increasing availability of lower carbon vehicles.

**Growing availability of low carbon vehicle options, eg rising from seven at or below 100g/km CO<sub>2</sub> in 2007, to 322 in 2012.**

**Table 2 - SMMT new car CO<sub>2</sub> database, number of variants by selected CO<sub>2</sub> bands**

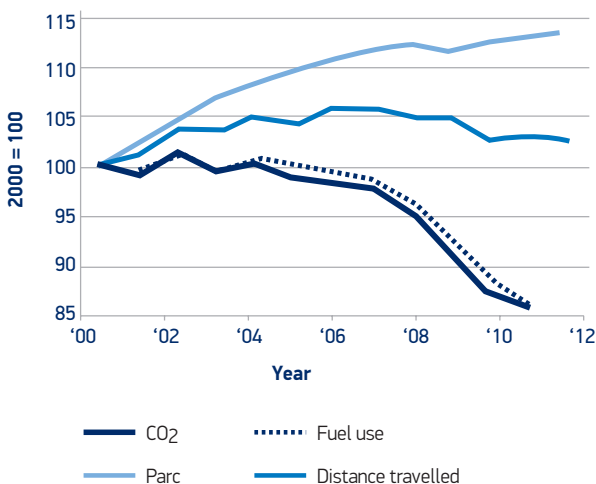
CO <sub>2</sub> /g/km	0	<=75	<=95	<=100	<=130	Over 200	Total
2007	4	4	6	7	482	2,420	7,208
2011	10	12	85	172	1,848	797	7,610
2012	15	19	151	322	2,425	683	7,899

Alternatively-fuelled cars accounted for 1.4% of the total new car market in 2012. Petrol-electric hybrids dominate the AFV market, but new types of powertrains appeared in 2012, such as the plug-in electric hybrid, range extender electric and diesel/electric hybrids. In 2012, a plug-in vehicle won the European Car of the Year award for the second year running.

The number of diesel cars in use passed 10 million units for the first time in 2012 and over one million diesel cars were registered in 2012, taking a record 50.8% share of the new car market, up from 14.1% in 2000.

As a result of the continued improvement in fuel efficiency, total CO<sub>2</sub> emissions from all cars in use (the parc) have fallen in all except one year since 2000. A new car is some 20% more fuel efficient than the average car in use and some 30% more efficient than a car reaching the end of its life. Since 2007, emissions have fallen by 12%, showing a step-change in the pace of change in average new car CO<sub>2</sub> emissions. The reduction in CO<sub>2</sub> emissions in 2011, at 1.8%, was the lowest since 2007 and reflected a rise in distance travelled, a trend which reversed in 2012.

### CO<sub>2</sub> emissions from all cars in use, fuel, parc and distance travelled



Further information on vehicle environmental performance (alternative fuels, petrol, diesel, alternative powertrains) can be found in SMMT's New Car CO<sub>2</sub> Report 2012 [www.smmt.co.uk/co2report](http://www.smmt.co.uk/co2report).

## EC review of the car and van CO<sub>2</sub> regulations

Having established the 2020 targets for CO<sub>2</sub> from cars and vans (2009 and 2011 respectively), the European Commission made a proposal in 2012 to review the modalities (detailed rules) for achieving them. The European Parliament and Council are debating the proposal and the amendments they wish to make in 2013.

SMMT believes the 2020 targets remain very ambitious and that stability is vital to the success of the EU CO<sub>2</sub> strategy as well as to research, development and deployment.

SMMT welcomes the Commission's proposals to retain eco-innovations and reinstate super-credits for low carbon vehicles. Additionally, SMMT is supportive of the Commission's updated approach to niche and small volume derogations in light of experience, which recognises the importance of diversity in the market.

The industry looks forward to working with the Commission to develop a separate and evidence-based policy for the period beyond 2020.

## Volvo

### Volvo V60 Plug-in Hybrid – highest-ever safety score for an electrified car in Euro NCAP

The new Volvo V60 Plug-in Hybrid has achieved the highest-ever Euro NCAP score for an electrified car. The five star result, which included a frontal off-set collision at 64 km/h (40 mph), demonstrates that the V60 Plug-in Hybrid has the same high safety level as the standard V60.

The integration of the battery pack and its additional weight required unique safety considerations during the development of the V60 Plug-in Hybrid. The structure has been modified and reinforced to enable a controlled deformation to help deliver the high safety standard. The battery pack in the V60 Plug-in Hybrid is well encapsulated and located under the load floor.

## Alexander Dennis

### Advanced hybrid buses from Alexander Dennis

Alexander Dennis outsold all other competitors put together in the Green Bus Fund in 2012 with the Enviro400 hybrid. Even so, the UK's leading bus manufacturer launched significant enhancements to its market leading hybrid products in 2012. The powertrain now features an advanced engine stop-start system that allows the engine to be automatically switched off as the bus approaches a bus stop, and remain off even after the bus has pulled away. The pure electric driving mode, developed with powertrain partner BAE Systems, paves the way for further electrification in the future using the latest generation of battery technologies.



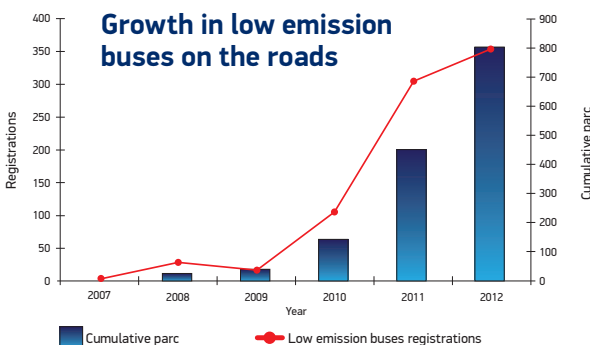
## Low carbon buses

The UK has been setting the standard in Europe for the deployment of low carbon technologies in the city bus market. Close collaboration between industry and government led to the development of a Green Bus Fund for buses that can demonstrate 30% less CO<sub>2</sub> emissions than a standard diesel bus.

Already, over 800 certified low carbon buses have been introduced to UK towns and cities such as Glasgow, London, Newcastle, Oxford and Perth, with the numbers growing month by month.

UK-based manufacturers have taken the lion's share of low carbon bus sales. With this expertise, UK bus manufacturers are well placed to expand into export markets as other countries take up the global challenge of reducing CO<sub>2</sub> emissions.

*(Ref Source: industry estimate - Green Bus Fund and Scottish Green Bus Fund volumes).*



**The UK is setting the standard for low carbon buses, with 800 on the road and rising.**

## Bus technology roadmap

The Automotive Council's car and CV consensus technology roadmaps have been instrumental in focusing research and strategic priorities, see [www.automotivecouncil.co.uk/what-we-do/reports](http://www.automotivecouncil.co.uk/what-we-do/reports). In 2012, LowCVP set out to build on this with a roadmap of low carbon technologies suitable for urban buses, both in the short and longer term to 2050. The roadmap is supported by the Automotive Council.

It identifies strategically important technologies that could benefit from economies of scale with the wider heavy-duty vehicle market but, with the focus for the CV sector on long haul and regional delivery duty cycles, recognises that specific action may be required to pull through urban bus-specific technologies.

In the near-term, while many alternative fuel options exist for buses, only natural gas or biomethane have the potential for mass market penetration. Others pay back in less than five years; however, to meet the longer term CO<sub>2</sub> targets, the development of advanced technologies for buses is needed, in parallel with improvements to internal combustion engines.

The bus technology roadmap is available at [www.lowcvc.org.uk/lceb](http://www.lowcvc.org.uk/lceb)



# AUTOMOTIVE SUPPLY CHAIN

This new chapter reflects on the importance of the supply chain in all three pillars of sustainability: economic, environmental and social performance. Case studies are therefore spread throughout the report and are highlighted with the supply chain logo:



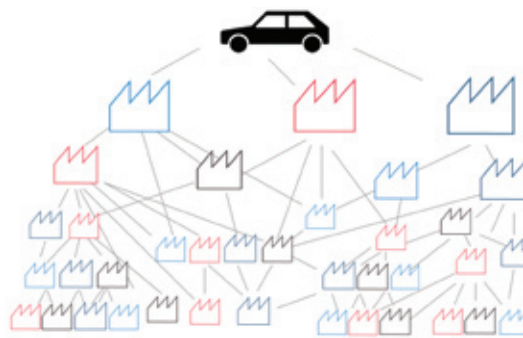
The automotive supply chain that underpins the assembly of cars and CVs is both far reaching and complex. In the UK there are around 2,350 automotive suppliers, employing 82,000 people (2009 data).

This supply chain covers the manufacture of essential components, sub-assembly and re-manufacturing activities as well as the intricate functions involved in outbound, inbound and aftermarket logistics.

Put together with packaging and recycling activities, the supply chain overshadows final assembly in terms of both scale and complexity.

The scope and scale of the supply chain starts to emerge when one appreciates that each vehicle can have up to 80,000 separate components and sub-components,

## Automotive Supply Chain



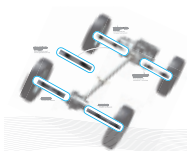
and an automotive aftermarket warehouse for a vehicle manufacturer might stock 250,000 separate part numbers. There are in fact seven tiers in the supply chain from raw materials through to finished fully assembled vehicle.

The supply chain is constantly evolving to adjust to changing client requirements and respond to the pressure of competition from lower cost locations.

## Supply chain key performance indicators

The diversity and complexity of the supply chain makes it difficult to identify the best way to measure the performance and efficiency of the various companies involved. Signatories' activities vary from production of engines for hydraulic excavators, automotive parts such as constant velocity joints, lamp clusters, prop shafts and tyres through to transport of chassis, tailpipes and engines etc.

**The UK boasts around 2,350 automotive suppliers which support 82,000 jobs.<sup>1</sup>**




SMMT's supply chain signatories considered various measures and decided the best proxy for productivity was the total weight of units produced/shipped. Efficiency KPIs were captured for energy and water consumption and for waste and CO<sub>2</sub> production, measured against weight of product shipped.

The KPI data for the supply chain signatories are included in the report summary table on page 2 (WI and AS), but the table on the next page focuses on the environmental performance of the supply chain to reflect the specific nature of their activities.

		2011	2012	Percentage change 2012 on 2011	
<b>SUPPLY CHAIN KPI'S</b>					
Weight of product produced/shipped	(tonnes)	401,922	330,097	-17.9	●
<b>Production inputs</b>					
Total combined energy use	(MWh)	628,615	495,469	-21.2	●
Energy used per weight of product produced/shipped	(MWh/unit) (VMs)	1.56	1.50	-4.0	●
Total combined water use	(m <sup>3</sup> )	777,000	774,000	-0.4	●
Water use per weight of product produced/shipped	(m <sup>3</sup> /tonne)	1.9	2.3	21.3	●
<b>Material output</b>					
Total combined CO <sub>2</sub> equivalents	(tonnes)	207,995	152,118	-26.9	●
CO <sub>2</sub> per weight of product produced/shipped	(tonnes)	0.52	0.46	-11.0	●
Total combined waste to landfill	(kg)	1,826,000	804,000	-56.0	●
Waste to landfill per weight of product produced/shipped	(kg/tonnes)	4.5	2.4	-46.4	●

# AUTOMOTIVE SUPPLY CHAIN

- The slowdown in supply chain production levels since the recession continued in 2012.
- Almost all absolute and relative environmental KPIs improved, as shown by the traffic light indicators. See case studies of activities that contributed to this success: Michelin page 6, GKN, page 7 and Perkins, page 8. 
- Annual water usage remained stable, reflecting a base load of consumption, for instance maintenance and some activities remain operational during stoppages.

## Vauxhall

### Vauxhall's business continuity certification brings confidence to customers and suppliers

Vauxhall Motors added the highly coveted BS25999 certification to its portfolio, already containing Top Employer and Investors in People certification. BS25999 is accredited to organisations with various measures and processes in place, endeavouring to maintain continuity of supply in adverse situations such as natural disasters or terrorist attacks, as well as minor instances such as ice and snow blocking local road networks. To gain BS25999 accreditation, Vauxhall had consistently to implement various measures and processes throughout the organisation, many of which involved employees and other stakeholders across its various sites.



## Supply chain opportunities for growth after the recession

Efficient supply chains are critical to the success of the wider automotive industry. They are extensive, complex and face significant challenges. SMMT, the vehicle manufacturers and Tier 1 suppliers are committed to increasing local sourcing practices and have been working with suppliers at every level of the supply chain to ensure that the UK is well positioned to be a world leader in vehicle production and development. A crucial factor in driving growth and attracting inward investment to the industry is a strong and capable supply chain.

Given their importance, the inclusion of more key suppliers in this year's Sustainability Report is another step towards addressing the challenges faced by the supply chain. A period of modest growth peaked in 2005, but the number of supply chain businesses fell sharply through the recession, as sales fell 25% and value added was one third down. In 2012, global vehicle manufacturers continued to invest heavily in UK automotive, creating a wave of new business opportunities at every level of the supply chain.

The Automotive Council report Growing the Automotive Supply Chain: The road forward identified more than £3 billion of annual opportunities available for suppliers wishing to invest in the UK. To maximise these opportunities UK automotive suppliers need:

- Access to specialist finance options to support growth.
- To build a globally-competitive skill set.
- To invest in innovation, R&D and capital equipment.
- To achieve world class quality, cost and delivery.

**For every job in vehicle assembly, there are 7.5 in the supply chain and wider economy.**

See [www.smmt.co.uk/supply-chain](http://www.smmt.co.uk/supply-chain)

## Addressing key competitiveness challenges



To increase dialogue between vehicle manufacturers and suppliers at every level of the supply chain, SMMT hosted more than 300 one-to-one meetings in 2012 at its Meet the Buyer event in the West Midlands to encourage greater levels of local sourcing.

SMMT also hosted a Meet the Funder event in November 2012. This was in response to key recommendations made in a report commissioned by SMMT earlier in the year. The Give them some credit! report identified the barriers to funding and growth constraints affecting the UK supply chain.



Fuel Economy		VED band and CO <sub>2</sub>	
<b>CO<sub>2</sub> emission figure (g/km)</b> 		<b>A 27 g/km<sup>(1)</sup></b> (weighted)	
<b>Fuel and electricity cost (estimated) for 12,000 miles</b> A guide price for comparison purposes is calculated using the combined drive cycle (town centre and motorway) and average fuel and electricity price. Fuel consumption for plug-in hybrid vehicles is measured in two conditions, one with the battery freshly charged and another where it is significantly depleted. A weighted average of the two figures obtained is calculated based on an assumption that a vehicle is driven 16 miles (25km) beyond its maximum electric range, using the engine as required without recharging. Cost is recalculated annually. Unit cost as at March 2013: petrol £1.38/litre, electricity 14.5p/kWh.		Fuel <b>£320</b>	Electricity <b>£364</b>
		Total <b>£684</b>	
<b>VED for 12 months</b> Vehicle Excise Duty (VED) or road tax varies according to the CO <sub>2</sub> emissions and fuel type of the vehicle.		1st year rate <b>£0</b>	Standard rate <b>£0</b>
Energy consumption: <b>235.4</b> Mpg and <b>4.8</b> Miles/kWh <sup>(3)</sup>		Electric range: <b>52</b> Miles <sup>(2)</sup>	

VED) or road tax varies according to the CO<sub>2</sub> emissions and fuel type of the vehicle.

Energy consumption: **235.4** Mpg and **4.8** Miles/kWh<sup>(3)</sup>

## New car CO<sub>2</sub> label extended to plug-ins

In anticipation of pure electric vehicles coming into scope of the Labelling Directive 1999/94/EC in early 2013, SMMT and several manufacturers worked through 2012 with DfT and LowCVP to adapt the existing showroom label for pure electric and plug-in hybrid cars. Since then, the new designs have been rolled out as these new technologies come to market. The same rules about adverts and promotional materials containing CO<sub>2</sub>/MPG data now apply to EVs and PHEVs as for conventional vehicles.

In 2012 LowCVP also completed a research study to inform future EU discussions about how the colour-coded fuel economy label could be developed in future. The key results and recommendations of the study were:

- Consumers prefer 'miles-per-gallon' to CO<sub>2</sub> data.
- Fuel costs expressed in 'pence per mile' are preferred to a three-year total.
- The label could include a comparison with the best and worst vehicle in the same model range.
- Use a Quick Response (QR) code to link the label to more information online.
- Car buyers have a very poor understanding of kiloWatt-hours (kWh), which suggests that there are challenges ahead in terms of labelling plug-in vehicles.

## Tyre labelling - mandatory from November 2012

The EU Tyre Labelling Regulation 1222/2009 helps customers make informed purchasing decisions by requiring information to be provided on replacement tyres' fuel efficiency, wet grip and external noise. This also applies where customers are offered a choice between different tyres for a new vehicle. There is a 7.5% improvement of fuel economy and 30% better braking distance between best and worst rated car tyres. If all cars were fitted with low rolling resistance tyres, direct emissions of eight million tonnes of CO<sub>2</sub> per year would be saved.<sup>2</sup>

**More informed purchasing decisions are made possible by the new tyre label, which explains the fuel efficiency, safety and external noise level of tyres on sale.**



To find out more about tyre labelling, visit:  
[www.tyreindustryfederation.co.uk/tyre-labelling](http://www.tyreindustryfederation.co.uk/tyre-labelling)

## Used car CO<sub>2</sub> label downloads doubled

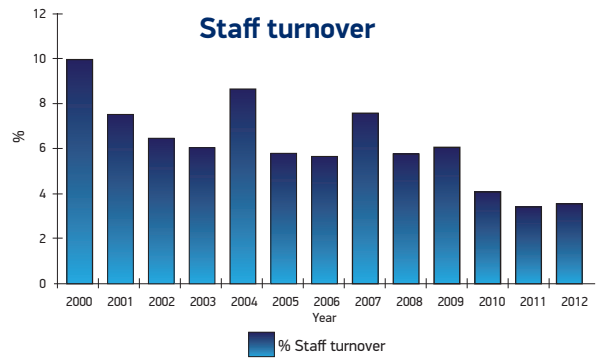
SMMT was closely involved in ensuring a smooth handover of the used car CO<sub>2</sub> label system from VCA to HPI and Experian and in raising awareness in the industry during 2012. Many dealers already use HPI or Experian to check for outstanding finance etc as part of the standard pre-sale checks for marketing a used car, so printing the label can become integrated into standard practice.

By the end of 2012, HPI and Experian were producing more than double the number of labels the VCA were earlier in the year. HPI and Experian produced 1.8m used car labels between April and December and saw a monthly peak of 234,434 labels produced in October.



# PEOPLE AND COMMUNITIES

A flexible workforce with world-class skills is vital to the competitiveness of the UK automotive sector. 731,000 jobs are directly dependent on the sector. Employment in automotive manufacturing is up 2% to 146,000, reflecting the recovery of production volumes, recent investment announcements and new models awarded to UK plants. This growth also presents serious skills challenges for industry, particularly in the supply chain, and UK automotive has prioritised areas to focus on to address present and future skills gaps. These priorities include increasing the quality of the pipeline of talent into the sector at apprentice and graduate level, to initiatives which provide clear guidance on the wealth of career paths and opportunities.



Signatories also improved staff retention, resulting in staff turnover reaching a new low of 3.6%.

In 2012, the number of lost time accidents dropped by 3.8% and reached 2.2 per 1,000 employees.

The number of training days per employee formally recorded declined to 2.7 training days, which represents a 15% drop. However, this performance is very much in line with pre-recession levels and may reflect increasing levels of less formal training such as e-learning, training on the job, toolbox-talks and mentoring.

## Jaguar Land Rover

### Jaguar Land Rover sponsors The Big Bang Fair

In March 2012, Jaguar Land Rover was one of the key sponsors of the annual Big Bang Fair, the largest celebration of science, technology, engineering and mathematics (STEM) for young people in the UK. The Big Bang Fair provided an opportunity for Jaguar Land Rover to address the UK shortage of engineers, who are essential for business growth. With 56,000 visitors, the event made science and engineering practical and fun by giving children lots of hands-on experience, including a chance to design a solar-powered water heater, explore radioactivity with a real Geiger counter and carry out a mock hospital operation. Jaguar Land Rover's stand highlighted how exciting engineering careers can be, through its interactive Technology Asset which included the Jaguar C-X75 and Land Rover DC100 concept vehicles on show.

More than 250 Jaguar Land Rover graduates led tours around the event, and Jaguar Land Rover engineers and apprentices were on hand to talk about the exhibits and their career experiences. A survey found that 90% of 8-11 year olds felt they had learned more about science at the fair, and 76% of 12-14 year olds viewed engineering more positively as a result of their visit.



## Mercedes-Benz

### Mercedes-Benz invests in training

Mercedes-Benz UK has invested £2.1m in new facilities that provide industry-leading training for young people to become Mercedes-Benz qualified technicians and parts advisors. The site was opened by HRH Duke of York and became fully operational in April 2012.

In 2012, 159 apprentices joined the Mercedes-Benz Apprentice Programme, from a total of 11,500 applications. The programme has recently been awarded a Grade One Outstanding for the Outcomes of Learners by Ofsted. In total, 1,200 apprentices have graduated from the programme since 1995 and 60% of those who graduate are still with Mercedes-Benz 10 years on, many progressing to senior positions. The apprentice programme has been running for 18 years, with an average intake of 117 apprentices per year and a 92% qualification success rate.



## Employer Ownership of Skills Pilot

In 2012, government announced the opening of Round 2 of the Employer Ownership of Skills Pilot (EOP). Round 1 of EOP provided nearly £70 million of government funding on projects ranging from extending skills training to local suppliers, to doubling the number of female apprentices, with Nissan among the successful bidders. Under Round 2, the industry has submitted an 'Industrial Partnership' bid, with a particular focus on supporting the skills needs of the automotive supply chain. The sector also supports Round 2 bids submitted on behalf of the whole Advanced Manufacturing and Engineering (AME) sectors. These bids cover a wide range of issues, from development of pre-employment traineeships to reviewing the range and quality of STEM degrees across AME.

## Promoting automotive careers to young people

The automotive sector welcomed the continuation of government's See Inside Manufacturing initiative in 2012. This initiative is designed to showcase the full range and diversity of careers available in manufacturing industries to young people and their influencers and also the varied career paths and qualification routes. In 2012, the sector sought to develop the scheme from the successful automotive pilot in 2011, holding over 50 events at more than 20 automotive sites across the UK.

In addition, SMMT, in collaboration with the Institute for the Motor Industry (IMI) and the Retail Motor Industry Federation (RMI), piloted the Discover Automotive Retail initiative in 2012 with a number of motor industry participants, including BMW Group UK which held multiple events. This industry-led scheme built upon the success of See Inside Manufacturing, and ensured that the automotive retail industry, and its career opportunities and qualification routes, were also promoted to young people.

For more information see [www.automotivecouncil.co.uk/join-the-industry/see-inside-manufacturing/](http://www.automotivecouncil.co.uk/join-the-industry/see-inside-manufacturing/)

## MINI

### MINI's new training school

As part of its continued investment in apprenticeships and training, MINI Plant Oxford opened a new training school featuring state-of-the-art classrooms, dedicated computer study areas and a fully-equipped workshop. The school will be used by MINI Plant Oxford's apprentices and by its 4,000 associates. It will allow the plant to tailor training to its specific technical needs.



## Ford

### Ford named as Top 100 apprenticeship employer

For the second year running, 2012 saw Ford recognised in the prestigious Top 100 Apprenticeship Employers list, compiled by the National Apprenticeship Service in partnership with City and Guilds. Ford was recognised for both its company apprenticeship scheme and its dealership programme. Ford apprenticeship programmes are open to all age groups and provide paths to career progression and development of core skills within the Company. The Ford Masters Apprenticeship Programme, which recruits 450 new apprentices into the Ford dealer network every year, has been running for over 11 years.



## Employability skills for young people

In 2012, SMMT, through its Charitable Trust, supported an automotive pilot of the Foyer Federation Working Assets programme. The already established Working Assets programme seeks to develop the skills of young people from a diverse range of backgrounds to enable them to become employable and, ultimately, independent adults. The pilot was targeted at careers in the automotive industry and aimed to increase their awareness and knowledge of career opportunities available in UK automotive. Ford UK, Unipart Group and Toyota Motor Manufacturing (UK) participated in the 2012 pilot, liaising with local Foyer centre services and facilitating bespoke projects to provide young people with an opportunity to get a taste of life in the automotive sector.

Activities ranged from community projects, site visits, and problem solving sessions to company inductions, training and work experience. During last year's pilot scheme, 30 young people from Foyers across the UK took part in activities and projects led by the automotive partners, and 73% of participants have since gone on to employment, education or training. SMMT's collaboration with The Foyer Federation is planned to continue in 2013 and beyond.

**Automotive companies pioneer initiatives to support young people with employability skills.**

## Unipart

### Unipart Educational Partnerships

Having recognised a shortage of skilled engineers in the UK and reflected on the skill sets required in the business, Unipart Manufacturing has developed a strategy to 'encourage young people into adopting careers in engineering and manufacturing'.

Unipart has developed different approaches to tackle different age groups, which includes engaging and enthusing younger pupils through to a structured recruitment pipeline with older students. It has also developed educational partnerships to support each programme. This directly resulted in one student joining as an apprentice (who now runs programmes for students aged 11-16), a further student being sponsored through a full time University degree course with the commitment of a job at the end, and another student recruited and being sponsored through a part-time degree course.





# FUTURE VISION

This section sets out some of the anticipated activity that will help to move the industry further towards a sustainable future. These items include hydrogen fuel cells for cars, gas powered trucks and a proposal from the European Commission that will require Member States to develop alternative fuel infrastructure for several low carbon fuels. Given that the CO<sub>2</sub> ambitions for cars and vans are already set to 2020, the focus is now moving on to post-2020 and to heavy goods vehicles.

**Planning for the future with industrial strategy, low carbon vehicles and infrastructure for hydrogen and other alternative fuels.**

## Industrial strategy – strategic vision for automotive

The government has committed to developing strategic partnerships with key industry sectors to drive investment and growth, with a budget of £1.6 billion over 10 years, and aims to double the budget with industry funding. Automotive is one of those key sectors and the strategy will be published in Summer 2013. The strategy has four main workstreams: business environment, technology, skills and supply chain. Proposals in the strategy will seek to address some of the major challenges from the sector, like future skills needs and supply chain finance, as well as how best to support

the significant opportunities for automotive growth and investment in innovation. One particular area is science and innovation funding which, SMMT believes, should reflect key UK industrial strengths, as well as a scale that is internationally competitive and delivered through tried and tested routes such as the Technology Strategy Board or centres of excellence. SMMT hopes to see a commitment to the creation of a joint government-industry funded Advanced Propulsion Centre.

## UK H<sub>2</sub> Mobility

The UKH<sub>2</sub>Mobility initiative was launched in January 2012 to ensure the UK is well positioned for the commercial roll-out of hydrogen fuel cell electric vehicles. This will evaluate the potential for hydrogen as a fuel for ultra-low carbon vehicles in the UK before developing an action plan for an anticipated roll-out to consumers in 2014-15. The group brings together the UK government and industrial participants from the utility, gas, infrastructure and global car manufacturing sectors.



## Honda

### Honda continues to demonstrate its commitment to the environment

Following the successful launch of the UK's first public access hydrogen refuelling station at Honda's car manufacturing facility in Swindon in September 2011, use of the facility gained momentum throughout 2012 including playing host to a national hydrogen fuel cell car road show and supporting the hydrogen-powered London taxis during the Olympics. The project now moves into its second phase of producing 'green' hydrogen on site. The original project team comprising Honda, BOC and Forward Swindon is now joined by additional partners and supported by the Technology Strategy Board.

The existing 5MW solar photovoltaic array that directly feeds the Honda site will power an electrolyser that generates 'green' hydrogen from water. This will feed the refuelling station and negate the need to transport bottled hydrogen to the site. The station will also supply hydrogen to a new fork lift truck refuelling point adjacent to the manufacturing area, which will allow fuel cell powered fork lift trucks, developed by Briggs, to serve the Honda facility.

As part of the project, two local businesses (Swindon Commercial Service and the Commercial Group) are working with Revolve Technologies to convert a total of seven combustion engine vans to run on hydrogen. These vans will join their daily operating fleets and refuel with the green hydrogen at the Honda Swindon site.



# FUTURE VISION

## Post-2020 CO<sub>2</sub> regime for cars and vans

A Commission Communication is anticipated to propose post-2020 targets and SMMT believes this will be a fruitful discussion after the current negotiation of the modalities for the already established 2020 targets. Once the new test cycle (worldwide harmonised light vehicles test procedure - WLTP) is fully defined in 2017, an objective approach to post-2020 targets would be welcome.

## EU Heavy Duty Vehicle CO<sub>2</sub> strategy

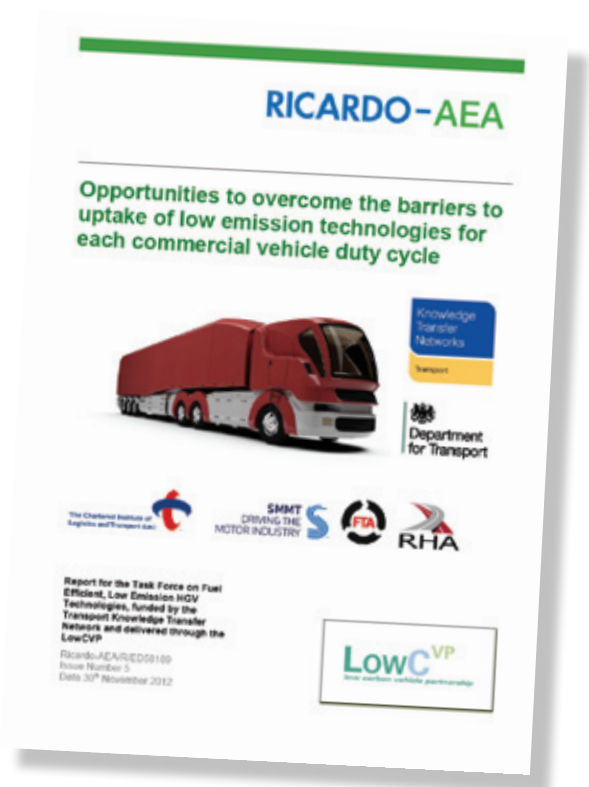
The automotive industry has been working intensively with the Commission to develop a measurement methodology for HDV CO<sub>2</sub> and early 2013 saw further refinement and proof of concept. The Commission intends to publish an EU Strategy for reducing CO<sub>2</sub> from heavy duty vehicles in 2013. Manufacturers believe it is critical that important policy decisions have a firm evidence base.

## Opportunities to increase UK uptake of low emission HGV technologies

An important study illustrating how the barriers to uptake of low emission HGV technologies can be overcome was presented to the Freight Minister, Stephen Hammond, in November 2012. Project-managed by SMMT, it was the first deliverable from the Task Force on Fuel Efficient, Low Emission HGV technologies, a joint government-industry initiative led by the Department for Transport (DfT) with SMMT, Freight Transport Association (FTA), Road Haulage Association (RHA), Low Carbon Vehicle Partnership (LowCVP), Transport Knowledge Transfer Network (TKTN) and others.

The road freight sector is responsible for around 7% of the UK's total CO<sub>2</sub> emissions, with long haul and regional deliveries responsible for 70% of that. Switching from diesel to gas, reducing rolling resistance and aerodynamic drag and introducing more hybrid and electric vehicles are identified as key opportunities for further cutting carbon and improving efficiency in the road freight sector. These recommendations are now being taken forward by the Task Force and a DfT strategy for switching trucks to gas is expected in the summer.

The Task Force was also instrumental in promoting the £11.3m Technology Strategy Board (TSB) low carbon truck trial. This will put 300 vehicles on the road in 13 fleets to demonstrate the performance of the alternative fuel technologies available and the business case for their wider adoption. It will also build a legacy of 11 new public access gas refuelling stations around the country.



## Clean Power for Transport – an EU alternative fuels strategy

The European Commission recently proposed a Directive with targets for the deployment of clean transport fuel distribution points in the EU (electric, liquid and compressed natural gas, hydrogen, etc). It aims to overcome the 'chicken and egg' conundrum where the business case for infrastructure and the large scale roll-out of alternatively-fuelled vehicles are reliant upon each other and neither has investment certainty. For electric vehicles, the Commission proposes that the UK should have 1,200,000 charging points by 2020, 10% of which would need to be publicly accessible.

## Mayor's vision for ultra low emission vehicles in London

London has a unique and important role as a leading location for the deployment of low and ultra-low emission vehicles. Using discounts under the Congestion Charge to support early market development is welcomed, in particular consistency in aligning policy to incentive regimes at a national level. The Mayor of London has announced ambitions to create an Ultra Low Emission Zone in central London by 2020. Transport for London has been tasked to prepare plans and examine the feasibility of such a scheme.

## Signatories to this report

Alexander Dennis  
Bentley Motors Ltd  
BMW Group UK including Rolls-Royce Motor Cars Ltd  
Caterpillar  
Ford Motor Company Ltd  
General Motors UK Ltd  
GKN Driveline Ltd  
Honda (UK) and Honda of the UK Manufacturing (HUM) Ltd  
IBC Vehicles Ltd  
Jaguar Land Rover Ltd  
Leyland Trucks  
Mercedes-Benz UK Ltd  
Michelin Tyre plc  
Nissan Motor Manufacturing (UK) Ltd and Nissan Technical Centre Group  
PSA Peugeot Citroën Automobiles UK Ltd  
Toyota (GB) plc  
Toyota Motor Manufacturing (UK) Ltd  
Unipart Group of Companies  
Volkswagen Group (UK) Ltd  
  
Volvo Cars UK Ltd

## Brands

Alexander Dennis  
Bentley  
BMW, MINI, Rolls-Royce  
Caterpillar, Perkins  
Ford  
Chevrolet, Vauxhall  
GKN  
Honda  
Nissan Commercial Vehicles, Renault, Vauxhall  
Jaguar Cars, Land Rover  
DAF Trucks  
Mercedes-Benz, smart  
Michelin  
Infiniti, Nissan  
  
Citroën, Peugeot  
Lexus, Toyota  
  
Unipart  
Audi, SEAT, ŠKODA, Volkswagen Passenger Cars, Volkswagen Commercial Vehicles  
  
Volvo

## References and online content

References and detailed data on the automotive industry performance can be found at [www.smmmt.co.uk/sustainability](http://www.smmmt.co.uk/sustainability).

The webpage also contains links to signatories' sustainability websites.

<sup>1</sup> Growing the UK automotive supply chain: the road forward – 2012 update, UK Automotive Council, 2012  
[www.automotivecouncil.co.uk/wp-content/uploads/2012/08/growing-the-uk-automotive-supply-chain-aug-2012.pdf](http://www.automotivecouncil.co.uk/wp-content/uploads/2012/08/growing-the-uk-automotive-supply-chain-aug-2012.pdf)

<sup>2</sup> Tyre Industry Federation Factbook, 2011  
[www.tyreindustryfederation.co.uk/wp-content/uploads/2011/12/tif-factbook-0712.pdf](http://www.tyreindustryfederation.co.uk/wp-content/uploads/2011/12/tif-factbook-0712.pdf)

Automotive glossary of abbreviations can be found on SMMT's website:  
[www.smmmt.co.uk/acronyms/](http://www.smmmt.co.uk/acronyms/)

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