

Written Evidence submitted by The Institute of Air Quality Management (IAQM) (AQU0061)

This response of the Institute of Air Quality Management (IAQM) addresses the five questions posed in the Committee's call for evidence. The responses are presented in order (Q1 to Q5).

Executive Summary

The key points of our response are:

- The production of the *Clean Air Strategy 2019* (CAS) was a requirement of the National Emissions Ceilings Directive and therefore the emphasis was on the pollutants encompassed by this Directive and, in particular, those where the UK is least likely to meet the targets. The CAS, by design, did not address nitrogen dioxide (NO₂), except indirectly by addressing NO_x emissions, nor did it cover road transport emissions, except by a reference to the *UK plan for tackling roadside nitrogen dioxide concentrations*.
- To allow for a (tighter) PM_{2.5} target plus just one other pollutant target to be achieved in 2037 does not convey the appropriate urgency to address what is a health issue. There is no compulsion in the Bill to reach the target value and therefore the public may be exposed to avoidable health risks for 17 years.
- Air quality regulations currently cover multiple pollutants, and the most obvious change to make would be to expand the pollutants and expand the locations at which limits apply. In particular, urgent consideration is needed for the protection of the public in indoor spaces.
- A key concern is whether the Office for Environmental Protection (OEP) would be truly independent or would follow pressure from the Secretary of State. What is needed is an ongoing critical review of air quality health and ecological effects by a body independent of the OEP and of consultants working for the OEP.
- The UK government has achieved improved the control of industrial sources and concentrations of roadside NO₂ concentrations are declining; both of these have been driven by European legislation. Emissions of PM_{2.5} and NH₃ are not showing the necessary declines and will provide the greatest challenge on outdoor air quality in the next 15 years.
- We would be cautious about making too strong a link between the prevalence of COVID-19 with poor air quality.
- The Government needs to retain a far-sighted approach to influencing emissions reduction, despite the immediate pressures on public funds. It should build on the public's willingness to do things differently.
- Public transport must remain part of the air quality solution in the medium and long-term, even if it is not being promoted during the COVID-19 crisis.

About IAQM

The Institute of Air Quality Management (IAQM) is the professional body for air quality professionals in the UK, representing approximately 550 air quality professionals. As such, IAQM has a direct interest in the way government at all levels seeks to manage and improve air quality. We aim to be an authoritative voice on matters of air quality, using the expertise of our members. This submission represents the view of the IAQM's committee.

The Institute for Air Quality Management promotes air quality management. Air quality management is a systematic approach that uses measurement and modelling to quantify emissions and concentrations, in order to provide effective solutions that will lower exposure and improve the health of the population and ecosystems. To apply air quality management in the UK, one needs to consider national and local policy commitments and quantify them in terms of future concentrations and the future health benefit.

Q1	Did the UK Government's 2019 Air Quality Strategy set out an effective and
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<i>deliverable strategy to tackle the UK's poor air quality and address the issues raised in our 2018 report? Has the UK Government put in place the necessary structures and resources to deliver its strategy?</i>
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1. The production of the *Clean Air Strategy 2019*¹ (CAS) was a requirement of the National Emissions Ceilings Directive² (NECD) and therefore the emphasis was on the pollutants encompassed by this Directive and, in particular, those where the UK is least likely to meet the targets. The CAS, by design, did not address nitrogen dioxide (NO₂), except indirectly by addressing NO_x emissions and it does not cover road transport emissions, except by a reference to the *UK plan for tackling roadside nitrogen dioxide concentrations*,³ (NO₂ Plan).
2. The time horizon for the NECD is 2030 and the CAS therefore addresses problems over this timescale. Over the next 12 years, the greatest problems are likely to be posed by the need to reduce emissions of ammonia (NH₃) and fine particulate matter (PM_{2.5}). The Strategy's attention to these pollutants is very sensible in this context.
3. The CAS discusses the merits of reducing PM_{2.5} concentrations to the WHO guideline value of 10µg/m³. Research for Defra⁴ and the Mayor of London⁵ demonstrates there is a path to achieving this level, so it is disappointing that the WHO guideline value will not become a government target until 2022 at the earliest.
4. Non-exhaust emissions are an important component of locally generated PM_{2.5} and the CAS actions on non-exhaust PM_{2.5} remains at the research stage.
5. The CAS covers some hard to reach sectors, such as agriculture and shipping and contains a section on indoor air quality (IAQ), all of which is to be welcomed. It also mentions reorganising local air quality management (LAQM) and commits to providing advice to local authorities on the Habitats Directive; both of these actions are outstanding.
6. The CAS lacked detail and there are no structures proposed or resources allocated specifically to deliver the CAS that have yet been put in place.
7. Environment, Food and Rural Affairs (EFRA) Committee's 2018 report, *Improving Air Quality*,⁶ (EFRA 2018) made 22 recommendations. Mostly, the CAS does not address the actions with specifics, so there has been little measurable progress in many important areas. There has, however, been progress on the following recommendations:
 - Reducing emissions from domestic burning by banning the most polluting fuels and only allowing the sale of the cleanest stoves;
 - A Clean Air Fund;⁷ for those local authorities instructed to tackle NO₂; and
 - The establishment of the Joint Air Quality Unit (JAQU), a joint unit of Defra and DfT, which was a significant step towards joined up action.

¹ Clean Air Strategy 2019, Defra, 14 January 2019

² The National Emission Ceilings Regulations 2018, Statutory Instruments, 2018 No. 129

³ UK plan for tackling roadside nitrogen dioxide concentrations, July 2017, Defra, DfT and the devolved authorities

⁴ Air quality: Assessing progress towards WHO guideline levels of PM_{2.5} in the UK, Reports to Defra, July 2019

⁵ Mayor of London, PM_{2.5} in London: Roadmap to meeting World Health Organization guidelines by 2030, October 2019

⁶ Improving Air Quality, a joint report of parliamentary select committees: Environment Food and Rural Affairs, Environmental Audit Committee, Health, and Transport, 15 March 2018

⁷ <https://www.gov.uk/government/publications/environment-bill-2020/10-march-2020-air-quality-factsheet-part-4>

8. The CAS points to the legislative framework for clean air to be addressed through the Environment Bill (initially 2019, now 2020).⁸ The Environment Bill will not provide any agency with equivalent powers, standards and enforcement mechanisms to the equivalent enforcement agencies in the EU.

Q2	<i>Will the Environment Bill provide England with a robust legal framework to define and enforce air quality limits?</i>
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Target setting

9. To allow for a (tighter) PM_{2.5} target plus just one other pollutant target to be achieved in 2037 does not convey the appropriate urgency to address what is a substantial health issue. There is no compulsion in the Bill to meet the target value and therefore the public may be exposed to avoidable health risks for 17 years.

10. The Bill provides a useful framework, although a framework by itself cannot prescribe or enforce air quality objectives or limit values. This has to be done through secondary legislation.

11. Ambient air quality, unlike some other environmental topics to be covered by the Bill, currently has a system of targets and limit values set out in legislation, mainly dating back over two decades. There is a case for a separate air quality bill to ensure that progress on air quality made to date is not lost.

12. It is good that the Bill does not contain any numerical limit values as the limit values should be subject to modification if the underpinning scientific evidence changes. Modification is simpler, if the targets are defined in secondary legislation. We do not support open-ended commitments to targets. The commitments should be to known standards with a procedure for revision in response to new science.

13. We would like to see the Bill set up a framework for setting limits, to be enforced by law, not targets, and those limits should be linked to health-based outcomes as the motivating force.

14. When it comes to the target-setting phase we should like consideration to be given to setting health-based targets such as reducing exposure, especially with regard to health inequalities, or reducing life years lost due to air pollution with the same emphasis on reducing health inequalities.

15. Air quality regulations currently exist for multiple pollutants; the most obvious change to make would be to include further pollutants and expand the locations at which limits apply. In particular, urgent consideration is needed for the protection of the public in indoor spaces.

Strengthen the independence of decision-making

16. National measures dealing with the COVID-19 pandemic have required 'following the science'. The same approach is proposed in the Environment Bill through the establishment of the Office for Environmental Protection (OEP). Understanding both air quality and COVID-19 requires true independence of scientific thought, in fields where there is not necessarily one scientific view.

⁸ The Environment Bill 2020, Defra. 30 January 2020

17. A key concern is whether the OEP would be truly independent or would follow pressure from the Secretary of State; for instance, to choose only targets which are readily achievable.

18. What is needed is an ongoing critical review of air quality health and ecological effects by a body independent of the OEP and of consultants working for the OEP, which would be transparent, take evidence from a wide range of experts, with a clear audit trail before making recommendations. The recommendations would provide a basis for setting air quality targets (limits), recognising uncertainties and risks, which would be subject to continuous review. This would avoid public criticism and would maintain public trust. This role is currently filled by the Air Quality Expert Group (AQEG) and we should like to see the role of AQEG as a strong, independent body preserved.

Enforcement

19. There is a danger we will continue to rely on national scale modelling to assess ‘compliance’, which will be inherently uncertain, and may not accurately represent exposure to pollution at a local level.

20. Enforcement has always been a challenge. It is relatively easy for a regulator to fine an industrial operator, as the source of pollution is stationary and regular monitoring is carried out. Vehicles and domestic stoves are far too numerous and individually small to be regulated in this way.

21. Local authorities lack the funding and resources to enforce regulations applicable to smaller industrial sources (Part B), vehicles and domestic stoves.

22. The existing EU limits values still apply in UK law but their future enforcement is not clear:

“The European Union (Withdrawal) Act ensures that the whole body of existing EU environmental law continues to have effect in UK law. Our national emission ceilings and ambient air quality limits are already set out in UK law.”⁷

23. Under the Environment Bill, enforcement procedures (for the PM_{2.5} target and one other target) are very bureaucratic, not binding on the Secretary of State and do not have the same force as under European legislation. It was European legislation which finally forced the government to present an air quality plan to ensure compliance with the NO₂ Limit Value in the shortest possible time.

Q3	<i>What progress had the UK Government made on reducing air pollution and enforcing legal pollution limits before the Covid-19 pandemic?</i>
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Reducing air pollution: the overall picture

24. The UK government has achieved substantial reductions in emissions from industrial sources, as shown by the dramatic fall in national emission of SO₂, for example. These reductions have been the result of the application of relevant European Directives, the decline of heavy industry and the switch from using coal in power generation.

25. Concentrations of roadside NO₂ concentrations are declining, as vehicle emissions are finally being reduced though the introduction of markedly cleaner vehicles to the fleet, following the introduction of Euro 6/VI emission standards and the emphasis on “real world” emissions.

26. Emissions of PM_{2.5} and NH₃ are not showing the necessary declines and will provide the greatest challenge on outdoor air quality in the next 15 years.

Reducing air pollution: NO₂ compliance

27. Some progress has been made in developing measures, with charging Clean Air Zones (CAZs) planned to be implemented in small number of cities (e.g. Leeds and Birmingham). The implementation of these CAZs has, however, been postponed due to delays in the delivery of central government systems and has since been postponed further as a result of COVID-19. A number of other local authorities have identified, and have implemented or propose to implement, measures aimed at achieving “compliance” in the shortest possible time. Some local authorities are still, however, assessing and considering options. These delays are not compatible with the Directive’s “shortest possible time” requirement. The Limit Value was to be achieved by 2010 yet measures are still not in place a decade later.

28. There is no overall summary of the actions which have been or will be taken (and when) and the dates by which compliance with the annual mean NO₂ Limit Value is expected to be achieved (with and without the measures). Without such a summary it is difficult to assess the progress which has been made against the NO₂ Plan. We recommended JAQU publishes such a progress report and that it be updated as monitoring and evaluation of the proposed measures is undertaken, potentially providing evidence of the efficacy of the various actions.

29. The process to develop measures, led by JAQU, could have been shorter and preceded by a review of the available evidence such as local monitoring data rather than relying on PCM predictions. PCM is a national scale model and yet its results are used as if they are reliable local scale concentrations. A review would have brought several areas into the process and excluded others.

30. The guidance documents produced by JAQU for local authorities have not been made public. It is unclear why they should be secret.

Enforcing legal pollution limits

31. Industrial emissions are well regulated and vehicles and domestic stoves are regulated by “type approval”. Enforcement against polluters on the basis of their impact on concentration is unlikely, as attribution is difficult if not impossible.

32. The EU was able to take legal action against Member States. In the judgement of Judge Garnham in the third ClientEarth case,⁹ he commented on the fact it took a small charity persisting with legal action to hold the government to account and for the government to produce a plan which complied with the domestic Regulations:

“I end this judgment where I began, by considering the history and significance of this litigation. It is now eight years since compliance with the 2008 Directive should have been achieved. This is the third, unsuccessful, attempt the Government has made at devising an AQP which complies with the Directive and the domestic Regulations. Each successful challenge has been mounted by a small charity, for which the costs of such litigation constitute a significant challenge. In the meanwhile, UK citizens have been exposed to significant health risks.”

⁹ Judgement of Mr Justice Garnham, High Court of Justice, [2018] EWHC 315 (Admin), Case No: CO/4922/2017

Local authority responsibility

33. The LAQM process has been effective in identifying areas of poor air quality, although not all areas of poor air quality will have been identified, as new Air Quality Management Areas are still being proposed; for instance, in Tunbridge Wells. However, it has been less effective in resolving the issues identified.

34. Lack of funding and resources is a major issue for air quality work in local authorities. Few authorities have a dedicated air quality officer unless the post is shared with other authorities; it will be one of many disciplines undertaken by an Environmental Health Officer and even with consultant support (if funding did allow) this is unlikely to result in significant progress on air quality. Lack of funding and officer time also affects the ability to influence planning decisions in a way that will ensure that developments do not worsen air quality.

35. While the COVID-19 pandemic continues government should be aware that Environmental Health Officers will be occupied tackling outbreaks in business premises in their local authority area and supporting them to remain COVID-secure.

36. There are significant questions of priority and responsibility. Improving air quality suffers a relative lack of priority at a local level (i.e. the requirement to “work towards” objectives rather than achieve in the “shortest possible time” as for EU Limit Values). Moreover, councils often cannot implement the measures identified to improve air quality (major roads and industrial sources). Nor can they address background levels of pollutants; that requires national scale action. The progress made in developing measures (CAZs) aimed at achieving compliance with EU Limit Values, however, shows what can be done with support from the highest levels of national and local government and appropriate funding.

37. Looking to the future, as the most significant pollutants will be PM_{2.5} and NH₃, for both of which regional effects are important, transnational effects are also important for PM_{2.5} and agriculture is an important sector, it is probably inappropriate for air quality to be a district council level responsibility.

Q4	<i>What does the early evidence from the COVID-19 pandemic say about the impact of poor air quality on health, and health inequalities for disadvantaged communities and other at-risk groups, and possible policy responses?</i>
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38. The IAQM is only an observer of any effects on health, others will contribute more authoritative views on health, but we would be cautious about making too strong a link between the response to COVID-19, and the prevalence of COVID 19, with poor air quality. The effects of poor air quality on health are already known to be very significant and health inequalities are deeply entrenched. It is, however, reasonable to suppose that the effects of the virus and poor air quality are synergistic.

39. Exposure to poor air quality appears to be linked to social deprivation.¹⁰ The incidence or effects of COVID-19 could also be associated with social deprivation, for instance, due to living in over-crowded conditions and working in low paid, public-facing jobs. On the face of it, it is easy to conclude that COVID-19 has been worse in areas with high air pollution, however, this ignores all of

¹⁰ Air Quality and Social Deprivation in the UK: an environmental inequalities analysis, Defra 2006

the other changes that people experienced. As an example, it is easy to imagine that COVID-19 has been a far more stressful experience for people living in cities than those living in the countryside. City dwellers may have had more exposure events as they live more densely than those in rural areas, and may have seen a more pronounced change in exercise levels due to the inability to get outside.

40. Good (indoor) ventilation is important in reducing exposure to COVID-19 and reducing exposure to high levels of air pollution indoors.

Q5	<i>What are the current and emerging risks and opportunities for air quality posed by: a) Short-term policy and societal changes in response to the pandemic, for example changes to transport to reduce the risk of transmission, and; b) Medium and long-term actions to promote economic recovery.</i>
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Short-term

41. While the response to the pandemic has depressed economic activity, and therefore emissions, in the short-term, in the near future there is a risk of increased emissions, or a less favourable trajectory than would otherwise have been the case.

42. Air quality could improve as: the public is likelier to walk and cycle than use private cars or public transport; the decrease in air pollution levels is a clear message to the public about the link between road traffic and roadside air pollution.

43. Air quality could worsen as: the public is less likely to use public transport (having been told it's the responsible thing to do not to use public transport) and may use private cars instead; and the government's current funding for cycling and walking requires reallocation of road space at the expense of road traffic, including at the expense of public transport.

Medium and long-term

44. The Government needs to retain a far-sighted approach to policy decisions in this area, despite the immediate pressures on public funds.

45. It is important that public transport remains part of the air quality solution in the medium and long-term.

46. Air quality could improve as: the shift from car to walking and cycling continues and becomes entrenched; there is increased public support to increase funding for charging infrastructure; and as the change in working patterns leads to lower peak traffic volumes and congestion.

47. Air quality could worsen due to factors affecting household finance and others affecting public finance:

Household finance

- Financial hardship would lead to a slower turnover of the vehicle fleet and a slower take-up of low emission vehicles. The UK reaching compliance with the NO₂ air quality objective depends on the vehicle fleet becoming cleaner;
- More people may be less able to afford any CAZ charge;

- Bus and coach provision will be decreased as existing providers fail and a decrease in passenger numbers makes the business less attractive to new entrants, potentially resulting in a more permanent modal shift from public transport to private car; and
- There may be an accelerated, permanent shift to the delivery of goods purchased on-line in diesel vans.

Public finance

- The squeeze on public funds could result in:
 - Less funding to stimulate the transformation of the vehicle fleet to be ultra-low emission; and
 - Current initiatives towards assisting the agricultural sector to reduce ammonia emissions could also be downgraded.
- Pressure from hard-pressed business may lead to a slowing down or halt in the implementation of measures to improve air quality: CAZs, the increase in the London Congestion Charge, and an expanded London ULEZ.

48. Reduced travel time and increased home working will lead to more time spent indoors and, specifically, in the home. This makes indoor air quality even more important and there needs to be sound advice on ventilation strategies. A virtuous circle would allow natural ventilation using “clean” outdoor air.

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