

# **Air Quality**

A response to the House of Commons Select Committee joint inquiry on air quality

November 2017



## Key Messages

- The government's air quality plan shows a wide range of actions are underway in an attempt to meet EU air quality targets.
- The air quality plan focuses on nitrogen dioxide as well as local transport as the primary emissions source. Additional policies, including the upcoming Wider Clean Air Strategy, need to include other gases, such as carbon dioxide, as well as particulate matter, and go beyond local transport to encompass fast food restaurants, agriculture, local power generators, biomass boilers, haulage, rail, shipping and aviation in order to be future proof.
- It is possible to identify examples of cities that publish monitoring data that is significantly above the compliance levels required yet do not appear on the lists within the government's air quality plan for either:
  1. Local authorities required to produce clean air plans
  2. Local authorities for which exceedances of compliance limits are predicted but which are not required to produce feasibility studies for an air quality plan.This raises the possibility that the predictive models forming the basis on which these priorities have been drawn up are seriously under estimating the number of areas requiring action. Policies such as Clean air zones (CAZs) need to be implemented based on good data at the local level and detailed local assessment.
- The government's air quality plan places a large burden of responsibility on local government, however, if air quality issues are to be addressed, a joined-up approach to governance is required across several dimensions;
  1. A cross-government approach is required, for example, in achieving the infrastructure required to achieve a transition to electric vehicles (EVs) and to ensure the planning system at a national level gives due weight to air quality in planning decisions.
  2. Central government needs to support local authorities through a combination of funding, standards, effective regulation and formal guidance.
  3. Local government needs to work with wider stakeholders at a local level, including planners, infrastructure operators and businesses.

## Introduction

1. The Royal Academy of Engineering welcomes the opportunity to respond to this inquiry on air quality. As the UK's national academy for engineering, the Academy brings together the most successful and talented engineers from across the engineering sectors for a shared purpose: to advance and promote excellence in engineering.
2. The Academy's response has been informed by the expertise of its Fellowship, which represents the nation's best engineering researchers, innovators, entrepreneurs, and business and industry leaders.
3. Air Quality is a major health and environmental concern resulting in high numbers of premature deaths and direct costs of around £2.7bn per annum. In order to reduce the impact of this issue there are many potential areas for policy intervention.

## How effectively do government policies take into account the health and environmental impacts of poor air quality?

4. The government's air quality plan states that air pollution is the largest environmental risk to public health in the UK but that the UK has failed to meet the EU emissions targets in the past. Generally, the quantification of the impacts from air pollution is considered to be limited, with few predictions made and very limited resource planning. The overview and detailed reports do summarise the evidence on the adverse health effects of poor air quality, estimating the direct costs to be £2.7bn per annum. The reports only briefly discuss the wider environmental impacts and there is no reference to the psychological impacts of living on and passing through streets with high emission levels.
5. While outlining many of the broad health and environmental concerns, the government's air quality plan focuses heavily on nitrogen dioxide, however, other gases and particulate matter, will contribute to health problems. Notably particulate matter has been found to be over the World Health Organisation's (WHO) recommended value in 44 of 51 UK cities in the WHO air pollution database. This particulate matter occurs in a range of chemical combinations from a variety of sources such as automobiles, construction sites, cooking and power plants. Particulate matter has been associated with serious health effects. These include premature death, cardiovascular disease and lung dysfunction as well as increased hospital admissions<sup>1</sup>. Smaller particles (PM<sub>2.5</sub>) and 'superfines' are thought to have the most serious health effects, WHO's guidelines for these are much more stringent compared to those for nitrogen dioxide so they should be included in the plan in order for it to be future proof.
6. The plan highlights that 80% of nitrogen oxides (NO<sub>x</sub>) emissions come from road vehicles. While elevated NO<sub>x</sub> emissions from diesel vehicles are harmful to human health, elevated CO<sub>2</sub> emissions from petrol engines are harmful to the climate. From a regulatory standpoint, setting priority on one or another will always impact the solutions and strategies employed for compliance. A balanced approach to tackling both local and global emissions is therefore essential.
7. The plan focuses heavily on the adoption of electric vehicles (EVs) as a major policy intervention. While EVs do have zero tailpipe emissions at the point of use, which will help in inner city environments with respect to air quality, it should be noted that EVs, are not zero emission; brake, tyre and road surface wear alone will contribute particulates just as it does for other vehicles. Additionally, the electricity generation to power the vehicles will likely result in air pollution, particularly if it results in an increased need to utilise older 'non-renewable' generating capacity to meet the increased demand. Avoiding this and mitigating its impact will need to be carefully considered if the problem is not to be transferred from one system (transport) to another (energy generation). While this would reduce the human exposure factor (as power stations are typically not positioned close to human populations) the environmental implications must be considered. Additionally, the wider, global environmental impacts and sustainability of a largescale and rapid transition to EVs, such as the increased extraction and utilisation of rare earth metals, Research shows battery manufacturing results in high levels of CO<sub>2</sub> emissions with the emissions increasing relative to the battery size. Therefore, the manufacture of EVs results in significantly higher greenhouse gas emissions compared to internal combustion engines<sup>2</sup>. These factors require careful analysis and consideration, especially as air quality is one of a number of factors causing pressure for a rapid transition to EVs internationally.

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<sup>1</sup> Air Quality Expert Group: [Fine Particulate Matter \(PM<sub>2.5</sub>\) in the United Kingdom](#)

<sup>2</sup> See for example: Romare and Dahllöf (2017) [The Life Cycle Energy Consumption and Greenhouse Gas Emissions from Lithium-Ion Batteries](#), Hao et al. (2017) [GHG Emissions from the Production of Lithium Ion Batteries for Electric Vehicles in China](#)

**Do these plans set out effective and proportionate measures to achieve necessary emissions reductions as quickly as possible?**

8. The air quality plan addresses some of the main causes of emissions and offers many practical ideas to improve air quality. However, relying on local incentives, much of the plan stipulates that local authorities should develop the solutions in the areas outlined by government. While locally developed solutions are important to reduce transport congestion pinch points, without the specifics on these measures it is difficult to comment on how effective they will be on a national level. However, there are multiple reasons for considerable doubt that the plan can achieve 'necessary emissions reductions as quickly as possible'. A level of standardisation and best practice should be established by central government.
9. While the air quality plan includes useful steps to reduce emissions from road vehicles, the degree of urgency in the initiatives appears to be limited. Some local authorities have seen a six month delay to the implementation of clean air zones due to funding restrictions. Despite the emphasis placed on local solutions in the plan, the number of proposed solutions for local authorities is limited and fails to identify the most cost-effective measures. If they are to deliver the task of national compliance placed upon them, local authorities will require significant support from government. This should include full funding and technical guidance from government (for example, in relation to opportunity for application of technology solutions for traffic management) with clearly defined requirements in terms of how it should be spent and the targets to be met. Without this support the approach defined in the report is unlikely to be successful in the shortest possible time frame.
10. With regard to the suggested plan to ban the sale of solely internal combustion engines by 2040, cars typically have a 12-year replacement rate, without financial incentives people are unlikely to make this important change sooner than necessary. This might be good as, while adoption of EVs is an expedient way to reduce emissions, at present the infrastructure is a major limitation to the potential scale of their uptake. The increase in EV usage will also generate extra demand on the national grid for which there must be the necessary capacity. The time scale to provide this in a reliable way can be very long, decades in the case of nuclear energy. The local electricity networks have not been sized to accommodate mass EV charging, achieving this will require substantial infrastructural investment. Due to the limitations of charging infrastructure, cost and weight of batteries, pure EVs (battery electric vehicles, BEV) will likely be confined to big cities and their numbers relatively low in the next decade. Instead, vehicles powered by hybrid and plug-in hybrid engines will become widely available and be adopted more rapidly than the BEVs. Evidence shows that hybrids have significantly lower NOx emissions in urban areas than internal combustion engines. Therefore, the combined use of the combustion engine optimised for hybrid operation with electric motor, such vehicles can make a greater and faster impact on improving the air quality than relying on BEVs due to faster implementation at higher numbers.
11. Clean air zones (CAZs) are one solution to reducing pollution. However, while these can be guided by the national 'pollution climate mapping' model, the data used to develop this national model is not of the highest achievable quality and CAZs need to be implemented based on the best data at the local level and detailed local assessment. By focusing solely on the outcomes from the model, the requirements of the European Directive 2016/2284/EU can be met but health and environmental improvements are not necessarily being maximised for the population.
12. According to the air quality plan (Table 3), just 29 English local authorities are required to produce clean air plans, with some needing to focus solely on a single road. Annex K provides a longer list, including more than 50 with annual average emissions forecast at between 41 and 50 $\mu\text{g}/\text{m}^3$  2017 (against a threshold of 40 $\mu\text{g}/\text{m}^3$  for compliance), for which a feasibility study for an air quality plan is not required. As an example of an omission, the City of York's 2017 Air Quality Annual Status Report published in June

2017 shows a value for the city centre and inner ring road of  $54\mu\text{g}/\text{m}^3$ , on the basis of which it should have been added to the list of 29 authorities from whom action is required. Yet it does not even appear in the longer list of local authorities with more minor exceedances. This omission may have arisen from the Department for Environment, Food and Rural Affairs (DEFRA) emphasis on modelling of air quality rather than direct measurement. It seems highly probable that, as a result, DEFRA will have seriously underestimated the number of areas where action is needed. If this is the case, the air quality plan risks being significantly deficient.

13. The report gives no guidance as to which of the four classifications of zone A-D should be adopted in a CAZ. Class A covers only buses, coaches, taxis and private hire vehicles, B adds heavy goods vehicles (HGVs), C adds vans, and only D includes cars suggesting government wishes to avoid imposing restrictions on private car drivers if possible. Yet by the report's own evidence (Figure 3), class A will only treat 18% of all  $\text{NO}_x$  emissions, class B 36%, and class C 58%. Since cars alone account for 43% of all emissions, it would be far more effective to include them at an earlier stage in this classification. By omitting cars there is a further risk that bus passengers incur the costs depending on the cost model used. This could result in inequitable treatment as they will be made to pay for their  $\text{NO}_x$  emissions even though, per head per km, car users may emit more (depending on the composition of the car fleet). There is a need for Europe wide common standards for CAZ.
14. While the air quality plan lacks specifics of the local measures to be developed, in practice, local authorities have a wide range of policy measures available to them in addition to those that directly encourage the use of ULEVs and could potentially speed up the process of improving air quality. Government policies do not give sufficient weight to the role of strategic (urban) land use planning in relation to industrial and commercial activity, which gives rise to poor air quality, nor in the design of urban areas, which seek to promote public and active mobility solutions in place of car-centric development. Land use planning should ensure that new developments support sustainable transport modes; better management of the operation of the road network; behavioural measures such as company and school travel plans; real time information; and pricing of road use and parking. All of these measures were identified in the 2009 guidance for the third round of Local Transport Plans but their reference in the air quality plan has been limited.
15. The only other reference to this wider set of measures was specifically ruling out the use of parking restrictions and charges yet, in practice, up to 30% of traffic in city centres may be searching for parking spaces. More appropriate charges and parking space management could help to reduce unnecessary traffic and pollution. Moreover, restriction of parking provision in new developments can help support the application of car clubs and trip pooling, reducing users' average annual car mileage.
16. While they are featured in the CAZ classifications, the number of measures aimed specifically at HGVs are limited in the air quality plan despite their higher emissions and the fact that they are almost entirely diesel powered. In late 2015, a group of Academy Fellows produced *The transport congestion challenge*, a paper that provided expert opinion on possible measures to reduce transport congestion<sup>3</sup>. This included the adoption of urban consolidation centres whereby vehicles consolidate their loads at a centre near the delivery point - to reduce the level of emissions from goods vehicles. The report highlighted that while home delivery and the shift to internet shopping is more efficient in transport terms than individual journeys by car, leading to less pollution and congestion, competition policy and law is currently leading to many parallel journeys by partially loaded vehicles (largely diesel vans). Incentives are needed to promote consolidation into fewer vehicles with a better load factor. More recently, the Institution of Civil Engineers (ICE), produced their report *Engineering*

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<sup>3</sup> Royal Academy of Engineering (2015) [The Transport Congestion Challenge](#)

*Cleaner Air*, this put urban consolidation centres forward as their number one action to be taken as part of a long-term commitment to better air quality<sup>4</sup>.

17. Generally, the air quality plan fails to separate addressing the very serious problems of inner city, urban pollution from the requirements for long-distance transport of goods, and commercial and social travel on the trunk roads and motorway system where efficiency and range are particularly important. In addressing the inner-city problems, the advance of autonomous vehicle developments and interconnectivity of vehicles and traffic management systems have the potential to enable far more active control of traffic flows in urban areas than at present, and could make a significant contribution to the reduction of local pollution levels but are not discussed. On the motorway system, the use of variable speed limits and hard shoulders is as much about capacity as pollution control, and the use of efficient petrol and diesel engine vehicles with modern emissions aftertreatment systems continues to be the best fit with requirements as electric HGVs just aren't practical.
18. Citing roads as responsible for the majority of air pollution, mention of rail, aviation and shipping in the air quality plan is confined to a short annex explaining limited ongoing measures to reduce emissions from such sources. Shipping has been associated with high concentrations of nitrous oxide at ports and harbours<sup>5</sup>, this may explain Southampton having a comparable emissions levels to London. While increased use of mass transit reduces emissions, many of the UK's trains still rely on diesel and there have been cuts to planned electrification. Without additional plans relating to these sectors and cross departmental strategies, there is untapped potential for further emissions reduction allowing targets to be reached faster.
19. The air quality plan commits £64M of further funding for electric taxis but only £23M on hydrogen vehicles in total. Taxi drivers are very resistant to EVs due to the refuelling time. Even 30 minutes represents 6% of an eight hour shift as opposed to two to three minutes to refuel with diesel. Hydrogen potentially offers a more attractive fuel choice for taxis and similar operations. While less developed than EVs, in the medium and long term, this may be an option worth considering.
20. *The transport congestion challenge* highlighted that a number of potentially good tram and light rail schemes were stalled due to lack of funding and this is still the case<sup>6</sup>. Well planned light rail schemes are zero pollution at the point of delivery and are more attractive to users than buses. For large conurbations, park and ride with tram or low emission bus routes into what are otherwise pedestrian only zones, have significant potential. Additional low cost parking adjacent to existing public transport infrastructure combined with reasonable off peak fares also has potential in some cases albeit with careful consideration regarding potential loss of existing commuting revenues.
21. Furthermore, there is no mention of demand management to reduce congestion and improve city air quality in the air quality plan. *The transport congestion challenge* presented a strong case for intelligent road pricing as a key recommendation to make better use of the transport infrastructure which could be implemented with technology available today. The introduction of intelligent road pricing can also replace the taxation anomalies created by adoption of EVs on road tax and fuel duty revenues.
22. While local transport is clearly a significant contributor to poor air quality, it is not enough to focus initiatives solely in this area. To tackle the air quality problem, a wider systems approach that looks beyond nitrous oxides and takes in wider sources of emissions and background pollution levels is needed. Outside of the obvious sources of pollution in transport and energy, fast food restaurants are responsible for significant levels of pollution<sup>7</sup>. These are often in dense, urban areas, adding to the already poor

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<sup>4</sup> Institution of Civil Engineering (2017) [Engineering Cleaner Air](#)

<sup>5</sup> DEFRA (2012) Air Quality Expert Group: [Fine Particulate Matter \(PM2.5\) in the United Kingdom](#)

<sup>6</sup> Royal Academy of Engineering (2015) [The transport congestion challenge](#)

<sup>7</sup> Ibid.

air quality. Reducing the harm from this source should be an additional consideration on either a local or national scale. In rural areas, agriculture also contributes to air pollution where both nitrogen fertilisers and the decomposition of organic matter in soil results in the release of nitrous oxide; according to the current methodology of the Intergovernmental Panel on Climate Change (IPCC) for estimating nitrous oxide emissions from fertilisers, 1 – 1.5% of nitrogen in synthetic fertiliser applied to crops is emitted as nitrous oxide<sup>8</sup>. However, as the study summarises, a great many local factors – such as soil characteristics and local weather following fertiliser application – determine actual emission levels. The Academy recommends that, in the upcoming Wider Clean Air Strategy, attention be paid to both CO<sub>2</sub> and particulate matter alongside NO<sub>x</sub> as well as the additional sectors discussed above that contribute to the air quality problem beyond local transport; specifically, fast food restaurants, agriculture, haulage, rail, shipping and aviation.

### **Are other nations or cities taking more effective action that the UK can learn from?**

23. There are a great number of international cases from which the UK and UK cities can learn. For example, in addition to London, over 500 European cities now have low emissions zones and clean air zones in place. Milan has had a road user charging zone designed specifically to reduce pollution since 2006, many Italian cities have implemented permit-based Traffic Limitation Zones (ZTLs), which are still not permitted in the UK. Paris has committed to being carbon neutral by 2030 while London aims to achieve this by 2050.
24. Norway has around ten times as many ULEV vehicles per capita, and the Netherlands at least three times. Lessons can be learnt from both in understanding how to achieve much higher levels of ULEV purchase and use. While the UK air quality plan suggests banning the sale of solely internal combustion engines by 2040, in Norway this policy will come into effect in 2025. As a result of incentivising EVs since the 1990s, Norway already has the highest proportion of EVs relative to its population which in part explains this short timeline. It should be noted that this transition in Norway, has been achieved with substantial government subsidy. Another example of a country with a stronger ambition on this goal is India, the world's 5<sup>th</sup> largest car market, which is aspiring to the same goal by 2030. Additionally, China have announced it is aiming to have five million EVs on its roads by 2020.
25. Other international examples include the California Air Resource Board – Enhanced Fleet Modernisation Program Plus-Up Pilot Project in Greater Los Angeles and the San Joaquin Valley, that supports households who wish to trade in their older polluting vehicles<sup>9</sup>. In return for scrapping their vehicle, households are entitled to money towards a cleaner vehicle or a public transport pass. The amount received depends on two elements: the type of replacement car (the cleaner, the more money), and the household income level (inversely). The programme is funded by a \$1 tax on all new vehicle registrations. As a result of EU commission incentives, a number of passenger car retrofit options are becoming available from reputable companies for Euro 4/5/6 diesel cars, to make them RDE compliant. This could be a less expensive way for the UK to support cleaner air than scrapping.
26. By combining two of the city's needs, more housing and less congestion, the San Francisco bay area also has innovative plans. San Francisco Planning Department, MTA, and County Transportation Authority have devised a strategy where each new development of 10 or more units must consider sustainable transport as a priority. In order to receive approval, each development has to reach a points target by incorporating a range of elements such as onsite childcare, fleets of bicycles, car sharing or public transport subsidies in order to reduce the number of vehicle miles

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<sup>8</sup> Royal Academy of Engineering (2017) [Sustainability of liquid biofuels](#)

<sup>9</sup> California Environmental Protection Agency [Enhanced Fleet Modernisation Programme](#)



travelled by its residents<sup>10,11</sup>. This plan still involves adding more people to an already densely populated area and is therefore unlikely to result in decreased emissions, but it could potentially curb further increases. These suggestions could also have additional health and social benefits, encouraging the residents to be active by their choice of transport and creating a community atmosphere by having shared facilities on site.

### **Is there enough cross-government collaboration to set in place the right fiscal and policy incentives?**

27. Reducing air pollution requires a joined-up strategy that actively avoids a siloed approach within government. This air quality plan includes DEFRA and Department for Transport but, for the reasons outlined below, both Department of Business, Energy and Industrial Strategy (the contribution of energy generation to air quality and the potential demands for upgrade of electricity distribution) and Department for Communities and Local Government (DCLG) (in potentially updating the planning framework and guidance) will have roles to play in ensuring effective policy developments. Additionally, the Treasury should be consulted as at present there appears to be a major inconsistency between the Treasury's approach to vehicle and fuel taxation and the aims of the air quality plan. The recent changes in Vehicle Excise Duty (VED) have withdrawn rebates for all but zero emission vehicles, at a time when those purchasing vehicles still need to be encouraged to transition towards lower emission vehicles. The relative levels of petrol and diesel fuel duty do not to any significant extent reflect their relative impacts on pollution and there is increasing evidence that a move away from these two forms of taxation to one based directly on vehicle usage would have a much greater impact on vehicle use and hence on emissions.
28. On top of cross departmental collaboration, the approach within individual departments must also be joined up; different modes of travel across rail, sea, air and road need to be brought together to ensure a consistent approach to meet the air quality targets. Additionally, there are both urban and rural considerations to tackle air quality.
29. It is not clear what action there will be by DCLG to update the National Planning Policy Framework and the Planning Practice Guidance to drive local authorities and the Planning Inspectorate to place more weight on air quality issues in development decisions. Paragraph 124 of NPPF only obliges planners to 'think about' air quality rather than it being an overriding consideration. Stronger guidance would provide a means of strengthening the planning system against new developments that will result in deterioration of air quality and drive continued emission growth. A similar system could be adopted to that implemented in San Francisco to ensure all developments above a certain threshold have a mandatory requirement to include transport measures.
30. While the need for a better network of charge points is repeated throughout the air quality plan, there is no coherent policy around how this will be managed. It was noted there is a need for the standardisation of the charging connections in order for this to be successful. However, there is no requirement to include charge points in new developments, or mandatory requirements for 'green' travel planning, leaving it at the planners' discretion which may limit uptake. The difficulties of home charging increase further for households with no off-road parking which make up 43% of households. In addition, there will be local electricity distribution needs to be able to cater for increased demand from home charging. To do this effectively the distribution network operators (DNOs), in particular, should be engaged. Formal Planning Guidance on this matter is urgently needed.

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<sup>10</sup> Citylab (2016) [Can San Francisco build housing that eases traffic?](#)

<sup>11</sup> California Air Resource Board (2017) [Transportation Demand Management Measures](#)



31. In addition to government, more responsibility should be placed with manufacturers to comply with European regulation, together with attention to robust compliance testing. In terms of road vehicle emissions, there is wide variation in performance of Euro VI vehicles with data from Emission Analytics suggesting some appear to have higher emissions of NO<sub>x</sub> than Euro III and IV, which would be excluded from some low emissions zones. Some can meet the requirements under the standard conditions and this should be required across all vehicles. Recent experience has shown, it is not enough to assume compliance and attention needs to be paid to loop holes that might be exploited. New Worldwide Light Vehicle Test Procedure (WLTP) driving cycle and EU legislation on Real-Driving Emissions (RDE) is addressing this concern by assessing environmental impact over a model's whole life cycle from well to wheel rather than just tailpipe emissions. All new diesel models must be compliant to these regulations as of September. The RDE should be made public to allow car buyers to make informed choices. The city of London has taken a lead on this, alongside implementation of the T-charge they have created a helpful online resource which rates NO<sub>x</sub> emissions of Euro 6 vehicles based on RDE measures<sup>12</sup>.

### **How can those charged with delivering national plans at local level be best supported and challenged?**

32. The government requires local authorities to produce their draft plans within eight months. This is likely to be a challenging timeframe, especially given the cuts to staff and resources experienced by local government of the last seven years which will impact upon their capacity to respond. Competitive bidding would add an additional pressure with failure leading to resources being wasted. While the government has only imposed this requirement on 29 English local authorities, it is clear that there are others where action is needed and there is a danger that the air quality plan legitimises inaction on the part of these additional authorities. To successfully adopt the suggestions outlined in the plan, a combination of funding, standards, effective regulation, support and formal guidance from central government will be vital.
33. Government's detailed plan specifies the way in which the government will assess the plans, including requirements to demonstrate that the plan will achieve the required results in the shortest time possible, and that there should be no unintended consequences. These two somewhat unrealistic tests raise the very real risk that the government may use them to refuse to provide further funding. Greater clarity on how these tests will be applied is urgently needed. Once implemented the most effective way to challenge local authorities to perform well is to ensure that they have effective emissions monitoring in place, and for government to regularly to check on improvements in measured emissions, rather than relying on its predictive models. Additional resources may be needed to establish effective monitoring programmes, however this evidence-base is vitally important. The government's overview report makes clear that the government is not proposing to provide new funding for its air quality plan, and that funding will have to come from a change in taxation of diesel vehicles expected later in the year. Since the government's analysis shows that air pollution is costing £2.7bn per year there is a strong case for making more funding available to tackle the problem. If, as the government suggests, local authorities are best placed to take action, this additional funding should be channelled to them based on the scale of the problem which they face.
34. There will need to be local collaboration and cooperation between local authorities and with wider stakeholders who will need to be involved in order to ensure air quality compliance. Where they exist, the focus on intervention should be at the Combined Authority level, although the duty transfer from DEFRA to local authority has been at the council level. The Combined Authority level allows definition of strategy rather than just local issues, and lends itself to the bigger picture solutions which are likely to be needed to genuinely improve the air quality.

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<sup>12</sup> Mayor of London London Assembly (2017) [Newer Vehicle Checker](#)

35. Funding allocated to retrofitting of buses will help but there needs to be standardised processes in place to ensure this is done correctly and economically. Similarly, UK wide standardisation is required for EV charging points, this should be led by central government rather than locally. The electricity generation and distribution industry needs to be encouraged to invest in infrastructure to support the radical move to EVs which will be needed to deliver the outcomes of the plan.
36. The implications of air pollution need to be better understood at a local level for this plan to take priority. National initiatives to provide wider public understanding of the problem could help reduce the task at hand by encouraging walking and cycling, use of public transport and purchase of EVs. Reducing public transport costs could discourage use of cars and taxis.