

2014 Automotive Sustainability Report

15th edition - 2013 data



THE SOCIETY OF
MOTOR MANUFACTURERS
AND TRADERS LIMITED

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IN SUMMARY

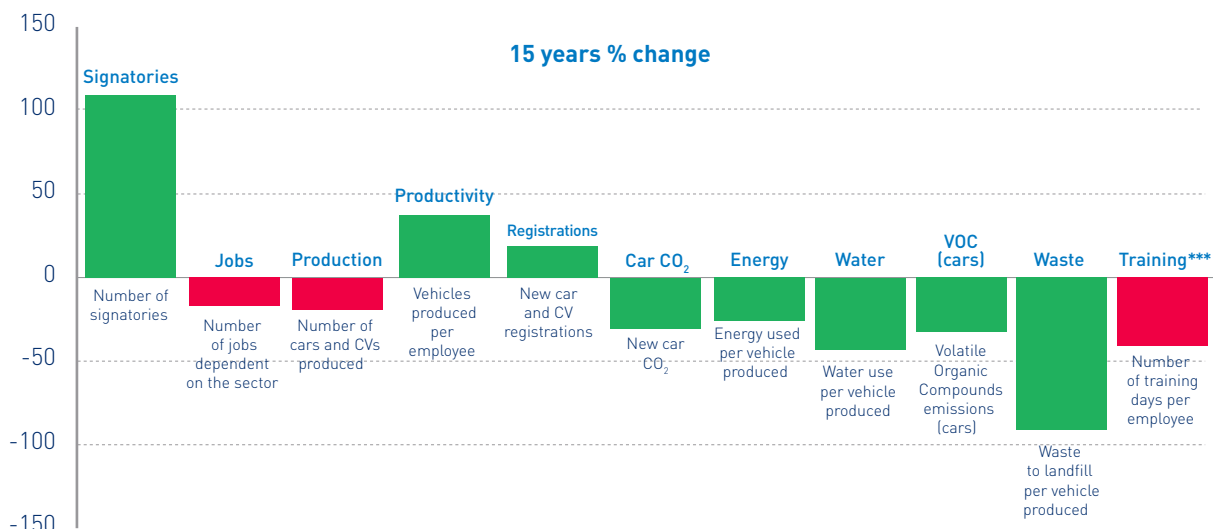
			1999	2012	2013	15 years - % change 2013 on 1999	1 year - % change 2013 on 2012
AS	Number of signatories		11	19	23	109.1 ↑	21.1 ↑
Economic performance							
WI	Automotive manufacturing sector turnover **	(£ billion)	44.1	58.1	64.1	45.4 ↑	10.3 ↑
	Expenditure on Business R&D **	(£ billion)	0.9*	1.7	1.9	120.9 ↑	9.7 ↑
	Total number of cars and CVs produced	(million)	2.0	1.6	1.6	-19.3 ↓	1.3 ↑
	Total new car and CV registrations	(million)	2.2	2.3	2.6	18.5 ↑	10.8 ↑
AS	Signatories' combined turnover	(£ billion)	20.1	62.2	69.3	245.0 ↑	11.5 ↑
	Total number of vehicles produced	(million)	1.44*	1.51	1.53	6.4 ↑	1.6 ↑
Environmental performance							
Production inputs							
AS	Total combined energy use	(GWh)	6,110	4,976	4,936	-19.2 ↓	-0.8 ↓
VMs	Energy used per vehicle produced	(MWh/unit)	3.10	2.22	2.29	-26.3 ↓	3.0 ↑
AS	Total combined water use	(000m3)	9,620*	5,951	6,254	-35.0 ↓	5.1 ↑
VMs	Water use per vehicle produced	(m3/unit)	5.3*	2.9	3.0	-43.2 ↓	3.9 ↑
Material outputs							
AS	Total combined CO ₂ equivalents	(tonnes)	1,821,586	1,510,783	1,449,651	-20.4 ↓	-4.0 ↓
	CO ₂ equivalents per vehicle produced	(tonnes/unit)	1.10	0.64	0.64	-41.5 ↓	0.1 ↓
VMs	Volatile Organic Compounds emissions (cars)	(g/m ²)	55	35.3	37.1	-32.5 ↓	5.2 ↑
	Volatile Organic Compounds emissions (vans)	(g/m ²)	59*	60.5	54.5	-7.6 ↓	-9.9 ↓
AS	Total combined waste to landfill	(tonnes)	54,954	13,801	9,286	-83.1 ↓	-32.7 ↓
VMs	Waste to landfill per vehicle produced	(kg/unit)	40.30*	5.87	3.49	-91.3 ↓	-40.6 ↓
Vehicle use							
AC	Average new car CO ₂ emissions	(g/km)	185.0	133.1	128.3	-30.6 ↓	-3.6 ↓
Social performance							
WI	Number of jobs dependent on the sector **	('000)	929	728	772	-16.9 ↓	6.0 ↑
	Combined number of employees		95,214	95,738	96,848	1.7 ↑	1.2 ↑
AS	Number of lost-time incidents		669*	248	243	-63.8 ↓	-2.2 ↓
	Number of training days per employees***		3.8*	2.8	2.2	-40.8 ↓	-20.7 ↓

(WI) Whole industry data; (AC) All car registrations in the UK; (AS) All signatories; (VMs) UK vehicle manufacturer signatories; (CV) Commercial vehicles; (CO₂) Carbon dioxide.

The report has 23 signatories which represent 95.9% of vehicle production in the UK. New signatories include Bosch, CEVA Logistics, Optare and Schaeffler. However the report covers fewer sites from Ford (Southampton closed), Toyota (Salford Technical Site closed) and GM (Millbrook sold).

The 2012 and 2013 data have been adjusted to take into account new signatories and enable year-on-year comparison. The absolute values for 1999 are not directly comparable to the 2013 data as the number of signatories has changed over the years.

*When the 1999 value is unknown, the first available figure is given. **Sector turnover, R&D and jobs dependent on the sector are compiled from several official sources using expert SMMT analysis. The 2012 and 2013 figures are based on projections.



*** The way training is conducted has changed and a growing proportion falls beyond what is recorded (see page 15). SMMT will review the available data for the next report, perhaps to focus on training outcomes like qualifications.

FOREWORD



2013 was a huge year for the UK automotive industry. Manufacturing output increased, billion-pound investments were made, and thousands of jobs were created.

In this 15th report we look at the progress made in 2013 and also over the 15 year history of SMMT's sustainability reporting, see the summary graph below left. As the scope of the industry expands, so does that of the SMMT Sustainability Report, and we are very pleased to welcome four new signatories to this 15th edition: Bosch, CEVA Logistics, Optare and Schaeffler.

UK car production continued its upward trend in 2013, with more than 1.5 million cars built – an

increase of 3.1% over 2012 volumes. With heavy investments yet to be fully realised, industry analysts are forecasting output to top the two million mark by 2017, surpassing the 1972 record volume of 1.92 million units in the process.

There are currently more than 772,000 people employed across the automotive sector, a number that is rising thanks to the aforementioned investments in UK facilities. Getting the next generation of engineers on board is crucial if the industry is to continue to expand, and initiatives such as See Inside Manufacturing are proving instrumental in addressing this challenge.

Crucial, too, is the support for a domestic supply chain that has a £3 billion opportunity to fill OEM component demand currently sourced from abroad. SMMT Meet the Buyer is a key event in the calendar, and will complement other industry-wide schemes in the drive to reduce this shortfall over the coming months and years.

One of the biggest challenges facing the sector is the transition to a low-carbon future, and the reduction of average CO₂ emissions from new passenger cars by around a quarter in the last decade to 128.3g/km in 2013 is an achievement which the industry is right to be proud of.

Clearly a significant part of a low carbon future also lies in manufacturing processes, and the

production of 25% more cars using the same energy as 15 years ago demonstrates the progress made by industry in this respect. SMMT continues to provide its members with support in reducing energy use, and some of the results can be found in this report.

The Automotive Sector Strategy, launched in July 2013, sets out government and industry's joint plan to invest more than £1 billion into the UK automotive sector over the next decade. The Strategy aims to grow the industry through four distinct pillars: building a competitive business environment, growing the supply chain, building the skills base and developing the UK's low carbon R&D capabilities (see page 5).

The conclusion to be drawn from the 15th Sustainability Report is clear: the current success of the UK automotive industry places it at the forefront of the UK's economic recovery, but it also brings certain challenges. Industry has already made great strides to address these, and must continue to work towards a sustainable future.

Further data and analysis is available at:
www.smmt.co.uk/sustainability

Mike Hawes
SMMT Chief Executive

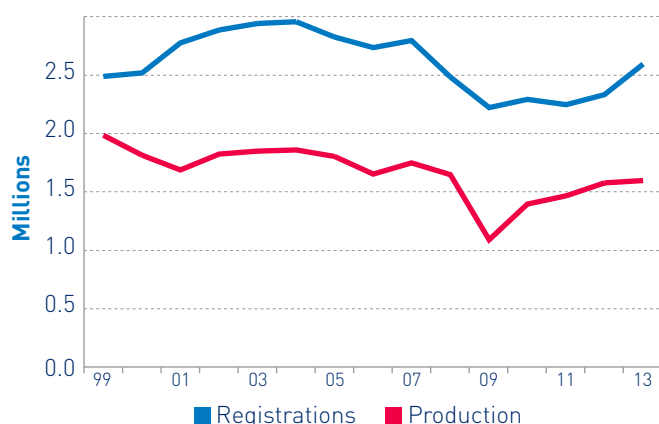
**SMMT welcomes
four new signatories:
Bosch, CEVA
Logistics, Optare
and Schaeffler**

THE UK IS HOME TO:



BUSINESS PERFORMANCE AND INVESTMENT

UK vehicle registrations and production, 1999-2013



Four in five UK produced cars are exported. At 1.25m vehicles exported, that's more than 15 years ago

UK car manufacturing grew further in 2013, surpassing 1.5 million units for the first time since the recession, as some manufacturers improved their output. The biggest net change came for one manufacturer that had seen disruptions in 2012, and the arrival of new models and new investment in the UK auto sector also supported growth. The

upturn in the domestic market and on-going European market challenges saw a slight change in the output mix, but four in five cars produced in the UK are still destined for export.

Nissan Sunderland Plant sets latest production milestone

A second year of 500,000 production units meant Nissan has built over one million cars in the last two years in the UK. Its Sunderland plant was the UK's biggest car producer for a 16th consecutive year, with one in every three cars built in the UK last year coming out of Sunderland.

In 2013 the plant successfully launched the 100% electric LEAF, the new Nissan Note and the second generation Qashqai; the company's flagship model in Europe and the highest volume car made in the UK.

A ceremony in October marked the beginning of an extension to Sunderland plant, for facilities to build premium vehicles under the Infiniti brand.

The year ended with a record employee headcount of over 7,000.



Engine production in the UK also improved in 2013, rising back above 2.5 million units after a decline in 2012. The closure of the Ford Transit plant in Southampton was a key contributory factor to the drop in CV production in 2013. If additional investment potential is realised then car production is set to rise further and potentially exceed two million units by 2017. The increased vehicle output together with the Automotive Council work on developing the UK supply chain is expected to support growth in domestically sourced components.

A record breaking year for Jaguar Land Rover



Jaguar Land Rover delivered its strongest ever full year global sales performance, thanks to the introduction of a series of multi award-winning new vehicles in 2013. Full year retail sales stood at 425,006, up 19%, with strong growth in all major regions and new records set in 38 markets, including Brazil, Canada, Korea and Russia. Regional performance for the full year was : Asia Pacific and the China region up 30%, Europe up 6%, North America up 21%, the UK up 14% and other overseas markets up 23%.

Since 1999 there has been considerable restructuring in the automotive manufacturing sector, with the closing of some sites offset by the success of others, notably Jaguar Land Rover and MINI Plant Oxford's thriving UK operations. Access to the European marketplace remains key but exports to markets further afield are on the increase, thanks to the UK's developing reputation for globally competitive premium products.

BUSINESS PERFORMANCE AND INVESTMENT

Automotive sector strategy drives UK business

The Automotive Sector Strategy, published in July 2013, provided a shared vision between industry and government for a globally competitive and growing UK automotive manufacturing industry. With Automotive Council leadership, the priorities set out are:

- Technology – including £1bn joint investment in the Advanced Propulsion Centre (APC) to develop, commercialise and manufacture advanced propulsion technologies in the UK; technology roadmaps.
- Supply chain – including establishing an Automotive Investment Organisation (AIO) to improve the image of the UK as a place for automotive suppliers to invest; access to finance cooperation framework agreed with the banks.
- Skills – high level roadmap for skills to create talent pipeline.
- Business environment – establishment of new Automotive Council Group to address and cement the UK as a globally competitive place to do automotive business.
- Kick-starting the ultra-low emission vehicle (ULEV) market: £500m government investment 2015-2020, building on £400m current investment; ULEV strategy published in September 2013.

The Strategy is long-term. Some actions are well advanced (eg APC, AIO), for others workplans are still in their infancy. <https://www.gov.uk/government/policies/using-industrial-strategy-to-help-the-uk-economy-and-business-compete-and-grow>



New vehicle registrations

The new car market rose 10.8% in 2013 to its highest volume since 2007. The market remained some 6% off the 2007 level and 11% short of the all-time high, but growth has been sustained over the past two years. Weak demand in Europe encouraged manufacturers to channel products to the UK, while attractive finance and mobility solutions, coupled with growing consumer confidence, also drove the sales up. With continued economic recovery, the expectations are for further growth in 2014, albeit at a slower pace than last year.

While 2013 volumes remained below the 2.4-2.58 million units typically seen pre-recession, the market now appears more robust and self-sustaining after the recession and scrappage scheme that followed. There is debate whether the market will return to pre-recession levels, given population trends, longer replacement cycles and the interest in and affordability of car ownership.

There has been a shift in recent years towards diesel-powered cars and, more recently, alternatively-fuelled vehicles, both of which took record volumes in 2013. However, petrol cars took an improved market share as demand for Mini and Supermini segment cars from private motorists led the growth. The Dual Purpose segment overtook the Upper Medium segment in 2013 to become the third largest segment.

Registrations up 11% and vehicle production up 1.3% as access to the EU market remains key

'000	1999	2012	2013	% ch 13 v 99	% ch 13 v 12
Car output	1,799	1,465	1,510	-16.1%	3.1%
CV output	186	112	88	-52.7%	-21.7%
Export of UK-built vehicles	1,225	1,275	1,249	2.0%	-2.1%
Engine output	N/A	2,495	2,553	N/A	2.3%
New car registrations	2,198	2,045	2,265	3.0%	10.8%
New CV registrations	288	289	331	15.0%	14.5%

Commercial vehicle (CV) volumes grew almost 15% in 2013, as the light commercial vehicle (LCV) market continued to recover from a disappointing 2012 and benefited from the wider economic growth and recovery in the construction sector. Registrations of heavy goods vehicles surged as Euro V compliant vehicles were registered ahead of the new Euro VI regulations, which came into effect on 1 January 2014.

For UK automotive announcements please see: <http://www.smmmt.co.uk/investment/>

ENERGY AND RESOURCE EFFICIENCY

The sector's dynamic nature is not only visible in its economic performance but also in its approach to addressing all environmental impacts of the vehicles' life cycle, starting from the production process, through the use phase and finally their end-of-life.

The majority of CO₂ emissions is associated with the vehicle's use phase, but progress is being made on all fronts.

Manufacturing performance

The industry is a leader in technology and innovation, which has helped significantly to reduce its environmental impact over the last 15 years, as well as minimise costs and the use of resources, enabling it to succeed even in tough economic times.

Energy and CO₂

Reducing energy usage is pivotal to industry's resource efficiency strategy and also crucial to maintaining competitiveness by reducing cost. Over the last 15 years the signatories have made great strides in terms of absolute and relative energy usage. In 2013, vehicle manufacturers signatories produced almost 25% more cars using the same amount of energy as in 1999.

In 2013 total energy usage dropped by 0.8%. However, energy used per vehicle manufactured increased 3%. This was largely due to a signatory opening a new building to produce a new model, while still transitioning from an old production line, both running at reduced volumes.

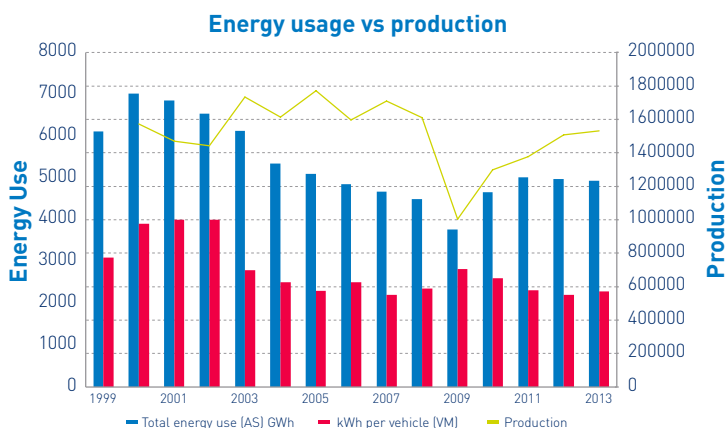
The carbon intensity of automotive production has been improving due to increased energy efficiency and the energy mix used. The overall CO₂ produced by signatories has dropped 42% since 1999 and 4% since 2012. CO₂ output per vehicle produced has almost halved in the last 15 years, and has remained stable over the last two years.

Renewable energy

The amount of renewable energy produced by signatories has been steadily increasing over recent years, and now totals almost 40GWh – more than double the 2009 tally. This is enough renewable electricity to power 9,400 homes. 11 signatories are now producing renewable energy on-site, up from only two in 2009.

To decarbonise production further, signatories have been switching to 'green electricity' produced from certified sustainable sources, up three-fold since 2010 to 334GWh in 2013. Green electricity now accounts for 20% of electricity and 7% of all energy used by signatories, enough to power almost 80,000 homes

CO₂ and energy usage fell by 42% and 26% respectively over 15 years and 4% and 1% on 2012



CEVA Logistics explored the power of the sun



Inspired by the success of a recent managed lighting project saving 685 tonnes of carbon, CEVA Team at Volkswagen's Parts logistic centre wanted to do more to reduce the site's environmental impact. The Team investigated the merits of solar energy, looking to achieve key benefits in terms of reduced electricity cost, carbon footprint reduction, enhanced corporate identity and rental income from a 25 year roof lease.



The installed system consists of 399 photovoltaic solar panels (the size of three tennis courts) – mounted on the south-facing part of the 65,000m² warehouse roof – and in 2013 produced around 95,000 kWh of renewable electricity that was used directly by the site.

ENERGY AND RESOURCE EFFICIENCY

Waste

Over the last 15 years, continuous improvement of production processes and an holistic approach has helped reduce waste to landfill by 83%, and waste to landfill per vehicle by 91%. Signatories recorded an equally impressive performance in 2013 with a 41% drop in waste to landfill per vehicle.

An increasing number of sites have managed to divert all their waste from landfill to reach a zero landfill target. Now only 3% of waste generated by signatories ends up in landfill, compared to 26% in 2004. At the same time, the amount of waste recycled and recovered increased from 74% to 97% over the same time period.

**97% of waste
is recycled or
recovered**

Water

Mainly due to a boost in production, water use rose 5.1% in 2013, with water use per vehicle also increasing 3.9%. Other contributory factors included a number of incidents at production plants, for example water leaks and issues with a water tank supplying a sprinkler system, resulting in a large tank being drained as an emergency measure.

However, water use in production has dropped dramatically since records began, largely due to improvements in painting processes and through creating closed-loop systems. These measures have almost halved the amount of water required per car, from just under 6m³ in 2000 to 3m³ in 2013. The overall water footprint of signatories has also improved by 35%.

MINI plant Oxford continues to improve its environmental performance



BMW Group is currently operating 730 programmes designed to reduce the carbon footprint and waste generated by all its manufacturing operations in the UK. One particularly innovative initiative was a new electro-coating facility, which replaced the three-stage bath system, bringing savings in both materials and energy while maintaining excellent corrosion protection. Other measures implemented at Plant Oxford include the installation of a new bodyshop, building insulation, energy saving sleep mode for robots, heat wheels in the roof to regulate heating and cooling, and water harvesting. During 2013, the combined impact of 175 energy saving initiatives at Plant Oxford and Plant Swindon yielded almost 47.8GWh equivalent to the energy consumed by 2,400 average UK homes in a year.

Toyota's eco-minded employees made further steps towards sustainable manufacturing



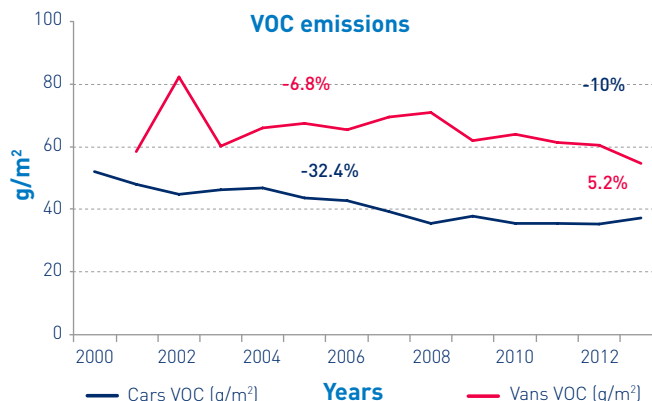
In 2013, as part of a continuous process improvement, Toyota identified re-using waste machining coolant from the aluminium swarf as a way to reduce environmental impact. This was achieved by introducing an additional filtration system to recover and return waste coolant directly to the engine block and head machining lines. As a result the coolant consumption was reduced by 38%, lowering the coolant make up water by 5.5% and the waste water treatment volume by 11%. It also achieved a cost reduction in raw materials and processing costs of 15%. The maintenance team's achievement and other similar initiatives are being recognised by Toyota's eco-kaizen awards and showcased to peers and company directors.

ENERGY AND RESOURCE EFFICIENCY

VOCs

Volatile organic compound (VOC) emissions from vehicle painting operations are considered one of the key environmental impacts of vehicle manufacturing.

Heavy investment in painting operations helped signatories reduce VOC emissions from car painting by 29% since 2000. The 2013 performance is almost 40% lower than the legal limit of 60g/m² for cars and 90g/m² for vans.



Vauxhall's Ellesmere Port wins 2013 EEF Sustainable Manufacturing Award

The plant won the award after changing from solvent-borne to water-borne paint, which reduced volatile organic compound (VOC) emissions by almost 90% in each paint booth. The new technology increased transfer efficiency of the paint to the car by 85%, reducing the amount of paint used by over one litre per car, and resulted in an increase in finish quality for the customer.



Re-use, recycling and recovery of end-of-life vehicles

The passenger car industry has successfully taken on producer responsibility for end-of-life vehicles (ELVs) and has established two vehicle collection networks, Autogreen and Cartakeback. They ensure that end-of-life vehicles can be handed over to an Authorised Treatment Facility (ATF), that will dispose of the car in an environmentally responsible way and without any costs to the last owner. Consequently, vehicles have become one of the most recycled retail products on the market. Since 2006, 85% by weight of vehicles processed by manufacturers' recycling networks has been recycled and recovered.

In the last few years the automotive industry's partners have made significant investments to meet the challenge of the higher 2015 ELV Directive targets, which require 95% by weight of ELVs to be recycled and recovered. Key developments include:

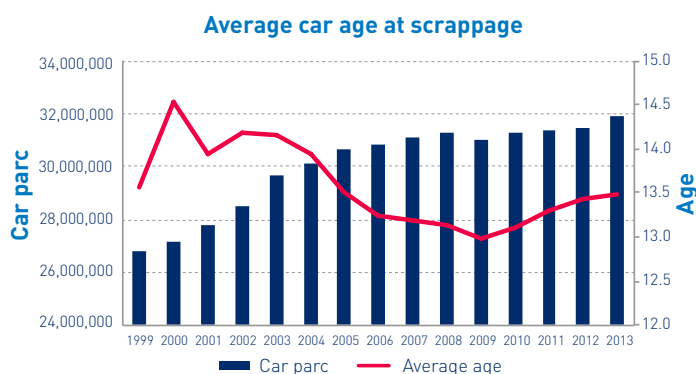
- a £150m gasification facility in Oldbury, near Birmingham which will generate 40MW of green electricity and divert over 500,000t shredder residue per annum from landfill.
- a Shredder Waste Advanced Processing Plant (SWAPP) to separate the non-metallic fractions from the equivalent of about 800,000 cars a year.

The scrappage rate over the past four years has fallen to around 1.85m vehicles per year, well

below the 2.1m per year average between 2003 and 2009, affected by lower new car registration volumes since the recession. Between 2001 and 2007, new car registrations were higher, averaging 2.5 million per year. As these vehicles reach their end-of-life, this could have repercussions for the size and structure of the vehicle fleet.

End-of-life vehicles age profile

Vehicles are now six months older on average at scrappage than they were five years ago. The average age of an ELV is now similar to where it was 15 years ago. This highlights a recent trend for consumers keeping cars for longer, and therefore the rising age of cars on the road and age at scrappage. (See also age of vehicles on the road – page 10).



All data and graphs are available online for 2013 performance in energy, CO₂, water, VOC and waste to landfill and recycling.

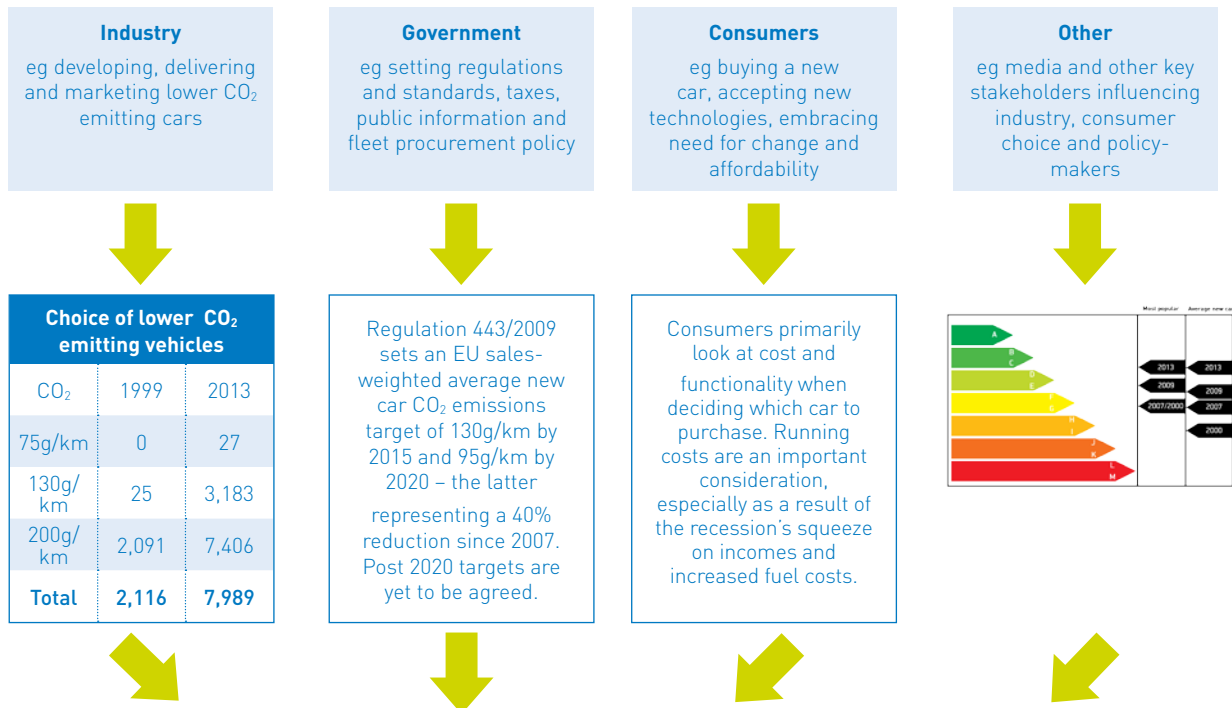
ENERGY AND RESOURCE EFFICIENCY

VEHICLE PERFORMANCE

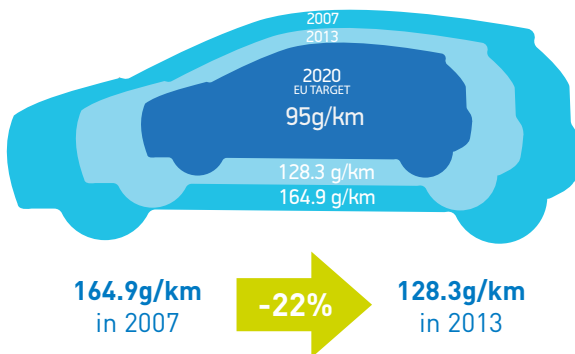
Industry is committed to improving further the efficiency of its products, and invested heavily in technology to deliver a reduction in CO₂ and other emissions. However, there are areas where sharing efforts are required as technology alone does not hold all the answers. An integrated approach is needed to enable all stakeholders – different industries, government, regulators, consumers and others – to work together and in parallel drive the agenda to introduce low carbon vehicles, and ultimately sustainable mobility, in a common direction.

Delivering low carbon vehicles through an integrated approach

Low carbon product introduction



Average UK new car CO₂ emissions

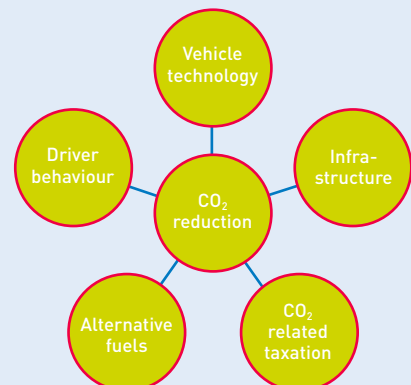


Alternatively-fuelled vehicles

The number of alternatively-fuelled vehicles (AFVs) has grown from zero to account for more than 1.4% of the market in the last 15 years. AFV registrations rose 17.5% on 2012 volumes to one in 69 cars registered in 2013.

Reducing CO₂ emissions

Similarly the reduction of CO₂ emissions from vehicle use require coordinated actions in various areas (see schematic). An holistic approach that includes better infrastructure, congestion reduction measures, the supply of and sufficient infrastructure for sustainable alternative fuels and other energy sources as well as taxation based on use will deliver progress in reducing CO₂ emissions.



ENERGY AND RESOURCE EFFICIENCY

Low carbon buses

The number of alternatively-fuelled buses on the road reached 1,500 in 2013, making the UK the European leader in

1,500 low carbon buses currently on the road, saving 26 tonnes CO₂/year each

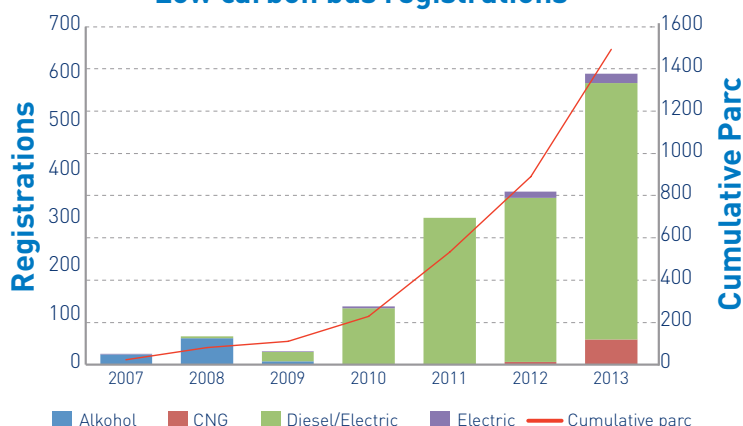
reducing CO₂ emissions from buses. Growth of the market has been rapid since 2007 (see graph), and each low carbon bus in London saves an average 26 tonnes of CO₂ per year (source: OLEV).

Hybrid buses dominate the market, but hybrid technologies are not all the same. Series electric hybrids, where the wheels are powered by an electric motor, offer flexibility for engineers to manage energy for optimum fuel economy and low emissions. The use of full-power-capable traction motors also gives them the ability to run in pure-electric mode, making them capable of a full performance

spectrum with zero local emissions, if the battery has sufficient capacity. By contrast, parallel hybrids use power-sharing between the engine and an electric motor to propel the bus. This means a smaller motor can be specified, for instance on less intensive urban routes, where there is lighter traffic and less benefit from shutting the engine down.

The bus technology roadmap is available at www.lowcvp.org.uk/lceb

Low carbon bus registrations



Alexander Dennis leads the way with low emission buses

Alexander Dennis is developing a range of powertrain technologies to suit the diverse needs of different



bus routes. The Alexander Dennis Enviro 400H series hybrid has captured 43% of the hybrid market. The firm's 'Virtual Electric' concept, a series hybrid with GPS-controlled zero-emissions capability and inductive charging, offers huge potential for air quality improvement in critical areas of cities, as well as greater CO₂ savings. A Virtual Electric bus will commence trials in Glasgow later this year.

Optare Versa electric bus recognised at National Transport Awards 2013

Optare won the 'Excellence in Technology' category at the 2013 National Transport Awards with its Versa EV electric



bus incorporating fast charging technology. It was the only bus manufacturer among the winners. This is the third time that Optare has won an award for its EV technology, having previously been awarded the highly prestigious SMMT Award for Automotive Innovation and a Chartered Institute of Logistics and Transport Environmental Improvement Award. Optare is leading the way in the development of full-size battery-powered buses in the UK, and was the first company with electric buses in service.

ENERGY AND RESOURCE EFFICIENCY

A growing and ageing fleet

The UK fleet grew 1.5% in 2013 to 36.3 million vehicles in use, having increased 18% or some 5.5 million vehicles over the past 15 years. Cars represented 80% of the additional vehicles in use, with the 2013 car parc showing the strongest growth rate in a decade.

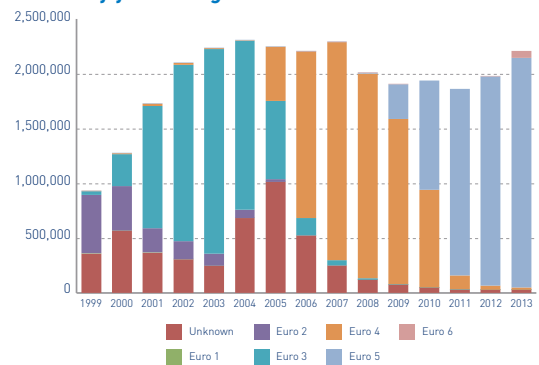
The average age of a car on the road in 2013 was a full year older than a decade ago, at 7.7 years. Enhanced reliability means cars are lasting longer, while impacts of the recession and low wage growth may be resulting in some cars left in use for longer than normal. The average age of a vehicle at scrappage has risen by six months in the last five years (see page 8).

Renewal of the fleet would ensure that the parc is made up of more efficient and safer vehicles with the latest Euro standard and lower carbon technologies.

Further information on vehicle environmental performance (alternative fuels, petrol, diesel, alternative powertrains) can be found in SMMT's New Car CO₂ Report 2014 www.smmt.co.uk/co2report.

An ageing fleet - the average car in use is a full year older than a decade ago

Cars remaining in the 2013 parc, by year of registration and Euro standard



PSA Peugeot Citroën launches the Efficient Modular Platform

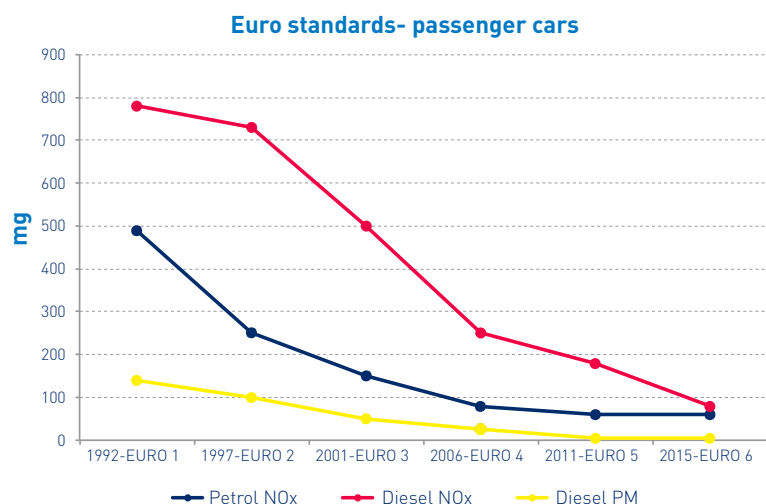
In 2013, PSA Peugeot Citroën brought its new-generation Efficient Modular Platform (EMP2) to the market. Featuring a wealth of advantages, including advanced modularity, weight saving of 70kg and high-performance technologies, it has enabled a 22% reduction in CO₂ emissions and new possibilities for a diverse range of body styles. It also provides increased safety, driving pleasure and comfort. The new EMP2 platform is expected to cover 50% of total production in the long term.



Air quality

Industry is committed to tackling all emissions, not just CO₂. Modern vehicles emit only a fraction of the pollutants compared to 15 years ago thanks to investments in engine technology and the after-treatment of exhaust gases. Emissions from cars and commercial vehicles are strictly regulated by Euro standards introduced from 1991/92. Euro-5 standards have been implemented for cars and Euro-VI is imminent for heavy duty vehicles. Car emissions of particulate matter (PM) have been cut by 95%, NO_x by around 75%.

It takes 100 modern cars to emit as much pollution as a single car from the 1970s



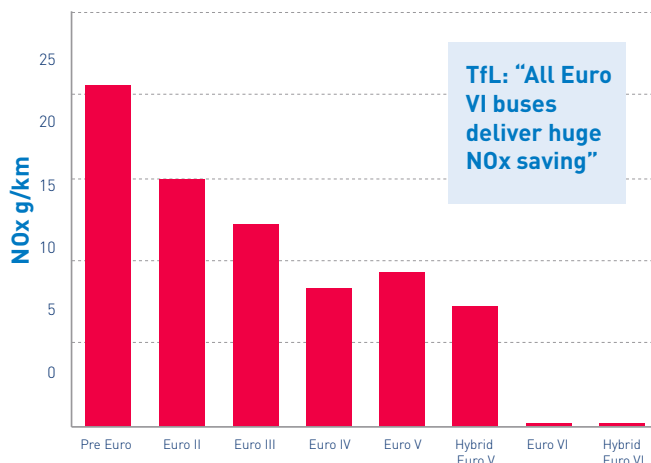
ENERGY AND RESOURCE EFFICIENCY

Air quality continued...

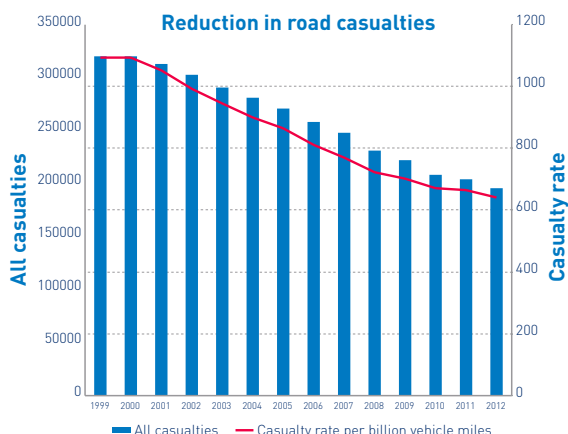
As these new vehicle Euro standards replace the older standard vehicles in the UK fleet. Department for Transport statistics show total particulate matter emissions from all cars in use have fallen 35.8% and nitrogen oxides (NOx) by 61.9% between 2000 and 2011. Some cars on the market are already Euro 6-compliant, and all new cars and vans will comply from September 2015.

The latest Euro-VI standard was required of new heavy duty vehicles from January 2014. The graph illustrates the 85-fold NOx reduction demonstrated on the London bus test cycle between Euro-V and Euro-VI. The challenge here is to ensure that this successful new technology is taken up into the market as quickly as possible.

NOx -99%, 85 fold reduction from EURO VI bus



Source: independent test data for double decker bus on London 159 test route

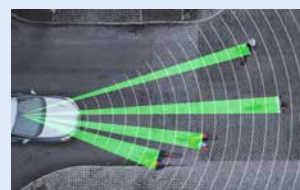


Vehicle safety

Improvements in road and vehicle safety are among the motor industry's key priorities. Thanks to technological advancements implemented by manufacturers and suppliers, as well as coordinated work with other stakeholders, significant progress has been made over the last 15 years. Between 1999 and 2012, the annual number of road casualties fell almost 40%, while at the same time the distance travelled rose 6%.

Volvo Cars launches world-first cyclist detection with full auto brake

In 2013 Volvo introduced a groundbreaking safety technology that detects and automatically brakes for cyclists swerving out in front of the car. The new functionality is an enhancement of the present detection and auto brake technology, and the package will be called pedestrian and cyclist detection with full auto brake. It claimed Best Car Safety system award in the 2013 'Techies' and was commended for offering a unique and innovative response to the growing number of cyclist deaths on UK roads. Sales of Volvo cars equipped with automatic braking have now passed the one million mark.



Ford Tourneo Connect gains maximum five-star Euro NCAP Safety Rating

The all-new Ford Tourneo Connect is the first compact people mover to be awarded the maximum five-star safety rating by independent crash test authority Euro NCAP. The versatile Tourneo Connect achieved a score of 94% for adult occupant protection, 85% for child occupant protection and 83% overall. The maximum rating achieved by the Tourneo Connect follows the first-in-class five-star safety rating for the Tourneo Custom large people mover.

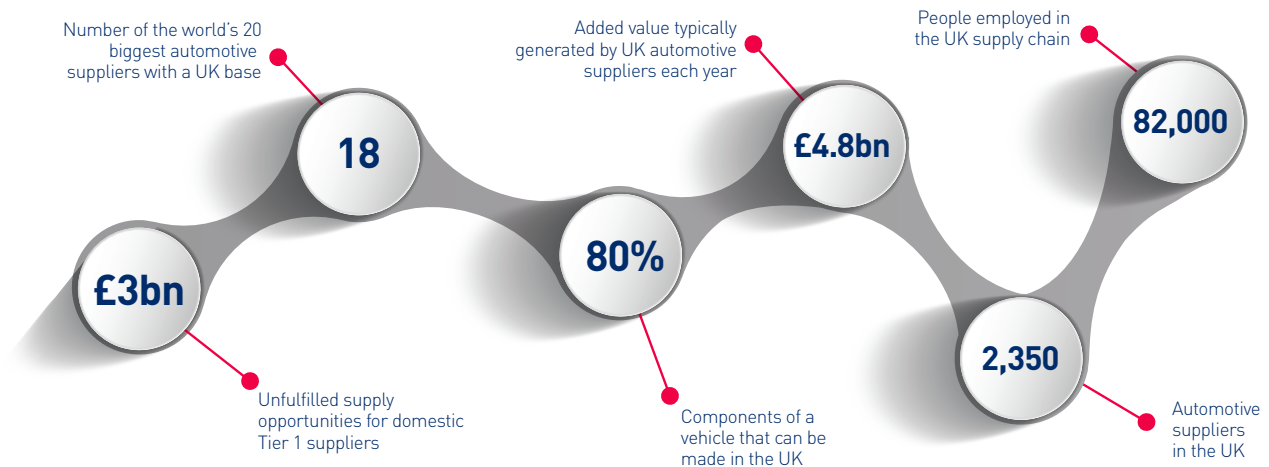


AUTOMOTIVE SUPPLY CHAIN



The UK automotive supply chain is broad and diverse. It includes companies across seven tiers involved in the manufacture of components, sub-assembly and full assembly supplied into vehicle manufacturers. In addition there is a multitude of companies that provide product development, inbound and outbound logistics and other support services.

The graphic shows that the UK supply chain has the capability to cater for the majority of automotive supply needs.



Supply chain key performance indicators

This is the second year of separately reporting KPIs for the supply chain. SMMT welcomes the growing number of supplier signatories with Bosch, CEVA Logistics and Schaeffler all joining this year. Their automotive activities varied and include the production of electronics and aftermarket products, automotive system solutions (engine, transmission, diesel, chassis and e-mobility systems) and supply chain management (freight forwarding, contract logistics, transportation management and distribution management). The new signatories in this report join Caterpillar, GKN Driveline, Michelin and Unipart, raising the number of supply chain signatories to seven.

Supply chain KPIs		2012	2013	Percentage change 2013 on 2012	
Weight of product produced/shipped	(tonnes)	335,008	327,770	-2.2	↓
Production inputs					
Total combined energy use	(MWh)	637,641,193	653,729,531	2.5	↑
Energy used per weight of product produced/shipped	(MWh/tonne)	1,903.4	1,994.5	4.8	↑
Total combined water use	(m³)	956,770	948,538	-0.9	↓
Water use per weight of product produced/shipped	(m³/tonne)	2.86	2.89	1.3	↑
Material outputs					
Total combined CO ₂ equivalents	(tonnes)	208,395	212,926	2.2	↑
CO ₂ per weight of product produced/shipped	(tonnes)	0.62	0.65	4.4	↑
Total combined waste to landfill	(kg)	1,588	1,185	-25.4	↓
Waste to landfill per weight of product produced/shipped	(kg/tonne)	0.005	0.004	-23.7	↓

- Production fell slightly in the supply chain, along with water use and waste to landfill.
- The relative KPIs rose with declining production, except waste to landfill, which was reduced by 24%.
- The production of renewable energy has doubled since 2011, from 6.3MWh to 13.7MWh, enough to power 3,250 homes.

Note: Given that SMMT first collected and published the supply chain KPIs in last year's report, we cannot compare with 1999 performance. See www.smmt.co.uk/supply-chain



Capitalising on opportunity for the UK supply chain

In recent years, the automotive industry has invested heavily in the UK, helping secure the long term future of UK automotive. Companies including Bentley, JLR, and Nissan have all committed to the UK with new investment, helping drive growth and create new jobs and opportunities for supply chain companies. The underlying supply chain has responded in turn, helping to keep industry's annual inward investment figure around £2.5bn.¹⁾

There are numerous challenges the supply chain must overcome if it is to capitalise on these opportunities, as explained in the Automotive Sector Strategy: Driving

Success, published in July 2013 (see page 5). A number of industry and government groups including the Automotive Council Supply Chain Group and similarly focussed groups within SMMT have been working collaboratively to address these challenges, to the benefit of the wider industry.

Annual inward investment reached £2.5bn

UK sourcing

With the UK supply chain capable of providing 80% of vehicle components, and successive announcements of upcoming OEM product lines being placed in the UK, the opportunity for the UK suppliers is both clear and substantial. In 2012 £3 billion of sourcing opportunities from OEMs were highlighted by the Automotive Council. 2) Gaps in the UK supply chain do exist and work is now being done by SMMT and the Automotive Investment Organisation (AIO), an organisation set up in 2013 with £3m government funding to help drive investment into the UK supply chain from overseas as part of the Industrial Strategy (see page 5). <http://bit.ly/investukauto>

Through initiatives such as Meet the Buyer 2013, SMMT has been leading the way in supporting the drive for increased local content.

In addition, SMMT and the Automotive Council have been working to understand the sourcing opportunities below the Tier 1 level of the supply chain. Through capturing demand at Tier 1 and mapping capabilities through Tier N (all tiers below Tier 1), the initiative will aim to match up UK demand with UK supply capabilities.

Supply chain competitiveness

A challenge remains for UK supply chain companies to be globally competitive. While UK companies benefit from factors such as a relatively stable domestic currency, flexible labour force and a strong domestic market, competition from overseas remains strong. To address these issues, industry is investing heavily to improve on factors such as quality, cost and delivery.

In 2013 SMMT submitted a bid for £13 million government funding through the Advanced Manufacturing Supply Chain Initiative (AMSCI), which has since been secured for the Long Term Automotive Supply Chain Competitiveness (LTASC) programme. LTASC will support 38 suppliers from four OEM networks as they invest £45.5m into CAPEX, R&D and skills development, creating nearly 1,000 jobs and securing a further 1,600.

Access to finance

Access to finance remains a key issue for some in the supply chain, especially SMEs. Industry has been working to improve the situation in collaboration with the banking sector. In November 2013 SMMT organised the latest in its series of Meet the Funder events to support the supply chain with its access to finance needs.

Technology

UK government and industry share an ambition to make the UK a global leader in the research, development, commercialisation and manufacture of low-carbon automotive technologies. To do this, industry and government have committed £1bn investment into the new Advanced Propulsion Centre (APC), an initiative that represents a key opportunity for the UK supply chain.

Business environment

The competitiveness of the UK's business environment plays a key role in attracting investment into the UK. Key concerns for industry include energy costs, corporation tax, business rates and free trade relations with key automotive regions. With 80% of UK-manufactured vehicles exported, the UK's relationships with the EU and other strategic markets remain vitally important to the supply chain.

Skills

The UK automotive supply chain recognises the importance of a talent pipeline that can provide for its ongoing skills needs.

PEOPLE AND COMMUNITIES

Employees

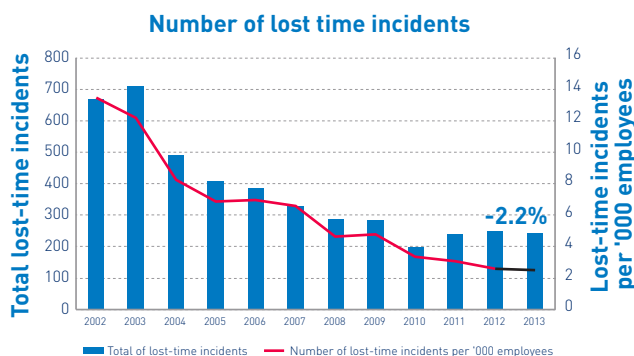
The automotive industry continues its road to recovery, which is reflected in the growing number of jobs dependent on the sector, up 6% to 772,000. Direct employment in automotive manufacturing also increased 9.5% to 161,000.

6% increase in jobs dependent on the automotive sector to 772,000

The average number of training days has remained relatively steady, between 2.9 and 3.8 days per person, which illustrates signatories' continued commitment to up-skilling their employees.

The way training is conducted has changed and a growing proportion falls beyond what is recorded, falling from 2.8 days per employee in 2012 to 2.2 days. This coincides with the rise of alternative forms of training, including talent development, mentoring, coaching and leadership programmes, professional development sponsorship, e-learning platforms, job rotation or secondment, business school programmes and on-the-job training. SMMT will review the available data for the next report, perhaps to focus on training outcomes like qualifications.

The signatories also invested in training their future employees by taking on 1500 new apprentices in 2013 with the aim of up-skilling them to take on positions within the company.



The industry takes the safety of its employees very seriously and has worked intensively over many years to embed safe procedures in its operations. This has resulted in a significant reduction in the number of lost time incidents per 1000 employees from 13.4 in 2002, when records began, to 2.5 in 2013.

GKN's thinkSAFE! safety campaign



During 2013 GKN Driveline Birmingham installed a new, improved Safety Corner where safety briefings and training take place for all employees. Different health and safety topics are cascaded each quarter. thinkSAFE! was expanded in 2013 to include 'don't WALK BY!', an awareness programme developed to encourage employees to identify and resolve safety and environmental concerns as GKN strives for even greater improvements.

Promoting automotive careers to young people

See Inside Manufacturing

The automotive industry participated in the See Inside Manufacturing initiative for the third time in 2013. Automotive organisations ranging from volume vehicle manufacturers to those in the supply chain hosted over 50 days of activities across the breadth of the UK in the October focus period. They opened their doors to interact with students, teachers and career advisors their perceptions of manufacturing.

Apprenticeship Trailblazers

The automotive industry has helped to pilot government's reforms to apprenticeships by participating in the Trailblazers initiative. The sector developed a new apprenticeship standard for 'Mechatronics Maintenance Technician' in 2013, which is high quality, employer-led and easy to understand. Government aims to deliver all apprenticeship frameworks under the new standards by 2017/18.

PEOPLE AND COMMUNITIES

UK automotive careers showcased

National Apprenticeship Week 2013 celebrated apprenticeships and the positive impact they have on individuals, businesses and the economy. SMMT and Semta jointly hosted two events. Firstly, a seminar on the reforms planned arising by the government-commissioned Richard Review of Apprenticeships. Secondly, the Business Secretary, Dr Vince Cable MP spoke at an event that showcased the depth, breadth and diversity of apprenticeships in the automotive sector. See www.apprenticeships.org.uk



New Bosch technology centre to support the UK automotive industry

2013 saw Bosch open an automotive technology centre on the new campus of the University of Warwick Science Park. 30 Bosch automotive engineers will focus on providing engineering support to vehicle manufacturers to optimise existing Bosch technologies and new functionalities.



More skilled and female engineers

Highly-skilled engineers play a crucial role in the success of the UK automotive sector, ensuring it's capacity to compete and to innovate.

The industry is also focusing on encouraging more women into engineering and manufacturing roles by offering a wide range of education programmes and, crucially, encouraging them to make the right subject choices at GCSE-level and beyond. Signatories run various projects such as 'Young Women In The Know', developed by Jaguar Land Rover, and 'Girls Engineering the Future', supported by Bentley.

Bentley supports 'Girls Engineering the Future'

Supported by Bentley and the government, 'Girls Engineering the Future' has been carefully designed to inspire talented young women to build a career they can be passionate about. Through the Bentley apprenticeship scheme they can play their part in developing the Bentleys of the future. www.girlsengineeringthefuture.org.uk



Developing skills in young people

The automotive Foyer Federation Working Assets programme, piloted in 2012, was continued in 2013 with BMW, Ford, Toyota and Unipart. The programme, supported by the SMMT Charitable Trust, focused on developing the skills of young people from challenging backgrounds, enhancing their employability and helping them in the journey to becoming independent adults. In total, 52 young people were engaged in the 2013 programme, with an average age of 20 and an equal gender split. Following completion of the programme, 72% of participants moved into employment or education, and 28% were in other positive activities as a result of Working Assets.

Unipart Nuffield Bursaries

For the past six years, Unipart Manufacturing has successfully sponsored students through the Nuffield Bursary Scheme, which encourages young people (post-16) to study maths-based subjects and to apply them in the working environment. Young people are placed within Unipart Group for a six-week period of training on Creative Problem Solving, which equips them with the skills to work on real-life mathematical problems within the company.



Volkswagen Group Charity Challenge

Group Services Staff teamed together to cycle 941 miles in a coast-to-coast relay from Aberdeenshire to Cornwall. Along with other events the Charity Challenge raised £15,000 for charities such as the Alzheimer's Society, BHF and Macmillan and, local to VWG, Willen Hospice and the Milton Keynes Community Foundation.

PEOPLE AND COMMUNITIES

Mercedes-Benz invests in training



In 2013, Mercedes-Benz UK saw a record 200 apprentice vacancies, a 65% growth in two years.

The Apprentice Programme also recently achieved government's Matrix Standard – a fantastic achievement on its first assessment. In total, 1,320 apprentices have graduated from the programme since it began in 1995 and 65% of those who graduate are still with the Mercedes-Benz brand 10 years on, with many progressing to senior positions.

In 2013, signatories and their employees donated almost 15,000 hours of their time. Other forms of contributions include engagement with emergency services on the Safe Drive Stay Alive and the Junior Good Citizen campaign, raffles with company branded merchandise, community foundation annual car raffle, careers support and work experience placements for students from local schools, workshops on language skills and STEM subjects (science, technology, engineering and mathematics).

The industry is actively engaged with the Motor Industry and Allied Trades Benevolent Fund (BEN), which provides care and support for employees and their dependants in times of need. In the last three years charity donations to BEN have exceeded £7m in direct and in-kind donations.

The Honda Challenge

Honda's dealer apprenticeship programme has trained over 1,100 apprentices in 13 years. Dealership apprentices attend block training at the Honda Institute to achieve City and Guilds Diploma in Light Vehicle Maintenance and Repair Level Three. Honda's programme consistently scores above the national average for completion rates, most recently more than 20% higher than the national average.



BMW UK give 300 staff hours to BEN

As part of BMW's ongoing support for BEN, the whole of the Aftersales Team spent the day at BEN's headquarters in Ascot undertaking maintenance and other essential tasks to improve surroundings for BEN care home residents. They helped the charity prepare for the Queen's visit and for a property sales event to raise funds for further developing BEN's care facilities for sick and elderly automotive industry employees.

Community engagement and charitable donations

The automotive industry has a strong tradition of engaging with communities by supporting local environmental

and educational projects and employment opportunities. This is made up of direct and indirect donations encouraging their employees to volunteer their time to the charitable causes and local community projects of their choice.

Signatories and their employees donated 15,000 hours in 2013

Michelin's commitment to local community



Michelin is committed to the economic regeneration and long-term prosperity of the areas local to its sites: Ballymena, Dundee and Stoke-on-Trent.

The 'Michelin Development' initiative offers financial support, as well as business expertise and advice, to small and medium sized enterprises (SMEs) that can create or safeguard sustainable jobs. Since it started in 2003, the scheme has helped over 200 companies with £5.5 million in loans, helping to create 2,300 potential jobs.



FUTURE VEHICLES AND TECHNOLOGY

OLEV strategy and £500m ULEV funding from 2015 to 2020

In July 2013, government allocated £500m funding for ultra-low emission vehicles (ULEV) from 2015 to 2020. A strategy was then published by the Office for Low Emission Vehicles (OLEV) to outline government's long-term vision for ULEVs. The principles include: a focus on inward investment and the supply chain; technological neutrality; working with the EU on ambitious but realistic regulation; addressing market failure; and consistent communications. A call for evidence has helped OLEV develop priorities for the £500 million funding, in which SMMT called for continuation of a balanced approach to government funding for ULEVs, incorporating elements on consumer incentives, strategic

investment in infrastructure and increased leverage of R&D support.

The OLEV package announced on 29 April 2014 includes the following funding streams: consumer incentives through the continuation of the Plug-in Car Grant and assistance for purchase of other vehicle types, further support for R&D, taxi infrastructure support and incentives, support for low emission buses, a new city scheme, infrastructure support including funding for a rapid charging network for electric vehicles and gas refuelling network for HCVs.

www.gov.uk/government/publications/ultra-low-emission-vehicles-in-the-uk-measures-to-support-use-and-development-2015-to-2020

GoUltraLow consumer campaign

The Deputy Prime Minister joined BMW, Nissan, Renault, Toyota and Vauxhall to launch www.GoUltraLow.com, a 2014 print, digital and radio campaign to help motorists understand the benefits, cost savings and capabilities of the raft of new ultra-low emission vehicles on the market. The website provides a one-stop-shop for information about owning and running an ultra low emission vehicle, the makes and models available and the locations of the thousands of publicly available chargepoints.



Post-2020 CO₂ targets

Having agreed the details of the 2020 CO₂ targets for cars and vans, the European Commission has now begun work on the car and van CO₂ regime for the post-2020 period. The key issues to be considered are: whether to change from the tailpipe CO₂ g/km metric to an energy efficiency metric such as MJ/km; whether a vehicle should be measured by the size of its footprint or its mass; when the next target should apply and how ambitious it should be.



CO₂ from heavy duty vehicles

Developed by the EU, Vehicle Energy Consumption Simulation Tool (VECTO) and the certified CO₂ information it provides will help operators choose the best vehicle and technologies for their duty cycle. A Commission proposal is expected in 2015 and could be in force by 2017. It is likely to focus on the most important segments for fuel-consumption like long distance, regional delivery and coaches in the first instance, with others to follow. VECTO is undergoing proof of concept by road testing and will then need to be developed from an engineering tool into a certification tool with user guide for wider use.

http://ec.europa.eu/clima/policies/transport/vehicles/heavy/index_en.htm

FUTURE VEHICLES AND TECHNOLOGY

Developing a gas strategy for trucks

The joint government-industry task force on low emission trucks, which includes SMMT and truck operators, has focused on a strategy of improving the uptake of methane gas trucks, which offer significant CO₂ and fuel cost savings. <https://www.gov.uk/government/publications/low-emission-hgv-task-force-recommendations-on-use-of-methane-and-biomethane-in-hgvs>. The government's commitment to a fuel duty differential between gas and diesel until 2024 brings certainty for the business case of operators and infrastructure providers to invest. The £13.5 million low-carbon truck trial and has 175 trucks on the road, which will rise to 354 vehicles, most of which are dual-fuel gas trucks. Eighteen aerodynamic and light-weight trailers are also in operation along with four refuelling stations, forming part of a planned network of 26 refuelling stations. This will leave an infrastructure legacy for the gas truck market to build on.

Closing the gap between real-world and test cycle performance

The original purpose of the current test cycle - NEDC for cars and vans was to provide comparable CO₂ and emissions data between vehicles to help inform consumer purchasing decisions. Even if vehicles are tested in a comparable way, motorists know that their performance depends on a range of factors including driving style, the route taken, maintenance standards, climatic conditions and load carried. The new Worldwide harmonised Light vehicles Test Procedure (WLTP) is designed to better represent real-world driving. The technical detail of WLTP was agreed in March 2014, and it is to be embedded into EU law over the coming years.

An important aspect of the switch to WLTP is that the 2020 CO₂ targets for cars and vans were set on the basis of the NEDC. A correlation exercise is therefore ongoing to ensure that, through introducing WLTP, the level of ambition is not artificially changed overall, for any vehicle segment or manufacturer.

The London Ultra-Low Emission Zone (ULEZ) is a significant proposal from the Mayor's Office

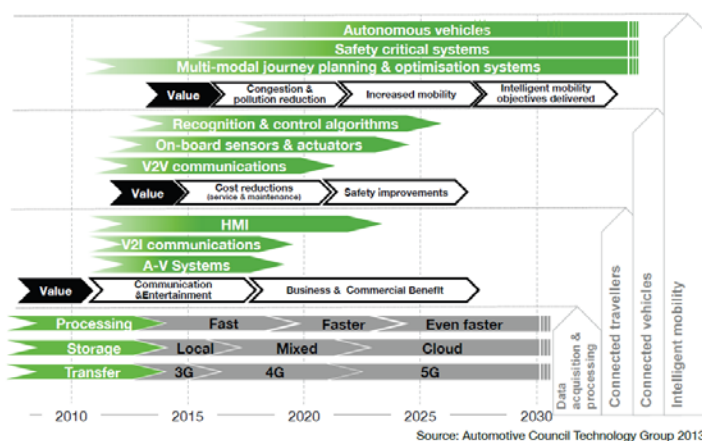
and Transport for London (TfL) to influence behaviour and tackle the air quality hotspots in the capital from 2020. Proposals aim to reduce air pollutants from road transport, contribute to achieving compliance with EU ambient air quality limit values, and support the Mayor's strategy in reducing CO₂ emissions and increasing the uptake of ultra-low emission vehicles in London.

Connectivity

Direct communication between vehicles and infrastructure will enable safer and more efficient traffic flows, with great benefits for drivers, pedestrians, the environment and the economy in an ever-busier world. Technologies include real-time traffic avoidance routing, crash avoidance, adaptive cruise control, geo-fencing to ensure vehicles switch to electric-only mode in the city centre and differentiated road tolls. Fleet telematics are already well proven in achieving higher utilisation factors for vehicles and location reports for individual items of freight with low cost and highly reliable technology. Highways engineers can also use the technology to control speed and provide variable traffic signs.

Government's 2013 Autumn Statement announced support for the development of driverless cars including a prize fund of £10 million awarded to a town or city as a testing ground. The Automotive Council has also developed a technology roadmap for intelligent mobility. The roadmaps focus R&D funding in the UK on the consensus areas where it is needed, and are collated at <http://www.automotivecouncil.co.uk/wp-content/uploads/2013/09/Automotive-Council-Roadmaps.pdf>.

Intelligent mobility technology roadmap



Signatories to this report	Brands
Alexander Dennis	Alexander Dennis
Bentley Motors Ltd	Bentley
BMW Group UK including Rolls-Royce Motor Cars Ltd	BMW, MINI, Rolls-Royce
Bosch	Bosch
Caterpillar	Caterpillar, Perkins
CEVA Logistics	CEVA Logistics
Ford Motor Company Ltd	Ford
General Motors UK Ltd	Chevrolet, Vauxhall
GKN Driveline Ltd	GKN
Honda (UK) and Honda of the UK Manufacturing (HUM) Ltd	Honda
IBC Vehicles Ltd	Nissan Commercial Vehicles, Renault, Vauxhall
Jaguar Land Rover Ltd	Jaguar Cars, Land Rover
Leyland Trucks	DAF Trucks
Mercedes-Benz UK Ltd	Mercedes-Benz, smart
Michelin Tyre plc	Michelin
Nissan Motor Manufacturing (UK) Ltd and Nissan Technical Centre Group	Infiniti, Nissan
Optare	Optare
PSA Peugeot Citroën Automobiles UK Ltd	Citroën, Peugeot
Schaeffler	Schaeffler
Toyota (GB) plc	
Toyota Motor Manufacturing (UK) Ltd	Lexus, Toyota
Unipart	Unipart Logistics
Volkswagen Group (UK) Ltd	Audi, SEAT, ŠKODA, Volkswagen Passenger Cars, Volkswagen Commercial Vehicles
Volvo Cars UK Ltd	Volvo

References and online content

References and detailed data on the automotive industry performance can be found at www.smmmt.co.uk/sustainability.

The webpage also contains links to signatories' sustainability websites.

- ¹ SMMT- UK automotive announcements: <http://www.smmmt.co.uk/investment/>
- ² Capturing opportunity; An assessment of supply chain opportunities in the UK automotive sector; September 2012 <http://www.smmmt.co.uk/wp-content/uploads/sites/2/SMMT-Capturing-Opportunity-report-KPMG-3MB.pdf>

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