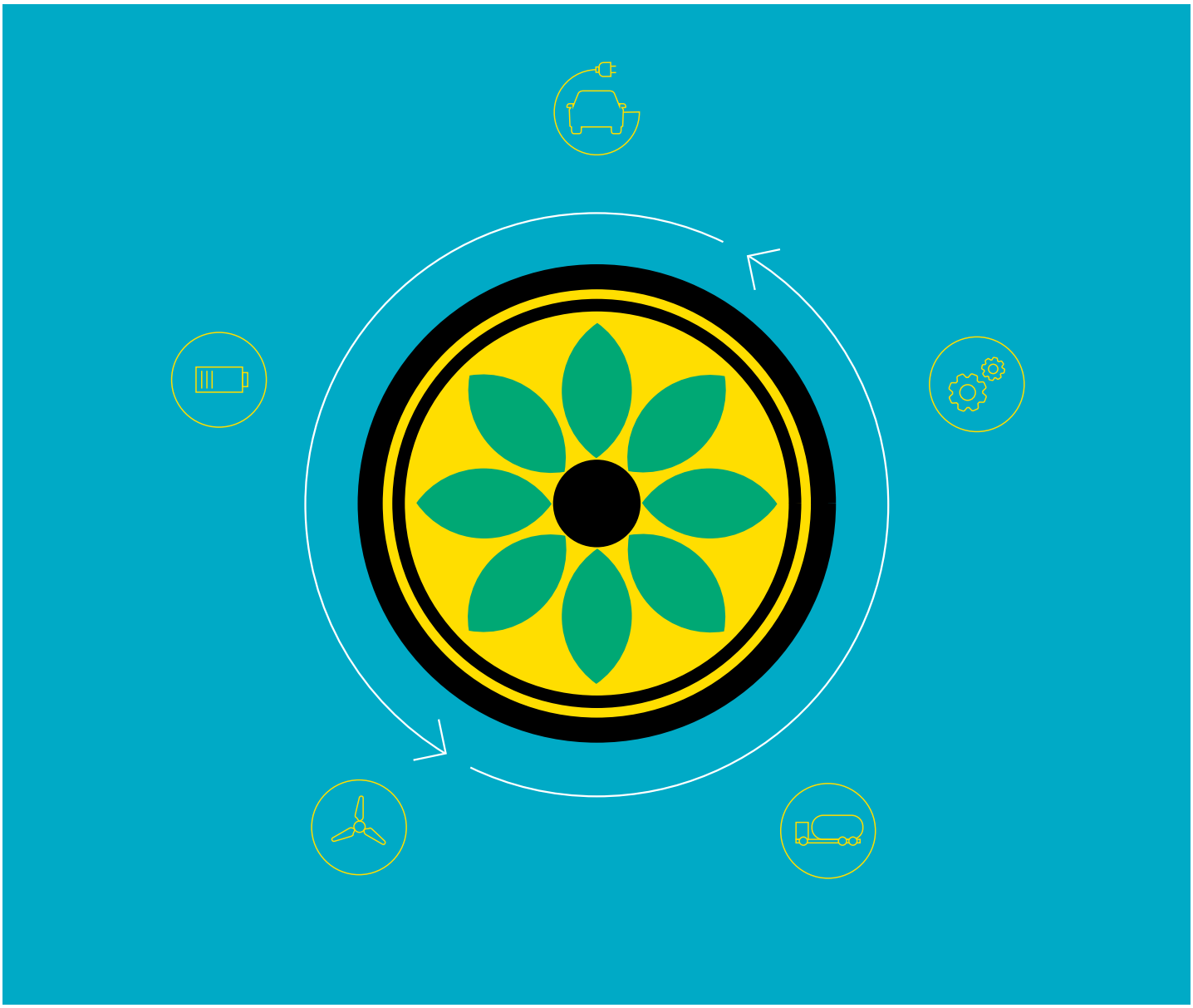
SMMT
DRIVING THE
MOTOR INDUSTRY

AUTOMOTIVE SUSTAINABILITY
REPORT 2020

2020 UK AUTOMOTIVE SUSTAINABILITY REPORT

21ST EDITION - 2019 DATA



REPORT'S SCOPE

The report focuses on the 2019 performance of the automotive sector in the UK. This year, the publication of the report was heavily delayed due to the pandemic, hence the report also covers its impact on the sector and some other 2020 developments.

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LETTER FROM THE CEO

In such an uncertain year for everyone, one of the few constants has been the resilience of UK Automotive. The industry generates more than £100 billion in trade annually and is Britain's biggest exporter of industrial goods, supporting thousands of vital skilled jobs. That success is fuelled by innovation, so automotive is a major investor in R&D – making it crucial to UK plc, and a key partner in helping the UK to reach its ambitious environmental targets.

The automotive industry's commitment to sustainable business growth and emissions reduction has been another point of continuity through a time of change. This report highlights how the sector delivered on those commitments throughout 2019, and continues to strive to do so, despite myriad challenges from ambitious net zero goals, Brexit uncertainty and, of course, an unprecedented global pandemic.

2020 has been a tumultuous year for the automotive sector. Most obviously, Covid-19 has impacted the industry unlike anything ever before. While that has been the case for the entire country, the impact on automotive has been particularly profound. Overall new car registrations are already down by some 33%, equivalent to almost 620,000 fewer units. Likewise, UK car manufacturers have seen production drop by around 40%, at a cost of some £9.5 billion. As such, one in six jobs in the sector are potentially at risk.

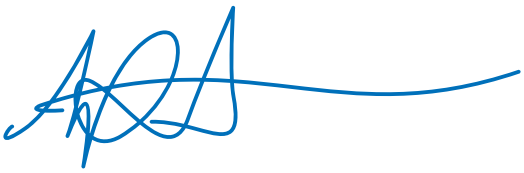
Before such challenges hit, the automotive sector had made exceptional progress on sustainability across the board. Over the past 20 years, the industry has shrunk its annual manufacturing carbon footprint by more than 1.3 million tonnes and saved around 1.2 million cubic metres of water. Last year alone, just over 1kg of waste went to landfill per vehicle produced a -23.1% reduction on 2018, and a -97.4% drop on 1999, when more than 40kg per vehicle was disposed of with no second life.

Even after these huge strides, manufacturers still find more ways to more efficiently produce vehicles that themselves are more efficient with every new model, with today's cars emitting, on average, -29.3% less CO_2 compared with their 1999 equivalents, alongside the next generation of zero emission capable cars. Work also continues apace on the major challenges expected within the next 20 years – battery recycling and reuse, sustainable materials and workforce upskilling.

However, all that progress could be undone if market confidence falters and trading conditions become more challenging.

To secure a truly sustainable future, we need a competitive business environment to anchor and grow manufacturing in the UK, with competitive energy prices, business rates that work for manufacturing and support for up- and reskilling the automotive workforce for the transformation ahead. We need a world-beating package of incentives and infrastructure investment to encourage electric vehicle uptake – within the context of wider recovery through market stimulus and supply chain support measures. An investment and a tax system that helps build a resilient raw material supply chain is crucial for the UK to be a global epicentre of battery manufacturing. And perhaps most importantly of all, we need an ambitious free trade deal with the EU that will allow us to maintain our global competitiveness and foster innovation.

Our world will be very different next year. However, with the right support and trade agreements, the UK automotive industry can remain a force for good – providing skilled jobs, leading on technological developments, and setting the global sustainable mobility agenda for years to come.



Mike Hawes **Chief Executive**
The Society of Motor Manufacturers and Traders (SMMT)

2019 SUSTAINABILITY SUMMARY

PRODUCTION

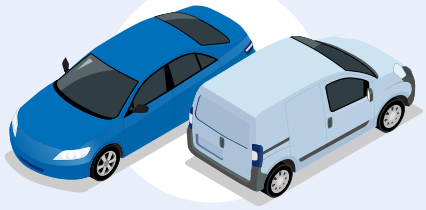
5.5%
Water use per vehicle produced up

-23.2%
Waste to landfill per vehicle produced down

3.2%
Relative energy up

-2.6%
CO2 per vehicle produced down

USE



127.9G/KM
Cars average CO2 emissions up 2.7%

7.4%
Alternatively Fuelled Vehicle registrations market share in 2019

1.6%
were Battery Electric Vehicles and Fuel Cell Electric Vehicles.

PEOPLE

-1.5%
Sectoral jobs down

-41%
Employee accidents down

1.1%
training days per employee up

SUSTAINABLE RECOVERY ASKS

- DRIVING A GREEN RECOVERY
- DRIVING THE UK'S COMPETITIVENESS GLOBALLY
- DRIVING TOWARD NET-ZERO
- JOB RESILIENCE AND LEVELLING-UP
- ENERGY COMPETITIVENESS
- THE UK'S CHANGING TRADE RELATIONSHIPS

			2018	2019	% change 2019 on 2018	1999	% change 2019 on 1999
AS	Number of signatories		28	24	-14.3%	11	118.2%
Economic performance							
WI	Automotive manufacturing sector turnover *	(£ billion)	82.2	78.9	**-4.0%**	47.90	**64.3%**
	Expenditure on business R&D*	(£ billion)	3.76	3.72	**-0.9%**	0.86	**330.6%**
	Total number of cars and CVs produced	(million)	1.60	1.38	**-13.9%**	1.81	**-23.8%**
	Total new car and CV registrations	(million)	2.72	2.68	**-1.7%**	2.52	**6.4%**
AS	Signatories' combined turnover	(£ billion)	76.9	77.2	**0.4%**	21.0	**268%**
VMs	Total number of vehicles produced	(million)	1.59	1.38	**-13.7%**	1.57	**-12.6%**
Environmental performance							
	Production inputs						
AS	Total combined energy use	(GWh)	4,464	3,962	**-11.3%**	7,013	**-43.5%**
VMs	Energy used per vehicle produced	(MWh/unit)	2.32	2.40	**3.2%**	3.9	**-38.5%**
AS	Total combined water use	(000m3)	5,288	4,838	**-8.5%**	6,090	**-20.6%**
VMs	Water use per vehicle produced	(m3/unit)	2.8	3.0	**5.5%**	5.3	**-43.5%**
	Material inputs						
AS	Total combined CO_2 equivalents	(tonnes)	993,872	854,420	**-14.0%**	2,182,926	**-60.9%**
VMs	CO_2 equivalents per vehicle produced	(tonnes/unit)	0.53	0.52	**-2.6%**	1.1	**-52.7%**
	Volatile Organic Compounds emissions (cars)	(g/m2)	33.5	33.3	**-0.7%**	55.0	**-39.4%**
	Volatile Organic Compounds emissions (vans)	(g/m2)	41.8	36.3	**-13.1%**	59.0	**-38.5%**
AS	Total combined waste to landfill	(tonnes)	3,300	1,729	**-47.6%**	80,399	**-97.8%**
VMs	Waste to landfill per vehicle produced	(kg/unit)	1.4	1.1	**-23.2%**	40.3	**-97.4%**
	Vehicle use						
AC	Average new car CO_2 emissions	(g/km)	124.5	127.9	**2.7%**	181.0	**-29.3%**
Social performance							
WI	Number of jobs dependent on the sector**		877,900	864,300	**-1.5%**	907,000	**-4.5%**
AS	Combined number of employees		99,331	93,466	**-5.9%**	95,214	**-1.8%**
	Number of lost-time incidents per 1000 employees		1.4	0.8	**-41.1%**	13.4	**-93.9%**
	Number of training days per employee		7.1	7.2	**1.1%**	3.8	**88.7%**
	Share of women employed by signatories	(%)	10.4	12.0	**15.4%**		N/A

Key:
Key –AS = signatories, WI = whole industry, VMs = vehicle manufacturers only
(WI) Whole industry data; (AC) All car registrations in the UK; (AS) All signatories; (VMs) UK vehicle manufacturer signatories; (CV) Commercial vehicles; (CO_2) Carbon dioxide.
The report has 24 signatories which represent 99.5% of vehicle production in the UK. New signatories include remanufacturing company Autocraft. Also, three companies were unable to provide data this year due to Covid-19 or closing their automotive operations. Those include ATP, GKN Driveline, Schaeffler, Pritex and LEVC.

*The 2018 and 2019 data sets have been adjusted to take into account new and leaving signatories to enable year-on-year comparison. Also some 2018 data were corrected in light of new information.
**Sector turnover, R&D and jobs dependent on the sector are compiled from several official sources using SMMT analysis. Some 2019 and all 2020 figures are based on estimates.
***Estimate of manufacturing, distribution, refuelling and repair of vehicles where automotive is the main activity.
All per vehicle figures also contain resources used during engine and battery production, some of which are destined for export.

UK Production – completed vehicles as they leave the production line in a UK facility.
Registrations – vehicles registered for road use in the UK for the first time with the DVLA or the DVLA's equivalent organisation in Northern Ireland, Channel Islands or Isle of Man.
UK Turnover – the money/income that a business generates in the UK each year.
UK expenditure on Business R&D – the amount, in monetary terms, spent on research and investment, each year in the UK.

SUMMARY

		2018	2019	% change 2019 on 2018
Economic performance				
Production		12,523	12,158	**-2.9%**
Environmental performance				
Production inputs				
Total combined energy use	(MWh)	106,906,571	128,091,687	**19.8%**
Energy used per vehicle produced	(MWh/unit)	8.5	10.5	**23.4%**
Total combined water use	($000m^3$)	199	142	**-28.6%**
Water use per vehicle produced	(m^3/unit)	15.9	11.7	**-26.4%**
Material outputs				
Total combined CO_2 equivalents	(tonnes)	26,523	28,050	**5.8%**
CO_2 equivalents per vehicle produced	(tonnes/unit)	2.12	2.31	**8.9%**
Total combined waste to landfill	(tonnes)	119	220	**85.2%**
Waste to landfill per vehicle produced	(kg/unit)	9.5	18.1	**90.8%**

SMALL VOLUME MANUFACTURES (SVM) KPIS

In 2019 SVM signatories recorded a decline in production levels, albeit a much lesser extent than the volume producers. Despite lower production levels, absolute energy use and associated CO_2 emissions increased due to one of the signatories opening a new production site where production is yet to commence.

		2012	2018	2019	% change 2019 on 2012	% change 2019 on 2018
Economic performance						
Output (weight of product produced)	(tonnes)	401,922	463,469	428,574	**6.6%**	**-7.5%**
Environmental performance						
Production inputs						
Total combined energy use (reporting weight)	(GWh)	628.6	290.1	235.6	**-62.5%**	**-18.78%**
Energy used/output (per tonne shipped)	(MWh/tonne)	1.56	0.63	0.55	**-64.8%**	**-12.2%**
Total combined water use (reporting weight)	($000m^3$)	777	366	306	**-60.6%**	**-16.2%**
Water use/output (per tonne shipped)	(m^3/tonne)	1.93	0.79	0.71	**-63.0%**	**-9.4%**
Material outputs						
Total combined CO_2 equivalents (reporting weight)	(tonnes)	207,995	64,908	49,898	**-76.0%**	**-23.1%**
CO_2 equivalents/output (per tonne shipped)	(tonnes/tonne)	0.52	0.14	0.12	**-77.5%**	**-16.9%**
Total combined waste to landfill (reporting weight)	(tonnes)	1,826	855	14	**-99.2%**	**-98.3%**
Waste to landfill/output (per tonne shipped)	(kg/tonne)	4.5	1.84	0.03	**-99.3%**	**-98.2%**

SUPPLY CHAIN KPIS

In 2019, a remanufacturing company, Autocraft, became a new signatory to the report. However, this year, four other supply chain signatories were unable to provide data due to the challenging situation created by the pandemic. Consequently, data from seven companies were included in the table above, representing a wide range of activities, ranging from component production to freight and remanufacturing.

In 2019, the activity level, defined as the weight of product produced, dropped by -7.5% year-on-year. All remaining absolute and relative metrics improved by a much higher level compared with the overall production decline.

ECONOMIC PERFORMANCE

→ **The automotive industry has worked tirelessly for years to finetune its efficiency and productivity to maintain its position as a successful and sustainable sector. However, the last few years have introduced new challenges. In 2019, both UK automotive production and registrations fell. This is reflected in almost all of the economic indicators for the sector. A subdued economic environment and political impasse on the UK's withdrawal from the EU resulted in low consumer and business confidence. UK production volumes were also impacted by multiple dates of uncertainty when the UK came close to leaving the EU without a deal, as well as by weak global demand.**

PERFORMANCE

- 2019 car production and registrations down -14.2% and -2.4% respectively
- Turnover down -4.0% to £78.9bn
- R&D spend down -0.9% to £3.72bn
- Production shutdown followed by gradual restart in 2020

REASONS

- Economic slowdown
- Changing Brexit timeline and future uncertainty
- Global Covid-19 pandemic in 2020

FUTURE CHALLENGES/OPPORTUNITIES

- Covid-19 repercussions
- Transition to new terms of trading with EU
- Transformational technologies – connected, autonomous, shared mobility and electrification


Fire point
LEONI
ABB

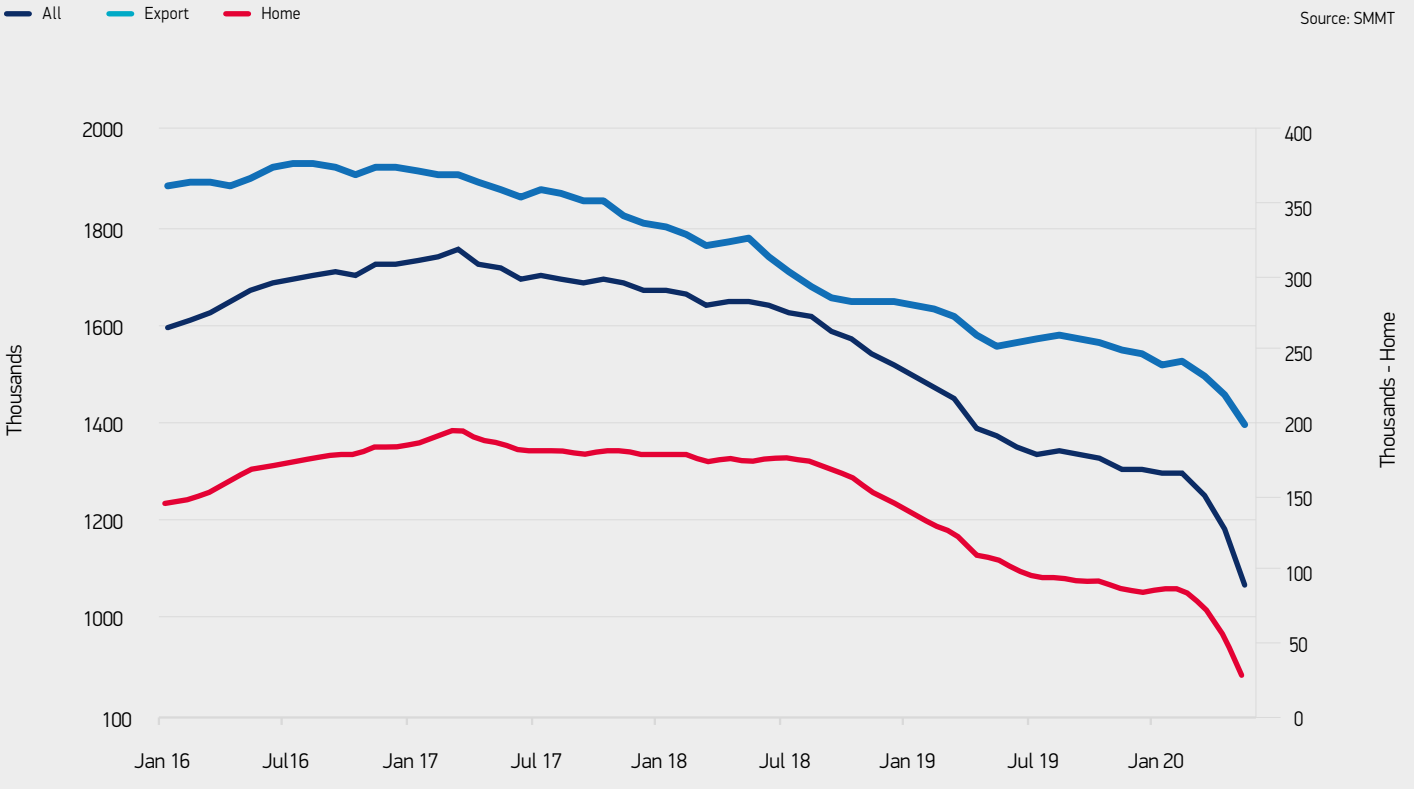
PRODUCTION

In 2019, UK car production fell for the third consecutive year, down by -14.2% to 1.3 million units – its lowest level since 2010 and some 400,000 units off the recent 2016 peak. Output was affected by multiple factors, notably several plant shutdowns to minimise potential impacts of the UK leaving the EU without a deal. Consumer and business confidence was also weak at home, with demand for UK-built vehicles in key overseas markets moderated. A number of significant model production changes also took place.

Similarly, UK commercial vehicle (CV) manufacturing declined by -7.8% in 2019. The fall in output follows a turbulent year, as model changeovers, variable fleet buying patterns and regulatory changes combined to affect production numbers.

Output was affected by multiple factors, notably several plant shutdowns to minimise potential impacts of the UK leaving the EU without a deal

CHART 1 **Car production (Rolling year)**



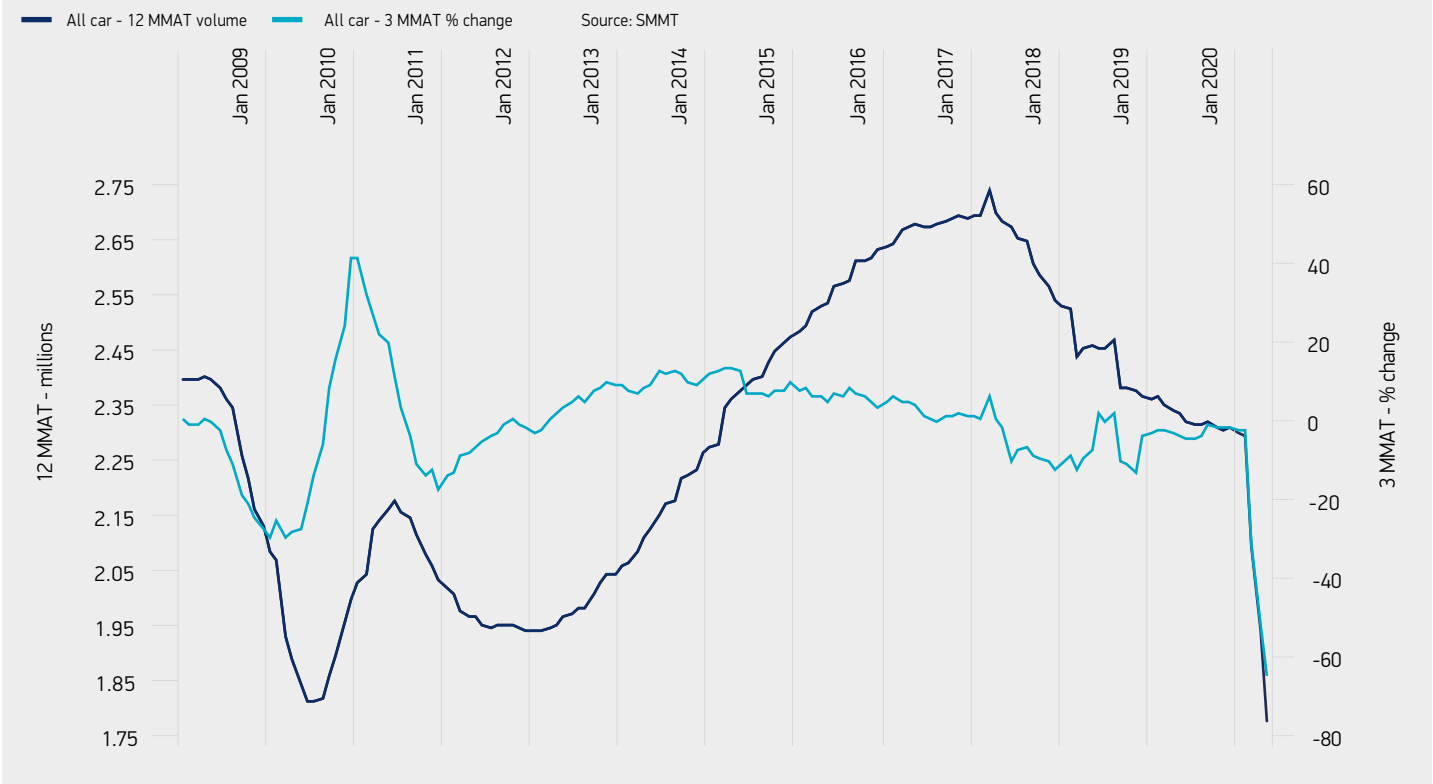
REGISTRATIONS

The UK new car market declined in 2019, with annual registrations falling for the third consecutive year. Since 2016, the UK new car market has fallen by some 380,000 units or -14.2%. Overall, 2.31 million units were registered in 2019, representing a fall of -2.4%, as the volatile market reacted to weak business and consumer confidence, general political and economic instability and confusion over Clean Air Zones. Private demand fell by -3.2% and was key to the overall decline, but a sharp -21.8% (or 135,000 unit) fall in diesel car volumes was also a major factor. Since 2016 diesel volumes have fallen by some 670,000 units.

Bucking the overall market trend, combined Alternatively Fuelled Vehicles (AFV) registrations, here defined as Battery Electric Vehicles (BEVs), Plug-in Hybrid Vehicles (PHEVs) and Hybrid Electric Vehicles (HEVs), rose significantly in 2019 to take a record 7.4% market share, up from 6.0% the previous year. HEVs continued to dominate this sector, with registrations increasing 18.7% to 97,600 units. The market share for HEVs rose from 3.5% in 2018 to 4.2% in 2019. Similarly, BEV registrations experienced the most significant percentage growth, rising 144% to 37,850 units and a 1.6% market share, overtaking plug-in hybrids for the first time. This growth was on the back of significant new model activity, as well as increasing consumer acceptance of AFVs. PHEV registrations ended the year -21.3% lower with 34,984 units and a market share of 1.5%, reflecting the impact of the removal of the plug-in car grant for PHEVs in October 2018.

The UK light commercial vehicle (LCV) market rose 2.4% in 2019 with 365,778 vehicles registered, the third highest on record. This reflected demand brought about by ongoing growth of online shopping and corresponding deliveries, and operator appetite for the latest low emission models to comply with Clean Air Zone requirements. Heavy Commercial Vehicle (HCV) registrations rose 12.6% to more than 48,500 units, largely on the back of regulatory changes and the introduction of digital tachographs, both of which are likely to create a knock-on effect in 2020. Bus and coach registrations fell by -18.8% in 2019, with annual demand falling for a third consecutive year to 5,874 units. This is linked to the ongoing decline in bus use, coupled with increased competition from personal vehicle hire/ride-sharing and modal shift (cycling and walking).

CHART 2 **New car registrations**

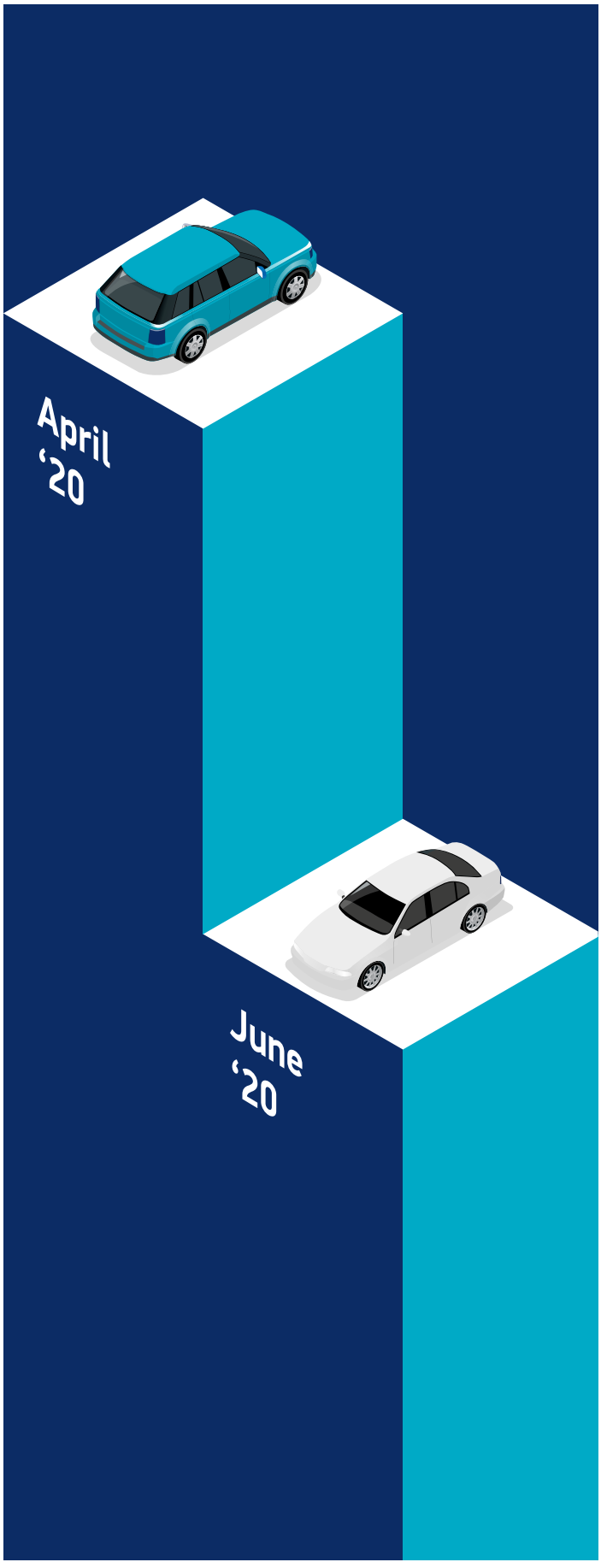


COVID-19

The Covid-19 pandemic delivered an immense shock to the UK and global economy. The magnitude of the recession caused by the pandemic is unprecedented in modern times. The UK economy plunged by -19.8% between April and June as social distancing restrictions shuttered economic activity. The government announced several extensive policy interventions to financially support businesses, workers and the wider public during the outbreak, as well as attempting to reduce economic uncertainty and increase resilience. Automotive has been one of the manufacturing sectors hardest hit by the outbreak, with production plants and dealerships shut for several months to help protect staff and the public both in the UK and many other parts of the world. The industry is left with a weakened demand in both the UK and many of the key export markets. 2020 is likely to see all metrics severely impacted, and these impacts may last well into the future given the as-yet unknown progress of the pandemic, as well as continued uncertainty around the UK's future relationship with the EU and other key trading partners.

These exceptional circumstances will require the industry to go back to the drawing board and rethink its future strategy to balance efficiency with long term resilience.

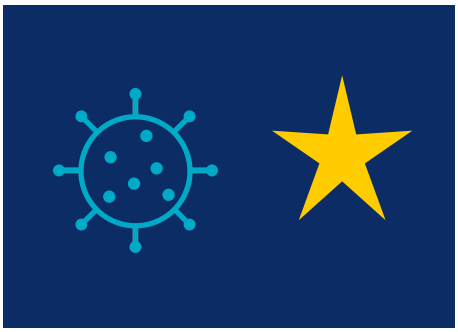
Car production continued to slip in early 2020, followed by the closure of plants from the middle of March in response to Covid-19. Some plants reopened in late May/early June, but others may remain shut into the autumn or beyond. Even those that have reopened are not producing anywhere near to full capacity and the restart will be a slow process, reflective of having to reconfigure plants to maintain social distancing to protect the workforce, reengaging the supply chain and ensuring consistent supply of inputs, against a backdrop of subdued customer demand. Parts and components supply has also been severely impacted. Overall production in the first eight months of the year fell by -40.2%, representing a year-on-year loss of 348,821 cars. The outlook remains very uncertain, but an independent assessment commissioned by SMMT predicts car production will be significantly below one million units in 2020, and notes the importance of a future trading agreement with the EU in maintaining the health of UK automotive.



Despite the difficulties, the pandemic also demonstrated the industry's ability to be innovative, flexible and ambitious. In April, instead of making cars, many manufacturers refocused efforts on producing personal protective equipment (PPE), including face shields, visors and medical gowns for use by healthcare professionals. Together they have made more than 700,000 pieces of PPE, with other carmakers helping to manufacture medical equipment, including more than 13,000 high-tech ventilators as part of the Ventilator Challenge UK Consortium. Also, some vehicle manufacturers loaned their vehicles to support emergency response workers.

With parts of the economy in lockdown and dealers forced to shut from late March until 1 June in England, and until late June in Wales and Scotland, vehicle registrations plummeted from mid-March onwards. In the first nine months of 2020, the car market was down -33.2%, and for LCVs, by -27.4%. HCV and bus and coach data is only available for Q2. HCVs were down -73.4% on the back of strong gains in 2019, while the bus and coach market was down -77.1% on an equally weak 2019 performance when growth was focused firmly in the minibus segment. Demand for new alternatively fuelled vehicles remained much more positive until September and market share has been flattered by the overall market's fall, with BEV cars reporting a 165.4% growth in registrations to take a 5.4% market share, and PHEVs up 83.7% to take a 3.4% share. This follows the introduction of 30 new BEV and PHEV models, a rise of more than 60% compared with the previous year to more than 80 models.

Looking ahead, SMMT's new car market outlook for 2020, published in July, has been downgraded from previous expectations to just 1.69 million registrations. This puts the sector on course to record its lowest performance since 1992's 1.59 million units, below the levels seen during the financial crisis, and some -27% (or 620,000 fewer units) lower than the 2.31 million new cars registered in 2019. The new BEV market is expected to double in 2020 to 78,340 units, raising market share significantly from 1.6% in 2019 to 4.9%. HEV registrations are expected to rise by 2.5% this year to 100,280 units. This would be a 6.3% market share, up from 4.2% in 2019. The LCV market is expected to decline -26.3% in 2020 to 269,460 units. Registrations are expected to recover by 17.9% to 317,750 units year-on-year during 2021.



CHALLENGES

The Covid-19 crisis has piled intense additional pressure on an already stretched industry. International trade tensions and uncertainty over the UK-EU future relationship are resulting in a lack of clarity over the trading environment in 2021 and beyond. The accelerated transformation to electrification needed to meet both UK and international climate change ambitions poses another challenge. The combination of all of these issues makes it an incredibly difficult environment in which to plan for the future.

The immediate challenge is how to safely trade and recover demand given the introduction of new restrictions. Simultaneously, the industry needs to plan for the outcome of other issues - most notably and urgently, the outcome of the negotiations on the future trading relationship with its largest and closest trading partner, the European Union. Significant questions remain about the nature of trading conditions from 1 January 2021, with uncertainty about customs procedures, regulation and damaging tariffs causing real concern. According to a July 2020 survey of SMMT members[1], this lack of clarity is severely hampering nine in 10 companies' (93.5%) ability to prepare for the end of the transition period.

The automotive industry is a key driver of UK economic growth, as well as a major employer across all geographic regions. To overcome the challenges, ongoing and increased government support for vehicle manufacturers and suppliers is needed and robust short-term measures are crucial. Government and industry need to partner to prepare for what comes after surviving the acute phase of the pandemic.

Despite the difficulties, the pandemic also demonstrated the industry's ability to be innovative, flexible and ambitious

1 Survey of 119 SMMT member companies conducted in July 2020

ENVIRONMENTAL PERFORMANCE

→ The automotive industry is rapidly evolving in response to its role in addressing climate change, improving local air quality and ensuring resource preservation. Great progress has been made in all areas of vehicle lifecycle, but as we work towards net zero, the scale of the challenge cannot be underestimated. Close cooperation between industry, government and all stakeholders is needed to ensure the right policy framework and effective incentives are in place for industry to fulfil its potential and achieve shared goals.

PERFORMANCE

- Relative energy up 3.2% but CO_2 per vehicle produced down -2.6%
- New car average CO_2 emissions up |2.7% to 127.9g/km
- 2019 AFV registrations at 7.4% market share, | of which 1.6% were BEVs and FCEVs

REASONS

- Efficiency drop due to output reduction
- Declining diesel volumes
- New, more stringent WLTP test cycle, gives higher CO_2 values than previous NEDC
- Customer shift to larger vehicles
- Growing consumer appetite for AFVs

FUTURE CHALLENGES/OPPORTUNITIES

- Gradual phase out of ICE vehicles
- Contribution to sustainable transport decarbonisation
- Achieving net zero GHG in production operations and supply chain
- Further increase sector's circularity
- Continue to minimise production and vehicle emissions

CO_2: UK NET ZERO TARGET 2050

In June 2019, the UK officially adopted a legally binding target which requires all greenhouse gas emissions (GHG) to be net zero by 2050. Any remaining emissions which cannot be removed by this date would be balanced by schemes to offset an equivalent amount of GHGs from the atmosphere, for example, planting trees or using technology such as carbon capture and storage. To mobilise support for reaching the target, in June 2020 the UK and Chile, as high-level climate champions, launched the United Nations Race to Zero campaign. The campaign aims to build up momentum for global decarbonisation ahead of the COP26 UN Climate Change Summit, which will be held in the UK in 2021.

Industry shares government's vision of a zero emission future and is spending billions developing the latest low and zero emission technologies to suit all driving needs, as well as implementing efficiencies across the manufacturing process. However, this requires a holistic approach as well as significant support from government to achieve the switch to ultra-low and zero emission vehicles, increase the development of renewable energy sources, plus funding for research to deliver zero emission manufacturing.

CHART 3 **UK average household CO_2 emissions (2017) kg CO_2 emissions**

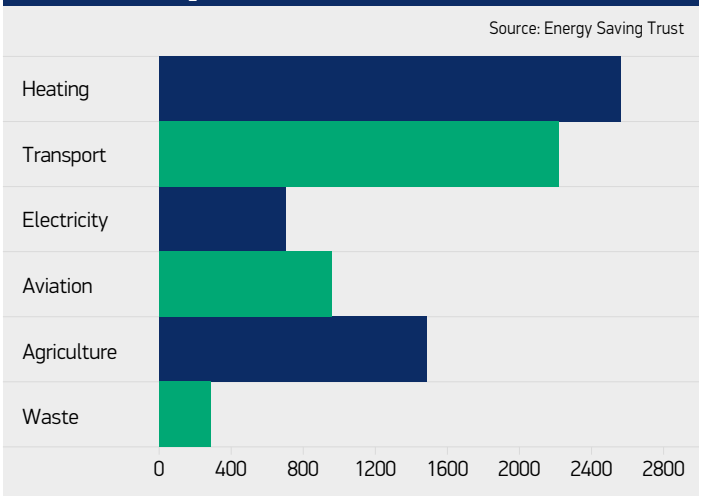
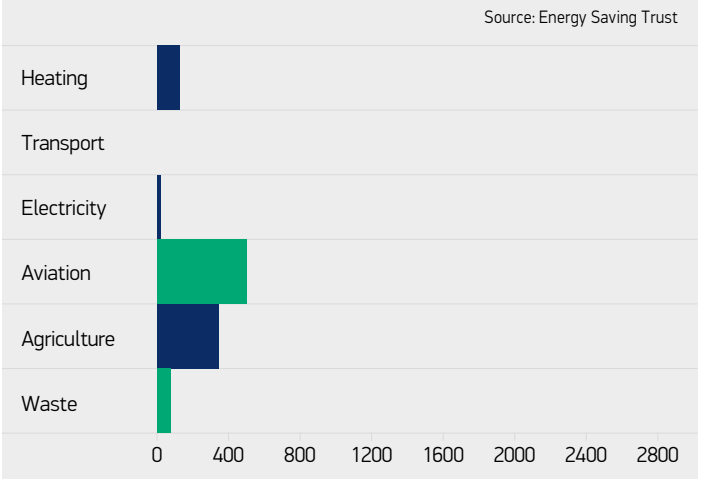


CHART 4 **UK average household CO_2 emissions (2050 Net zero) kg CO_2 emissions**

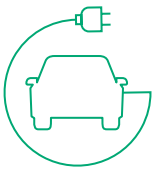


TRANSPORT DECARBONISATION PLAN

In March 2020, government published *Decarbonising Transport: Setting the Challenge*, which outlines a coordinated, cross-modal plan to decarbonise all transport in the UK. The Transport Decarbonisation Plan (TDP), which will be published later in 2020, will outline what is needed from all key actors to deliver a net-zero transport sector by 2050. The TDP will look at in-use GHG emissions. Emissions from power generation and distribution for transport are outside the scope of the plan, as they are covered in other government strategies. The *Setting the Challenge* document sets out six key strategic priority areas on which the final TDP will focus.

Accelerating modal shift to public and active transport

- Help make public transport and active travel the natural first choice for daily activities
- Support fewer car trips through a coherent, convenient and cost-effective public network; and explore how we might use cars differently in future
- Encourage cycling and walking for short journeys
- Explore how to best support the behaviour change required



Decarbonisation of road vehicles

- Support the transition to zero emission road vehicles through:
  - regulatory framework
  - strong consumer base
  - market conditions
  - vehicle supply
  - refuelling and recharging infrastructure
  - energy system readiness
- Maximise benefits through investment in innovative technology development, and development of sustainable supply chains

Decarbonising how we get our goods

- Consider future demand and changing consumer behaviour for goods
- Transform 'last-mile' deliveries – developing an integrated, clean and sustainable delivery system
- Optimise logistics efficiency and explore innovative digitally-enabled solutions, data sharing and collaborative platforms

Place-based solutions

- Consider where, how and why emissions occur in specific locations
- Acknowledge a single solution will not be appropriate for every location
- Address emissions at a local level through local management of transport solutions
- Target support for local areas, considering regional diversity and different solutions

UK as a hub for green transport technology and innovation

- Utilise the UK's world-leading scientists, business leaders and innovators to position the UK as an internationally recognised leader of environmentally sustainable technology and innovation in transport
- Build on expertise in the UK for technology developments and capitalise on near market quick wins

Reducing carbon in a global economy

- Lead international efforts in transport emissions reduction
- Recognise aviation and maritime are international by nature and require international solutions
- Harness the UK as a global centre of expertise, driving low carbon innovation and global leadership, boosting the UK economy

SMMT welcomes the development of a Transport Decarbonisation Plan. The automotive industry is committed to playing its part in creating a UK zero carbon economy, but the right policy framework and support must be in place for this to happen.

We support the shift to sustainable and active travel. However, private vehicles will continue to be a crucial means of mobility for large parts of the population. Therefore, government support for consumer purchase of low and zero emission vehicles - for example via the Plug-in Car and Van Grants - is essential. These types of fiscal incentives are crucial if we, as a community, are to meet the 2050 targets.

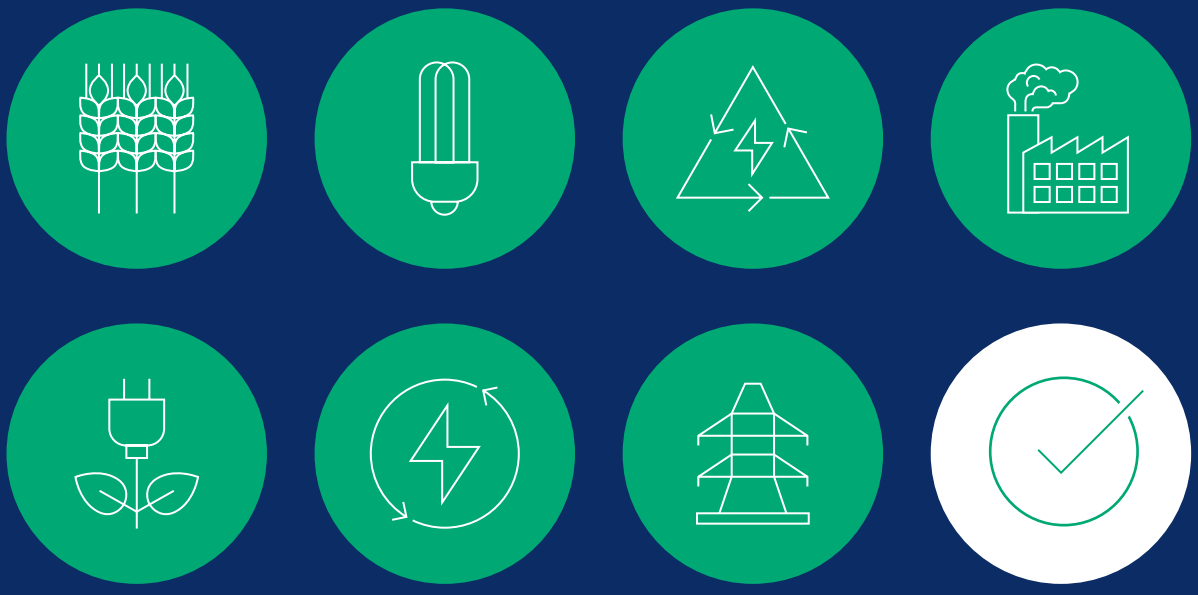
CASE STUDY:
WE'VE HAD OUR SCIENCE-BASED TARGETS APPROVED

SCIENCE BASED TARGETS

Science based targets (SBTs) are set targets in line with the level of decarbonisation required to keep the global temperature increase below 1.5°C, compared with pre-industrial temperatures. Since 2015, the following companies have committed to SBTs covering their global operations: Honda, Michelin, Nissan and Toyota. Recently Bosch, Daimler, Group PSA and Renault also had their targets set and approved.

GROUPE PSA CO2 SCIENCE-BASED TARGET APPROVED

In line with its commitment to tackle climate change, Groupe PSA paved its way to carbon neutrality after its greenhouse gas emission reduction targets were approved in 2019 by the Science Based Targets initiative (SBTi) Steering Committee.



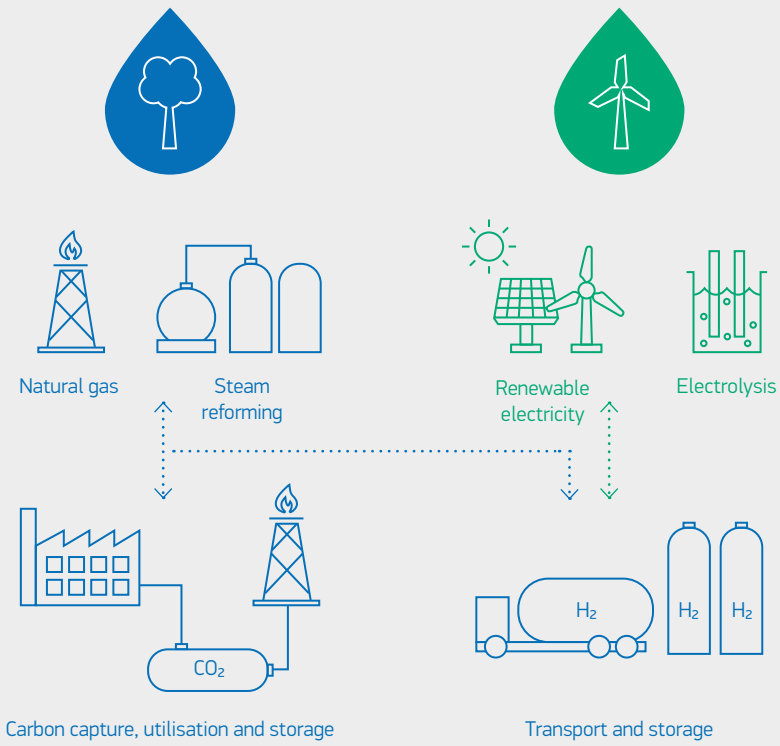
BUSINESS ENERGY

In automotive manufacturing, energy is typically the second largest variable cost, after labour, and is key to the competitiveness of UK manufacturing plants. The industry has invested heavily in reducing energy consumption over the years – with energy per vehicle produced down -43.3% over the past 20 years, delivering a -23% reduction in 2017/18 versus 2008 in the Climate Change Agreements (CCA) and a -25% reduction in EU Emissions Trading Scheme (ETS) emissions in 2019 versus 2013. However, the effects of Covid-19 are quickly unravelling short-term energy efficiency ambitions and will significantly constrain investment opportunities ahead.

Grid decarbonisation is an important part of the UK meeting its carbon budgets. Many manufacturing sites already have renewables such as solar and wind turbines on site but are restricted by space in going much further. To reach zero emissions, a radical move is needed, for example, switching to use sustainable hydrogen as a fuel, or mini-nuclear or electric heating (when electricity becomes decarbonised). However, at present the technologies to do this, especially on a commercial and industrial scale, either do not exist, are unproven or are simply not currently cost effective. For example, early estimates suggest a switch from gas to hydrogen may be in the region of £50 million per manufacturing site. Decarbonising by moving from gas to electricity will be at odds with current CCA targets.

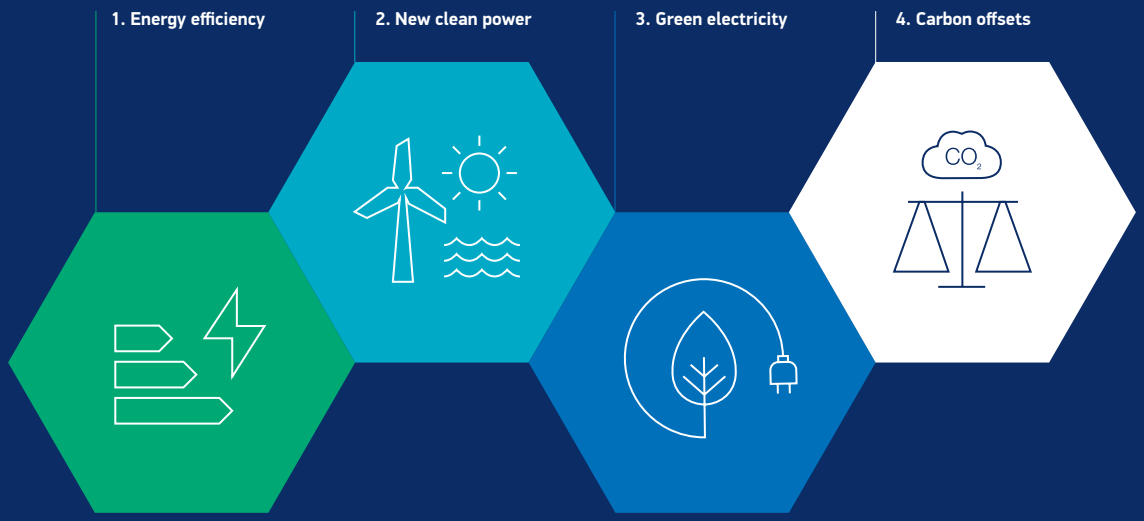
It is vital that a secure supply of low cost, sustainable energy is available in the UK. The UK has overall made great progress in moving to renewables - in part paid for by large energy users including automotive manufacturers. The sector is not shielded from government-imposed renewable generation charges unlike some other energy-intensive sectors. In fact, UK-based manufacturers now face the highest industrial electricity prices in the EU15, 66% above the EU28 average.

The industry welcomes the extension for CCAs by a further two years, as announced in the March Budget. However, it was disappointing that the proposed targets took no account of the impacts of Covid-19, which will make targets exceptionally challenging to deliver and diminish the impact of action taken before the pandemic. Members are also keen to understand the future carbon pricing scheme to replace the EU ETS once the UK leaves the Transition Period with the EU. The automotive industry supports a UK ETS that links to the EU to ensure a level playing field and sufficient market liquidity. However, we need the scheme to be up and running by January 2021 and are concerned that a temporary carbon emissions tax (designs still to be consulted on) could leave UK businesses facing higher costs than key competitors.



CASE STUDY:
BOSCH CARBON NEUTRALITY BY 2020

In 2019 Bosch made a commitment to become carbon neutral in 2020 across its 400-plus locations worldwide. To achieve carbon neutrality swiftly, Bosch will buy more green electricity in the near term and compensate for unavoidable CO_2 emissions with carbon offsets. In the years up to 2030, the company will gradually increase the share of renewable energy in the power that it generates and buys, and will invest €100 million every year to do so.



CASE STUDY: BENTLEY BECOMES UK'S FIRST CARBON NEUTRAL LUXURY AUTOMOTIVE FACTORY

In 2019 Bentley Motors achieved carbon neutrality certification, in line with PAS 2060, from the Carbon Trust for its factory headquarters in Crewe. The Standard recognises measures taken by the company to reduce the carbon emitted in its operations. 100% of Bentley's electricity is either generated by onsite solar panels or purchased as certified green energy.

The industry has invested heavily in reducing energy consumption over the years - with energy per vehicle produced down, -43.3% over the past 20 years

VEHICLES
CO_2 EMISSIONS

2019 saw the third consecutive rise in new car fleet average CO_2 emissions, up 2.7% to 127.9g/km, a result of the move away from diesel, combined with segment shift to heavier vehicles and the introduction of the new Worldwide Harmonised Light Vehicle Test Procedure (WLTP). Because WLTP is more stringent and reflective of real-world driving patterns, consumers now see a more representative picture of a vehicle's on-road CO_2 emissions. However, for the vast majority of vehicles, the WLTP CO_2 emissions value is higher than under the old NEDC test. Indeed SMMT analysis shows an average 20-25% increase.

Despite this, new vehicles to market continue to be more efficient than those they replace, as technology advances and manufacturers seek to comply with both CO_2 reduction targets and respond to consumer demand for more efficient vehicles. Advancements in powertrain technologies, lightweight materials and aerodynamics means that new car models on average emit some -29.3% less CO_2 than those produced in 2000. Therefore, fleet renewal remains the quickest way to lower emissions in the immediate term, by replacing older, more polluting vehicles with new vehicles, which have significantly lower emissions.

For light commercial vehicles (LCVs), new average fleet CO_2 emissions were down -0.7% to 165.8g/km. Unlike cars, diesel remains the predominant powertrain for LCVs. Petrol vans began to re-enter the market in 2020 and it remains to be seen as to what impact this may have on the new fleet performance during 2020. WLTP was introduced for vans in September 2019, and we would expect to see a similar challenge to progress on CO_2 performance during 2020 as we saw for cars in 2019.

Great progress in ultra low emission vehicle (ULEV) uptake has been made in the passenger car sector, with more than 110 battery electric (BEV), plug-in hybrid electric (PHEV), fuel cell electric (FCEV) and hybrid (HEV) vehicle options now available for consumers. While the internal combustion engine (ICE) remains the technology of choice for most drivers, there is increasing interest in alternatively fuelled vehicles. The market for ultra low emission light commercial vehicles is at a much earlier stage but vehicle choice and consumer interest are both growing.

For heavy duty vehicles (HDV), the European Union introduced regulations requiring manufacturers to reduce their CO_2 emissions by -15% by 2025 and -30% by 2030, measured against a 2019 baseline. Baseline data is expected to be published by the European Commission in April 2021, with values based on the certified CO_2 emissions of new HDVs collected under separate monitoring and reporting regulations.

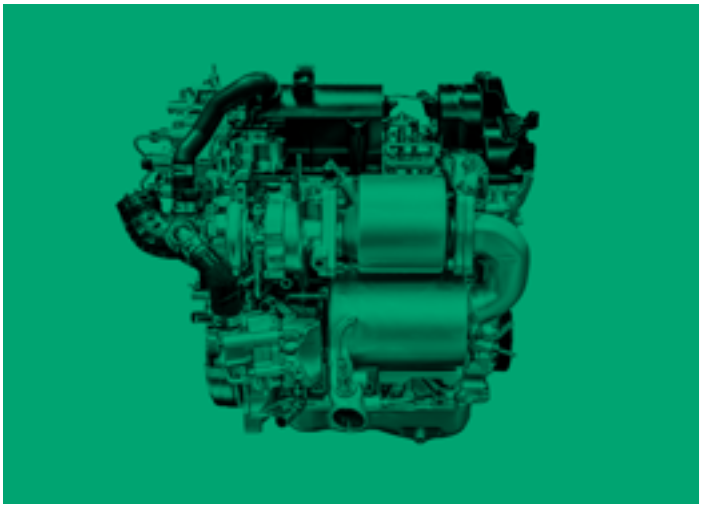
The CO_2 regulation applies to four categories of new rigid trucks and tractor units weighing more than 16 tonnes registered after 1 January 2019. Incentives to boost the production and sales of zero and low emission heavy vehicles are included with a system of 'super credits', where from 2019 to 2024, zero emission heavy vehicles are counted as two vehicles, while low emission heavy vehicles can count as up to two.

In July-August 2020, the Department for Transport consulted on transposing these EU regulations into UK law, with new national requirements expected following the end of the Transition Period. The forthcoming UK HDV CO_2 regulations are expected to closely mirror the EU requirements with regards to ambition level and baseline, although data monitoring and reporting will be subject to significant changes in process. The new UK regulations are expected to apply from 1 January 2021.

A commercial vehicle is a business tool and not chosen or renewed in the same way as a passenger car. Manufacturers are researching technologies to develop solutions that will provide zero tailpipe emissions, while maintaining the required payload and functionality of these vehicles. Commercial vehicles have a unique set of challenges which must be considered when developing zero emission capability.

This may mean that hydrogen fuel cells become a large part of the solution. There would need to be a breakthrough in battery technology to deliver an affordable BEV solution for the very largest and heaviest commercial vehicles with the necessary vehicle range .

At the same time the logistics sector will need to adopt new practices and technologies to reach zero carbon. There is an opportunity to improve delivery efficiency and tackle final mile logistics, while keeping congestion under control. It should also be recognised that it will not be advantageous to replace all heavy goods vehicles with multiple lighter variants.



END OF SALE OF INTERNAL COMBUSTION ENGINE 203X

In February 2020, government announced its consultation on ending the sale of new petrol or diesel cars and vans by 2035, or earlier if feasible. The consultation also included consideration, for the first time, of whether hybrid cars and vans should be included in this end-of-sale date. The Road to Zero Strategy, published in 2018, already outlined government's ambition to phase-out new petrol and diesel cars and vans by 2040, with most new vehicles beyond this date expected to be zero emission capable. Industry is already working hard to achieve government's current 2040 ambition. While challenging, this date provides both consumers and industry with sufficient time to make a smooth transition.

As government considers an earlier phase-out date, SMMT strongly believes effort and policy focus must be centred on creating the right ecosystem to support the consumer transition to ultra low emission vehicles. For mass market adoption, there must be the right vehicles, the right infrastructure and the right incentives, complemented by long-term certainty on future taxation policy and clear communication to consumers. With these pillars in place, consumers will be encouraged to make the switch to lower emission vehicles, paving the way for 100% of new cars and vans to be zero emission in the future.

While some consumers are already in the market for battery or hydrogen fuel cell vehicles, others are likely to take a little longer to make the switch. Therefore other technologies such as full hybrid and plug-in hybrid electric cars and vans have a vital role in helping consumers make that transition, addressing concerns over lack of charging infrastructure, and lowering CO_2 emissions both now and in the future. During this transition period, the newest, cleanest internal combustion engine vehicles will also continue to play a vital role for all vehicle segments in meeting current and future carbon budgets.

A cross-sectoral strategy and roadmap must therefore be developed that incorporates commitments and targets on the development of infrastructure, consumer incentives, supporting energy provision and R&D funding. It must also look at the transition for UK manufacturing and effective communication to consumers on technology choices. As committed to in the 2018 Road to Zero Strategy, there should be timed reviews to determine how this ecosystem is developing, and to assess what further measures need to be put in place if progress is not being made at the required rate.

The journey to zero emission cars and vans is a significant transition for both consumers and industry. SMMT and its members are working in partnership with government to ensure this can take place as quickly as is feasible, ensuring that consumers are taken on this journey.

CASE STUDY: FORD'S HYBRID VANS SUPPORT DRIVE FOR CLEANER CITY AIR

In 2019, Ford concluded its year-long trial in London, using the Plug-In Hybrid Ford Transit Custom van, to see if PHEVs could help improve air quality in cities with clean air targets. Supported by a £4.7 million grant from the UK's Advanced Propulsion Centre, a range of businesses covered 150,000 miles in 20 PHEVs to test whether they could carry out their typical duties while using zero-emissions power. During the trial, 75% of the fleet's mileage in Central London and 49% in Greater London was completed using pure electric power. The results highlight how PHEVs can dramatically reduce tailpipe emissions in inner city areas as the charging network develops and gives the flexibility to complete longer journeys when required. Further trials in Cologne in Germany and Valencia in Spain will provide data from different cities, customers and vehicles.

CASE STUDY: HONDA COMMITS TO TOTAL ELECTRIFICATION IN EUROPE BY 2022

In October 2019, Honda announced its intention to move 100% of its European sales to electrified powertrains by 2022. This new ambition builds on the brand's 2017 aim of two-thirds of its sales to be electrified by 2025, and paves way to Honda's global electrification shift announced as part of its 2030 vision.

ALTERNATIVE FUELS

With the increasing ambition towards zero emission transport, it should be remembered that internal combustion engines can still be low emission and even net zero emission, with the use of the latest sustainable low carbon and synthetic fuels.

Biofuels have been around for many years now and the UK government plans to launch E10 (petrol with a 10% bioethanol content) during 2021. E10 is already widely used in many other countries and, while there are compatibility issues with much older vehicles, the fuel can be used in all vehicles manufactured from 2011 and for the vast majority manufactured after 2001. Some 96% of the UK fleet is fully compatible with E10 and a 'protection' E5 grade will be maintained for at least another five years to supply those vehicles not suitable for its use. According to the Department for Transport, switching to E10 would reduce the CO_2 emissions from a petrol vehicle by around -2% and, if combined with an increase to overall biofuel supply targets, could cut overall transport CO_2 emissions by a further 750,000 tonnes per year - the equivalent of taking around 350,000 cars off the road.

Hydrotreated Vegetable Oil (HVO) is approved for use by many of the heavy duty vehicle manufacturers and can provide a significant CO_2 reduction. Due to its nature, it can be used as a drop-in fuel, allowing benefits to be achieved in the existing vehicle parc.

Synthetic fuels or carbon-neutral fuels (also known as e-fuels) are now being developed by many companies. These fuels capture CO_2 in the manufacturing process and, in this way, the greenhouse gas becomes a raw material from which petrol, diesel and substitute natural gas can be produced with the help of electricity from renewable sources. One further crucial advantage of the combustion engine using synthetic fuels is that the existing filling-station network can continue to be used. The same applies to the existing combustion-engine manufacturing value chain.

WORLDWIDE FUEL CHARTER

In 2019, the European Automobile Manufacturers Association (ACEA), the US Alliance of Automobile Manufacturers, The Truck and Engine Manufacturers Association (EMA) and the Japan Automobile Manufacturers Association (JAMA), published the sixth edition of *The Worldwide Fuel Charter and Guidelines.* These charters have two purposes. First of all, they inform policymakers and other interested parties how fuel quality can significantly affect engine and vehicle operation, durability and emissions performance throughout the year. Secondly, their purpose is to promote harmonised fuel quality worldwide in accordance with vehicle, engine and emission control system needs, for the benefit of consumers and the general environment.

GREEN NUMBER PLATES

Front plate

Rear plate

In June 2020, Government announced the Autumn introduction of green number plates to help drive its green economic recovery plans. It is hoped that drivers will be encouraged to make the switch to electric vehicles through the introduction of these number plates, which will make it easier for cars to be visually identified, helping local authorities design and put in place new policies to incentivise people to own and drive them.

CASE STUDY: TOYOTA'S EMISSIONS REDUCTION

In 2019, Toyota Motor Manufacturing UK invested £20 million in a brand new Global Paint Line in its plastics shop, facilitating the use of water based paints. Prior to the investment, solvent based paints were utilised on plastic components like bumpers, grills and sills, and generated VOC emissions well within the legal limits. The new facility is able to achieve significant reductions through material change, and by increasing the accuracy of painting and therefore reducing waste.

OTHER EMISSIONS

VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

The industry recognises the importance of reducing VOC emissions from its painting operations as one of the key environmental impacts of vehicle manufacturing. Consequently, the sector has invested heavily in painting equipment and improved its own processes, where possible going above and beyond the legal requirements. Since 1999, VOCs from painting dropped by -39.2% for cars and by -29.7% for vans.

2020 saw the publication of the revised *Best Available Techniques Reference Note* for surface treatment processes which use organic solvents (STS-BREF). This will have a significant impact on vehicle manufacturers' paint shops as well as the coating of other parts such as bumpers. The revised document brings substantial changes to permitted emission limits, which will become much more stringent, and the industry has four years to comply.

The automotive industry is keen to make a difference and is fully committed to the task, as demonstrated by the overall downward trend in VOC emissions over the past two decades. These improvements continue through facility upgrades and the installation of new systems. However, the tightening emission levels pose a real challenge for manufacturers and must be implemented across Europe and in the UK against a very tight timeframe. As such, the industry will need to adapt and must continue to build on the substantial efforts and investments already made.

AIR QUALITY

Air pollution is caused mainly by the burning of fossil fuels for energy generation, transport and the wider industry. Air quality issues are exacerbated by geographical factors as well. Increased evidence and a greater understanding of the health effects of air pollution have led to policy decisions that seek to reduce emissions.

The automotive industry is committed to improving air quality, as well as reducing CO_2 emissions, and continues to invest in the design and engineering of clean technologies. Fleet renewal is essential to allow these new technologies to achieve air quality improvements in the real world. Any slowdown of this will be detrimental.

NITROGEN DIOXIDE (NO_2)

The UK government published its *Plan for tackling nitrogen dioxide (NO_2) concentrations at the roadside* in July 2017. The plan included a commitment to end the sale of conventional petrol and diesel cars and vans by 2040, and laid out a requirement for the UK cities with the highest concentrations of NO_2 to set out their own plans for meeting the annual mean NO_2 objective limit within the shortest possible timeframe. This included having to conduct a feasibility study for the implementation of Clean Air Zones.

As cities develop their plans, it is essential that they take a consistent approach to ensure drivers are aware of the emissions standard for their vehicle, avoiding confusion when travelling between cities.

In 2018, road transport was responsible for 31% of NO_2 emissions in the UK. Air quality monitoring data from across the UK from 2013 to 2019 show a decrease of -5.6% in mean NO_2 concentrations at the roadside. This is a greater reduction than that observed at rural background sites and therefore it can be determined that emissions from road traffic have decreased. With the introduction of the latest Euro 6 emissions standard in new vehicles in 2015, and the continued increase in alternative fuelled vehicle registrations, we expect NO_2 emissions from road transport to decrease even further.

PARTICULATE MATTER (PM)

The greatest contribution to particulate pollution is derived from industrial sources and combustion in residential, public, commercial and agricultural sectors. Road transport was responsible for 11% of PM emissions in the UK during 2018. Particulate emissions from exhaust emissions from all road transport have decreased by -83% since 1996.

There have been some concerns that non-exhaust PM emissions from electric vehicles are higher than those from an internal combustion engine, due to the increased weight of the vehicle. This assumption does not take into account the benefits of regenerative braking in electric vehicles, which is likely to have a net benefit for non-exhaust emissions. PM from non-exhaust sources is not regulated at vehicle level, due to the difficulties associated with robust, repeatable measurement techniques for emissions from brakes and tyres. The UN expert group on Particulate Measurement, consisting of experts from governments, industry and academia has been working to develop such techniques and has just finalised a method for the measurement of particulate emissions from brake wear.

FUTURE MOBILITY

Private cars are, and will remain, an essential part of the transport system in the UK. They offer a valuable mobility option for the public and are still the best option for numerous journeys. New ways of using cars should be explored. For example, the government should support car sharing schemes and make it easier for local authorities to operate them.

Buses and coaches play an important role in providing sustainable transport options and the government must support the industry during this critical period when public transport usage is down due to the pandemic. It should also support the bus sector to accelerate the transition towards zero emission vehicles in the medium to long term. The industry supports government competitions for all-electric and all-hydrogen bus towns, and sees them as useful drivers for the technological developments required for these vehicle types to be decarbonised.

There is a clear divide between urban and rural areas in transport services and solutions on offer to the public. Private cars will remain a crucial option in rural areas that lack the public transport services and other mobility solutions that are readily available in urban areas. Decisions to re-allocate road space away from private vehicles to active travel, for example, or new micro mobility options, need to take a holistic view of the local transport system and be executed in a way that provides consumers with mobility options as well as ensuring that different modes can operate safely together.

The Department for Transport recently announced plans to allow trials of e-scooters on the UK road network. This is an excellent opportunity to collect robust and useful data on their use – including the use cases for these types of vehicles, data on injuries and collisions, and data on trips (eg trip patterns, trip purposes). Risk and wider impact assessments should be completed using this data to ensure that all measures are taken to avoid undermining road safety in the UK, to better protect e-scooter users, pedestrians and vulnerable road users, and to ensure that they are compatible with all other road vehicles. This will enable a safer and more effective roll-out once the trial is over while ensuring the safety of pedestrians, vulnerable road users and other road users. The industry supports the use of e-scooters when used in a sharing service, with future rollout dependent on the results of the government trials.

EV CHARGING INFRASTRUCTURE

Government announced the rapid charging fund in the March 2020 Budget. £500 million has been committed to increase the number of rapid electric vehicle (EV) charging points in the UK. Project Rapid aims to install around 2,500 high-powered charge points across England's motorways and major A roads by 2030, with 6,000 by 2035. Motorway service areas in England will see at least six high-powered, open access charge points (150-350 kilowatt capable) installed by 2023, with some larger sites having as many as 10 or 12.

SMMT and Frost & Sullivan analysis has found that a substantial increase in all types of EV charging infrastructure will be needed to support increased uptake of plug-in vehicles. Based on an assumption that 24% of the whole UK car parc will be electric by 2030 and 41% by 2035, a total of 6.99 million chargepoints are needed by 2030 (around 1.66 million of which will need to be public/off-street residential). By 2035 this would need to increase to a total of 11.83 million chargepoints by 2035, of which 2.8 million will need to be public.

HYDROGEN CHARGING INFRASTRUCTURE

By early June 2020 there were 13 publicly accessible hydrogen refuelling stations (HRS) in the UK, with formal plans for the development of five others confirmed. At the time of writing, there were 248 hydrogen fuel cell electric (FCEV) cars and vans in operation with fleet owners in both the public and private sectors. Stage two of OLEV's Hydrogen for Transport programme was launched in December 2018, with £14 million awarded to five projects to install new hydrogen stations alongside more hydrogen vehicles (73 cars and 33 buses).

Several manufacturers have made announcements in this area, including Optare, which in July 2020 revealed a newly developed FCEV double decker bus for the domestic and international markets. On the production and supply side, the government announced nearly £30 million worth of funding for five new projects to produce low carbon hydrogen across the UK, which will be essential to help the FCEV market grow in the future, and to meet other sector decarbonisation needs.

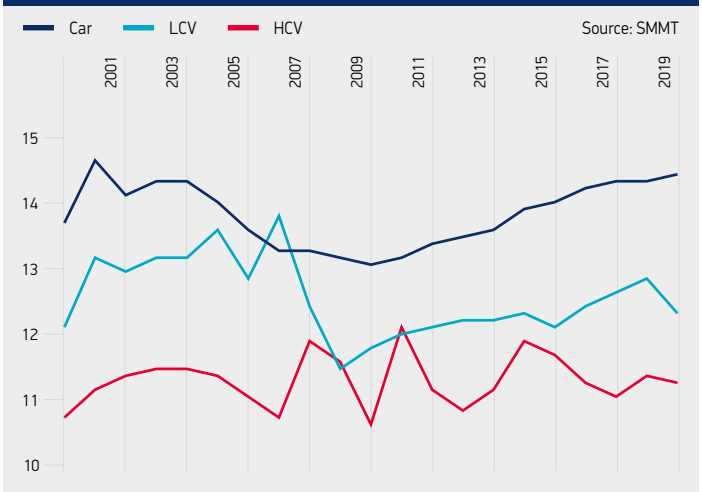
In June 2020, SMMT joined the Hydrogen Strategy Now cross-industry campaign, calling for the government to develop and adopt a hydrogen strategy for the UK.

CIRCULAR ECONOMY
MANUFACTURING

The automotive sector is a highly competitive industry, with ever increasing efficiency and cost reductions, meaning waste is now almost completely eliminated. Indeed circular economy principles were embedded in companies' ethos even before the term 'circular economy' was coined.

At the design stage, it is ensured that at least 95% of each vehicle by weight can be recycled and recovered at the end of its life. High quality standards of materials and production processes ensure that vehicles are long lasting, durable and repairable. Moreover, energy usage and related emissions at the production stage are kept to a minimum to reduce costs as well as carbon footprint. With high metal content, 75% on average, vehicles lend themselves well to being recovered and reused in new vehicle production. However, there is always scope for improvement, and the industry recognises its role in increasing the use of secondary materials. Furthermore, the industry is working with value chain stakeholders to ensure the best possible environmental outcomes while meeting safety and quality requirements. To support that work, in 2019 on behalf of the industry, the European Automotive Trade Association (ACEA) joined the European Circular Plastic Alliance, which has a target to use a maximum of 10 million tonnes of recycled plastics in products and packaging by 2025. Each member of the alliance is expected to take on an appropriate share of the overall target. It is estimated that the automotive industry accounts for 9% of plastic waste in the EU.

CHART 5 **Average age at scrappage (years)**



END-OF-LIFE VEHICLES (ELVS)

Vehicles are one of the most recycled retail products on the market. When a vehicle reaches the end of its life it must be disposed of in an environmentally responsible way through an Authorised Treatment Facility (ATF). Through the End of Life Vehicle (ELV) Directive, vehicle manufacturers have an obligation to provide free take-back for cars and light commercial vehicles. In the UK, manufacturers have partnered with companies such as Autogreen and Cartakeback which collect vehicles that have reached the end of their usable life and issue the necessary Certificate of Destruction (CoD). The vehicle can then be disposed of and parts re-used, recycled or used for energy recovery.

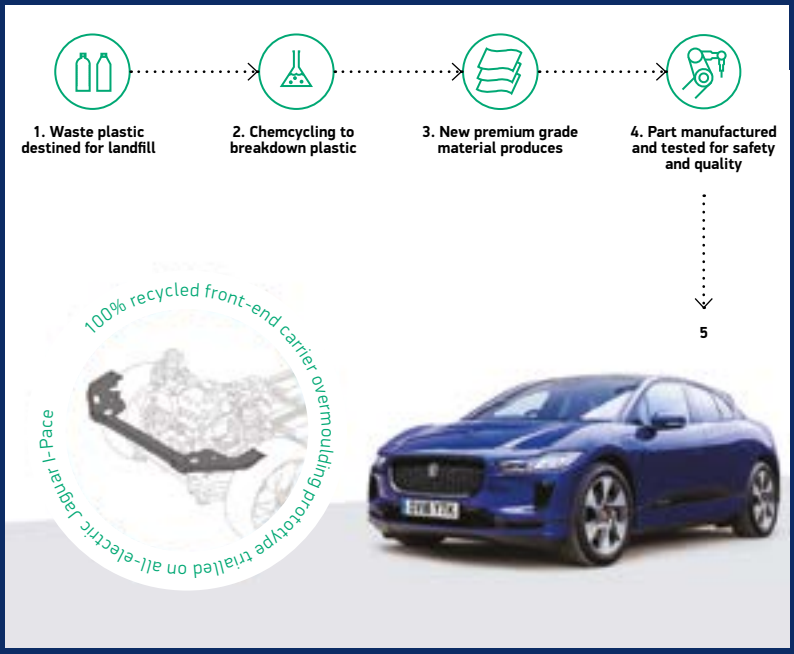
In line with the EU target, vehicle manufacturers' approved networks of ATFs have achieved 85% reuse and recovery of materials from ELVs each year from 2006, when the requirement came into force. Since 2015, the industry has improved its performance by 10% to reach the new pan-European target of 95%.

CASE STUDY: JAGUAR LAND ROVER PARTNERS WITH BASF TO TACKLE THE CHALLENGES OF PLASTIC WASTE

In 2019, Jaguar Land Rover (JLR) and BASF trialled an innovative recycling process which upcycled domestic waste plastic, otherwise destined for landfill or incinerators, into a new high-quality material for potential use in future vehicles.

Known as the ChemCycling project, it tested recycled plastic material on prototype production parts in the all-electric Jaguar I-PACE to ensure it met JLR's quality and safety standards.

The waste plastic was transformed to pyrolysis oil using a thermochemical process. The secondary raw material was then fed into BASF's production chain as a replacement for fossil resources; ultimately producing a new premium grade that replicated the high quality and performance of 'virgin' plastics. It could be tempered and coloured making it the ideal sustainable solution for designing the next-generation dashboards and exterior-surfaces in JLR models.



LIFE CYCLE ASSESSMENT (LCA)

The automotive industry has a long-standing tradition of applying a life cycle approach to improve its understanding of the full impact of production, use and disposal of vehicles. The main objective has been to establish how much the new generation product has improved compared with previous generations. This is usually done in line with ISO standards 14040 and 14044, using consistent assumptions and data sources to ensure comparability.

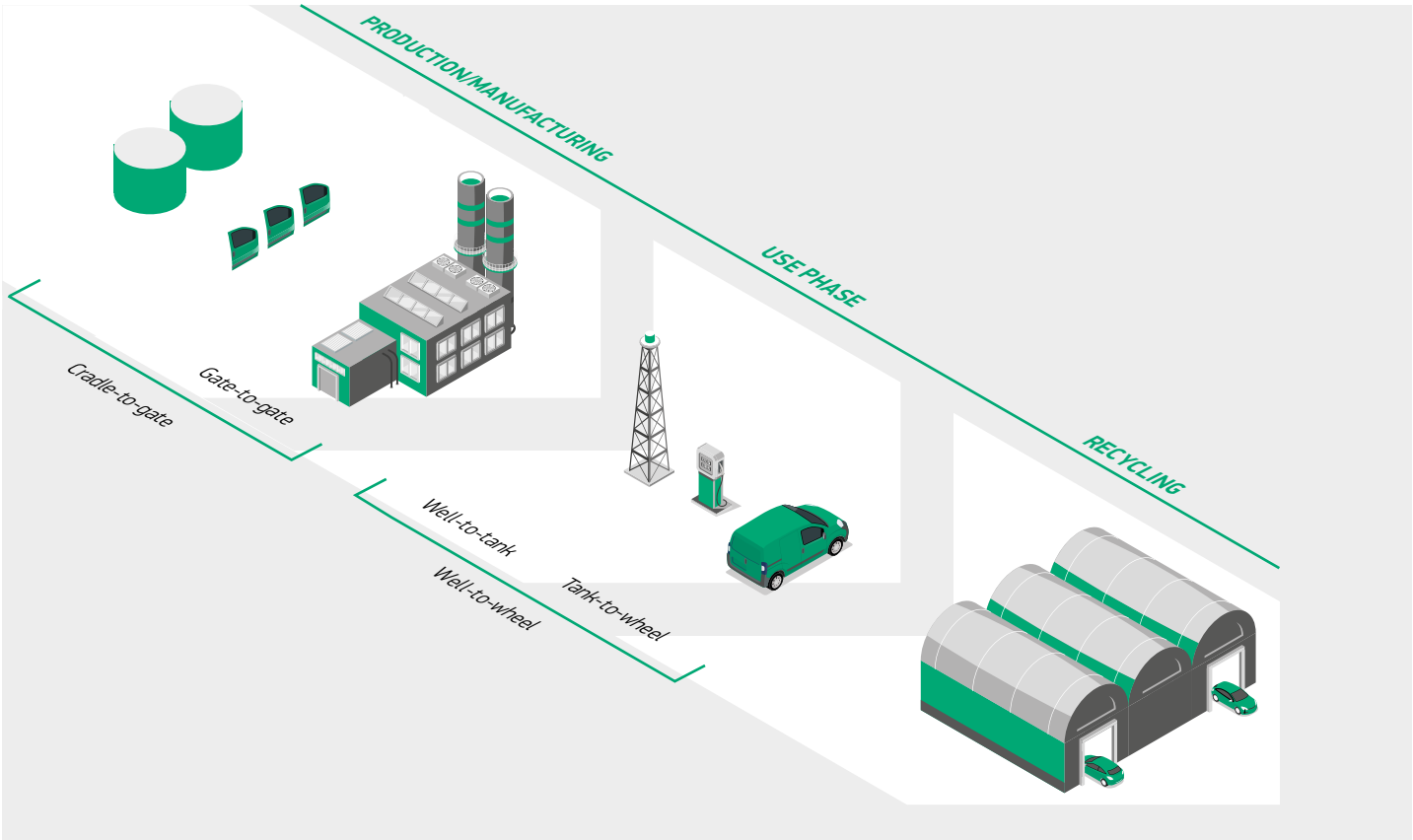
Conducting a Life Cycle Assessment (LCA) is a very complex and time-consuming exercise, which creates valuable outcomes only if conducted using consistent scope, data sets and assumptions. On a wider scale beyond individual company use, an LCA is currently better suited to detect emission hotspots rather than comparing individual products' overall scores. An LCA is a great tool to ensure environmental burdens are not shifted from one part to another of the vehicle's overall life cycle.

For internal combustion engine (ICE) vehicles, the great majority of life cycle CO_2 emissions arise from the use phase. For Battery Electric Vehicles (BEV), however, around 40% of emissions are linked to the battery production. It should be noted that a BEV's LCA is highly sensitive to regional variations, mainly due to the carbon intensity of the grid electricity used for battery production and vehicle charging.

Because the emissions generated in the production of a battery electric vehicle are higher than for an internal combustion engine vehicle, there is a certain distance they need to travel to payback the greenhouse gas (GHG) emissions from production to break even with, and then surpass, the performance of an ICE. That distance varies greatly depending on the assumptions used. Consequently, a BEV's carbon benefits increase with its use. In addition, the carbon emissions saving derived from a battery's second life can bring additional benefits.

A vehicle LCA also looks beyond GHG emissions to other environmental impacts; eg acidification potential and human toxicity which should be taken into consideration.[1]

1 Determining the environmental impacts of conventional and alternatively fuelled vehicles through LCA – study undertaken by Ricardo and their partners and commissioned by DG CLIMA.



Results Summary - Relative contributions of each life cycle stage by vehicle type and powertrain technology

Vehicle Type	Conventional ICE Powertrain Technology				BEV Powertrain Technology			
	Vehicle Production	WTT	TTW	EoL	Vehicle Production	WTT	TTW	EoL
L-Category	c.10-30%	c.10-15%	c.60-75%	<5%	c.45-75%	c.25-55%		<5%
Passenger Car	c.15-30%	c.10-15%	c.60-70%	<3%	c.20-60%	c.40-60%		<3%
Heavy Duty Truck	c.1-3%	>95%		<1%				
Bus	c.15%	>80%		<5%	c.30-40%	c.60-70%		<5%

Source: Ricardo

CHART 6 Determining the environmental impacts of conventional and alternatively fuelled vehicles through LCA

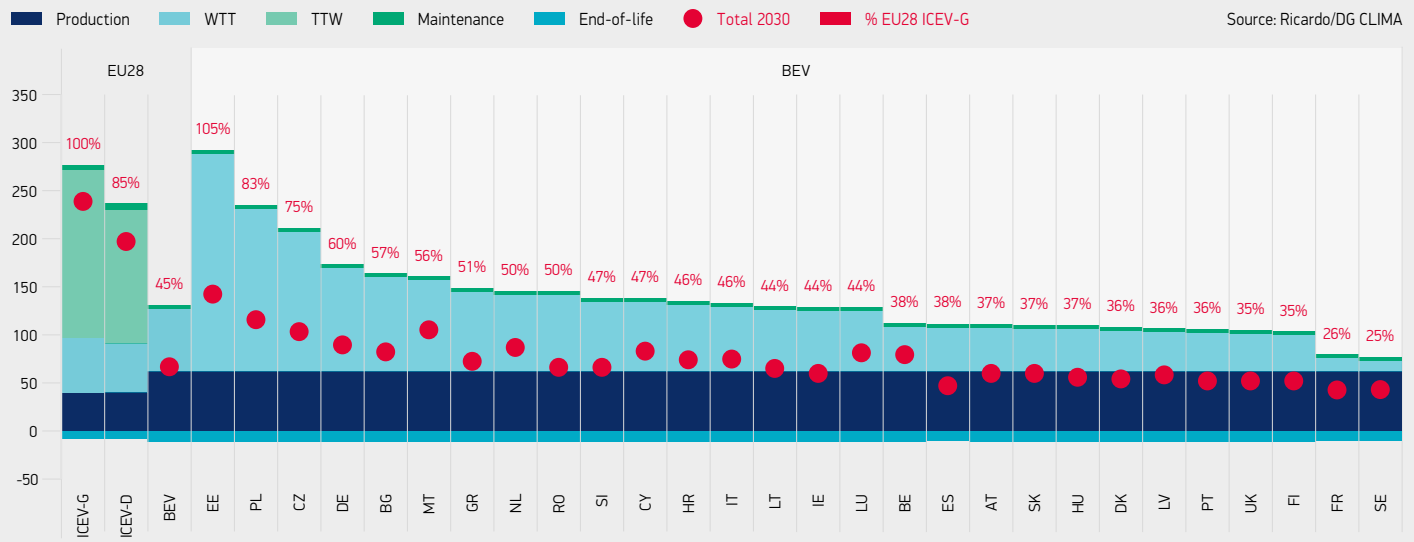
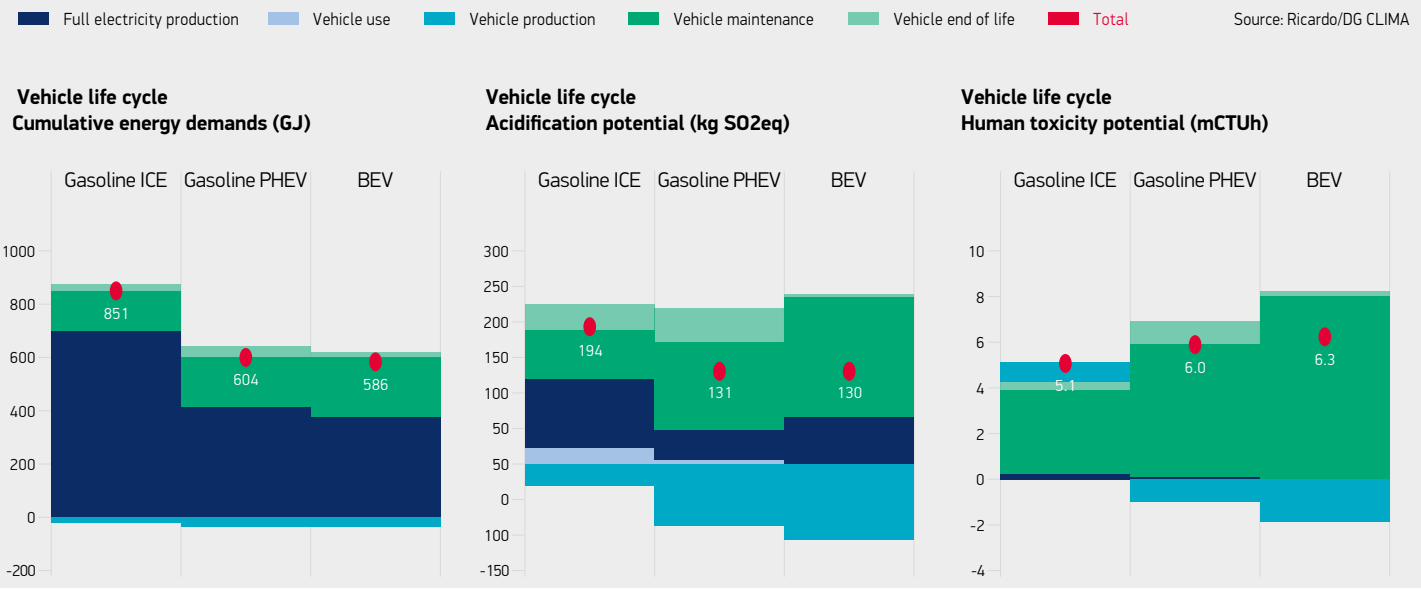


CHART 7 Impacts beyond global warming and GHG emissions



BATTERIES

Batteries will play a crucial role in supporting the transition towards a climate-neutral economy by 2050. As one of the key enablers for transport and energy decarbonisation, their life cycle will need to continue to be optimised to maximise environmental benefits.

PRODUCTION

Battery manufacturing capacity and demand is concentrated in Asia, helped by both higher sales volumes and availability of scarce raw materials. Currently, European production capacity is low and does not fulfil demand. Therefore, bringing more production capacity to Europe would enable greater control of raw material sourcing, production process efficiency and overall carbon footprint.

SUSTAINABLE BATTERY VALUE CHAIN

If the UK's uptake of zero emission vehicles accelerates, this will significantly increase the demand for lithium, cobalt and nickel used to manufacture EV batteries. As many countries around the world are adopting the same broad electrification timeline, the annual global production level will need to be rapidly scaled up to avoid security of supply issues for raw materials. It is expected that a quadrupling in global lithium and a doubling in global cobalt production will be needed between 2018 and 2035 (source Faraday Institute) to fulfil the demand.

Lithium, cobalt and nickel are predominately found in a small number of countries. The Democratic Republic of Congo (DRC) is the biggest producer of cobalt, supplying more than 60% of the world's demand, while large quantities of lithium are found in Chile, Australia and Argentina. This concentration of resources creates significant risks around the supply chain and the security of supply.

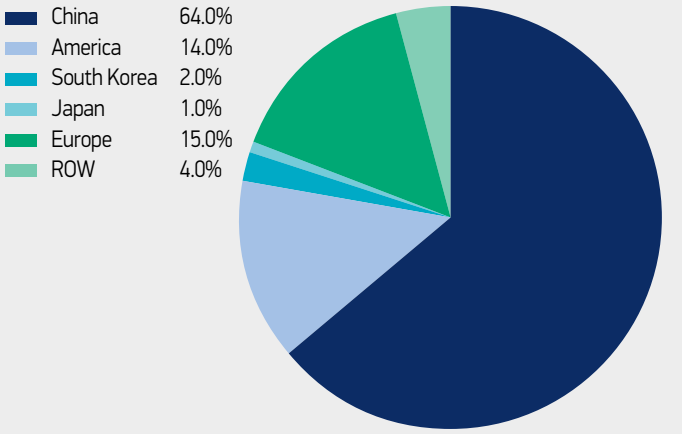
A range of international efforts has been made to increase transparency and traceability of the supply chain. Those include: Cobalt Industry Responsible Assessment Framework (CIRAF), Delve, Global Battery Alliance, Pact's Mines to Markets (M2M), Responsible Cobalt Initiative (RCI) and Responsible Minerals Initiative (RMI).

As a typical vehicle lifespan is 14 years in the UK, and because EV sales are relatively low, battery recycling is unlikely to contribute as a significant source of raw materials before 2030.

Recycling of cobalt is expected to generate an additional 40,000 tonnes of cobalt globally and 6,000 tonnes in Europe per annum by 2030 (source Faraday Institute). In the longer term, some materials might be phased out or significantly reduced; eg Nickel-manganese-cobalt (NCMA 811) lithium-ion cells battery chemistry with reduce cobalt content from 20% to 10%.

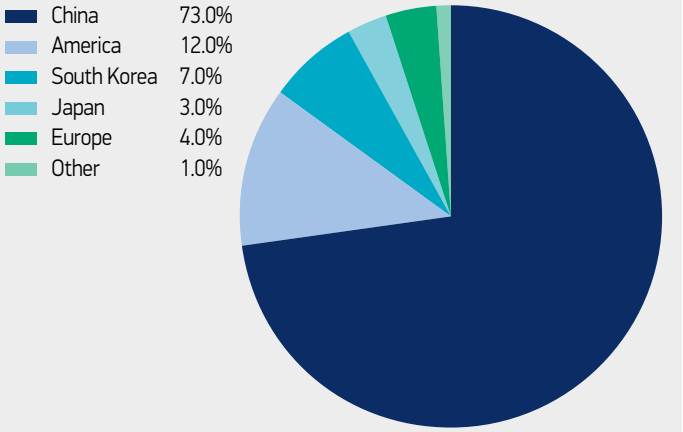
Therefore, taking into account the security of supply and Corporate Social Responsibility aspects, it is vital to establish a resilient raw material supply chain in the UK. The UK has substantial capacity to refine and produce critical metals needed for the UK EV market, for example,. Cornish lithium. However, it still needs to increase further to meet raw material demand for mass market EV production.

CHART 8 **Passenger EV battery demand**



Source: Bloomberg

CHART 9 **Battery manufacturing capacity**



Source: Bloomberg

The recently published UN report *Commodities at a glance: Special issue on strategic battery raw materials* highlights the importance of sourcing and producing critical raw materials for the manufacture of High Voltage Batteries (HVB) in a sustainable manner. It emphasises the importance of facilitating research into battery technologies that depend less on critical raw materials, employing advanced scientific processes that prevent or control undesired environmental impacts of raw material extraction, and recycling of raw materials recovered from spent HVB. It recommends that: batteries should be designed to allow for better recyclability; that better information is provided from manufacturers to recyclers; high-efficiency recycling standards linked to a certification scheme should be developed; and the recovery of critical raw materials from mining waste and landfill should be promoted.

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SUSTAINABLE SOURCING

Drive Sustainability is a collaborative partnership between 10 automotive companies (BMW Group, Daimler AG, Ford, Honda, Jaguar Land Rover, Scania CV AB, Toyota Motor Europe, Volkswagen Group, Volvo Cars and Volvo Group), which has published a widened common strategy and action plan for a circular and sustainable automotive value chain.

The DS partnership plans to scale up its activities and engage with suppliers and stakeholders on four sustainability challenges:

1. Sustainable raw materials: to source raw materials sustainably
2. Workforce wellbeing: to ensure employees in the supply chain are treated well and empowered
3. Carbon neutrality: to strive towards a carbon neutral supply chain
4. Circular value chain: to promote circular use of resources in the value-chains

To achieve these four ambitions, a series of activities and milestones have been outlined in the DS Action Plan 2020-2030. The plan includes steps such as agreeing on and promoting a common standardised method and tool to measure and reduce supply chain emissions.

AMBITIONS	2020	2025	2030
	• Set-up and promote use of common standardised tools, methods and common requirements to integrate sustainability into the procurement process • Direct Tier 1 suppliers engaged in assessment and capacity building activities • Establish and promote usage of common standardised tools and methods to cascade sustainability beyond Tier 1	• Supplier sustainability is a key decision criterion • Direct Tier 1 suppliers improved sustainability performance compared to 2025 • Supplier sustainability is promoted beyond Tier 1	
	• Set up and promote usage of common standardised tools and methods for sustainable sourcing management • Implement impact key projects with the aim to improve social and environmental situation related issues to responsible sourcing (issues to be defined: indigenous people rights, communities development, biodiversity etc)	• Common audit and multi-minerals standard endorsement • Reached optimum transparency and traceability • Impact key projects successfully completed	
	• Agree on and promote use of a common standardised Business and Human Rights due diligence tool/s and a grievance mechanism to proactively tackle issues related to the United Nations Guiding Principles on Business and Human Rights (issues to be defined: living wage, child labour etc.)	• Common standardised Business and Human Rights due-diligence tool and grievance mechanism rolled out and promoted in the supply chain (Tier 1 and beyond)	
	• Agree on and promote use of a common standardised method and tool to measure and reduce emissions in the supply chain • Implement impact key projects with the aim to reduce emissions in the automotive supply chain	•Common standardised method and tool used to measure and reduce emissions in the supply chain • Impact key projects successfully completed	
	• Set up and roll out learning network on priority issues (issues to de defined: water management, air, waste, biodiversity, plastic etc)	• Engage all relevant suppliers and stakeholders in learning network activities	

CASE STUDY: VOLVO CARS TO USE BLOCKCHAIN TO TRACE COBALT USED IN EV BATTERIES

Volvo Cars is set to become the first car maker to implement global traceability of cobalt used in its batteries by applying blockchain technology to establish a transparent and reliable shared data network and boost transparency of the raw material supply chain. The announcement in 2019 follows the reveal of the company's first fully electric car, the XC40 Recharge.

GLOBAL BATTERY ALLIANCE

In early 2020, the Global Battery Alliance, forming as part of the World Economic Forum, have agreed on 10 guiding principles for a sustainable battery chain. These principles form the first step in the Global Battery Alliance's *A Vision for a Sustainable Battery Value Chain in 2030.*

THE PRINCIPLES INCLUDE:

- Maximising the productivity of batteries
- Enabling a productive and safe second life use
- Circular recovery of battery materials
- Ensuring transparency of GHG emissions and their progressive reduction
- Prioritising energy efficiency measures and increasing the use of renewable energy
- Fostering battery-enabled renewable energy integration
- High-quality job creation and skills development
- Eliminating child and forced labour
- Protecting public health and the environment and supporting responsible trade and anti-corruption practices
- Local value creation and economic diversification

These commitments are based on the Organisation for Economic Co-operation and Development (OECD)'s due diligence guidance and economically viable considerations for a circular and low carbon economy. The principles will guide the development of a global digital battery information disclosure system called the Battery Passport.

Participants include (among others): Audi, BMW, the Faraday Institution, Honda, Johnson Matthey, Renault Group, Transport & Environment (T&E), Volvo and VW Group.

LIFETIME

Currently, electric vehicles typically have an eight year or 100,000-mile battery warranty, with usually 75-80% capacity remaining after that period. However, experience gained over recent years shows that EV batteries can last for the lifetime of a car or longer. At the same time, individual battery performance will depend on its usage, as a heavily used battery might need to be retired earlier, whereas those with lower use, good maintenance and charging patterns should last much longer.

REPAIR/ REMANUFACTURING

The Custom Automotive Lithium Ion Battery Recycling (CALIBRE) project, part of the Faraday Challenge, has concluded that cells in batteries do not age in a linear manner and therefore replacing around 5%-30% of those below the required State of Charge (SoC) of 80% can bring the SoC back to the original performance specification multiple times. This would minimise the need for whole battery replacement, preserving resources.

SECOND LIFE

In line with circular economy principles and waste hierarchy, a product's lifecycle should be extended as far as possible. EV battery second life applications should be promoted and incentivised by fiscal benefits for participating companies, combined with other benefits to the end user (e.g. no VAT) to discourage premature recycling. Second life applications of lithium batteries are also still in the early stages of development, however, the numbers are growing annually. With their second life lifetime expectation at between five and 10 years, they present serious competition to new batteries.

At the same time, it needs to be noted that these activities will delay the time batteries take to reach their end of life and can become a source of secondary raw materials. As such, R&D into reducing the use of certain critical materials in batteries is of paramount importance.

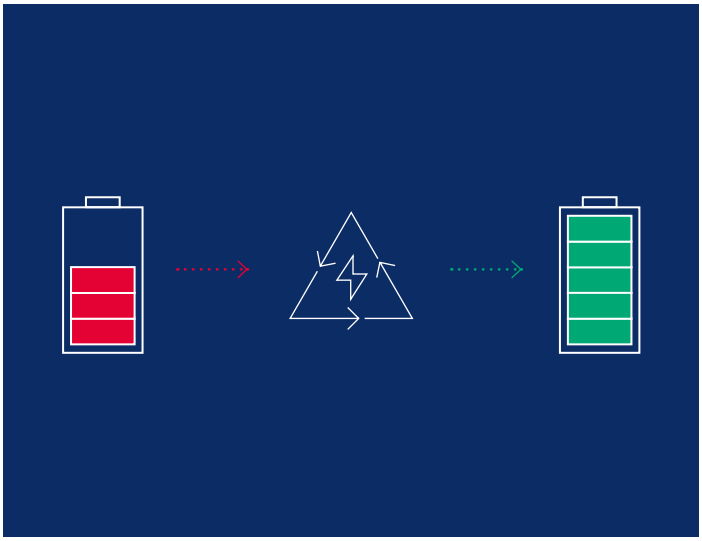
BATTERY RECYCLING

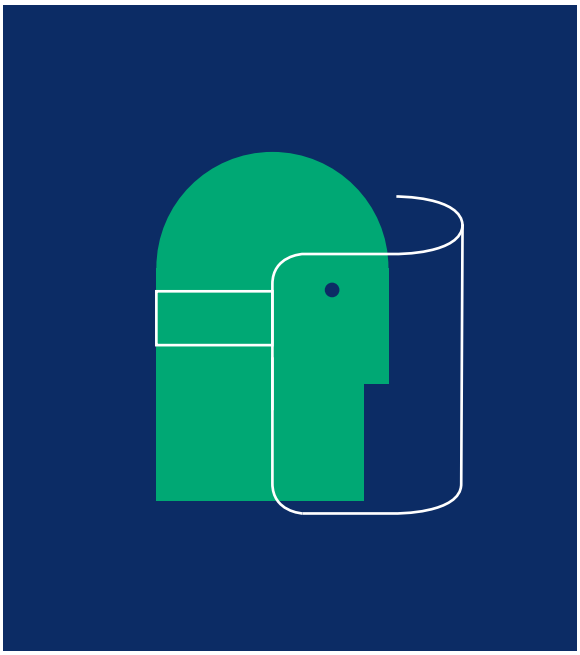
Currently, the number of batteries reaching the end of their life is low. Those batteries are currently transported to the EU for recycling, resulting in potential raw materials for battery production being lost for the UK based production processes.

Establishing battery recycling facilities in the UK would both support circular economy principles and the competitiveness of the UK as an EV manufacturing location. Their development would also result in reduced end of life costs, by minimising logistic movements, and carbon footprint. In addition, companies manufacturing batteries in the UK would benefit from a secure supply of raw materials which would in turn support the growing EV market.

For example, the Faraday Institution's Reuse and Recycling of Lithium Ion Batteries (ReLiB) project is developing the technological, economic and legal infrastructure to allow close to 100% of the materials in lithium-ion batteries to be recycled.

Adequate battery recycling facilities will also be important for the environmental credibility of electric vehicles in minimising the whole-life carbon footprint, as well as the wider environmental and resource impact of electric vehicles.





COVID-19 EMPLOYEE SAFETY AND SUPPORT TO COMMUNITIES

Most automotive production plants and related activities remained closed due the pandemic from the middle of March to late May/early June 2020, with some remaining shut for even longer. Therefore, the overall energy usage of the sector and related emissions are expected to be significantly lower for 2020. At the same time, some activities like painting operations were running for efficiency reasons. Some plants also adjusted their manufacturing operations to produce personal protective equipment (PPE) and medical equipment to support healthcare professionals during the pandemic (see the economic section for details). Many production operations tried to make the most of the difficult situation by utilising the closure to undertake maintenance work, which is difficult to conduct with workforce present on site.

SOCIAL PERFORMANCE

→ **The industry has always recognised the value of its employees by creating safe and progressive workplaces even in times of growing long-term uncertainty. The current Covid-19 crisis has put social challenges in focus and shown the industry has a clear commitment to prioritise the safety and wellbeing of its employees, putting it at the forefront of business goals. Consequently, complex production processes need to be adapted to minimise the risks for employees and to allow for changes in production plant capacity.**

Performance

- Sectoral jobs down -1.5% while signatories reported a -5.9% drop
- Employee accidents down -41.0%; training days per employee down -2.8%

Reasons

- Drop in production levels
- Long-term uncertainty due to Brexit and COVID-19

Future challenges/opportunities

- Attracting and sustaining a workforce skilled to meet the changing requirements of future vehicle technologies

EMPLOYMENT

The number of jobs dependent on the automotive sector in 2019 decreased by -1.5% to 864,300 Direct employment in automotive manufacturing jobs dropped by -3% to 180,300, on 185,900 in 2018[1].

Signatories' reported total employment declined in 2019 by -5.9% to 93,470 employees on the previous year. The share of agency workers has dropped too, down from 13.9% in 2018 to 12.7% in 2019. It is highly likely that the uncertainty caused by Brexit has played a significant part in this decline.

In the first six months of 2020, production volumes dropped by -43% to 1954 levels, due to the pandemic. By the end of July more than 13,000 job cuts had been announced across the industry, including manufacturing, supply chain and retail roles.

TRAINING

APPRENTICESHIP DEVELOPMENT

Many automotive companies continue to invest in their workforces and offering high-value, well-paid jobs with lifelong learning opportunities. Historically, the sector has been one of the biggest champions of apprenticeships and this remains the case today. Automotive businesses view apprenticeships as a way to bring bright new talent into the business, for the long-term, while providing high quality on- and off-the-job training.

In 2017, the Apprenticeship Levy was introduced on UK employers with annual bills above £3 million. While progress has been made, particularly in the development of automotive standards, there is still scope for improvement – most notably extending the expiration date of levy funds to 48 months, so automotive businesses can draw down all costs to fully fund Science, Technology, Engineering and Mathematics (STEM) apprenticeships from their levy pot. At present, UK manufacturing businesses are unfairly penalised for running longer 3 - 5 year apprenticeship programmes which outlast the duration of the levy.

T-LEVELS

As of September 2020, new Technical Level (T-Level) courses have been available as one of the main choices for students after GCSE. These include two-year courses in design and development for engineering and manufacturing, maintenance, installation and repair for engineering and manufacturing, and engineering, manufacturing, processing and control.

The sector has participated in workshops with the Department for Education to help develop the scheme, to ensure both students undertaking a T-Level, and businesses tasked with providing the work placement, have confidence in the route a student will take once their T-Level is complete. As Government reviews post-GCSE qualifications to create a simpler pathway for students pursuing a career in manufacturing and engineering, the sector is keen to better understand how T-Levels will work alongside apprenticeships and further education.

We welcome the creation of T-Levels as a mechanism for driving more technical skills into the UK manufacturing sector. This ambition is shared across both industry and government. We look forward to working with policy makers to ensure a smooth roll-out of T-Levels so that businesses face no added burden at a time when many are already struggling.

FUTURE SKILLS

The automotive industry is undergoing a dramatic shift in the way vehicles are driven, powered and built, sold and owned. As a result, the automotive workforce will also undergo drastic transformation, with an estimated 120,000 job roles in automotive manufacturing alone impacted by new technologies (analysis carried out in 2019[2] before the Covid-19 crisis). The industry requires a workforce transformation programme which allows employers across the industry to upskill their existing workforce, as well as those now seeking work, to ensure ongoing national industrial relevance globally.

In 2019 the West Midlands Combined Authority launched an Automotive Skills Plan with £3 million allocated to provide training for new automotive staff, and re-training existing skilled workers in the supply chain in the West Midlands.

The Automotive Council Skills Working Group has also created two sub-working groups – an Electrification Working Group and a Digitalisation, Culture and Skills Working Group. Through the work of these groups, the industry has identified three phases of activity which need to take place: defining the existing training grid; developing the training content for new and emerging skills; and delivering the content to the workforce floor.

1 *The 2018 and 2019 data sets have been adjusted to take into account new and leaving signatories to enable year-on-year comparison. Also some 2018 data were corrected in light of new information

2 Automotive Council Skills Working Group workshops exercises with industry representatives and stakeholders

The first phase of the automotive transformation is currently underway with the future skills forecasting work of the High Value Manufacturing Catapult (HVMC) associated with digital technologies, and the development of an electrification skills framework by the Faraday Institution. The sector is requesting government support both in continuing to identify the sector's high-level learning needs, and for designing and developing learning courses in the following five prioritised areas: circuits, electric motors and drives; electric batteries; data analysis; digital twins and data simulations; and the Internet of Things, smart logistics and robotics and additive manufacturing.

IMPACT OF COVID-19 ON MODERN SLAVERY REVIEW

Government expects significant changes to many businesses during the pandemic. If a company needs to work with new supply chains and service providers, future modern slavery statements need to demonstrate that businesses still address the risks related to labour exploitation.

As such, government recommends businesses take the following steps when reviewing modern slavery practices within their organisation and supply chains:

1. Health and safety of workers: Ensure local and national policies to help to prevent the spread of coronavirus are implemented throughout the supply chain.
2. Supporting suppliers: Engagement with suppliers should be prioritised, including paying for orders already in production where possible. Where orders are no longer required, businesses should still try to avoid late cancellations of orders, which might result in workers not being paid for work undertaken.
3. Grievance procedures: Adapt as required to ensure access to appropriate procedures, so that workers can raise concerns.
4. Recruitment: Some suppliers may be seeking to recruit additional workers to meet increases in demand. Business should maintain rigorous checks on new recruits to avoid exploitation, especially of vulnerable workers.
5. Emerging risks: Undertake new and regular risk assessments and reconsider prioritising of previously identified risks as appropriate. As part of these risk assessments, businesses should consider which parts of their workforce may be particularly vulnerable, and keep their Board of Directors updated on emerging or heightened risks.

COVID-19 EMPLOYEE SAFETY AND SUPPORT TO COMMUNITIES

The 2020 pandemic and Brexit have meant significant financial loses and uncertainty for the sector and its workforce, which cannot be underestimated. Despite the challenging situation, the industry responded to calls to make ventilators and PPE equipment, with many companies donating essential safety clothing and masks to organisations in need. The unprecedented circumstances brought people together on many fronts despite the physical separation of home working, while the industry took all appropriate actions to protect its workforces' physical and mental health and wellbeing during this difficult time.

To support the industry efforts, in May 2020 SMMT published sector-specific guidance to ensure all automotive production sites are safe spaces for workers, controlling the risk of transmission. The document contains wide-ranging advice covering everything from social distancing and hygiene standards, to personal protective equipment (PPE), mental health and staff communications.

ROAD AND VEHICLE SAFETY - VISION ZERO

A growing number of large cities around the world have committed to end deaths and injury on their roads and transport networks by committing to Vision Zero. The UK has launched its Vision Zero UK and Vision Zero for London.

In 2019,Transport for London consulted on imposing a 20mph speed limit on all central London roads as part of the Vision Zero Strategy announced in 2018.

The Mayor of London Transport Strategy sets out the goal for no one to be killed in or by a London bus by 2030, and for all deaths and serious injuries from road collisions to be eliminated from London's streets by 2041.

THE VISION ZERO FOR LONDON ACTION PLAN AIMS TO ADDRESS THE FOLLOWING AREAS:

Safe speeds: Introduction of new lower speed limits

Safe streets: Transforming junctions, which see the majority of collisions, and ensuring safety is at the forefront of all design schemes

Safe vehicles: Introducing a world-leading Bus Safety Standard across London's entire bus fleet and a new 'Direct Vision Standard' for Heavy Goods Vehicles

Safe behaviours: Reducing the likelihood of road users making mistakes or behaving in a way that is risky for themselves and other people through targeted enforcement, marketing campaigns, education programmes and safety training for cyclists, motorcycle and moped riders

Post-collision response: Developing systematic information sharing and learning

SUSTAINABLE RECOVERY ASKS

It is critical we secure a sustainable recovery for automotive as a strategic industry as well as restore the competitiveness of the UK as a place to invest, lead in future technologies and strengthen consumer demand to end the recent decline. We hope our asks can deliver not just for the breadth of automotive but for the UK's ambition to restore the country back to growth, lead a green recovery and level up across the regions. Our priority areas are:

01

DRIVING A GREEN RECOVERY:
Supporting UK Automotive recovery and resilience through market stimulus, supply-chain support measures and ensuring finance schemes meet the needs of automotive.

02

DRIVING TOWARDS NET-ZERO:
Delivering consumer confidence and market transition through a long-term approach to incentives, ensuring scaling up infrastructure investment to ensure it is accessible and ubiquitous, and a holistic approach to ensure a smooth and sustainable market transition

03

ENERGY COMPETITIVENESS:
As well as investment in ULEV development, incentives and infrastructure, in parallel we must see investment to wider decarbonise UK energy supply and wider energy infrastructure. Ultimately energy must be easily available, affordable and renewable if EVs are to be sustainable. Furthermore, for automotive manufacturing, energy costs present a huge competitive challenge – and are significantly higher than in any comparable manufacturing countries. Energy levies and taxes make up a significant part of these costs and we see substantial scope for simplifying the policy landscape, helping improve competitiveness and delivering the transition to net zero.

04

DRIVING THE UK'S COMPETITIVENESS GLOBALLY:
Ensure the UK is globally competitive and attractive as a place to invest though securing at least eight gigafactories and establish a resilient raw material supply chain in the UK, delivering the Automotive Transformation Fund, ensuring innovation and R&D investment support, such as tax credits are at a globally-competitive level, and other taxes such as business rates support investment and manufacturing needs

05

JOB RESILIENCE AND LEVELLING-UP:
Enhancing employment and skills through immediate action to ensure current schemes to support jobs meet industry needs and are of sufficient duration, ensure the Apprenticeship Levy works for automotive business and support the automotive workforce transformation, for manufacturing, design, development, retail, remanufacture and maintenance/service and repair, through the development and delivery of upskilling and reskilling programmes for current, future and former employees.

06

THE UK'S CHANGING TRADE RELATIONSHIPS:
The UK automotive industry strongly supports the ambition to negotiate a comprehensive deal with the EU securing tariff-free and quota-free trade of all automotive products and cooperation in the area of future regulation and customs. The urgency of clarity on the UK's future trading relationship with the EU is critical.

SIGNATORIES

SIGNATORIES TO THIS REPORT	BRANDS
Autoelectro	Autoelectro
Autocraft	Autocraft
Aston Martin Lagonda Ltd	Aston Martin, Lagonda
Bentley Motors Ltd	Bentley
BMW Group UK including Rolls-Royce Motor Cars Ltd	BMW, MINI, Rolls-Royce
Bosch	Bosch
Carwood	Carwood
Caterpillar	Caterpillar, Perkins
Ford Motor Company Ltd	Ford
General Motors UK Ltd	Vauxhall, Opel and Holden
Honda (UK) and Honda of the UK Manufacturing (HUM) Ltd	Honda
IBC Vehicles Ltd	Vauxhall, Opel
Jaguar Land Rover Ltd	Jaguar Cars, Land Rover
Leyland Trucks	DAF Trucks
Lotus	Lotus
McLaren	McLaren
Michelin Tyre plc	Michelin
Nissan Motor Manufacturing (UK) Ltd and Nissan Technical Centre Group	Infiniti, Nissan
Optare	Optare
PSA Group	Citroën, Peugeot, DS Automobiles
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 Car UK Ltd	Volvo

References and online content

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

The webpage also contains links to signatories' sustainability websites.

SMMT
DRIVING THE
MOTOR INDUSTRY

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