

Written evidence submitted by the Society of Motor Manufacturers and Traders (SMMT)(AQU0075)

Introduction

The Society of Motor Manufacturers and Traders (SMMT) is one of the largest and most influential trade associations in the UK. It supports the interests of the UK automotive industry at home and abroad, promoting the industry to government, stakeholders and the media. The automotive industry is a vital part of the UK economy accounting for some £82 billion turnover and £18.6 billion value added. With some 168,000 people employed directly in manufacturing and 823,000 across the wider automotive industry, it accounts for 14.4% of total UK exports with over 160 countries importing UK produced vehicles. 30 manufacturers build in excess of 70 models of vehicle in the UK supported by more than 2,500 component providers and some of the world's most skilled engineers.

SMMT welcomed the publication of the Clean Air Strategy in January 2019. The following key points were noted.

- Welcomed the provision of air quality data in one place
- Was pleased to see other emissions sources, as well as all modes of transport included in the strategy.
- Would like to see improvements to modelling data through consideration of latest methods and understanding of emission sources
- Requested source apportionment data on PM and the impact of weather to be included in the assessment of a baseline for working towards meeting WHO limits
- Recommended clear communication with the public on air quality including leading by example from central and local government
- Seeks to work with government on the detail of future UK requirements impacting road transport, NRMM and medium combustion plant

Vehicle emissions reduction

The UK automotive industry is firmly committed to a zero emission future and has invested significantly to develop a portfolio of technologies that will address the challenges of reducing both carbon and pollutant emissions from vehicles. A variety of vehicle technologies are currently available with each having benefits for varying consumers. Battery electric vehicles (BEVs), hybrid electric vehicles (HEVs), plug in hybrid electric vehicles (PHEVs), fuel cell electric vehicles (FCEVs) and extended range electric vehicles (E-REVs) all play a role in reducing both greenhouse gases and emissions harmful to health. These should all be given equal priority in any emerging transport and air quality improvement policy to ensure consumer needs and affordability are considered.

Vehicles being produced today feature filters that capture over 99% of particulate emissions, making them the cleanest ever produced. Compared to 2000, nitrogen oxides (NO_x) are down 64%, particulates (PM₁₀) are down 90% and carbon monoxide (CO) levels are down 22%. The introduction of Euro 6 sees an overall 84% drop in NO_x emissions in diesel cars since 2000.

As the market for ultra-low emission vehicles (ULEVs) continues to grow this will bring a further reduction in exhaust pollutant emissions as well as CO₂ emissions. Emissions from road transport currently contribute 7.4% and 8.5% of all UK primary PM_{2.5} and PM₁₀ emissions

respectively¹. Due to the significant improvement and near elimination of PM from exhaust emissions, the majority of PM from road vehicles is derived from non-exhaust emissions (NEE). There have been some reports that brake and tyre wear emissions will be higher from heavier vehicles², such as electric vehicles. Due to the difficulties in accurate measurement of these emissions and allocation of their source, this has yet to be proven. However, the use of regenerative braking in electric vehicles is likely to result in a net-benefit to non-exhaust PM emissions in certain road and traffic conditions³. Modern electric cars offer such high levels of regenerative braking that, much of the time, they can be driven with little or no use of the friction brakes. On electric buses, in-service telematics shows that typically 30% of the energy supplied from the battery can be re-captured by the regenerative braking system, the resultant lower brake wear rates being borne out by operators' reports of very long pad life. Industry is an active participant in the UN expert group on particulate measurement which is working to develop appropriate methodologies for the measurement of these types of emissions.

Registrations of ULEVs are increasing and currently represent 8% of the new car market⁴ but this still only accounts for about less than 1% of the total parc. Furthermore, as vehicles have become more reliable, the average age is increasing⁵ and this may be further exacerbated by the Covid-19 pandemic. The decline in new car registrations this year so far equates to almost 600,000 units, and without a rapid recovery, risks leaving older vehicles on the road for longer.

Communication

Clear communication on the sources and potential mitigation of air pollutants is essential. Government and media language regarding "bans" of vehicles cause a reactionary effect on the public whereby they cease to purchase new vehicles and keep older more polluting vehicles for longer. This messaging should also apply to devolved administrations to avoid fragmentation of local policy and provide consumers with clarity on technology and fuel choices that are most appropriate for their needs.

Furthermore, apprehension around purchasing ULEV's still exists mainly due to affordability and charging anxieties. The whole consumer experience of ULEVs and sustainable transport must be taken into account when encouraging behaviour change. This can be achieved through encouraging public sector fleets to purchase ULEVs and make them visible and by government creating a real time, open source database for charging and refuelling infrastructure availability.

Covid-19 impacts on air quality

Prior to the Covid-19 pandemic there was clear evidence from nationwide monitoring that air quality was improving. Data provided by Defra⁶ through the National Atmospheric Emissions

¹ https://uk-air.defra.gov.uk/assets/documents/reports/cat09/1907101151_20190709_Non_Exhaust_Emissions_typeset_Final.pdf

² <http://www.soliftec.com/NonExhaust%20PMs.pdf>

³ https://uk-air.defra.gov.uk/assets/documents/reports/cat09/1907101151_20190709_Non_Exhaust_Emissions_typeset_Final.pdf

⁴ <https://www.smmmt.co.uk/2020/08/new-car-registrations-up-11-3-as-pent-up-demand-helps-lift-market/>

⁵ SMMT

⁶ <https://www.gov.uk/government/publications/emissions-of-air-pollutants/emissions-of-air-pollutants-in-the-uk-1970-to-2018-summary>

Inventory (NAEI) shows a significant decline in emissions of air pollutants. Road traffic is the largest contributor to NO_x emissions but in 2019 concentrations reduced to average annual mean of 19.6µg/m³, the lowest since 1990⁷.

Kings College London reported⁸ a 55% reduction in NO₂ concentrations due to less traffic during lockdown. Particulate Matter (PM₁₀ and PM_{2.5}) concentrations remain of concern as even with significantly less traffic, PM concentrations were higher in April than at any other time in 2020. Springtime PM episodes are common due to agricultural activity and transboundary pollution⁹. Kings College London report these may have increased due to domestic garden and wood burning¹⁰. The pandemic has created unprecedented circumstances allowing atmospheric scientists to assess pollutants¹¹ and sources within a living lab providing a far more accurate assessment of sources than modelling ever could. This has highlighted the necessity to consider emissions from all sources and not just road transport.

Since the Covid-19 pandemic UK automotive has seen a drastic fall in new car registrations¹². The effect of this decline in new vehicle registrations on air quality may be significant without a boost to the sector to support consumers to purchase new vehicles. Whilst Covid-19 still presents a threat and restrictions remain in place, it is likely that many people will use their car rather than public transport. At a local level, government support and encouragement for walking and cycling could improve local air quality by reducing the number of shorter journeys taken by car, however, for the many journeys where it is not possible to walk or cycle, fleet renewal both in the passenger car and commercial sectors is imperative to reduce emissions and improve air quality.

Buses

SMMT data shows the current average age of buses and coaches in the UK is almost 10 years. Evidence from bus testing on the London-specific test cycle demonstrates that there has been up to a 95% reduction in NO_x emissions from Euro V to Euro VI. The success of Euro VI technology, introduced in 2013 for heavy commercial vehicles, together with investment in lower emission trucks and buses has achieved significant results in emission reductions. The UK bus sector in particular is leading the way in Europe with the introduction and use of hybrid and zero emissions technologies. Data from Putney High Street and Brixton Road automatic monitoring stations show the significant improvement in NO₂ concentrations achieved after the introduction of the clean bus corridors.

Whilst the technology has already been proven to reduce emissions there remains a consumer reluctance to use bus services. Prior to the Covid-19 pandemic, bus patronage was already in decline¹³. This decline has been further exacerbated since social distancing restrictions have

⁷ <https://www.gov.uk/government/publications/air-quality-statistics/nitrogen-dioxide>

⁸ <https://www.kcl.ac.uk/news/mixed-pollution-results-london-during-lockdown>

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https://www.london.gov.uk/sites/default/files/london_response_to_ageg_call_for_evidence_april_2020.pdf

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https://www.london.gov.uk/sites/default/files/london_response_to_ageg_call_for_evidence_april_2020.pdf

¹¹ <https://ee.ricardo.com/news/blog-update-on-covid-19-and-changes-in-air-pollution>

¹² <https://www.smm.co.uk/vehicle-data/car-registrations/>

¹³

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/852652/annual-bus-statistics-2019.pdf

been imposed and operators are facing significant financial pressures. Government support¹⁴ to keep these operations running is welcome; however, operators are likely to struggle to commit to purchasing new, cleaner vehicles without further government support.

Government has previously provided significant investment for new bus and retrofitting technologies through the Green Bus Fund¹⁵ and Ultra-Low Emission Bus fund¹⁶. This has supported the introduction of around 1500 low emission buses. In 2019 EV bus penetration reached 7% of total domestic sales; almost 10 times higher than that seen in our car market. This demonstrates the effectiveness of such funding packages and these should be maintained for the bus sector to allow operators to provide sustainable, low emission public transport services across the UK.

Infrastructure

Charging for larger commercial vehicles remains a challenge due to the higher power demands and physical space required for parking. Locations for charging and refuelling infrastructure must ensure unrestricted access to large commercial vehicles. The current system for motorway refuelling of HGVs is effective and this should remain in place as we make the transition to alternative fuels. Additional consideration for transport refrigeration units (TRU's) is also required. These units are capable of running on both the vehicle engine and an external electricity source. The provision of 3 phase plugs alongside vehicle charging and refuelling will enable further emissions reduction from non-exhaust sources.

The passenger car market has evolved significantly, and manufacturers offer over 60 plug-in vehicle models. To provide consumers with the confidence they need to purchase these vehicles, a clear package of incentives is required together with a ubiquitous, interoperable nationwide electric vehicle charging and refuelling infrastructure network. Government has committed funding for the installation of charge points both domestic¹⁷ and public¹⁸¹⁹. SMMT asks that the government expedite these plans immediately to install the charging infrastructure required to support the mass market roll out of ULEVs.

A holistic infrastructure strategy must be developed that ensures adequate charging is delivered in each part of the network – home (on and off-street parking), workplace, depot, destination and highway. There are currently approximately 33,000 public chargepoint connectors available in the UK. A substantial increase in charging infrastructure is required to support government's ambition for the uptake of ULEVs.

Based on an assumption of an EV parc of 24% by 2030 and 41% by 2035, a total of 6.99m chargepoints are needed by 2030, of which 1.66m are public chargepoints, increasing to a total of 11.83m chargepoints by 2035, of which 2.8m are public chargepoints. To deliver the full 2.7m on-street 7-22kW public chargepoints by 2035 (there are currently around 18,000 already in place), a total investment of at least £16.67bn is required, covering hardware, wiring, installation and grid connection.

¹⁴ <https://www.gov.uk/government/news/almost-400-million-to-keep-englands-buses-running>

¹⁵

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/699255/green-bus-fund-table.pdf

¹⁶ <https://www.gov.uk/government/publications/low-emission-bus-scheme>

¹⁷ <https://www.gov.uk/government/collections/government-grants-for-low-emission-vehicles>

¹⁸ <https://www.gov.uk/government/publications/government-vision-for-the-rapid-chargepoint-network-in-england/government-vision-for-the-rapid-chargepoint-network-in-england>

¹⁹ <https://www.gov.uk/government/publications/charging-infrastructure-investment-fund>

