

Implementation of Clean Air Zones in England - Climate Conversations response

Please note: This response was submitted through the new citizen space consultation system (an online survey system) and therefore the answers below were copied into the online forms. Section numbers below refer to specific sections of the consultation framework and impact assessment.

Consultation deadline: 9th December 2016

Consultation draft: <https://www.gov.uk/government/consultations/implementation-of-clean-air-zones-in-england>

1. In the Draft Clean Air Zone Framework, are the right measures set out in Section 2?

The Clean Air Zone (CAZ) framework is fundamentally flawed because:

- * It is based on a plan to tackle only one of the airborne pollutants - nitrogen dioxide (NO₂). It is recognised in the Defra document 'Tackling nitrogen dioxide in our towns and cities' that *"the combined impact of [NO_x and PM] is a significant challenge to public health"* (para 10), but the air quality plan does not address the combined impact of all pollutants which have an effect on air quality, in particular, NO_x, particulate matter and sulphur dioxide (SO₂).
- * It does not tackle all sources of air pollution as it only focuses on the most polluting road vehicles. It is not just a question of including private vehicles in Clean Air Zone plans, but regulating emissions from ports, airports, industry and homes. For example, in relation to homes, please see the BMJ article '2.4 times more PM_{2.5} pollution from domestic wood burning than traffic' (<http://www.bmj.com/content/350/bmj.h2757/rr-1>) The impact of Southampton Port will be discussed in detail below.
- * It only focuses on 5 areas (+ London) rather than all 38 zones in the UK with the highest pollution levels. It is important to deal with air quality across the UK, but especially in the most deprived areas of the UK as: *"Air pollution has a disproportionate effect on low-income and ethnic minority groups. The most deprived 10% of areas in England are subject to 41% higher concentrations of nitrogen dioxide from transport and industry than the average."* (<http://www.clientearth.org/reports/air-quality-briefing-ADPH.pdf>) There is also the risk that fleet operators will assign non-compliant vehicles to non-CAZ areas.
- * None of the 5 cities which are to have mandatory CAZs are required to include private cars, motorcycles or mopeds. This is despite Department of Transport projections showing a 25% increase in traffic by 2040 (Fig 3.2, Road Traffic Forecasts 2015 (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/411471/road-traffic-forecasts-2015.pdf)). In Southampton, cars + LGVs produce the same amount of air pollution as HGVs. In total, these 3 types of vehicle produce 2/3 of the pollution from road transport in the city. (<http://www.southampton.gov.uk/moderngov/documents/s28547/Air%20Quality%20Update.pdf>)

* Research has shown that Low Emission Zones are not effective in dealing with air quality issues. A 2015 review paper looked at many of the 200 low emission zones (LEZs) across Europe. It found that there is minimal improvement in air quality in such areas, unless passenger vehicles are included. But, even then, German LEZs which ban passenger vehicles have only demonstrated a 4% decrease in NO₂ concentrations and 7% for PM₁₀. (https://www.researchgate.net/publication/275059001_Review_of_the_efficacy_of_low_emission_zones_to_improve_urban_air_quality_in_European_cities) (2015). A separate research paper states: *“LEZ has led to a 2.46% to 3.07% reduction in PM emissions in Inner London, but has failed to make any significant impression on NO_x emissions reduction despite an early prediction that LEZ would reduce NO_x emission by 4% by the end of 2008”*. Also, *“Currently, most of the cities (including LEZ cities) in Europe still regularly exceed the air quality standards for PM and NO_x. This has called into question the effectiveness of the Low Emissions Zones as an air pollution control measure.”* (<http://www.jmest.org/wp-content/uploads/JMESTN42350921.pdf>) (2015)

We welcome the judgment of the High Court requiring the Government to produce a revised air quality plan by July 2017. We hope that as a starting point the Government will indeed include all 38 zones in the UK areas with the highest pollution levels. (<http://www.airqualitynews.com/2016/12/07/9322/>) We also welcome legal proceedings by the European Commission over failure of the UK to act over the ‘dieselpgate’ scandal.

Furthermore, we hope that the Government will take heed of the conclusions of the Environmental Audit Committee which found that: *“The Treasury tends not to take full account of the long term environmental costs and benefits of decisions which would reduce costs for taxpayers and consumers in the long run.”* (<http://www.parliament.uk/business/committees/committees-a-z/commons-select/environmental-audit-committee/news-parliament-2015/sustainability-treasury-report-published-16-17/>)

Funding and regulatory powers

Paragraph 12 of the Framework states that local authorities which design Clean Air Zones in line with the framework will have an additional advantage when bidding for central government funding in relation to air quality. This did not appear to be the case with the Sustainable Travel Transition Year fund (2016-2017) in relation to 2 Southampton bids (one single, one joint) despite it being one of the 5 cities mandated to have a Clean Air Zone (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/539236/sustainable-travel-transition-unfunded-schemes.csv/preview)

Local authorities need central government finance and stronger regulatory powers in order to support air quality policy and produce significant reductions in local air pollution.

Economy vs public health

The Framework lists 3 themes with associated measures. The themes appear to be listed in order of priority, with local growth and transition to a low emission economy (economic considerations) being given more weight than immediate action to improve air quality and health (environmental and social considerations).

A recent report by The Royal College of Physicians (Every breath we take: The lifelong impact of air pollution) finds that no level of exposure to these toxic gases and particulates can be thought of as safe. The report asks whether the cost outweighs the benefits to public health:

“The reality is that agreed standards often incorporate considerations of practicality, i.e. by how much is it economically reasonable to reduce emissions?”

(<https://www.rcplondon.ac.uk/projects/outputs/every-breath-we-take-lifelong-impact-air-pollution>)

Evidence-based policy making

There is a great deal of recent research which highlights the serious impact of air pollution on health and which needs to be brought to the attention of policy makers. For example:

- Exposure to traffic-related air pollution and risk of development of childhood asthma: A systematic review and meta-analysis (Nov 2016)

<http://www.sciencedirect.com/science/article/pii/S0160412016307838>

- Traffic-related air pollution exposure is associated with allergic sensitization, asthma, and poor lung function in middle age. (May 2016)

<https://www.ncbi.nlm.nih.gov/pubmed/27372567>

For the purposes of clarity, detailed responses to the measures outlined in Section 2 will be provided under question 2.

2. Are there additional measures that should be highlighted under each theme? Please give evidence of impact if possible.

Section 2.2 - Minimum requirements

Monitoring

Paragraph 25 states that Clean Air Zones need to be in response to a clearly defined air quality problem. In Southampton we do not know the true extent of the problem due to a lack of continuous and real-time monitoring. As per Figure 3 in the ‘Air Quality Plan for the achievement of EU air quality limit value for nitrogen dioxide in Southampton Urban Area (UK0019)’, the plan is based on data from a single NO₂ monitoring station.

(https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/485709/aq-plan-2015-southampton-urban-area-uk0019.pdf)

There are actually four monitoring stations within Southampton plus 60 NO₂ diffusion tubes, but it is unclear whether data from these were included in the methodology. (<https://www.southampton.gov.uk/environmental-issues/pollution/air-quality/air-quality-monitoring/>)

The air quality plan also uses air quality modelling, but as Client Earth submitted in its skeleton argument to the High Court (<http://www.documents.clientearth.org/wp-content/uploads/library/2016-10-18-clientearth-v-ssefra-high-court-case-skeleton-argument-cc-en.pdf>) “...it is clear from the materials disclosed that Defra officials, as well as experts whom they have consulted have consistently raised concerns about the limitations of the model used, including its reliance on COPERT emission factors.”

Client Earth has won its case in the High Court with Mr Justice Garnham stating that ministers knew that over optimistic pollution modelling was being used. (<http://www.clientearth.org/major-victory-health-uk-high-court-government-inaction-air-pollution/>)

In April 2016, the campaign group Clean Air Southampton commissioned a 'Smogmobile' to drive around the city for a day, to monitor roadside emissions of nitrogen dioxide and particulates. Duncan Mounsor of Enviro Technology Services plc which operates the 'Smogmobile' said:

"Our observations show that the average NO₂ concentration over the day (between 8am to 3:30pm) of all the routes we drove and during the time we were parked up at West Quay was 63.15 µg/m³, which is over 50% higher than the annual limit value of 40 µg/m³."
(<https://climateconversations.org.uk/2016/04/27/thinking-outside-the-box-is-a-clean-air-zone-the-way-to-tackle-dirty-air/>)

Therefore, minimum requirements should include baseline monitoring (real-time and real-world), rather than modelling, and evaluation. There should also be an annual reporting process in order to gauge progress. Defra should also reinstate the legal requirement for monitoring stations (<http://cleanair.london/legal/defra-condemned-for-proposals-scrapping-local-air-pollution-monitoring>)

Modeshift

Paragraph 25 also states that a Clean Air Zone is expected to 'support healthy, active travel' but we would question the priority given to this measure. Supporting sustainable travel initiatives should have a much greater importance than signage, support for ULEVs and procurement. For areas with only a Class B zone, such as Southampton, what are the incentives for residents to switch to sustainable modes of travel if owners of private cars, LGVs, motorcycles and mopeds will not be discouraged from entering the zone?

A Clean Air Zone is not a single cure for air quality issues, especially as it is a relatively technical measure. It should be combined with other approaches such as reducing the reliance on motorised transport as a whole, through investment and promotion of sustainable transport systems, including walking and cycling.

Decoupling of growth

Paragraph 15 references "decoupling of growth and pollution". We would draw your attention to the following statement:

"...it's essential to distinguish between what's called relative decoupling – a decline in the material intensity of economic output – and absolute decoupling – an absolute fall in material use or emissions." (p13, 'Limits Revisited - A review of the limits to growth debate, All-Party Parliamentary Group of Limits to Growth, April 2016)
<http://limits2growth.org.uk/wp-content/uploads/2016/04/Jackson-and-Webster-2016-Limits-Revisited.pdf>

"Decoupling of growth and pollution" could be an argument for increasing pollution year on year. Satisfying relative decoupling could result in increased rates of growth and increased amounts of pollution. If growth is to be maintained, then it is the absolute decoupling of pollution from growth that should be prioritised. That is the only way to both grow an economy and decrease the amount of pollution that such economic activity produces.

As it stands, the plan for Clean Air Zones falls very short of absolute decoupling as there is little proof that emissions would decline.

Section 2.3.1 - Engaging local communities

Paragraph 29 refers to raising awareness of air quality issues; Paragraph 31 refers to demonstrating progress. Again, without clear information on the extent of the air quality problem from real-time monitoring, it is very difficult to provide accurate information to raise awareness and also evaluate progress against a specific baseline.

Paragraph 31 also refers to decisive action on emission sources. Action is required on emissions from all sources, not just the vehicles included in the various CAZ classes. In addition, monitoring and abatement of all airborne pollutants, not just NO_x, is important for protection of health and the environment.

Paragraph 36 refers to understanding air pollution in your area. Personal exposure to air pollution depends on many factors including location, transport use and seasonal variations. It is insufficient to give information on air pollution for an entire city, especially if it is based upon data from a single monitoring point. In addition, information and advice on air pollution is not part of the National Curriculum and should be included as soon as possible.

Section 2.3.2 - Delivering local ambition

Southampton Port

Port development is relevant to the Clean Air Zone consultation as port operations are already a significant contributor to air pollution in Southampton, not only through shipping emissions but from road transport to and from the docks. This is evidenced in 'Western Approach AQMA air quality assessment for Southampton - Baseline study to support LEZ feasibility assessment & development of mitigation measures' which states (p3):

"This part of Southampton has a large effect from the port operations ... HGV fleets are significant contributors. In the centre of the AQMA around Millbrook Road, the port is a large NO_x contributor, indeed it is as large a source of NO_x as road traffic at some locations. [...] There is a significant flow of HGVs serving the port"

(https://www.southampton.gov.uk/policies/Low-emission-zone-study-July-14_tcm63-376002.pdf)

In addition, smokestack emissions from international shipping kill approximately 50,000 people a year in Europe, at an annual cost to society of more than €58 billion. (<http://airclim.org/air-pollution-ships>)

The UK plan for reduction of nitrogen dioxide mentions shipping, and in particular MARPOL Annex VI, which relates to air pollution. However, this part of the convention only applies to ships of over 400 GT and so there is significant under-reporting of emissions. Whilst particulate matter and NO_x are of concern in relation to road transport, sulphur dioxide is the major contributor to air pollution from shipping. Local authorities should be given powers to request data on all emissions from all vessels entering ports. Currently there is no continuous monitoring of shipping emissions whilst in port and powers to carry out checks and enforce penalties only lie with the government of the country where the ship is registered. The UK government together with local authorities should be able to regulate emissions in their own waters.

Despite national planning policy being founded on the principles of sustainable development, more weight is being given to economic interests than social and environmental concerns.

The Government has already stated that it would support the renewed Dibden Bay scheme to expand Southampton Port, despite serious environmental issues relating to both biodiversity and air quality. This decision has also been taken out of the hands of the local planning authority and is now subject only to approval by the secretary of state. (<http://www.bbc.co.uk/news/uk-england-hampshire-37791314>)

This is supported by the National Policy Statement for Ports (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/3931/national-policy-statement-ports.pdf) which states that “3.3.1 *The Government seeks to encourage sustainable port development to cater for long-term forecast growth ... thus contributing to long-term economic growth and prosperity.*” However, air quality is not mentioned in the list of policies relating sustainable development of ports in paragraph 3.3.3 of that document.

Port development has been given the green light despite the statement that “5.7.7 *In the event that a project will lead to non-compliance with a statutory limit, the decision-maker should refuse consent.*” We refer once more to the Client Earth case in the High Court and submit that the Secretary of State has a legal obligation to refuse consent for expansion of Southampton Port.

Superceding local concerns and the powers of the local planning authority is also in conflict with the measure in the CAZ framework document - ‘making the best use of the local authority role in land use planning’.

Optimising traffic management

Paragraph 47 refers to improving road layouts and junctions to improve traffic flow. At present Highways England is carrying out a consultation on the Redbridge roundabout improvement scheme in Southampton. (<https://highwaysengland.citizenspace.com/he/m271-a33-a35-redbridge-roundabout/>)

The Q&A document for the scheme states: “*The modelling undertaken indicates that there would be a slight benefit in air quality, as reduced congestion resulting in a reduction in vehicle emissions.*” However, we are questioning the methodology used and its outputs; and await further clarification from Highways England. This is relevant to the Clean Air Zone consultation as the scheme directly impacts the proposed Clean Air Zone in Southampton. In this respect, we refer you again to the criticisms given above about air quality modelling carried out by Government departments.

In addition, it is clear that the main driver for optimising traffic management at this junction is to improve traffic flow to the port. The ABP Master Plan (2016-2035) states that 60% of containers are transported to and from the port by road (para 2.24). In addition, it is stated (para 6.21) that there is an “*overall continuing trend of growth in container traffic through the port*”. (http://www.southamptonvts.co.uk/Port_Information/Commercial/Southampton_Master_Plan/)

Furthermore, the Master Plan notes that the port has experienced significant growth in cruise passengers, handling of motor vehicles and container traffic (2005-2015) and expects growth to continue over the next 20 years. All of this will have a serious impact on air quality in Southampton.

It was stated at the public exhibition on the Redbridge scheme that the project would create around £150million in time-savings. We are also waiting for clarification from Highways England on who would benefit from these savings. Considering that there is a

significant flow of HGVs serving the port, the main beneficiary appears to be the port, rather than residents of Southampton, in particular those in the neighbourhood of Redbridge which suffers from multiple deprivation. The residents of this area are disproportionately impacted in health terms by air pollution.

Improving collaboration and joining up approaches

The concerns relating to the consultations and policy documents mentioned above, also apply to this measure. The plans for ports, airports, highways and other city developments must be developed or revised alongside national and local air quality strategies and policies. Similarly, national plans on air quality should reference large infrastructure projects and take into consideration how these might impact air quality goals.

For the Southampton area various consultations relating to transport infrastructure, development and air quality are currently ongoing:

- * ABP Masterplan for Southampton Port (2016-2035) - this includes major projections for growth but pays little attention to air quality issues
- * Highways England Redbridge roundabout improvement scheme
- * A new cycling strategy for Southampton is presently out for consultation and will form part of the revised Local Transport Plan
- * The Local Plan will be put out for consultation early in 2017
- * The Local Transport Plan may be out for consultation in early 2017
- * Devolution proposals in the Solent area will bring the potential for much larger infrastructure projects
- * Large housing developments on the northern and eastern fringes of Southampton, where planning has been approved and detailed plans are out for consultation
- * Biodiesel-fuelled Flexible Generation Facility at Marchwood.

Taking all these consultations into account, now is the time when all relevant authorities should be talking to each other, commissioning planning advice, and preparing a vision for how all these proposals can form part of an ambitious vision for the whole area, which solves the tremendous problems experienced with traffic volumes, road accidents and air pollution now and for the next generation, within the city and beyond. This plan for a Clean Air Zone cannot, on its own, address the scale of what is required.

Paragraph 20 references devolved areas meeting minimum requirements to implement Clean Air Zones. In relation to the Solent Deal it would therefore make sense to have a Solent area Clean Air Zone which encompasses Southampton, Portsmouth and the Isle of Wight. Unfortunately, a joint bid to the Sustainable Travel Transition Year fund (2016-2017) for A Better Connected Solent was unsuccessful.

Section 2.3.3 - Improving the business environment

Traffic-free zones in city centres should be part of Clean Air Zones. Southampton City Council has claimed in its "Streets and spaces framework" document (<https://www.southampton.gov.uk/planning/planning-policy/supplementary-planning/streets-and-spaces-framework.aspx>) that trade could increase by up to 40% if shopping areas are created with pedestrians and cyclists in mind, and with fewer vehicles.

In addition, "The provision of new cycling infrastructure has been shown to have a positive effect on the local economy, in part by increasing footfall in retail and leisure outlets in the areas close to the new infrastructure. (Section 3.2, Expanding the local economy, 'Evaluating the economic and social impacts of cycling infrastructure: considerations for an evaluation framework' March 2016)

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/509391/evaluating-economic-social-impacts-cycling-infrastructure-evaluation-framework.pdf

Section 2.4.1 - Accelerating ultra low emission vehicle take up

Moving away from dependence on cars

Replacing high polluting diesel vehicles with ULEVs is an important measure in relation to tackling air pollution but the focus here is still on individual vehicles rather than mass transit of people and freight. Cities are currently designed for vehicles rather than for people. The aim should be to remove HGVs, LGVs and private vehicles from cities altogether, through measures such as distribution centres, park & ride, reduction in available parking, expensive parking fees, subsidised public transport, investment in zero emission buses/taxis, e-cargo bikes and proper cycling infrastructure on routes into and across cities, not just in city centres.

The Birmingham Connected white paper (https://www.birmingham.gov.uk/downloads/download/552/birmingham_connected) outlines a transport system which puts the user first. A detailed discussion on moving away from a car-centric society can also be found here: (<https://www.theguardian.com/cities/2015/apr/28/end-of-the-car-age-how-cities-outgrew-the-automobile>) This suggests measures to take public space away from private vehicles such as mobility service providers, car clubs and well-integrated public transport systems.

Car clubs are a sound investment:

<https://www.lepnetwork.net/news/2016/car-clubs-are-a-sound-investment-new-research-reveals/>

We refer again to the need for private vehicles to be excluded from Clean Air Zones. There is however a disproportionate burden on those least able to afford to upgrade to ULEVs, or pay a congestion charge, especially in Southampton which has several neighbourhoods with high levels of deprivation. Transport and planning systems which focus on people rather than cars would remove that problem.

Lifecycle assessment of ULEVs

The Government has stated its plan for all new vehicles to be zero emission by 2040 and nearly all vehicles to be zero emission by 2050. The Impact Assessment for this consultation has not included a lifecycle assessment of ULEVs, particularly with respect to the Government targets mentioned above. Greenhouse gas emissions in relation to the production of new vehicles is still a relevant consideration especially as we need to enter a period of negative emissions in order to meet the UK's commitments under the Paris Agreement.

In addition, there is a serious question over accessing the raw materials required to produce this number of ULEVs, in particular rare earth metals. We therefore submit that a full lifecycle assessment should be carried out with respect to ULEV production over the next 20-30 years.

Rare earth mining in China comes at a heavy cost for local villages:

<https://www.theguardian.com/environment/2012/aug/07/china-rare-earth-village-pollution>

Tesla's electric cars aren't as green as you might think:

<https://www.wired.com/2016/03/teslas-electric-cars-might-not-green-think/>

There would also need to be serious investment in renewable energy generation in the UK in order for the ULEVs to be truly zero emission. Unfortunately, the UK has slid to 13th in the 'Renewable energy country attractiveness index' in terms of investment: (<http://www.ey.com/gl/en/industries/power---utilities/renewable-energy-country-attractiveness-index>)

Section 2.4.2 - Improving services and infrastructure

Paragraph 73 - Consideration should be given to reduction of parking spaces in the city centre, except for ULEVs. Southampton is oversupplied with parking spaces which are presently far cheaper to use than public transport. To balance this, bus companies should be helped to offer family tickets which cost less than parking a car. An "Oyster card" system should be introduced to make using public transport a cheaper and more integrated experience than it is now as there are a number of different bus companies in Southampton. In addition, car parks on the periphery of the city could be designated as "park and ride" and existing local bus routes badged as "park and ride" with stops at convenient locations. This could be introduced immediately without the considerable expense of a specially constructed park and ride scheme.

Paragraph 74 - Southampton already has a distribution centre, operated by a large logistics company. It is under-used. As a consequence we have articulated HGVs delivering food to small local supermarkets and other goods to large stores right across the city, causing obstruction to traffic movements and air pollution. The language of this paragraph (use of "may include" instead of "will include") will not change this situation. Local authorities should have powers to require the use of e-cargo bikes and ULEV vans for deliveries within the Clean Air Zone.

Paragraph 76 - There should be Government support to local authorities and bus companies to move to electric and hydrogen powered buses.

Section 2.5 - Immediate action to improve air quality and health

Paragraph 87 states: "A Clean Air Zone has immediate impacts on levels of pollutants such as nitrogen dioxide and particulate matter." What is the evidence for this statement? We refer you again to the lack of baseline monitoring and recent research which shows that Low Emission Zones have little impact on air quality.

Section 2.5.1 - Reducing local emissions

Engine idling - in Southampton the local authority does not have the funds to deploy sufficient numbers of enforcement officers to tackle issues of excessive engine idling.

Ports - as detailed above, this is a significant issue for Southampton. "Encouraging the consideration of connecting ships to an onshore electricity supply" (para 93) is a very weak measure. Cold-ironing and other emission reduction measures need to be mandated by government under the 'polluter pays' principle as air quality is not a major consideration for privately-owned port operators. In addition, local authorities will be unable to "work closely with port operators" (para 93) if they are unable to exercise their powers due to port development being considered a National Infrastructure Project.

Airports - The impact of airports is not included in the list of measures for reducing local emissions but they are a major point source contributor to air pollution. (<http://www.nhs.uk/news/2015/10October/Pages/Living-near-an-airport-may-be-bad-for-your-health.aspx>) (<http://www.airportwatch.org.uk/briefings/air-quality-briefings-and-information/>)

Southampton airport expects passenger numbers to grow from 1.84 million in 2005 to 6 million per year by 2030. (<http://www.southamptonairport.com/about-us/our-vision/>) It is unclear what the impacts on air quality will be of such growth.

Motorways - the impact of motorways is also missing from the framework document. Southampton not only has the port and airport contributing to poor air quality but is bounded by the M27, M271 and M3. The Government is aware of the air quality issues arising from motorways due to its consultation on Air Quality Mitigation for the M3: (<https://www.gov.uk/government/consultations/m3-junctions-3-to-4-air-quality-mitigation-60-mph-speed-limit>)

Unfortunately these measures were not taken forward due to a large number of negative responses to the consultations. However, the National Institute for Health and Care Excellence (Nice) has recently stated that variable speed limits and average speed checks should be put in place across the UK motorway network in order to tackle air pollution: (<http://www.independent.co.uk/news/uk/home-news/motorways-variable-speed-limits-cut-auto-emissions-air-pollution-a7449516.html>)

Generators - we support the regulation of emissions from this source. In Southampton, diesel generators are used at St Mary's football stadium to run the high energy lighting for keeping the pitch green. These are a significant source of emissions.

HGVs in city centres - HGVs should not be allowed to access city centres or residential areas due to their high emissions and the high risk of death or injury to cyclists.

Section 2.5.2 - Encouraging healthy and active travel

This requires serious investment in sustainable transport options and a redesigning of neighbourhoods so that they become less car-centric, for example, through lower speed limits in residential areas and around schools, designation of roads as Quiet Lanes or Home Zones, secure bike parking in car parking spaces, and so on. Due to the level of car ownership it is often not safe or desirable to cycle or walk to school.

Town planners in Leicester have been reclaiming space for people rather than for cars, by creating more cycleways and pedestrianised zones. The city has an elected mayor which has made it easier to make 'bold decisions' in relation to sustainable travel. (<https://www.theguardian.com/cities/2015/nov/26/lessons-from-leicester-the-uks-unlikely-new-poster-city-for-cycling>)

3. In addition to the draft Framework, are there other positive measures that (a) local or (b) central government could introduce to encourage and support clean air in our cities?

We suggest the following measures:

* The Government should increase the first year's excise duty (VED) on new diesel cars to between £3,500 and £5,000. This would decrease sales of new diesel cars and raise £500 million a year to help fund a diesel scrappage scheme. (<https://www.theguardian.com/environment/2016/jun/30/tax-new-diesels-up-to-5000-to-cut-pollution-says-report>) This should be in conjunction with increased tax on diesel fuel.

* Provide central government funding for all 38 zones in the UK which have high air pollution levels.

- * Support research and investment for mitigating non-exhaust emissions from road transport, for example to reduce PM generation from road abrasion (<http://www.jmest.org/wp-content/uploads/JMESTN42350921.pdf>)
- * Investment and support for academic research in citizen science projects so that residents are able to monitor personal exposure to air quality.
- * Research into targeted measures where high deprivation-high pollution areas persist. (https://uk-air.defra.gov.uk/assets/documents/reports/cat09/0701110944_AQinequalitiesFNL_AEAT_0506.pdf)
- * Work closely with governments of other Member States in order to reduce pollution from sources outside the UK's borders as well as learning from the examples of cities such as Paris (banning diesel cars by 2025) and Copenhagen (bikes outnumber cars).
- * Making funding available for public art projects which focus on sustainable transport options and air quality issues.
- * Additional support for the Sustainable Distribution Centre to reduce the number of HGV movements into and through Southampton.
- * Further funding for modeshift projects

4. Are the operational standards and requirements set out in Section 3 of the Framework acceptable? Please provide supporting evidence for your views.

Charging zones need to be implemented immediately, not in 2019/2020, due to the continued health impacts. The original, legally binding deadline for the UK to meet air quality targets was in 2010. Air pollution is causing a public health and environmental crisis - the Government can no longer drag its feet over the issue.

In this regard we support the idea of a Clean Air and Public Health bill. (<https://www.burges-salmon.com/news-and-insight/legal-updates/expert-opinions-on-clean-air-zones/>)

Section 3.3 - Classes of charging Clean Air Zone

Para 114 refers to clear and ambitious air quality aims. All 38 areas across the UK with high pollution levels should be mandated to have Class D charging zones (ULEZs) in order to have the greatest impact on air quality nationwide. However, these need to be supported with investment in integrated public transport systems so that owners of private vehicles with lower incomes are not disproportionately affected by such a charge.

Section 3.5 - Future standards

The long-term ambition for all new cars and vans to be zero emission by 2040 is too long a timescale. For example, Norway is to completely ban fossil fuel-powered cars by 2025: (<http://www.independent.co.uk/environment/climate-change/norway-to-ban-the-sale-of-all-fossil-fuel-based-cars-by-2025-and-replace-with-electric-vehicles-a7065616.html>)

There is also a question over whether Euro VI diesel cars will actually produce promised emission reductions in a real-world context. Recent real-world emissions monitoring shows that their contribution to air pollution (even the newest Euro 6 vehicles) will be higher than that from HGV Euro VI, by a factor of around 4.5. (<http://www.slideshare.net/ies-uk/routes-to-clean-air-2016-dr-norbert-ligterink-tno>) Therefore Southampton should have a mandated Class D Clean Air Zone.

Vehicle standards for entering a charging Clean Air Zone

Paragraph 120: With regard to real-world emissions of diesel vehicles, we submit that independent monitoring stations be installed within Clean Air Zones in order to verify the actual level of tailpipe emissions.

Section 3.8.5 - Residents who live within a Clean Air Zone

This measure would only be relevant if all CAZs include LGVs and private vehicles. Residents living within a Clean Air Zone should be provided with free or heavily subsidised public transport, or financial incentives and community support to cycle.

5. Do you agree that the requirements in Clean Air Zones for taxis and for private hire vehicles should be equivalent? Please provide supporting evidence for your views.

Yes

6. Do you agree the standards should be updated periodically? Please provide supporting evidence for your views.

Yes, in line with new research on real-world emissions testing and to meet more stringent air quality standards such as the WHO limits, which are actually referred to within the Impact Assessment. Emissions from all sources within and bonded to a Clean Air Zone should be continuously monitored and subject to annual reporting requirements. Modal shift should also be tracked and reported on annually.

Please see the responses to earlier questions which provide evidence for this view.

7. If yes, do you agree that the minimum vehicle standards set out in the Framework should remain in place until at least 2025? Please provide supporting evidence for your views.

No, more stringent standards should be considered as soon as possible due to continuing health and environmental impacts. All 38 Clean Air Zones in the UK should be mandated to be Class D. The Government should also implement more stringent legal limits on air pollution, for example in line with WHO guidance, which is stricter than current EU limits: (<http://www.eea.europa.eu/media/infographics/air-pollution-exposure-in-cities/view>)

More stringent limits on air pollution should be implemented in order to recognise that *“subpopulations may be at considerably increased risk of suffering adverse health effects”*. (<http://jech.bmj.com/content/58/1/3.full>) For example, children, the elderly and sick, and those living in deprived neighbourhoods where residents are subject to much higher levels of airborne pollutants.

8. Do you agree with the approach to Blue Badge holders?

Yes

9. Is the approach set out in Section 3.9 suitable to ensure charges are set at an appropriate level?

Yes

10. Do you have any comments on the secondary legislation as drafted?

We believe the secondary legislation will have to be redrafted following a revised Air Quality Plan being published in July 2017, so have no comments at this time.

11. Do you agree with the approach undertaken in the impact assessment? If no, please provide supporting evidence.

As stated above, the basis for the Clean Air Zone consultation is fundamentally flawed, which also reflects on the approach undertaken in the impact assessment. In particular, the sensitivities associated with the modelling, relating to emissions standards and magnitude of health impacts, both of which demonstrate uncertainties.

All of the comments stated above relating to source apportionment for air pollution, pollutants considered to be within the scope of the framework, emissions standards, air quality modelling and the general ineffectiveness of low emission zones, are relevant to the approach undertaken in the impact assessment.

For example, particulate emissions are detailed in Fig 2.1 but do not form a part of the impact assessment or framework. In addition, how were the datasets derived to produce the graphs of a reduction in PM2.5 and NOx emissions between 1990 and 2014? If these were based on the COPERT emission factors referenced above and if they do not take into account real-world vehicle emissions, then the graphs should be revised. This is especially because road traffic trends (TSGB0701) show a 14% increase in traffic between 1989 and 1999, and a 6% increase between 1999 and 2009. (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/489894/tsgb-2015.pdf)

Furthermore, how was the data gathered for emissions from the aviation sector as this appears to be minimal and calculated together with other non-road transport? There are no specific air quality targets for the UK aviation industry. Local authorities are tasked with assessing air quality. For example, Eastleigh Borough Council has an Air Quality Management Area near Southampton airport but this is primarily to monitor roadside emissions, rather than those from the airport. Emissions from ports also do not appear to be listed in these graphs, and as mentioned in response to an earlier question, there is significant under-reporting of shipping emissions.

The impact assessment states that Clean Air Zones are the most cost-effective measures for reducing air quality issues. Para 32 also states that “Ahead of the production of the [Technical] report [on the NO2 plan], a wide range of policy options were considered and assessed to identify the most efficient and cost effective manner in which to reduce NO2 concentrations and reach compliance in the shortest possible time. Clean Air Zones were identified as a central measure to contribute towards this objective.” It would be very useful to understand which policy options were considered and their associated costs.

A detailed impact assessment should therefore:

- * explain why Clean Air Zones were chosen as the most efficient and cost-effective method for reducing air pollution (especially as research points to them being ineffective).
- * compare the benefits and costs of other policies such as serious investment in integrated public transport systems and a move away from a car-centric society
- * include the economic impact of financially punitive measures for pollution from industrial sources under the ‘polluter pays’ principle

* include detailed environmental and social impact assessments alongside economic evaluations

In relation to social impact assessments, it is important to note again that environmental inequalities arise in neighbourhoods where there are high levels of deprivation. (<http://www.clientearth.org/reports/air-quality-briefing-ADPH.pdf>)

In addition, population susceptibility to air quality impacts are a compounding factor of environmental inequalities. For example, *“there are a higher proportion of children in the most deprived deciles in England where higher concentrations of NO₂ and PM₁₀ tend to be observed.”* (https://uk-air.defra.gov.uk/assets/documents/reports/cat09/0701110944_AQinequalitiesFNL_AEAT_0506.pdf)

Furthermore, the communities that have access to fewest cars tend to suffer from the highest levels of air pollution, whereas those in which car ownership is greatest enjoy the cleanest air. (http://www.dannydorling.org/wp-content/files/dannydorling_publication_id1827.pdf)

12. Do you agree with the conclusions of the impact assessment? If no, please provide supporting evidence.

We refer you to the answer given to question 11. However, in relation to the 5 areas assessed for CAZs, we agree that they should have mandatory charging zones, but that they should be Class D.

13. Are you aware of any additional data that could inform the impact assessment? If yes, please give details.

Robin Wilson at the University of Southampton <http://cmg.soton.ac.uk/people/rtw1v07/> has developed ‘A novel method for monitoring air pollution from satellites at very high resolution’ <http://cmg.soton.ac.uk/research/projects/a-novel-method-for-monitoring-air-pollution-from-satellites-at-very-high-resolution/>

Matt Loxham at the University of Southampton works on the harmful effects of particulate air pollution https://www.researchgate.net/profile/Matthew_Loxham

Local government authority attitudes to road traffic CO₂ emissions modelling: a British case study (Oct 2016)

[http://eprints.soton.ac.uk/401676/1/Grote%20\(2016\)%20LGA%20attitudes%20to%20emissions%20modelling-Case%20study.pdf](http://eprints.soton.ac.uk/401676/1/Grote%20(2016)%20LGA%20attitudes%20to%20emissions%20modelling-Case%20study.pdf)

Including congestion effects in urban road traffic CO₂ emissions modelling: Do Local Government Authorities have the right options?

[http://eprints.soton.ac.uk/385381/1/Grote%20\(2016\)%20Including%20congestion%20in%20Urban%20CO₂%20models.pdf](http://eprints.soton.ac.uk/385381/1/Grote%20(2016)%20Including%20congestion%20in%20Urban%20CO2%20models.pdf)

An AIS-based approach to calculate atmospheric emissions from the UK fishing fleet:

<http://eprints.soton.ac.uk/377647/1/>

[soton.ac.uk_ude_PersonalFiles_Users_idw_mydocuments_RESEARCH_PAPERS_2015_AtmosEnv-JC1-2015.pdf](http://eprints.soton.ac.uk/377647/1/soton.ac.uk_ude_PersonalFiles_Users_idw_mydocuments_RESEARCH_PAPERS_2015_AtmosEnv-JC1-2015.pdf)

There is also significant potential for efficiency improvements from coordinating abatement activity across mobile and point source pollution types. http://faculty.haas.berkeley.edu/wolfram/Papers/fkw_100326.pdf