

AGENDA

Meeting **Environment Committee**

Date **Thursday 28 February 2019**

Time **10.00 am**

Place **Chamber, City Hall, The Queen's
Walk, London, SE1 2AA**

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Members of the Committee

Caroline Russell AM (Chair)
Leonie Cooper AM (Deputy Chair)
Tony Arbour AM
Jennette Arnold OBE AM

Shaun Bailey AM
David Kurten AM
Dr Onkar Sahota AM

A meeting of the Committee has been called by the Chair of the Committee to deal with the business listed below.

Ed Williams, Executive Director of Secretariat
Wednesday 20 February 2019

Further Information

If you have questions, would like further information about the meeting or require special facilities please contact: Clare Bryant, Committee Officer; telephone: 020 7983 4616;
Email: clare.bryant@london.gov.uk; minicom: 020 7983 4458

For media enquiries please contact Giles Broadbent, Communications Officer,
Telephone: 020 7983 7983; Email: giles.broadbent@london.gov.uk. If you have any questions about individual items, please contact the author whose details are at the end of the report.

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Certificate Number: FS 80233

**Agenda
Environment Committee
Thursday 28 February 2019**

1 Apologies for Absence and Chair's Announcements

To receive any apologies for absence and any announcements from the Chair.

2 Declarations of Interests (Pages 1 - 4)

Report of the Executive Director of Secretariat

Contact: Clare Bryant, clare.bryant@london.gov.uk, 020 7983 4616

The Committee is recommended to:

- (a) Note the list of offices held by Assembly Members, as set out in the table at Agenda Item 2, as disclosable pecuniary interests;**
- (b) Note the declaration by any Member(s) of any disclosable pecuniary interests in specific items listed on the agenda and the necessary action taken by the Member(s) regarding withdrawal following such declaration(s); and**
- (c) Note the declaration by any Member(s) of any other interests deemed to be relevant (including any interests arising from gifts and hospitality received which are not at the time of the meeting reflected on the Authority's register of gifts and hospitality, and noting also the advice from the GLA's Monitoring Officer set out at Agenda Item 2) and to note any necessary action taken by the Member(s) following such declaration(s).**

3 Minutes (Pages 5 - 42)

The Committee is recommended to confirm the minutes of the meeting of the Committee held on 16 January 2019 to be signed by the Chair as a correct record.

The appendix to the minutes set out on pages 9 to 42 is attached for Members and officers only but is available from the following area of the Greater London Authority's website:

www.london.gov.uk/mayor-assembly/london-assembly/environment

4 Summary List of Actions (Pages 43 - 58)

Report of the Executive Director of Secretariat

Contact: Clare Bryant, clare.bryant@london.gov.uk, 020 7983 4616

The Committee is recommended to note the completed and outstanding actions arising from its previous meetings.

5 Action Taken under Delegated Authority (Pages 59 - 82)

Report of the Executive Director of Secretariat

Contact: Clare Bryant, clare.bryant@london.gov.uk, 020 7983 4616

The Committee is recommended to note the recent action taken by the Chair under delegated authority, namely to agree, in consultation with party Group Lead Members:

- (a) An output for the 8 November 2018 meeting's discussion on aviation;**
- (b) A response to the Government's consultation on proposals to ban the distribution and/or sale of plastic straws, plastic - stemmed cotton buds and plastic drink stirrers in England;**
- (c) An output from the 20 September 2018 meeting's discussion on embodied carbon in buildings;**
- (d) An output from the 16 January 2019 meeting's discussion on air pollution in London.**

6 Responses to Environment Committee Outputs (Pages 83 - 104)

Report of the Executive Director of Secretariat

Contact: Ian Williamson, environmentcommittee@london.gov.uk; 020 7983 6541

The Committee is recommended to:

- (a) Note the Mayor's response to the Committee's letter on plastic waste attached as Appendix 1 of the report; and**
- (b) Note the Report Impact Review for the Committee's report, *Single-use plastic: unflushables* and the Impact Review of the Committee's response to the draft London Food Strategy attached as Appendices 2 and 3 of the report.**

7 Deputy Mayor for Environment and Energy (Pages 105 - 106)

Report of the Executive Director of Secretariat

Contact: Ian Williamson, environmentcommittee@london.gov.uk; 020 7983 6541

The Committee is recommended to:

- (a) Note the report as background to putting questions to the Deputy Mayor for Environment and Energy on Mayoral progress and notes the subsequent discussion; and**
- (b) Delegate authority to the Chair, in consultation with party Group Lead Members, to agree any output arising from the discussion.**

8 Environment Committee Work Programme (Pages 107 - 110)

Report of the Executive Director of Secretariat

Contact: Ian Williamson, environmentcommittee@london.gov.uk; 020 7983 6541

The Committee is recommended to:

- (a) Consider how it will take forward the Assembly's opposition to the expansion of Heathrow airport, noting the Committee's previous work on aviation;**
- (b) Note its previously agreed work programme for the 2018/19 Assembly year, as set out in the report;**
- (c) Note the schedule of its provisional meetings for 2019/20, which is subject to agreement at the Annual Meeting of the London Assembly on 2 May 2019; and**
- (d) Delegate authority to the Chair, in consultation with the party Group Lead Members, to agree any scrutiny arrangements and outputs before the first formal meeting of the Committee of the 2019/20 Assembly year.**

9 Date of Next Meeting

The next meeting of the Committee is scheduled for 3 April 2019 at 2.30pm in Committee Room 2, City Hall.

10 Any Other Business the Chair Considers Urgent

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Subject: Declarations of Interests

Report to: Environment Committee

Report of: Executive Director of Secretariat

Date: 28 February 2019

This report will be considered in public

1. Summary

- 1.1 This report sets out details of offices held by Assembly Members for noting as disclosable pecuniary interests and requires additional relevant declarations relating to disclosable pecuniary interests, and gifts and hospitality to be made.

2. Recommendations

- 2.1 **That the list of offices held by Assembly Members, as set out in the table below, be noted as disclosable pecuniary interests¹;**
- 2.2 **That the declaration by any Member(s) of any disclosable pecuniary interests in specific items listed on the agenda and the necessary action taken by the Member(s) regarding withdrawal following such declaration(s) be noted; and**
- 2.3 **That the declaration by any Member(s) of any other interests deemed to be relevant (including any interests arising from gifts and hospitality received which are not at the time of the meeting reflected on the Authority's register of gifts and hospitality, and noting also the advice from the GLA's Monitoring Officer set out at below) and any necessary action taken by the Member(s) following such declaration(s) be noted.**

3. Issues for Consideration

- 3.1 Relevant offices held by Assembly Members are listed in the table overleaf:

¹ The Monitoring Officer advises that: Paragraph 10 of the Code of Conduct will only preclude a Member from participating in any matter to be considered or being considered at, for example, a meeting of the Assembly, where the Member has a direct Disclosable Pecuniary Interest in that particular matter. The effect of this is that the 'matter to be considered, or being considered' must be about the Member's interest. So, by way of example, if an Assembly Member is also a councillor of London Borough X, that Assembly Member will be precluded from participating in an Assembly meeting where the Assembly is to consider a matter about the Member's role / employment as a councillor of London Borough X; the Member will not be precluded from participating in a meeting where the Assembly is to consider a matter about an activity or decision of London Borough X.

Member	Interest
Tony Arbour AM	
Jennette Arnold OBE AM	European Committee of the Regions
Gareth Bacon AM	Member, LB Bexley
Shaun Bailey AM	
Sian Berry AM	Member, LB Camden
Andrew Boff AM	Congress of Local and Regional Authorities (Council of Europe)
Leonie Cooper AM	Member, LB Wandsworth
Tom Copley AM	Member, LB Lewisham
Unmesh Desai AM	
Tony Devenish AM	Member, City of Westminster
Andrew Dismore AM	
Len Duvall AM	
Florence Eshalomi AM	
Nicky Gavron AM	
Susan Hall AM	Member, LB Harrow
David Kurten AM	
Joanne McCartney AM	Deputy Mayor
Steve O'Connell AM	Member, LB Croydon
Caroline Pidgeon MBE AM	
Keith Prince AM	Alternate Member, European Committee of the Regions
Caroline Russell AM	Member, LB Islington
Dr Onkar Sahota AM	
Navin Shah AM	
Fiona Twycross AM	Deputy Mayor for Fire and Resilience; Chair of the London Local Resilience Forum
Peter Whittle AM	

[Note: LB - London Borough]

3.2 Paragraph 10 of the GLA's Code of Conduct, which reflects the relevant provisions of the Localism Act 2011, provides that:

- where an Assembly Member has a Disclosable Pecuniary Interest in any matter to be considered or being considered or at
 - (i) a meeting of the Assembly and any of its committees or sub-committees; or
 - (ii) any formal meeting held by the Mayor in connection with the exercise of the Authority's functions
- they must disclose that interest to the meeting (or, if it is a sensitive interest, disclose the fact that they have a sensitive interest to the meeting); and
- must not (i) participate, or participate any further, in any discussion of the matter at the meeting; or (ii) participate in any vote, or further vote, taken on the matter at the meeting

UNLESS

- they have obtained a dispensation from the GLA's Monitoring Officer (in accordance with section 2 of the Procedure for registration and declarations of interests, gifts and hospitality – Appendix 5 to the Code).

3.3 Failure to comply with the above requirements, without reasonable excuse, is a criminal offence; as is knowingly or recklessly providing information about your interests that is false or misleading.

- 3.4 In addition, the Monitoring Officer has advised Assembly Members to continue to apply the test that was previously applied to help determine whether a pecuniary / prejudicial interest was arising - namely, that Members rely on a reasonable estimation of whether a member of the public, with knowledge of the relevant facts, could, with justification, regard the matter as so significant that it would be likely to prejudice the Member's judgement of the public interest.
- 3.5 Members should then exercise their judgement as to whether or not, in view of their interests and the interests of others close to them, they should participate in any given discussions and/or decisions business of within and by the GLA. It remains the responsibility of individual Members to make further declarations about their actual or apparent interests at formal meetings noting also that a Member's failure to disclose relevant interest(s) has become a potential criminal offence.
- 3.6 Members are also required, where considering a matter which relates to or is likely to affect a person from whom they have received a gift or hospitality with an estimated value of at least £25 within the previous three years or from the date of election to the London Assembly, whichever is the later, to disclose the existence and nature of that interest at any meeting of the Authority which they attend at which that business is considered.
- 3.7 The obligation to declare any gift or hospitality at a meeting is discharged, subject to the proviso set out below, by registering gifts and hospitality received on the Authority's on-line database. The on-line database may be viewed here:
<https://www.london.gov.uk/mayor-assembly/gifts-and-hospitality>.
- 3.8 If any gift or hospitality received by a Member is not set out on the on-line database at the time of the meeting, and under consideration is a matter which relates to or is likely to affect a person from whom a Member has received a gift or hospitality with an estimated value of at least £25, Members are asked to disclose these at the meeting, either at the declarations of interest agenda item or when the interest becomes apparent.
- 3.9 It is for Members to decide, in light of the particular circumstances, whether their receipt of a gift or hospitality, could, on a reasonable estimation of a member of the public with knowledge of the relevant facts, with justification, be regarded as so significant that it would be likely to prejudice the Member's judgement of the public interest. Where receipt of a gift or hospitality could be so regarded, the Member must exercise their judgement as to whether or not, they should participate in any given discussions and/or decisions business of within and by the GLA.

4. Legal Implications

- 4.1 The legal implications are as set out in the body of this report.

5. Financial Implications

- 5.1 There are no financial implications arising directly from this report.

Local Government (Access to Information) Act 1985

List of Background Papers: None

Contact Officer: Clare Bryant, Committee Officer

Telephone: 020 7983 4616

E-mail: clare.bryant@london.gov.uk

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MINUTES

Meeting: Environment Committee
Date: Wednesday 16 January 2019
Time: 10.00 am
Place: Committee Room 5, City Hall, The Queen's Walk, London, SE1 2AA

Copies of the minutes may be found at:

www.london.gov.uk/mayor-assembly/london-assembly/environment

Present:

Caroline Russell AM (Chair)
Leonie Cooper AM (Deputy Chair)
Tony Arbour AM
Jennette Arnold OBE AM
Shaun Bailey AM
Tom Copley AM
David Kurten AM

1 Apologies for Absence and Chair's Announcements (Item 1)

- 1.1 Apologies for absence were received from Dr Onkar Sahota AM, for whom Tom Copley AM substituted.

2 Declarations of Interests (Item 2)

- 2.1 The Committee received the report of the Executive Director of Secretariat.

2.2 Resolved:

That the list of offices held by Assembly Members, as set out in the table at Agenda Item 2, be noted as disclosable pecuniary interests.

3 Minutes (Item 3)

3.1 Resolved:

That the minutes of the meeting held on 6 December 2018 be signed by the Chair as a correct record.

4 Summary List of Actions (Item 4)

4.1 The Committee received the report of the Executive Director of Secretariat.

4.2 Resolved:

That the completed and outstanding actions arising from its previous meetings of the Committee be noted.

5 Action Taken under Delegated Authority (Item 5)

5.1 The Committee received the report of the Executive Director of Secretariat.

5.2 Resolved:

That the recent action taken by the Chair under delegated authority, namely to agree, in consultation with party Group Lead Members, the Committee's report, *Farming in London's Green Belt*, and the report, be noted.

6 Air Pollution in London (Item 6)

6.1 The Committee received the report of the Executive Director of Secretariat as background to putting questions on air pollution in London to the following invited guests:

- Elliot Treharne, Head of Air Quality, Greater London Authority (GLA);
- Stephen Inch, Senior Policy and Programme Officer (Air Quality), GLA; and
- Professor Martin Williams, Air Quality Research, King's College London.

6.2 A transcript of the discussion is attached at **Appendix 1**.

6.3 During the course of the discussion, Members requested the following additional information from Elliot Treharne, Head of Air Quality, GLA:

- The number of schools which have applied for the School Air Quality Audit and the number of successful applications the Mayor's campaign for green infrastructure at schools have received;
- How the occupational exposure limits for tube dust set by the Health and Safety Executive and Institute of Occupational Medicine relate to ambient air limits in UK law and the WHO guidelines and the Mayor's targets; and
- An explanation of issues around schools air quality measures depending on the use of GLA Group land, including details relating to St Stephen's Church of England Primary School, Twickenham.

6.4 During the course of the discussion Stephen Inch, Senior Policy and Programme Officer (Air Quality), GLA, undertook to provide an update on the progress of the Fuel Poverty Action Plan and the Solar Action Plan, including how they work together to reduce non-road emissions, also details of the planned tightening of the low emission zone for non-road mobile machinery to 2040.

6.5 **Resolved:**

- (a) That the report and subsequent discussion be noted; and**
- (b) That authority be delegated to the Chair, in consultation with party Group Lead Members, to agree any output arising from the discussion.**

7 Environment Committee Work Programme (Item 7)

7.1 The Committee received the report of the Executive Director of Secretariat.

7.2 **Resolved:**

- (a) That the Committee gives further consideration as to how it will take forward the Assembly's opposition to the expansion of Heathrow airport;**
- (b) That the previously arranged work programme for the 2018/19 Assembly year be noted; and**
- (c) That the summary note of Committee's visit to Peabody Thamesmead, attached as Appendix 1 of the report, be noted.**

8 Date of Next Meeting (Item 8)

- 8.1 The next meeting of the Committee was scheduled for Thursday, 28 February 2019 at 10.00am in the Chamber, City Hall.

9 Any Other Business the Chair Considers Urgent (Item 9)

- 9.1 There were no items of business that the Chair considered to be urgent.

10 Close of Meeting

- 10.1 The meeting ended at 12.15pm.

Chair

Date

Contact Officer: Clare Bryant, Committee Officer; telephone: 020 7983 4616;
Email: clare.bryant@london.gov.uk; minicom: 020 7983 4458

London Assembly Environment Committee – Wednesday 16 January 2019

Transcript of Item 6 – Air Pollution in London

Caroline Russell AM (Chair): That brings us to the main agenda item, looking at air pollution in London.

I would like to welcome our guests. We have Elliot Treharne, who is Head of Air Quality for the Greater London Authority (GLA); we have Stephen Inch, who is a Senior Policy and Programme Officer here at the GLA; and we have Professor Martin Williams, who is a Professor in Air Quality Research at King's College London. Welcome to all of you.

This is all very timely. We have just had the Government publish its Air Quality Strategy. We have the Ultra Low Emission Zone (ULEZ) getting started pretty soon. Also, there is a lot of interest in the media in the health impacts of air pollution.

What progress the Mayor is making towards his new particulate targets.

Elliot Treharne (Head of Air Quality, Greater London Authority): It is worth starting by saying that improving air quality is a big challenge and has been identified as a huge priority for the Mayor. If you do not mind, I will also talk a little bit about nitrogen dioxide (NO₂). Often some of the interventions we are doing are actually going to deliver co-benefits in terms of tackling not just NO₂ but also particulate matter (PM) and also, crucially, carbon dioxide (CO₂) given that we have adopted an integrated approach to tackling these emissions. As you know, there have been some very significant results and improvement, thanks to the Mayor's efforts. Assembly Member Cooper in particular will be aware of the benefits of some of the low-emission bus zones that have been delivered, which have seen some very significant reductions in concentrations of NO₂.

On PMs, the ULEZ is expected to have a significant impact in terms of exhaust emissions and we are expecting the central London ULEZ to help reduce those emissions by around 60%. However, I am sure many Members of the Committee will be aware that the Mayor has been talking for some time about the importance of ensuring he has the right powers to tackle all emissions, not just transport emissions. When we come to PM, in particular, there is a significant challenge that comes in terms of construction contributions from tyre and brake wear and from wood burning. The Mayor has set out quite clearly that additional powers will be needed in order for London to have the ambitious policies needed to achieve the commitment he has set out in the London Environment Strategy of achieving the World Health Organisation (WHO) recommended guidelines by 2030.

There is definitely a lot of progress being made on improving air quality, particularly NO₂. There will be further improvements to come in terms of PM but we are the first to recognise that without additional powers, achieving the WHO recommendations is challenging.

Caroline Russell AM (Chair): Am I right in understanding that you are not going to be able to meet the target for the WHO guideline by 2030?

Elliot Treharne (Head of Air Quality, Greater London Authority): No, that is not what I said. What I said is that, in order to achieve it, there needs to be the right additional powers in place so that the Mayor can

tackle as effectively as possible all the different sources in London and so that local boroughs can take similar action, but as the [Mayor's] London Environment Strategy makes it very clear, this has always been in the context of a co-ordinated national approach with additional national action and the right powers and new legislation.

As you are aware, we are currently in a process whereby the Government has published a Strategy [The Air Quality Strategy] that makes a lot of the right noises but does not actually have the right detail in it yet. We know that the forthcoming clean air legislation is going to be absolutely critical in terms of ensuring we have the right powers to meet those 2030 WHO objectives. They are achievable, but we need those powers.

Caroline Russell AM (Chair): What specifically are those powers that you do not have at the moment that would enable you to meet these?

Elliot Treharne (Head of Air Quality, Greater London Authority): Again, as set out in the London Environment Strategy, there is a whole range of additional powers we have been seeking, particularly around construction. Of course the Mayor has used, through the planning system, the powers he does have in terms of trying to tackle emissions from construction, but he wants to go much further and would be able to do that if he had ULEZ-style powers over construction sites.

In terms of wood burning and building emissions, the Mayor has also set out additional powers: he wants to be able to set emission standards for new equipment going in, for example, wood burning stoves, so that he can make sure those standards reflect London's particular needs to meet that very challenging target of WHO limits.

On tyre and brake wear, again, we need the ability to work with manufacturers and, again, we would expect the Government to do a lot of this work but we are also picking this up through things like [Go Ultra] Low City [Scheme], which is our partnership with industry, to try to ensure that tyre and brake wear is tackled, particularly through the integration of the right regenerative braking technology into new electric vehicles, which we think will pay dividends because it will start tackling some of the tyre wear, which contributes to levels of PM less than 2.5 microns in diameter (PM2.5). They are a few examples of the powers that we are looking for or the additional action that we are looking for.

Caroline Russell AM (Chair): Those are the powers that you are seeking. Do you have views about the way that London's roadside PM2.5 levels seem to be flattening out at the moment? They are not coming down fast enough.

Elliot Treharne (Head of Air Quality, Greater London Authority): We are actually in the process of doing some more work to understand that. When we publish the new London Atmospheric Emissions Inventory later this year [2019] we will probably have a better understanding of what exactly is going on.

As I say, I do take the point that we need to do much more and that involves having the correct powers, but progress has actually been seen in recent years in terms of some of those PM2.5 levels, partly because of some of the work that has happened around taxis, particularly retiring some of the older taxis through the taxi age limit. There have been significant improvements in terms of bus emissions and other vehicle emissions through more effective PM control equipment on vehicles. You are very well aware, I know, of some of the issues in terms of Euro standards for NO₂. We have seen less of those in terms of the vehicle fleet.

As you know, with Euro V and Euro IV, the expected reductions we were hoping for in terms of nitrogen oxides (NOx) emissions from vehicles did not quite transpire and there have been some issues with Euro V where you

can actually have increased nitrogen oxide (NOx) emissions. However, generally speaking, we have seen positive progress through the emission standards in terms of PM emissions.

We will have to wait until we have completed that work before I can comment definitively, but I would say that significant progress has been made in the past. However, obviously, as I was explaining a few minutes ago, additional work and those new powers are also crucial to continuing the progress that we all want to see and to making sure we achieve those WHO limit values.

Caroline Russell AM (Chair): At the moment, every tyre that is rolling on the road is producing PM2.5s, which are damaging to Londoners' health. Do you think that Londoners understand the seriousness of that health impact and that, given that we do not have these future vehicles at the moment, every decision to drive less is helping their own health and other people's health?

Elliot Treharne (Head of Air Quality, Greater London Authority): You have also highlighted one of the key planks of the general plan to tackle PM2.5 emissions, especially from tyre and brake wear. As you know, in the Mayor's Transport Strategy there are very ambitious targets around ensuring mode-shift towards walking, cycling and public transport to reduce the dominance of the car and, as a result of that, to deliver some of those improvements. That could be explained to people in a whole variety of ways, particularly in terms of the wider health impacts that you have, more walking and cycling, and a more pleasant community and urban realm.

Absolutely, it is fair to say that we can do more to explain around PM2.5. The Mayor has already put a huge focus in terms of explaining and communicating the impact of air pollution, not least through his support of various bits of scientific research and in partnership with organisations like King's [College London] - I imagine Professor Williams will talk about that in the time being - and also, crucially, in the provision of the alert service, which gets information out there.

Once people start to understand in general terms that air pollution is such a significant challenge and that it impacts their health, that also opens the way in terms of some of those wider behaviour-change messages that are getting out more generally as part of the Healthy Streets initiative and also on tyre and brake wear specifically.

Caroline Russell AM (Chair): I would like us to look at what the Mayor is doing particularly to help vulnerable Londoners to reduce their exposure to air pollution. Professor Williams, would you like to come in at this point in terms of exposure to air pollution and protecting people, particularly children and older people who may have lung and heart health problems?

Professor Martin Williams (Air Quality Research, King's College London): Yes. Let me just backtrack maybe on the question you asked previously about whether Londoners understand. Looking across the United Kingdom (UK) as a whole, I have not exhaustively trawled people but my sense is that Londoners are probably much better informed than in most cities elsewhere in the UK, not least through the activities of the Mayor but also in the media there is a much higher profile of air quality and health issues in London than in most other cities in the UK. That is not to say that we could not do better, obviously, but we are in a pretty good place.

In terms of exposure, yes, there has been a lot of work not just at King's but elsewhere showing the numbers of schools and hospitals that are located in situations with high pollution levels. That has to be recognised and dealt with. I happened to be at a meeting in Brussels yesterday where another country in the European Union (EU), where we still are, was making the point that one ought not apply annual average concentrations to

places near busy roads because people do not spend more than an hour or so there. That argument is being voiced elsewhere in Europe but fortunately we in the UK - certainly in London - do not take that view. A long-term average, which is what the PM2.5 WHO guideline is all about, is very relevant to places like schools and hospitals and habitation near roads. Those sorts of situations are ones that we really do need to protect and keep an eye on.

Caroline Russell AM (Chair): You have talked about the annual average and the annual exposure, but there are periods when there are peaks and when we get many more hospital admissions for asthma and we hear that there are effects on people's heart health that follow these peaks. How are we making sure that Londoners know how to protect themselves when the pollution is likely to be more damaging?

Elliot Treharne (Head of Air Quality, Greater London Authority): If you do not mind me jumping in here, it is a very important point that you are raising and it is very important that people have that information, which is why the Mayor of course, shortly after entering office, did launch the [public] alerts programme that we have, which provides information through a number of channels.

For example, for high and very high pollution alerts, we mobilise the entire communications framework we have within Transport for London (TfL). That includes things like bus countdown signs and the variable message signs next to roads. It includes information at the entries to Tube stations. That provides information about there being a pollution episode and then links people to a website where they can get hold of that information and health advice.

There are also now direct emails that go to nearly every school in London in terms of moderate, high and very high pollution episodes. Again, that provides relevant health advice particularly for children.

There is also the airText service, which is probably more for people who have existing health conditions. It will provide text information about whether there is pollution and what the pollution levels are. That, again, provides a mechanism for going to check what the relevant health advice is.

Therefore, yes, in reference to that first part in terms of providing information, a lot of work has taken place on that to make sure that during, as you say, some of those peaks, information gets out there; although you are also right and Professor Williams is right that, with the average levels, the ongoing exposure that people have every day to air pollution also has health impacts. It is important that we do not try to make this just about the peaks. It is about the everyday exposure as well.

Caroline Russell AM (Chair): Do you think you should be using the peaks to really drive behaviour change? The peaks come about, presumably, from a whole mixture of sources, but transport particle pollution is very much part of that and in the mix. The information to Londoners about the peaks is very much at the moment, as I understand it, targeted to the vulnerable people who might come to harm breathing that bad air, but would it not also make sense to be using that as an opportunity to alert Londoners that every time they use their car, while cars are the technology that they are at the moment, they are contributing to poisoning the air that we are all breathing?

Elliot Treharne (Head of Air Quality, Greater London Authority): In terms of the enhanced functionality I was just talking about, the duty forecaster service where we contact schools, we are coming up to the first year of the operation of that and so we are doing a review to understand how effective it is and to understand whether the messages are calibrated in the right way so that the right information is getting across to people as quickly as possible. As part of that - and I know you have asked Mayor's Questions about this and it is something we have taken on board - we are considering if there are those behaviour-change messages

we could also issue at the same time through the same kind of platform that I was talking about, which does have quite a wide reach to Londoners. Absolutely, that is something that we are considering and that we are looking at.

Caroline Russell AM (Chair): Do you think that the measures are working for the most vulnerable, particularly children - you have talked about the school messages - and also for older people? Do you think you are reaching the people whose health is being impacted?

Elliot Treharne (Head of Air Quality, Greater London Authority): This very much explains some of our recent efforts to start targeting those kinds of organisations where children are most likely to be located; obviously schools, for example, but we are looking at what other institutions we could work with. It is very important to make sure that we do try to target those messages as effectively as we possibly can.

Caroline Russell AM (Chair): The Mayor's Strategies are all very un-siloed and it has been very good to see how the Strategies have been interlinking across each other. How does the air pollution work intersect with the Health Inequalities Strategy?

Elliot Treharne (Head of Air Quality, Greater London Authority): That is the other thing that is probably really important to highlight. You have seen a step change in the interest both at a national level, in fairness, and also, crucially, within London over the last few years in terms of the involvement of the health community. Directors of Public Health have recognised this as a major issue. We did a lot of work trying to work with those public health professionals to get this into things like the Joint Strategic Needs Assessments that take place for each of the areas for which a Director of Public Health has responsibility. [Professor] Yvonne Doyle CB, who is the Public Health England lead for London and the Mayor's Statutory Health Advisor, has been a real champion of this issue. They have been able to start highlighting potential mechanisms for working with health professionals - general practitioners are a really good example, but also through various different clinics at hospitals - in terms of trying to raise awareness of the issue more generally and publicise some of the tools and resources that are available, like the ones I was just explaining and the alert system.

Shaun Bailey AM: Just a few small things. Firstly, we see the powers you are requesting around tyres and brakes. Could you explain that to me? That seems like something that would almost need to be dealt with at an international level. How much leverage would we have over things that are produced internationally by huge companies?

Elliot Treharne (Head of Air Quality, Greater London Authority): That is a really key point and you are exactly right in terms of our ability to influence big manufacturers. We have to work together. You might be aware of some of the work previously that we have been doing in terms of trying to address bus premiums. We created a coalition of international cities in order to drive down the premiums we were paying for some of these new hybrid and electric buses. We are adopting the same approach with other cities through the C40 network of cities to try to develop a common approach across cities about what we are hoping to achieve in terms of technology and what our concerns are, highlighting the importance of achieving those WHO objectives, and then through pooling our influence, basically, trying to engage directly with the manufacturers about some of the technological changes and where research and development need to go. As I said, we have had successful roadmap reviews previously with the bus manufacturers and the bus industry, and we are hoping to replicate that with this.

Shaun Bailey AM: Is that not slightly different? In that sense, we are the customer. In another sense, we would just be lobbying. We are not the customer. We collectively do not buy cars. Of course we collectively

buy buses and so we have greater leverage there. Is this something that should be done in partnership with the Government?

Elliot Treharne (Head of Air Quality, Greater London Authority): Absolutely. Perhaps when it was referred to, “tyre and brake wear” is a bit more nuanced than just a power. It is about a co-ordinated set of actions, absolutely which involves the Government. Historically we have had also the EU playing quite a big role in terms of, again, trying to set tyre standards and all the rest of it and, obviously, in the context of Brexit, we are going to have to ensure that the Government steps in and ensures that we have a robust framework for the UK.

Shaun Bailey AM: I just ask because you say it is more than a power but it has been presented to us as asking for a power, which muddies the waters because we cannot deliver this. This needs to be delivered by national governments internationally, and so we should not be asking for it as a power. It will make it harder to achieve all our other goals that we could achieve because it is one extra thing for someone to say no to.

Leonie Cooper AM (Deputy Chair): I do believe that the Mayor has spent a lot of time raising awareness about the health impacts of air pollution, but I am still unconvinced that the media takes it as seriously as, for example, knife crime, which gets endless amounts of coverage. I am absolutely not saying that deaths caused by knife crime or gun crime on our streets, or indeed in domestic settings, or anywhere else are not important, but approximately 150 knife or gun crimes get far more media attention than 9,000 deaths in this city due to air pollution, let alone the impact on children’s lungs, which are stunted not just this week but permanently, chronic health conditions like chronic obstructive pulmonary disorder, and the nanoparticles that we now know with better research are causing brain cancer and cancer in other organs of the body.

Do you think there is anything else that can be done? There are also some politicians who are not taking this seriously, either. Is there anything more that we can do to raise awareness of the health impacts and what I believe - I completely agree with the Mayor - is a public health emergency here? I still think it has not got through to everybody. Is there anything else we could do?

Elliot Treharne (Head of Air Quality, Greater London Authority): The first thing to say is that knife crime is a massive priority for the Mayor and every death is a total tragedy and needs to be avoided.

Leonie Cooper AM (Deputy Chair): Of course.

Elliot Treharne (Head of Air Quality, Greater London Authority): Separately, obviously, the health impacts from air pollution are a massive priority as well for the Mayor in terms of the impacts you were setting out, which are over the course of our lives. As you said, the Mayor has recognised that as a public health emergency. The evidence you were talking about continues to grow and I am sure Professor Williams might want to jump in in a moment to talk a bit more about that. It is very important that we tackle air quality to protect public health. That is what the Mayor has set out to do and what the Mayor is achieving.

Leonie Cooper AM (Deputy Chair): The Government has introduced a Clean Air Fund, to which we have no access, and, frankly, it is tiny at £200 million. It does not really seem to me that, beyond the Mayor, we have proper buy-in from politicians. Is there anything else that you think we can do, Professor Williams?

Professor Martin Williams (Air Quality Research, King’s College London): Maybe I should declare an interest here. I used to head the Air Quality Programme in the Department for the Environment, Food and Rural Affairs (Defra) about eight years ago. There is a limit beyond which you cannot go in influencing the media, as you might imagine. You can provide the information and you can put out press releases and feed

stories but ultimately it is an editorial decision both in newspapers and in the broadcast media. There are limits there that we face in a free-press democracy.

That said, there is emerging evidence all the time, as you say, of pollution effects on different illnesses and different parts of the body like the brain, recent work on dementia and other neurological issues. One can make the most of those and latch on to each of those pieces of new research that come out to raise the profile and to make people aware of how wide the dangers are from air pollution exposure. That is one thing you can do, as well as all of the other things that Elliot has already mentioned like feeding the press with all of the actions that are going on and continuing to raise the profile of the high number of premature deaths associated with air pollution. Just keep banging the drum, basically.

Leonie Cooper AM (Deputy Chair): I just want to build on something else that the Chair was mentioning in her previous remarks and Elliot alluded to as well, which is the issue about tyre and brake wear. Our understanding of nanoparticles, whether they be plastic microbeads, and our understanding of these very small particles and their impact on our health and the health of all the other fauna on the planet has been growing exponentially, but I am not sure as yet whether the move towards electric vehicles completely takes on board the issues relating to the nanoparticles that still flow from the braking and the tyre wear.

For example, in one of the boroughs that I represent a major thrust of air quality improvement planning has been around the need to get a big electric network so that we can shift all of our residents away from driving internal combustion engine vehicles, which obviously will deal with the emissions from the internal combustion engines but is not going to be dealing with the tyre wear and also the other health benefits that you get from moving towards a true embrace of the Mayor's Transport Strategy with 80% using public transport, walking or cycling.

Is there anything else that we can do to really start to emphasise the impact of those particles and where the Chair's questions began in the first place? I know we spoke about having a ULEZ rather than having a ban on diesel and you came in with Shirley Rodrigues [Deputy Mayor for Environment and Energy] and we had quite an intense discussion about other cities that were saying, "Let us completely ban diesel", but we did not want to drive people away from diesel towards petrol. I am slightly concerned that we might be driving people away from internal combustion engines but towards electric vehicles too much and not embracing the Mayor's Transport Strategy sufficiently.

Elliot Treharne (Head of Air Quality, Greater London Authority): That is a point that was very well made. Just to restate, in terms of the hierarchy of action, the Mayor's Transport Strategy is very clear about the mode-shift and the achievement of the 80% target. Encouraging people to use public transport, to walk and to cycle is absolutely the priority. Obviously, the Mayor also recognises that there is a role for vehicles and that some journeys will have to be made by vehicles.

In terms of the approach we have adopted in the [Transport] Strategy, once we have achieved the 80% mode-share target and we do have more people walking, cycling and using public transport, for those who still need to use a vehicle, the point is to try to switch those to electric or to zero-emission. It is very important, as you say, that we build into that approach - also to Shaun's [Bailey AM] point as well, which is a very important one - making sure that we are getting the right technology built in so that we do minimise any other impacts from things like tyre and brake wear or the wider impacts of having a vehicle. That is very important.

On the other thing that we were saying in terms of raising awareness of it, that work is starting to take place. We talked a huge amount about NO₂. The Mayor and the WHO in particular have started to talk much more about PM2.5s and about the difference between the legal standards for PM2.5s compared to the

recommended health-based guidelines produced by the WHO. They are very different. As we start to try to get that message across and people start to realise just how much of London is not in conformity with those WHO recommended guidelines, it will be a spur to the next stage of action in terms of improving air quality.

Professor Martin Williams (Air Quality Research, King's College London): Can I just say something on electric vehicles? Sure, the first step ought to be to minimise the use of any kind of vehicle, particularly internal combustion engine ones, but I am a fan of electric vehicles. If you are going to change cars, change to electric. The main source of ultra-fine particles currently in London is probably motor vehicle internal combustion and the exhaust emissions.

The non-exhaust emissions are tyre and brake wear from electric vehicles. There are good reasons to think they might actually be lower than from conventional vehicles. The science is pretty uncertain and there is not much information around but there are indications that in regenerative braking, as it is called, where the engine does the braking rather than the discs on the brake drums, if the engine is doing the braking 50% of the time then potentially you are going to get 50% less emissions from brake wear. The big question is whether that "if" is going to actually happen. As I say, there is very little information on that out there but there are indications that it might reduce tyre and brake wear. Not so much tyre wear, I guess, but brake wear might be reduced if you go to regenerative braking with electric vehicles.

Leonie Cooper AM (Deputy Chair): That is interesting but I think we have also heard the opposite evidence about tyre wear, that because electric vehicles tend to be heavier there might be more tyre wear.

Professor Martin Williams (Air Quality Research, King's College London): That is the uncertainty.

Leonie Cooper AM (Deputy Chair): The point I am making is not that we should ban electric vehicles. For example, I personally quite like car clubs, where they have been established, to have a minimum percentage, so that you say, "If you are going to have a car club at least 50% of the vehicles now must be electric, and in five years' time they should all be electric". I would quite like to set some very firm targets like that. I am not completely against electric vehicles, I am just concerned that to reduce vehicle use to 20%, with the 80% in the Mayor's Strategy for everything else, we might need to be developing our thinking around this a little bit more.

Caroline Russell AM (Chair): I think Tony [Arbour AM] would like to come in.

Tony Arbour AM: Professor Williams, you have just repeated that the principal cause of pollution is the combustion engine, being near highways and so on. We have heard from Elliot about the Mayor's attempts to raise public awareness of this. Can I ask you, Professor, what your views are on the increase of - if I can put it this way - 'boulevard London'? There are more and more coffee shops and eating places on the edge of major highways and there are increasing numbers of people sitting there, presumably intelligent people. In my constituency, for example, on Chiswick High Road you cannot move along the pavements because of people sitting out at tables and eating. You have stationary traffic jams there. I guess many of the people who eat at these places read the newspapers, possibly read *The Guardian* [British Newspaper] and are aware of these matters. What do you think should be done about that? Perhaps you do not think that people eating in cafes on the highways are affected by pollution.

Professor Martin Williams (Air Quality Research, King's College London): They clearly are. I personally would not do it. That is back to this whole issue we have been talking about of public information and raising awareness. If you were to mount a campaign then you might want to use that kind of example as

part of it. You would need to be pretty careful about offending commercial interests and leaving yourself open to challenge but that is the sort of thing one might want to --

Caroline Russell AM (Chair): Can I just come in here? Are you suggesting that public policy should be about stopping people eating in the restaurants or are you suggesting that we should be reducing the pollution coming from the road traffic?

Professor Martin Williams (Air Quality Research, King's College London): Well, both, but certainly reducing the pollution coming from the road traffic. I am not sure what sort of powers there are to prevent people from --

Tony Arbour AM: There are powers and I am about to ask Elliot about that but I am asking for your general view. You have just told us that you have come back from Brussels, where they are doing this all the time, eating out and so on. Is it a fact or is it simply an impression one gets that this is an important area and an increasing area where people might be suffering from pollution? We hear a lot of chat about schools. Schools do not operate for as long hours as restaurants. The children who are in schools are not out for as long as people are sitting in restaurants. I think you said an hour's exposure was very significant. To come back to my original point, is it just a mad impression I have or is it a fact that more and more people are becoming exposed to pollution because of the changing habits of Londoners?

Professor Martin Williams (Air Quality Research, King's College London): I do not know what the statistics are on the number of people or the increase in people sitting outside cafes and restaurants and eating, but the fact is that if you were to sit on a pavement outside a restaurant near a busy road then your exposure is going to be a lot higher than if you were inside that restaurant eating because you are much closer to the emissions, for a start, and in buildings pollution levels get attenuated by absorption on surfaces and all that kind of thing. There is no question that you are exposing yourself to more pollution by sitting outside near a busy road than you would be if you went inside. That is undeniable. Whether there is an increase in people doing that kind of thing is something I do not know.

Elliot Treharne (Head of Air Quality, Greater London Authority): I was just going to jump in and say that obviously the critical thing is improving air quality so that people can enjoy the space and enjoy the city. This is what I was talking earlier about in terms of the urban realm. Obviously also as part of the Mayor's Transport Strategy, the Healthy Streets approach has been adopted. That tries to look holistically at the streets and the street space that we have and tries to ensure that they are safe, they are liveable, there is good shelter and the air quality is good. This is part of a strategic approach to make sure that we can encourage people to walk and cycle and be outside, and for that not to have health consequences. As I explained, we are starting to have impacts. Around Putney High Street was one example. In other locations we expect that things like the ULEZ will deliver further improvements when that is introduced later this year [2019].

Tony Arbour AM: Let me come back to the point. You were talking about having the signs at stations and schools getting emails about high pollution levels. Had it ever struck you that this fashion for eating outside and as close to the highway as people could possibly get is something that ought to be talked about?

Elliot Treharne (Head of Air Quality, Greater London Authority): We think a lot about streets and about exposure on the streets, and we know that it is not just the case that people walk up and down the street. Yes, we are definitely aware that some people sit outside, whether that is to sit on a bench or to sit at a cafe.

Tony Arbour AM: I revert to my initial point. These are people who are probably quite intelligent and who would have been exposed - to coin a phrase - to [the Mayor's] messages about this, but on the face of it it does not seem to have an effect. Can I extend that to what you are doing in relation to schools which are on highways? This is something over which the GLA has control. The Mayor has given grants to schools for green walls and green barriers and things of that kind. First, can you tell me how successful that has been?

Elliot Treharne (Head of Air Quality, Greater London Authority): The School [Air Quality] Audit programme covers a whole range of potential interventions. Some of them are, as you say, green screens and other green interventions. You have to think about how you are using those screens. Vegetation itself can have a small benefit, a small impact; however, normally the greater benefit that you get from green infrastructure is the barrier effect, and then of course because it is a green screen or a green barrier it has a whole range of co-benefits and it is an attractive addition to the school environment. There has been a study done in a London school to try to understand the benefits. That showed that there was a reduction in terms of pollution behind the barrier, but we are going to be doing some more work around this because we understand --

Tony Arbour AM: How many applications there have been? How successful has the Mayor's campaign for this been? How many schools have applied?

Elliot Treharne (Head of Air Quality, Greater London Authority): I would have to get back to you with the --

Tony Arbour AM: Do you think it was a lot?

Elliot Treharne (Head of Air Quality, Greater London Authority): Yes. Again, please do not quote me on this number because I do need to check it but I think it is around the 50 mark.

Tony Arbour AM: Can I give you an example of a school in my constituency? This is a school called St Stephen's Church of England Primary School, which is on the A316 Chertsey Road on a roundabout near the Rugby Football Union. They have had a grant from the Mayor, but TfL are refusing to allow them to plant their green wall because it is on TfL land. This is something that clearly is in the GLA's gift. The Mayor, after all, is Chair of TfL. On the one hand, here is the Mayor giving out the money, and on the other hand, here is the Mayor as Chair of TfL saying, "No, you cannot do it". Is this the kind of problem you have been aware of?

Elliot Treharne (Head of Air Quality, Greater London Authority): When you install things like green infrastructure and you are using people's land - obviously this is not just a small estate, this involves TfL as well - we also have to work with partners. What the school audit approach has enabled us to do is to bring those partners around the table, and as I understand it with that specific case there is still work ongoing and discussions ongoing. I will happily provide you an update separately on that once I have had a chance to get into the detail.

Tony Arbour AM: This is why I am having a go at Elliot, not at you, Professor. Elliot, so to speak, is the servant of the GLA and this is one of the very few areas where the GLA can actually do something. I have just drawn your attention to this school and you can do something. Similarly, this is not something I would advocate for one moment but in relation to eating on the pavements and making use of land outside shops and along the public highway, this again is something where you have real power and you could really do something. I have seen no proposals. You might think, Chair, that when we write our report we can draw attention to the fact that this is something we can actually do rather than speaking in euphemisms.

Caroline Russell AM (Chair): Can I just ask what exactly you are suggesting? Are you suggesting green walls on all TfL roads or are you suggesting more measures to reduce traffic and protect people?

Tony Arbour AM: No, not at all. So far as the green walls are concerned it is no use one arm of the GLA doing something and being prevented by another arm of the GLA. In relation to the eating out, if it really is a bad thing, personally I think it adds to the gaiety of life and if people are well informed about particulates - I nearly flippantly said "and want to shorten their lives by having a cappuccino and a whole load of NOx" - then that is their choice. It is something that we can control through planning legislation. That is really the point I am making.

Elliot Treharne (Head of Air Quality, Greater London Authority): As I say, I am not an expert in the area of the planning rules and how they can apply. I imagine that there are probably issues in terms of trying to take action retrospectively. Rather than focus on trying to stop things like that from happening, I would go back to the fact that the Mayor has set out a strategic approach which is going to improve air quality and, through the Healthy Streets approach, let people enjoy and use our streets. Surely that is the outcome we all want. We want people to make the most of all the opportunities that London provides.

Tony Arbour AM: I do support that.

Shaun Bailey AM: We have spoken a lot about what is being done about transport and what particulates the cars put out. Indeed, the Government have gone so far as to ban diesel cars by 2040, a big step. Why are we not talking, particularly from an education point of view and a legislative point of view, about what goes on in people's homes? Our very own Jennette Arnold [OBE AM] pointed out to me that our greatest exposure is in our kitchen with gas stoves or whatever. Why are we not doing something about that? We talk about an education piece. If I start to change my behaviour in the home --

Caroline Russell AM (Chair): Shaun, this is coming up in your section when we are looking at non-transport. We will stick to the briefing. Can I bring in Jennette please to look at road transport in particular?

Jennette Arnold OBE AM: Can I just say thank you for Mr Bailey for formally making me a mayoral want-to-be advisor? I have been waiting for this all my life.

Before I ask my question, can I just raise a point? Going back to what Tony [Arbour AM] was saying, as the representative of the sidewalk cafe borough of Islington I would ask that before we put anything in our report we speak to local authority planners. Tony, I do not know what they do in your part of the world but you will find that - I think this is the correct term - the curtilage outside of the shop is part of either the lease or that business frontage. I know that boroughs, certainly Islington, do all that they can to work with businesses because as well as the possibility of their customers breathing in a higher level of polluted air, there are also the restrictions that are placed on people who are walking, using Shank's pony and stuff like that. It is a contested area at the moment. I do think we should ask some questions before we add that in and take on the business community, which it seems to me have every right to go about their business. That is why they are looking to the Mayor of London to use all of his powers to improve the air quality.

That is why it is great for me to be able to skim these questions on road transport. I would like to ask you, Elliot, to just briefly tell us how the Mayor is maximising the air quality benefits that he already knows about from the Toxicity Charge (T-Charge) and the expectations with the forthcoming ULEZ in April 2019.

Elliot Treharne (Head of Air Quality, Greater London Authority): Obviously, as I said, we have set out an overarching approach in terms of trying to tackle emissions from road transport. The T-Charge was a precursor or stepping stone towards the ULEZ. The T-Charge set a Euro IV standard for all vehicles in central London and operated just as congestion charging now. Basically, it was in effect a surcharge to the Congestion Charge. The ULEZ is very different. That is obviously coming in in April [2019]. The way it is different is that it is a 24-hour charge, seven days a week, 365 days a year. It is obviously in the central London area to start but over time will expand up to the North-South Circular roads.

We think it is going to be a very effective intervention. It is going to set tighter standards. Although petrol cars and petrol vehicles will stay at the Euro IV standard, diesel vehicles will have to meet the Euro VI standard and that is expected to reduce NOx emissions from road transport in central London in 2020 by about 45%. You can see the scale of that as an intervention and the benefits that will deliver in terms of improving air quality and reducing some of those health impacts that we were talking about.

Jennette Arnold OBE AM: There are some areas where you have given a longer transition period. Can you put that on record? That is for their vehicles to move from the Euro IV standard to Euro VI.

Elliot Treharne (Head of Air Quality, Greater London Authority): In the central London area there is going to be a sunset period for residents to give them until 2021 to meet those standards, recognising that in the central area, if they live there, they are going to be more likely to have to use their vehicle. There are some sunset periods in place. Later on when we introduce the expanded area there will also be sunset periods for charities and those who have a disabled tax class vehicle.

Jennette Arnold OBE AM: That is fine. Then - again, to get it on record - within the ULEZ, would it be only the one charge of £24 for the day?

Elliot Treharne (Head of Air Quality, Greater London Authority): The ULEZ charge is depending on the type of vehicle. For a car, a van or a motorbike, the daily charge is £12.50. For a heavy vehicle, a bus, a coach or a lorry, the daily charge is £100. The ULEZ is separate from the Congestion Charge. The Congestion Charge applies from 7.00am to 6.00pm. If you were to drive into the central area in congestion charging hours and you did not have some kind of exemption or discount you would have to pay the Congestion Charge, and if you did not meet the relevant ULEZ standard you would also have to pay the ULEZ charge. However, they are separate charges and it is appropriate to think of them separately given they are trying to do different things and that one applies at different hours.

Jennette Arnold OBE AM: But overall it is an additional £8,000 or so that individuals will have to find if they are in the Congestion Charge zone and their vehicle does not qualify.

Elliot Treharne (Head of Air Quality, Greater London Authority): If they had already been driving with the Congestion Charge before the ULEZ had come in, half of that amount would not be additional. It would have been the ongoing cost that they would have been subject to, at different levels, since 2003 when the Congestion Charge came in. Again, as I say, it is appropriate to think of them as separate.

Jennette Arnold OBE AM: There is a figure for both, is there not? There is an annual figure --

Elliot Treharne (Head of Air Quality, Greater London Authority): If you ended up being liable to the --

Jennette Arnold OBE AM: -- and we should say so that people can accept that. People will have to find about £6,000 or £7,000 a year extra.

Elliot Treharne (Head of Air Quality, Greater London Authority): My point is that it would not be extra if they were already paying the Congestion Charge because the Congestion Charge has been in place since 2003. It would be half that.

Jennette Arnold OBE AM: Take away the word “extra”. This is the cost.

Elliot Treharne (Head of Air Quality, Greater London Authority): I understand what you are trying to say.

Jennette Arnold OBE AM: This is an additional charge Londoners will have to pay - or anybody else visiting - of around £6,000 to £7,000. People talk about behaviour change. Do not ever dismiss that because that is a great driver for behavioural change and I think we should wait to see how that impacts on people before we set about anything else. That is just my personal view.

In terms of the impact of the ULEZ on PM2.5 levels, over what period of time, just share with us briefly, what sort of graph you expect to see.

Elliot Treharne (Head of Air Quality, Greater London Authority): By 2020 in the central zone we expect around a 60% reduction in PM2.5 exhaust emissions. We just had a very important conversation around tyre and brake wear. As we know, as the engines are becoming more efficient over a number of years thanks to Euro standards, as I explained, there have not been the same issues for PM with Euro standards. The exhaust component is now probably smaller than the tyre and brake wear component, which is why it is so important, as well as doing things like the ULEZ to continue minimising exhaust emissions, to also tackle other sources including tyre and brake wear. It is a significant reduction if you think about 60%.

Jennette Arnold OBE AM: The press I have been reading is suggesting that over a million have been on the TfL site to find out about the impact of the ULEZ on them. Could you share with us generally if that is correct?

Elliot Treharne (Head of Air Quality, Greater London Authority): Yes. Obviously there has been an extensive outreach campaign being led by TfL. The Mayor, when he first entered office, was talking about bringing forward the start of the ULEZ and then expanding it. There have been very large consultations which have had a lot of interest and a lot of coverage in the media. This has been talked about since 2016.

Then since the summer of last year [2018] there has been an extensive campaign, led by TfL, which has resulted in 2.5 million emails being sent and over 250,000 letters sent recently to owners of non-compliant vehicles in the zone and an outreach programme particularly targeted to businesses which has talked to thousands of business about the ULEZ and how that might impact them. Obviously as we enter the last three months there is a real ramping-up of that effort and you will start seeing the boundary signs going onto the zone. Variable emission signs are also being used to make sure that people are aware of the boundary and when the scheme is coming in. There has been a lot of direct work with stakeholders and using stakeholder networks. As you were saying, there have also been 1.5 million people who have used the online checker which TfL has put in place so that people can check whether their vehicle is compliant or not. All of this is underpinned by a major marketing campaign being led by TfL and by the same team who delivered the original Congestion Charge.

Jennette Arnold OBE AM: Is there any independent monitoring? TfL sending 2.5 million emails does not mean to say that 2.5 million Londoners are reading those emails or opening their notorious brown envelopes. Is there some independent monitoring in place? There is a bit of scepticism about TfL data.

Elliot Treharne (Head of Air Quality, Greater London Authority): TfL are leading those efforts and so TfL are managing that work. Obviously, it is a fair point, particularly around emails. I am not a marketing expert so apologies if any of this is not quite right but my understanding is that TfL do have an understanding of the follow-through, someone actually opening the email and then assuming that it was then read. One of the ways of tracking and understanding what is actually happening in terms of the behaviour is the fact that, following on from those emails, there have been those 1.5 million people who have taken action to check their vehicle on the TfL website. That gives you a sense that people are definitely taking action to make sure they are aware of the ULEZ and what it means for them.

Jennette Arnold OBE AM: Professor, just a few questions to you. Can I just start by thanking you for your work at King's [College London]? As someone who suffers from obstructive airways disease, we sometimes forget the hundreds of thousands of Londoners whose quality of life is affected by air pollution. They seem sometimes to be an afterthought.

You have seen the information about the ULEZ. Is the focus right? Should we been trying to get a higher level of understanding about the health impacts in terms of the quality of our lives? Does that not resonate with people more, mums and grannies, when they hear that their dearest's lungs are going to be affected? Should we not be bolder about this?

Professor Martin Williams (Air Quality Research, King's College London): We have talked already about media messages and getting the message across to the public at large. Yes, the introduction of the ULEZ is another good opportunity to do that. I mentioned before that you can latch onto new research that comes out to make the message get across. The introduction of the ULEZ is another opportunity like that to spread the word and to make people more aware. It has to be a very good thing.

One thing I should say in terms of effectiveness is that colleagues at King's and at Queen Mary [University of London] are embarking on a project to look at the impact of the ULEZ on children's health funded by the NIHR, the National Institute for Health Research. There is some work going on to look at the impacts as well but for getting the message across, as you say, I think that is an ideal opportunity.

Jennette Arnold OBE AM: That is good news. We will watch that with interest.

Tony Arbour AM: I would like to ask about the efficacy of the T-Charge. We were told by TfL that the T-Charge would only make a negligible impact on NO₂ emissions. What impact has there actually been? What emissions have been saved?

Elliot Treharne (Head of Air Quality, Greater London Authority): There are a couple of key points to make. As I was explaining, it was an important intervention in terms of preparing the ground for the ULEZ and as a stepping stone to ULEZ, which is going to have those very considerable impacts that I was talking about. However, in terms of the T-Charge specifically, we have seen now that 95% of the vehicles seen inside the central London area during charging hours meet that Euro IV standard. That was a 30% reduction in the number of non-compliant vehicles since, I think, February 2017. It means that on an average day, about 1,000 non-compliant vehicles that would otherwise have been there are no longer there. Obviously, that does have an impact and a benefit in terms of air quality.

Now, in terms of trying to understand what that specifically means in terms of air quality in the central London area, we are in the process, as I say, of updating these figures but I think the last figures we shared with the [London] Assembly were of an 8% reduction in concentrations. I am not attributing all of that to T-Charge - there is a whole range of factors that are currently at play, including the improvements to the bus fleet - but I would have expected T-Charge to have contributed somewhat to that.

Tony Arbour AM: You think it is value for money?

Elliot Treharne (Head of Air Quality, Greater London Authority): It was an important intervention in terms of setting the stage for the ULEZ which, as we have heard about, is important in terms of ensuring there is good awareness and that people are preparing for it. Yes, I think the T-Charge was an important intervention.

Tom Copley AM: Just on the ULEZ, as someone who lives just south of the South Circular I would appeal for it to cover the whole of Greater London, not just inner London. I represent a ward on Lewisham Council which is outside of the ULEZ as well and apparently the air quality on Sydenham Road is worse than it is on the South Circular. I would love it if the ULEZ went even further.

My first question is something we touched on earlier, which is about reducing brake and tyre wear emissions. There are things like regenerative braking. What sorts of technical innovations are there and what is the Mayor doing about this issue of tyre and brake wear?

Elliot Treharne (Head of Air Quality, Greater London Authority): As I was explaining a bit earlier and as I think Professor Williams was explaining, regenerative braking provides a potential mechanism for new vehicles, with potentially obviously the switch to electric vehicles, to tackle not just the exhaust component - which, as I said, some of the Euro standards have been quite effective at tackling - but also ensuring that you tackle the tyre and brake wear itself. I think that regenerative braking technology is going to be important, as was being discussed. In order to get that right we need to work with the manufacturers to explain what the needs and the concerns actually are. We are trying to take forward some of that work through the international fora of which we are part but I think Assembly Member Bailey was exactly right that we also need to be talking to Government, and we do talk to Government about this. I know that Government have been thinking about what more can be done in order to make sure that they are bringing their voice to the table as well.

In terms of other interventions for tackling tyre and brake wear, Assembly Member Cooper was spot on the money earlier when she was saying that the hierarchy that we have set out in the Mayor's Transport Strategy is probably the most powerful intervention we have, which is getting people to walk, cycle and use public transport. The amount of investment and commitment that is required in terms of delivering that is massive from the Mayor and is, of course, probably the main intervention that the Mayor is taking to tackle tyre and brake wear.

Professor Martin Williams (Air Quality Research, King's College London): I will just add a little bit to that. Firstly, again, I would just repeat the uncertainty in the science. Assembly Member Cooper mentioned earlier that there is a trade-off between potentially increasing weight of vehicles which could lead to an increase in these emissions and regenerative braking which would work the other way. We do not know which way things are going to go in the future right now.

The other thing to say is that in terms of technologies, manufacturers are already looking at this issue. There is no policy on it anywhere or no legislation around the place at all, but manufacturers nonetheless see the way

the wind is blowing and are looking at techniques to minimise or enclose brakes to try to minimise the emissions.

The other thing that is being looked at, in my understanding, is the composition of the brake system because the concern over the toxic effects of these emissions results mainly from the metals that are in the particles that come out. Obviously, if you have two metal surfaces rubbing against each other, you are going to generate small particles of metals and they are the toxicologically active species. Manufacturers are looking at alternative materials, ceramics and the like, to try to understand whether one can reduce the toxicity of the emissions even if you do not necessarily reduce their mass.

Tom Copley AM: Yes, absolutely I agree that the best thing is to get people out of cars altogether.

Professor Martin Williams (Air Quality Research, King's College London): Quite.

Tom Copley AM: Moving on to the secondary engines point, what is the Mayor doing to tackle emissions from secondary engines? Am I right in thinking there are regulations on secondary engines, but they are less stringent?

Elliot Treharne (Head of Air Quality, Greater London Authority): I might bring my colleague in, Stephen [Inch], who does a lot of the work we do on mobile machinery including these kinds of engines.

Caroline Russell AM (Chair): Can we just clarify first; these secondary engines are the refrigeration engines on the big lorries?

Tom Copley AM: Yes, secondary engines, yes.

Stephen Inch (Senior Policy and Programme Officer, Air Quality, Greater London Authority): Yes. Secondary engines are used for a number of purposes on different vehicles - for instance, cement trucks would have a secondary engine that turns the big drum on the back - but transport refrigeration units are obviously a significant portion of the fleet. As Elliot said, they count as what is called 'non-road mobile machinery (NRMM)', which sounds a slightly odd definition for something that is on the road. Essentially if it is not striving the power of moving the vehicle forward it falls into that regulatory category, which is a slightly odd name.

As with road engines, there have been progressive European standards evolving over the last 19 years or so. Stage V, which is the most recent standard, came in in January this year [2019]. They are, in some ways, much more complex than the Euro standards for roads just because they look at different power bands and slightly different types of engines. It is a bit messier, but the principle is the same. They have been driven forward over time.

One thing that has changed significantly with Stage V, which is a real big step forward, is that previously they were restricted to between 8 or 9 kilowatts and 560 kilowatts and did not consider engines that were smaller or larger. Obviously, a lot of these little refrigeration engines would be smaller than the regulated category. Stage V has closed those gaps. From this year, any new transport refrigeration engines are regulated.

In terms of where they sit relative to road engines, the regulations are not quite as tight as on a big heavy goods vehicle, although in the middle ground where you have got construction machinery and things that they are starting to align between road and non-road engines. I could send you figures and graphs if you are very interested, but the key point is that while they are regulated, what we do not have is the controls that we have

through the ULEZ to say you have to meet this standard. An old, unregulated transport refrigeration unit (TRU) could stay on a machine on the road until it falls apart.

Tom Copley AM: Right. It is not possible to regulate that through the ULEZ?

Stephen Inch (Senior Policy and Programme Officer, Air Quality, Greater London Authority): It is not, no. That is quite specifically about the motive engine.

Tom Copley AM: Sure.

Elliot Treharne (Head of Air Quality, Greater London Authority): Just to jump in, going back to what I was saying earlier in terms of powers, again one of the things that we set out in the London Environment Strategy and is important is making sure that the Mayor has the right powers around NRMM. There is a moment of opportunity with this new clean air legislation and it is important that we get that.

Tom Copley AM: Absolutely. Just finally, how much do they contribute in terms of PM2.5 emissions? What sort of proportion are we talking about?

Elliot Treharne (Head of Air Quality, Greater London Authority): I have got some statistics here from some work that TfL have done. It is probably around 2.5% of all road transport PM. It is a small but significant proportion. It is important to say this looks very specifically at the TRUs, not at NRMM more generally. They are individually very polluting. If we could get the right powers and we could regulate them and address them, it potentially gives you a very high return on a per-vehicle basis in terms of reducing emissions.

Leonie Cooper AM (Deputy Chair): Just a very brief point. The Mayor has worked with some of the other Mayors across Europe and the C40 cities group to increase appetite amongst people who make hydrogen buses and other newer technologies to say, "There are several of us who would like to buy these", to help drive down the price. I was approached by some of the people who make these vehicles who were asking about the implications of the T-Charge, the smaller ULEZ and then the expanded ULEZ and also the wider London ULEZ. These vehicles are very expensive to create with the additional facilities on them.

There is some appetite in the private sector to come forward and to create vehicles that will be at the cutting edge in terms of clean air. I would be very happy to pass on the details of the people who approached me about the details. They did not understand the direction of travel and when new things were going to be introduced. They might decide when they are investing in new kit to purchase stuff that is going to comply with what we are looking for. It is more of a carrot, I think, the fact that we are making these changes for them to step up rather than necessarily needing the stick to say, "If you do not do this, these are the powers that we can wield".

Elliot Treharne (Head of Air Quality, Greater London Authority): That is incredibly helpful, and I am very grateful for the offer. If you, please, connect them with me, I am happy to pick that up. I do know that TfL are considering developing a voluntary industry code of conduct. That would feed into creating a great case study so please do connect us.

Caroline Russell AM (Chair): I just wanted to go back to this NRMM. You were saying that it is just 2.5% of the fleet?

Elliot Treharne (Head of Air Quality, Greater London Authority): That is just with the TRUs.

Caroline Russell AM (Chair): Right.

Elliot Treharne (Head of Air Quality, Greater London Authority): Also, what the study was able to cover in terms of understanding the number of vehicles which might partake.

Caroline Russell AM (Chair): My point is about exposure to very polluting vehicles. For instance, cycling this morning from Highbury down here to City Hall, I went around Highbury Corner. I was behind a construction vehicle that was moving construction stuff. They are rebuilding Highbury Corner roundabout and I was stuck behind it, breathing. It smelt terrible; I just was completely surrounded by horrible emissions from an engine. Later in the journey I found myself stuck with a bus beside me, a bus in front of me and a lorry behind me. The bus in front of me felt like a diesel bus. I was trapped in a little space, breathing stuff coming out of these engines. I just wonder, because I know that a lot of the exposures are measured as annual exposure but that exposure of Londoners to high concentrations of pollution, what is the health impact of that or should one only be worrying about the long-term, annual exposure?

Professor Martin Williams (Air Quality Research, King's College London): On the long-term exposure, all the epidemiological and health impact studies suggest that the biggest impact comes from that long-term exposure. That is not to say that the short-term peaks are not important; they are. We have already talked about that and they are important.

Again, it is invidious to pick on specific cases but the general consensus amongst the health community is that the health benefits of cycling, to take that as an example, outweigh the adverse effects of the higher exposures that you get when you are cycling in the stream of emissions. Clearly, there may well be outliers in that sort of range of exposures where that overall consensus does not hold and particularly on polluted routes like that you might be worse off. The exposure drawbacks might outweigh the health benefits slightly in some cases. Generally, the view is that the health benefits of cycling and walking outweigh the adverse effects. There are specific cases and it all comes back to the measures that we will take to remove the emissions in the first place is the strategy clearly. That is the kind of scientific view at the moment.

Shaun Bailey AM: You talked about these small diesel engines on the back of lorries for refrigeration. Is that an engineering challenge? Why are they diesel? Why are they not electrically powered? Is it just engineering or is just far cheaper to do it that way still?

Stephen Inch (Senior Policy and Programme Officer, Air Quality, Greater London Authority): The simple answer is yes. It is an engineering challenge. Traditionally, diesel engines are relatively easy to make. They last for an extremely long time and if you do not consider the pollution of them, there is a lot of engineering stuff you might like. That is why they have been used in these contexts.

We are aware, particularly with transport refrigeration units, there is a number of interesting innovations out there in the zero-emission space. It is possible to use the motor power engines, so the Euro VI engine, although you have to marry the two bits of the truck together in a different way.

Shaun Bailey AM: You have to draw the refrigeration.

Stephen Inch (Senior Policy and Programme Officer, Air Quality, Greater London Authority): Yes. We have spoken to people who have been doing some interesting stuff with liquid nitrogen which is a waste material from a lot of industrial processes that can be used to both drive a refrigeration engine and provide direct cooling. There are a few of those on the roads and there are electric alternatives. One of the problems

is there is no real driver to encourage people to take these alternatives. They are very familiar with their diesel engines. They have been there for a long time. This is part of the point of seeking new powers to control them; it is to drive the uptake of alternatives.

Shaun Bailey AM: There is an alternative. It gives more, I am going to use the word, right to make that legislative change because if there is nowhere for anybody to go, they are stuck. If you could say, "You could be using a different technology", then the legislation makes much more sense.

Elliot Treharne (Head of Air Quality, Greater London Authority): That is also how it worked in terms of things like the ULEZ or the Low Emission Zone previously is that once you have that technology, how do you encourage people to take it up? Absolutely, but you need the technology first.

Caroline Russell AM (Chair): We are now going to move on and look at Tube dust which has been in the news just recently.

David Kurten AM: A lot of people were quite disturbed by the headlines recently. It is saying that the particulate levels in the London Underground were far higher than the legal limit of 25 micrograms per cubic metre that is going to come in 2020. Far higher. One figure I have got, 302 which is 12 times as high and that was on the Jubilee line. There is a recent report by the Committee on the Medical Effects of Air Pollutants (COMEAP) that stated that now there is no strong evidence that Tube dust is less toxic than other particulates. This is what people were saying beforehand. What are the implications of this news and the implications of the report by the Committee?

Elliot Treharne (Head of Air Quality, Greater London Authority): Before I start, I want to caveat my comments slightly in terms of that my air responsibility is the ambient air quality, therefore, I look after the air above ground. This is a matter for TfL. However, I can try to do my best to answer some of your questions. However, if you have more detailed questions or if it gets a bit too technical, you will have to forgive me. It might be better that, at some point, you bring in a witness from TfL to talk to you about that.

In terms of the report, there is a couple of things. TfL, first of all, would say that not only did they meet the health and safety executive specified limits, but they also meet the much tighter Institute of Occupational Medicine (IOM) limits in terms of exposure to respirable dust. Of course, the report itself had a whole series of recommendations. Basically, one of the key findings was is that more research was needed to understand what these impacts were. There were recommendations in the report around TfL having to do additional monitoring and trying to then make that available to a whole team of researchers and anyone who might want that from the academic community, therefore, they can try to get that stronger understanding of what the implications might be.

It is important to bear in mind that TfL has been very proactive on this. They are the people who went to the COMEAP to ask them, "Can we have updated advice based on the previous work that has been done with the IOM?". They have also been extremely proactive in the sense of trying to identify various different interventions which might be positive and helpful, particularly around their cleaning regime which they are doing a lot of work with in terms of enhanced cleaning and trying to understand the impact that has in terms of things like PM levels underground.

Work is underway to try to reduce those levels. That is obviously a very clear recommendation from the COMEAP report. TfL have accepted that recommendation. They are taking that forward and they are also supporting the academic and wider air quality community in terms of getting that better understanding of what the impacts potentially are.

David Kurten AM: You mentioned there were some limits and TfL are saying that they meet limits which are set by the IOM and other bodies. What are those limits, and do they relate to PM2.5 and do they relate to some other category of particulates?

Elliot Treharne (Head of Air Quality, Greater London Authority): This is where you might be entering a space which is beyond my level of expertise. I would hate to say something that was wrong because, as you can appreciate, this is quite a sensitive subject.

David Kurten AM: Yes, right.

Elliot Treharne (Head of Air Quality, Greater London Authority): I am happy to go away and try to talk to TfL and then get some information which we can send in writing to you, if that would be helpful.

David Kurten AM: It would be good to know. I appreciate that you deal with aboveground but if you have a level of 302, and they are saying that meets limits but then the limit coming in is 25, then we need to understand where the discrepancy is.

Professor Martin Williams (Air Quality Research, King's College London): I am not an expert on occupational limits and so forth, but I have a feeling, from memory, that the metric is what is called total suspended particulate which is the size ranging bigger than PM10. We are not comparing like for like in that sense and equally in terms of the limits, you are not comparing like with like there either because the ambient limit values in the EU are designed to protect the whole population including the more sensitive groups, the elderly and children. Occupational limits, of course, generally are set much higher than that on the basis that firstly, the working population is healthier than the population at large.

Caroline Russell AM (Chair): Are you suggesting that it is OK or that TfL are arguing it is OK because the working population is healthy and not vulnerable and, therefore, they do not need --

Professor Martin Williams (Air Quality Research, King's College London): No, I am not blaming you. I am not making any objections here at all. I am explaining the way the system works. The way the occupational system works is that it is a dialogue. The way the ambient system works is that a limit value will be proposed which is designed to protect the more vulnerable people as well as everybody else; the children, the infirmed, the elderly. That is then put out for public consultation and everybody gets a say and the democratic process takes over and you end up with a value that is notionally acceptable to the population at large.

The way occupational exposure limits work is that they are done in one step with consultation between the industry side, the unions and the workforce. The idea there is generally the philosophy is that firstly, you have a healthier population and secondly, you have people being paid to be exposed to these things. That process tends, across the board, on average, to lead to laxer limits than the ambient ones. Those are essentially the reasons. That is why the limits are different.

David Kurten AM: I just want to think about this. The figure I have got here for the IOM, the guideline is 1,000. You are saying that is for total suspended particulates which is different.

Professor Martin Williams (Air Quality Research, King's College London): Possibly, do not quote me.

David Kurten AM: OK, we need to check that. If that relates to a different thing than the coming legal limit which is PM2.5, the two things would be two separate issues. This is a very important point to take onboard.

Professor Martin Williams (Air Quality Research, King's College London): The only other thing I would say is that the particles, from reading the COMEAP report and the literature that they looked at, the makeup of the particles is completely different in the Underground from the ambient. It is virtually all metals or metal oxides. You get very little of that stuff in the ambient atmosphere. In the Underground, you do not get any of the diesel exhausts and the combustion emissions that we know are toxic. I label diesel exhaust as a huge carcinogen and so on. You do not get that in the [London] Underground. There are good reasons for needing to do more detailed toxicological work on the particles that you get from the Underground. We just do not know how toxic they are or how benign they are. That is the crucial area here.

David Kurten AM: It seems to be that the report is suggesting that there is no evidence that that is less toxic, and we need to take it seriously.

Professor Martin Williams (Air Quality Research, King's College London): No. There are good reasons to believe that metals could have toxicological effects. You can see the earlier discussion on the exhaust emissions from the type of brake wear.

David Kurten AM: This can cause Alzheimer's disease and so on.

Professor Martin Williams (Air Quality Research, King's College London): Yes, absolutely.

Elliot Treharne (Head of Air Quality, Greater London Authority): It is worth emphasising again that obviously TfL has accepted the recommendations of the report which is to do more work to try to better understand what those are. That is important. As I said, I am more than happy, given that this is not my area of expertise, I am a bit worried that there is probably someone at TfL right now shouting, "You should just say this, say that" when I am trying to get a key bit of information across. What I will undertake to do is to talk to TfL and if you are happy for me to do so, write with a proper update on this.

David Kurten AM: Two figures that would be quite useful to have as well as the total suspended particulates underground, it would be also useful to have the PM2.5 level. It would also be useful to know what the legal limits are going to be for total suspended particulates, if any, therefore, we can compare the different figures.

You have mentioned some things that TfL might be doing in order to try to reduce those levels on the network. Can you say a bit more about that, particularly in terms of tunnel cleaning? That is something that might be very positive as an action. Can you say any more about how they are going to do that and how that is going to be rolled out?

Elliot Treharne (Head of Air Quality, Greater London Authority): At the moment, the work TfL is doing in relation to tunnel cleaning and also to platform cleaning is very much as a trial to try to understand what the most effective technique is, what the most effective timing is, the sequencing, how often you have to do it and also what the most effective area that you need to do is. Can you just do the platform? Do you need to go into the tunnels? Can you use things like sealants or other kinds of mechanical agents to try to prevent resuspension? They are doing that work now. They are getting a range of results and I understand that when that work is complete, they will be making a decision about going forward; what the most effective way is. What this underlines is TfL is committed to trying to bring down any levels of particles of anything else in the air underground, the lowest possible level, to make sure that staff and customers breathe the cleanest air possible. That work is underway.

David Kurten AM: I do not know if you can answer this. How often do they do tunnel cleaning? Is it every day or is it every week or every month? How regularly does that happen?

Elliot Treharne (Head of Air Quality, Greater London Authority): I cannot answer that categorically, but I think that the work that I was talking about in terms of the measurements that they are taking and in terms of the cleaning trial, in terms of the roller enhanced cleaning is to understand exactly those kinds of issues. Do not forget that we are often talking about doing, for example, the track bed and the tunnel in-between stations. They are trying to understand how often they should do that and what the most effective combination, or the way of doing that will be to bring down particle levels on the Underground.

David Kurten AM: Yes. Are there any other ways apart from tunnel cleaning that would reduce the concentrations of particulates?

Elliot Treharne (Head of Air Quality, Greater London Authority): I know that there has been work which has been done in terms of other metros in terms of trialling all kinds of different ideas. Everything including electrostatic precipitation and other techniques and that is using the current to basically, for want of a better phrase, stick down particles.

I do not know the details of this. Again, I can provide a bit more of an update when we write, but I do understand that TfL did look at the feasibility of a whole range of interventions. The one that they are definitely starting with and focusing on because they think it is likely to be most effective is that enhanced cleaning regime.

David Kurten AM: How about any technologies to do with the trains and the rails? Professor, you have said a lot of the makeup of the particulates in the Underground is due to metals. I assume that comes from grinding between the wheels of the trains and the tracks. Is there anything we can do about reducing the rate at which those particulates are generated?

Professor Martin Williams (Air Quality Research, King's College London): I could not answer that.

David Kurten AM: No, OK. That is something for TfL, yes.

Elliot Treharne (Head of Air Quality, Greater London Authority): That has reminded me in terms of time and again, I will give you chapter and verse when we write on this subject. I do understand that, for example, the new Victoria line trains do use regenerative braking and they have seen an impact in terms of that. Much of what we see in terms of time brake wear, as Professor Williams was explaining, on the Underground you have the large component of metals and of course that is going to be because of the friction between wheels on the track. That is something that TfL have used as a mechanism for reducing those levels and they have seen some positive results. Of course, this is part of the wider upgrade and investment in the Underground. Apologies, I am not giving you a fuller and more precise answer now but we will come back in writing to give that to you.

Leonie Cooper AM (Deputy Chair): I wanted to ask you about how we are going to inform the passengers but just before I get into that, I just wanted to ask you about this issue of the particle size. At the moment, we are saying that TfL does not, or you do not, know that there is a breakdown between the total suspended particulate matter in the Underground as measured and the smaller particles, the ones that we know cause the issues, particularly the PM2.5s. Is that something that is going to be looked into and we are going to be given

those details of the breakdown of 2.5s and smaller nanoparticles as a percentage of the overall level of dust in the Tube?

Elliot Treharne (Head of Air Quality, Greater London Authority): Again, that is probably one to handle by a letter but, as I understand it, TfL have already published a large amount of this information from the regular sampling and testing that they do on their website. Obviously, I know that King's [College London] has recently done some work which is published alongside or is definitely covered in terms of the COMEAP work which did look into in much more detail. I am not sure if Professor Williams wants to add anything more than that.

Professor Martin Williams (Air Quality Research, King's College London): I do not have the details to hand. That is something we need to come back on in writing.

Leonie Cooper AM (Deputy Chair): The headlines that have come out from the COMEAP data, the 302 micrograms per metre cubed on the Jubilee line, do we think that is PM --

Caroline Russell AM (Chair): That is PM2.5.

Leonie Cooper AM (Deputy Chair): That is PM2.5?

Caroline Russell AM (Chair): Yes, it is PM2.5.

Leonie Cooper AM (Deputy Chair): Generally speaking, what we found is we have had more evidence come forward in terms of the smaller particles which are able to cross through the lung into blood and then get around the rest of the body. One of the makeups of those tiny particles is, in the main, iron which, as it seems to be what we are saying, is most of the particulate matter in the Underground is iron fragments, really tiny fragments. Surely those fragments, whatever they are made up of because they are so tiny and because they are, therefore, able to circulate around so much of our bodies are going to have a not very good impact on us physically as particles made up of anything else; just because they are so tiny, and they can jump so far.

Professor Martin Williams (Air Quality Research, King's College London): They probably could but the precise impact is still something that is not clear.

Leonie Cooper AM (Deputy Chair): That has not been sufficiently researched, is what you are saying.

Professor Martin Williams (Air Quality Research, King's College London): Not yet, no.

Leonie Cooper AM (Deputy Chair): At this stage, we are not at the point where, for example, if we are doing regular measurement in the Tube, and I understand that TfL is moving towards doing some sort of more constant monitoring, that if it is a bad air day underground, we are not going to start sticking up signage for passengers to say, in the way that we are warning people now of a bad air day above the ground because we know of the health connection, we are not, at this point, going to start warning people that it is a bad air day down in the Tube or anything like that.

Elliot Treharne (Head of Air Quality, Greater London Authority): My understanding is that there are no plans for that although, as I say, I think you and Professor Williams have just alluded to one of the key findings from the report, which is that more research is needed to understand what those impacts might be. TfL has been very proactive. They have accepted the recommendations from COMEAP. They are going to work to improve their sampling and do more enhanced monitoring and make that available to researchers. As we have

heard, they are also taking action or exploring what is the most effective action in terms of reducing particle levels underground.

Leonie Cooper AM (Deputy Chair): In terms of the staff, I take your point, Professor Williams. However, I do not completely take it. If you travel on the Tube in the morning, for example, or if you travel slightly earlier than most people in the evening rush hour -- only yesterday I met 50 children in my carriage who were travelling back to Furzedown ward, where I live in Wandsworth. They were travelling to Penwortham Primary School. Now, they had all been out on a day trip, so they do not do that trip regularly. However, there are many children who travel on the Tube to get to school. Therefore, while the levels might have been set for healthy adult workers in a workforce, lots of people use the Tube who might be -- and we are making the Tube very accessible. Part of our strategy is to make public transport accessible. Again, coming back to the 80% of the Mayoral Transport Strategy then surely, we need to be bringing the air quality in the Tube up to the levels for the people who might be most harmed.

Professor Martin Williams (Air Quality Research, King's College London): Yes. That is an issue for debate obviously and my point was that those lax occupational exposure limits would not apply to the school kids, they would apply only to the staff that work for TfL, clearly. The question is then still open as to what one ought to do to protect the non-workforce people who are using the Underground.

Elliot Treharne (Head of Air Quality, Greater London Authority): Just to jump in, I am sure that TfL would say that they are absolutely committed to making sure that all their staff and all their customers breathe the cleanest air possible when they are on the Tube. They would not say, "This is just something we are doing for our staff". They see it holistically as anyone who uses or operates or works on the Tube, including children.

Leonie Cooper AM (Deputy Chair): Looking specifically at the staff, we have done some calculations about how much exposure somebody would get who travels on the Tube for 46, 47 or 48 weeks of the year for 20 minutes in the morning - or half an hour, you know, whatever it is - and it is not great. For a member of staff who might be working a six or eight-hour shift and is down there for a considerable period of time, do you know, Elliot, whether there has been any investigation into health impacts on, for example, the lung health of Tube drivers? I would think they must be the ones most affected.

Elliot Treharne (Head of Air Quality, Greater London Authority): Again, I can probably write to you with more detail about that. However, as I understand it - and as I say, occupational health is not my area of expertise either - TfL have not seen any trends. Obviously, they have had people working underground for many years and they do a lot of work, not just for air pollution but for a variety of reasons, to understand health when operating and working in an underground environment. Therefore, I will happily talk to TfL and see if we can get you something more in writing in terms of that. I do not think there is any history of a greater susceptibility for things but I will write to confirm.

Leonie Cooper AM (Deputy Chair): That would be great. It is slightly frustrating because two years ago we actually talked about Tube noise and the person from TfL who deals with Tube dust and particles actually came to that meeting in error. She had almost nothing to say because we were talking about decibels and noise and the impact on people above ground as well as in the carriages, which I must say is--

Caroline Russell AM (Chair): We asked the wrong questions.

Leonie Cooper AM (Deputy Chair): -- which is not improving any as far as I can tell. The Victorian line yesterday was dreadful and so was the Northern line.

Caroline Russell AM (Chair): I think what we take from that is that there are very high levels of PM2.5 underground. We definitely need to know a lot more about the impacts on both passengers and workers and we will be following up. If you can, Elliot, come back to us with some information from TfL, but we may also well be following up with some very specific questions.

Elliot Treharne (Head of Air Quality, Greater London Authority): If you will allow me, Chair, I will probably talk to Ian [Williamson, Scrutiny Manager] offline about what might be more appropriate. I am happy to be the conduit although it might be more effective if you write to TfL given that this is their area of expertise rather than mine.

Caroline Russell AM (Deputy Chair): I would think probably the Committee should be writing to TfL with some questions about it.

Shaun Bailey AM: In view of the level of investigation needed into this subject and some of the big questions about how the occupational level is calculated, should the public and staff have a different level because of the amount of exposure?

I think we should actually speak directly to TfL in a session. There is a lot here to be investigated because there are some Londoners, if they pursue the Mayor's wishes of giving up their car, who will have to spend many more hours on the Tube. Because I personally live far away and ride the Tube for a very long time, well over 20 minutes actually, in both directions and well over 40 minutes sometimes, I would like to know what I am breathing in.

Caroline Russell AM (Chair): Absolutely. I think most Londoners would like to as well and we will definitely be following up on this. Shaun, I am going to bring you in now to raise some questions about non-transport particulates.

Shaun Bailey AM: Let me start by asking this first question primarily to Elliot. How well are non-transport sources of emissions measured and understood within London?

Elliot Treharne (Head of Air Quality, Greater London Authority): I will probably share the section quite a bit with my colleague, Stephen, who kind of does a lot of the work that we do in terms of non-transport emissions. Stephen will probably jump in with a bit more but obviously, as a starting point, the main tool that we actually use in terms of understanding emission contributions from various different sources is the London Atmospheric Emissions Inventory (LAEI). That captures a relatively good understanding of most of the main sources. However, we would be the first to accept that we keep that inventory under review. We continually try to improve the inventory and we will have a version of that inventory coming out this year which will deliver some further improvements.

One example - it is transport but we would think of it in many ways as a non-transport source - is around river emissions. We have done a lot of work with the Port of London Authority (PLA) to improve our understanding of those emissions.

Stephen Inch (Senior Policy and Programme Officer, Air Quality, Greater London Authority): On the river, there has been a really successful collaboration between the PLA and the TfL team who developed the LAEI. Specifically, the PLA's updated port inventory is in a format that can be directly incorporated into the next round of the LAEI, which is based on real shipping movements. Some additional work was done with portable emissions monitoring systems. Essentially, they put emissions monitors on boats, stuck a probe into the --

Shaun Bailey AM: In a sense, is measuring emissions on the river not the same as measuring emissions on the road? The difficulty, I imagine - and please correct me if I am wrong - is measuring general emissions from the home, from gas, central heating, whatever. It strikes me as slightly more complicated if only because the area is so much larger and there are so many different ages and types whereas measuring it on a vehicle, whether that vehicle be floating or driving is roughly the same.

Stephen Inch (Senior Policy and Programme Officer, Air Quality, Greater London Authority): Yes to both parts of your question, I think is the short answer. However, in terms of the river one of the key distinctions between that and the road is the extent to which we understand the fleet. We previously knew a lot less about the kinds of engines and what they were putting out on the river, compared to what we know about what is going on the road. You asked about building emissions and other sources.

Shaun Bailey AM: Yes. Heating, cooking, wood-burning stoves, those kinds of things.

Stephen Inch (Senior Policy and Programme Officer, Air Quality, Greater London Authority): That is something that there has been quite a bit of work on, as I understand it, with the development of the LAEI to see how far we can update our understanding. For instance, boilers and cookers will all get wrapped up in a figure that is derived from gas use throughout London. However, one piece of research we have done that has just recently been published was looking at whether boilers degrade over time. If you know what a boiler was putting out when it was built, does it stay the same or does it get worse. It was a very small study; a sort of pilot piece of work and the initial indication is that they look fairly stable which helps improve some of our inventory work there.

We have been doing quite a lot of research into the prevalence and use of combined heat and power (CHP) across London, which feeds into some of that as well and we talked earlier about some aspects of NRMM. As you know, we have the NRMM Low Emission Zone for construction sites that we do through planning, which is backed up by a database of what is being used where on planning sites in London. We have been using that to inform the next round of the LAEI as well, making that slightly more robust in terms of understanding those emissions.

Shaun Bailey AM: I think where I am going, because beforehand I mentioned it, is that we have talked so much about transport. It is the most visible polluter. It was technically the one pushing out the most pollution measures and nationally, internationally and locally we are dealing with that. That now brings us to the point where non-transport emissions are at least 50% and with current legislation now have become more. Where is the Mayor's education approach affecting that? Because if you read this paperwork some of our emissions are not entirely necessary, you know, wood-burning stoves for effect when people also have central heating. It strikes me that there are some savings there that are just behavioural; far less complicated than construction or brake dust or Tube dust. Where is the Mayor trying to educate people on that level?

Elliot Treharne (Head of Air Quality, Greater London Authority): Yes, absolutely. There are a couple of things. The Mayor is one of the first people to talk about wood burning and about its potential impacts. Obviously, we have to get the balance right in terms of addressing that. What the Mayor definitely wants to do is to encourage people to use the right fuels. A really good example of that is the use of wet wood is much worse than the use of dry wood, kiln-dried wood. It is also about making sure that any appliance is properly maintained. Of course we also want people definitely not to use open fires, and if they are going to be burning wood to use an appliance that is Defra compliant.

Now, the Mayor also wants to go further and he has asked for those additional powers so that for people installing new appliances we can make sure they are the most efficient ones possible. In terms of the way that he has been promoting this and getting some of this information out there, he has worked with a lot of the industry bodies in terms of making sure that there is promotional material available at point of sale. Obviously, as the Chair was talking about earlier, we are considering other ways that potentially we can get important messages out there at times where you may get a lot of people doing wood burning all together which might cause air pollution issues which often happens in the winter on some days, for example. Hence, the Mayor has recognised that as an issue. He has set out some steps he wants to take and I totally agree with you, it is very important that we try to make sure that people make informed choices about when and how they burn wood in London.

Professor Martin Williams (Air Quality Research, King's College London): Just to add to that, I would not disagree with anything that Elliot has said. Just indulge me for a minute to fly the flag for King's College London which, by making some detailed measurements of the products of wood burning, we have managed to quantify and come to a view as to how much wood contributes to PM_{2.5} in London, and it is not a trivial matter it is really quite important.

The other thing on informed choices and so on, the National Clean Air Strategy that Defra launched on Monday, there is a proposal in there to actually ban the more polluting fuels; ban the sale of, including wet wood, which is potentially a lot more polluting than dry wood, as Elliot said, by a lot. That has not actually come to fruition yet but the intention there is to ban the sale of things like wet wood which would actually help.

Shaun Bailey AM: Some of these things about the best equipment stuff, it often strikes me that that is probably best done at a national level. Let me just ask you, Professor, about exposure. Like I said, earlier on in the year Assembly Member Arnold [OBE] spoke to me about your gas fire, when it is burning you are inhaling things that as an asthma sufferer are pretty bad for you. At what level is exposure in the home because of boilers, gas cookers, central heating, is that any more potent to you as a person breathing it in than it is walking along the road; where is the exposure the highest?

Professor Martin Williams (Air Quality Research, King's College London): Depending on the use of gas cookers and so on it can be almost equally high indoors from gas cooking. Just by way of background the current EU limit value for NO₂ is numerically the same as the WHO Guideline for NO₂ and that guideline was set on the basis of nine studies of gas cookers in homes. It was set on the basis of indoor air quality. Now, a molecule of NO₂ is the same indoors as it is out on the street. Hence there should, in theory, be no difference between the impacts of it.

Particles can also be high from cooking indoors and, again, we have worked with the GLA to quantify cooking emissions of PM from restaurants and the like in London. Therefore, you have got two potential problems of cooking indoors, NO₂ from gas and PM particles from fats and all sorts of other materials that you use to cook; hence indoor exposures can be quite high.

Elliot Treharne (Head of Air Quality, Greater London Authority): If you do not mind me jumping in I think you raise a very important point. Again, I said earlier that the formal statutory responsibilities that we have are around ambient air quality being the air quality outside, however the London Environment Strategy does actually recognise and does raise the issue of indoor air quality. It does set out the importance of providing better information and one of the things that we are currently doing is we are supporting the Royal College of Physicians naturally doing basically further work to better communicate and understand and explain what those potential impacts of indoor air quality might be and then also the best ways of actually reducing

them. You gave a really good example about whether people are aware that if they use a wood burning stove what the potential impacts might be in terms of within the home.

I think the Royal College of Physicians is going to do a very authoritative piece of work and once we have that we will be in a better position to develop policy and provide advice.

Shaun Bailey AM: I just thought, from an education point of view, two things. On planning, why are we not asking people to provide power and heat in a different way that does not produce so much particulate material in the home? I could not care less if it is gas in my home or electric. You rent the place and it is what is in there and that you use it. Surely there is something we could do around planning.

I now want to move on and talk about construction work. There is the initial construction Low Emissions Zone. How else is the Mayor bearing down on constructions emissions? That, again, is a very significant part. For Londoners, in a roundabout way, it is also very important because if you make construction significantly more expensive that will impact us in one of our other big needs, for housing. How is the Mayor bearing down on that, bearing in mind that tension?

Stephen Inch (Senior Policy and Programme Officer, Air Quality, Greater London Authority): I think those are questions for me. I just want to go back to wood burning just for one very small thing. [Professor] Martin [Williams] talked about the regulations that the Government is talking about bringing forward and the Mayor did respond to that consultation. One of the key things in his response was that any new labelling of products for burning in the home should contain health warnings. We are drawing the analogy with cigarettes. That is another way of promoting that message, so that each time you pick up a bag of coal you go, "Oh".

Shaun Bailey AM: How else can we bear down on construction emissions bearing in mind the tension about not making construction too expensive?

Stephen Inch (Senior Policy and Programme Officer, Air Quality, Greater London Authority): Yes. There are a couple of things there. Obviously, you are aware, I think, of the NRMM Low Emission Zone that is done through planning. One of the other reasons we are interested in looking at other mechanisms to do that is ways of reducing the burden by making a simpler a system. However, we have, in the new [draft] London Plan, retained that concept of keeping the NRMM Low Emission Zone as part of planning going forward. This means that it has been included in the viability testing for the new London Plan. In terms of any additional cost, that was found to not be significant compared to a lot of the other things we were asking for buildings to do. It is not something that would be the straw that broke the camel's back.

We have done a couple of things to develop that Low Emission Zone further as we go forward. We revised what is called the "exemption policy" late last year, October last year [2018]. It sounds like a rather trivial thing but it is actually quite an important piece of the puzzle. It is there to allow people to use retrofit solutions for older machinery to extend their life. A retrofit solution can be a few thousand pounds whereas a new piece of machinery could be tens or even hundreds of thousands of pounds, making it key particularly for some of the smaller builders that we get that right. Also, we have been able to look at some of the data we have generated over time on that and say that for some of the things we gave automatic exemptions to previously, such as truck-mounted cranes, we have good evidence that they are available in abundance meeting the standard. Hence, we will remove the exemptions from them, which improves the overall emissions.

We have also put forward in the Mayor's Environment Strategy how we see NRMM developing over time, right out to 2040. This gives industry a good head start on understanding what they will need to do to comply in future. I have the details here if you are interested in how that is going to evolve over time. Essentially it will start to up the standards and move the zones around as we develop with a particular focus, between now and 2025, on things like the opportunity areas where we know we are promoting high levels of development, thus where we are getting the most 'bang for our buck' on that.

One final thing on construction. Obviously, the other area of construction that produces dust, although generally more in the PM10 rather than PM2.5 range, is the mechanical stuff from knocking down buildings and building buildings. We have said in the [draft] London Plan that we would look to review some of the guidance on that and we have got an eye on some of the work that King's [College London] have done about how monitoring can be used more effectively. However, we have not taken any formal steps in developing that yet.

Caroline Russell AM (Chair): Just before we move on to Leonie [Cooper AM] to take our next section of questioning, there is one area that has not come up, which is barbecues. In my ward in Islington there is a park where people hold barbecues and I get huge numbers of people saying that their children feel very chesty in the park on busy summer barbecue days, likewise older constituents who have lung and heart health problems who complain that they do not like sitting in the park on days when there are clouds of barbecue smoke hanging over the park. Now, the campaigners who have been trying to get the Council to change their mind about whether barbecues are allowed in the park have done lots of measurements and they have encountered really high levels of PM2.5, up towards 200. However, they do not break the annual limits in the park because obviously this is concentrated in the hot summer months.

I just wondered - this is particularly for Professor Williams but also Elliot or Stephen if they have any thoughts - about the health impact of a park effectively just having a cloud of smoke over it when it is very hot weather and lots of people, understandably, because it is a place where barbecues are allowed, want to come and cook food for an evening picnic.

Professor Martin Williams (Air Quality Research, King's College London): Well, yes, it is difficult. I can give you a --

Caroline Russell AM (Chair): It is a very specific location, I am sorry.

Professor Martin Williams (Air Quality Research, King's College London): There will undoubtedly be impacts on people's lung function and respiratory efficiency and so forth, and potentially on asthmatics as well. Also in summer months you are not only likely to get the barbecue impact but also ozone levels might well be high and the photochemical smog pollutants in a park. The ozone levels are probably going to be higher than they would be on busy streets and so forth, so you might well get a kind of composite effect from the barbecue emissions. The extent of the impact, of course, would be something that would depend on precisely how high the levels were and so forth. However, there would undoubtedly be health impacts.

Caroline Russell AM (Chair): Obviously the Fire Brigade prefer no open fires anyway. However, do you think it is advisable for local authorities to allow barbecues in the summer months?

Professor Martin Williams (Air Quality Research, King's College London): That is a tricky issue. I mean on the one hand they undoubtedly do cause pollution impacts, whereas on the other hand people like to do it and it is a very popular thing. I could imagine a very, how shall we say, full and frank public debate on the proposal to ban such things.

Leonie Cooper AM (Deputy Chair): I think you should start a petition and if the decision of people who live in Islington is to follow people in Wandsworth and agree that there should be a ban on barbecues, you just pass a bylaw that covers your open spaces. That is the way forward.

Shaun Bailey AM: Except that if they did not, you would have to let them keep their barbecues.

Caroline Russell AM (Chair): Let me move us on to Assembly Member Cooper who is going to be looking at climate change.

Leonie Cooper AM (Deputy Chair): Who does not have a problem with barbecues anywhere in Wandsworth at least.

Obviously in some areas the Mayor's initiatives around air quality and climate change complement each other. However, there are one or two things where they do seem to be running against each other. I just wondered if you could set out - probably you, Elliot - how we can make sure we are prioritising measures that are going to improve London's air quality while also meeting our goals around climate change, particularly as we have just agreed in the Assembly and the Mayor has also supported the concept of a climate emergency?

Elliot Treharne (Head of Air Quality, Greater London Authority): Absolutely. It is very important and as I set out earlier, there has been a huge emphasis on an integrated approach to make sure that we maximise the benefits both in terms of tackling air pollution and minimising any potential disbenefits and, likewise, maximise the improvements you are going to get in terms of CO₂ and minimise the risk of the policies interacting in a negative way. That integrated Strategy has been the cornerstone of our approach under this mayoralty. Shirley Rodrigues, the Deputy Mayor for Environment and Energy, has really championed and pushed that. She is very good at holistic thinking, thinking about how things work together, and you can really see that come across in terms of the London Environment Strategy.

To give you an example on the transport side which might be helpful, one of the things we have been very keen to do, as we have been tackling vehicle emissions, is not just to generate a very simple run-back so that as we discourage emissions from older diesel vehicles we just get people purchasing a lot of petrol vehicles, which might have a disbenefit in terms of their CO₂ emissions. Therefore, the way we are doing that is we have set out in the Strategy that we want a phased approach where we phase out over time the use of all fossil fuels in vehicles. That would be both diesel and petrol, and this is obviously in the context of the 80% mode shift target that we are talking on.

Consequently, for those vehicles that then remain, the goal is to switch them to zero emission technology, which will have both CO₂ and air quality benefits. Then of course in the context of the wider [Environment] Strategy, which is about decarbonising the energy grid as a whole, it will actually deliver significant benefits against both. That is one practical example about how, in the London Environment Strategy, we have tried to integrate our thinking and ensure we just did not have a very simple approach of "diesel bad but if you want to use petrol that is fine". It is being much more nuanced and integrated.

Leonie Cooper AM (Deputy Chair): However, the electricity grid at the moment is not decarbonised, therefore at the moment unless you are charging up your vehicle at home and you have solar panels all over your roof and a number of other renewables, the chances are that electric vehicles are going to be using power that is coming from sources that will contribute to climate change. Obviously there has been a push in some areas towards combined heat and power and heat networks associated with energy from waste plants. Energy from waste plants create their own set of emissions and so on and so forth. We have just been discussing

wood burning stoves. Some people obviously see wood burners as being great, although if they are then also producing PM because people are burning lots of wet wood, that then goes against that.

I am just wondering how effectively we can make sure that we are getting those priorities set. I think there are some tensions.

Elliot Treharne (Head of Air Quality, Greater London Authority): Yes. I think, having worked on things like the London Plan in the past where there had not been that same integrated approach that Shirley [Rodrigues, Deputy Mayor for Environment and Energy] has insisted on and has kind of made sure happened with this London Branch Strategy and also the London Plan, those potential issues have been recognised and have been addressed head on. I might invite Stephen just to explain a little bit more about an example of how we have done that with CHP maybe.

Stephen Inch (Senior Policy and Programme Officer, Air Quality, Greater London Authority): Yes. As I am sure you can imagine, this was an area of a great deal of discussion in the development of both the London Environment Strategy and in the London Plan, which obviously would implement the Strategy in terms of new developments of CHP. One thing I would like to draw your attention to, to begin with, is the SI3 policy in the London Plan, which is energy infrastructure; very exciting stuff. That is really the policy that drives how we want to see heat networks develop in the future and there have been some minor suggested changes to that policy since the draft new London Plan was published, particularly in the language around CHP and where we see the role for CHP in the future in London.

I think it is a lot clearer but essentially the overall thrust of it is that our preference would be for low temperature heat networks which can then use renewable sources and heat pumps and all those sorts of clever devices, or waste industrial heat and use those without the need to put an engine in place in the network itself. We have left some space for what we refer to as “inherently low emission CHP”. The concept behind this is that as some heat networks develop they may go through a phase where they need to have some sort of active heat generation, rather than relying on these renewable sources because there are scale issues, which I do not fully understand, but my managing colleague could explain it to you in exhaustive detail.

Ultimately we would like to see these things working on heat pumps. The two ways of managing that is to make sure that anything that does come forward of a sufficient scale, we think we want it enough to allow some form of on-site heat generation. We would want to see a transition plan as part of the initial set-up so we would know when it would finish and how it would finish and how it would progress on to renewable sources. Also, we are very clear that these would be considered on a case-by-case basis, which is a big difference from the previous London Plan where there was blanket support for the use of CHP.

The other thing I would draw your attention to is that we are talking about the air quality and climate change impacts. We are quite -- well, not “comfortable”, but we are aware of the fact that gas engines in particular are quite a lot more polluting than equivalent boilers, although other technology such as turbines are less so. There has been a lot of change in how the carbon emissions are understood from these forms of CHP and the overall understanding is that as the grid continues to decarbonise, albeit not fully decarbonised, the relative carbon benefits of having onsite CHP generation are starting to drop away. Therefore, you get less reduction in your net carbon emissions from your building by doing that. Accordingly, there is a good argument on both sides of moving away from combustion as our source of heat.

Leonie Cooper AM (Deputy Chair): That is talking quite a lot about new buildings and dealing with how we move into the future once the London Plan --and we are down in this room because the Examination in Public of the London Plan has just started in the Chamber. What about existing buildings? Professor Williams, earlier

on, was talking about boilers and Assembly Member Bailey was starting on that too. One of the ways to reduce emissions from boilers is to make them work less hard by insulating the building in which they are situated, and that also sits very well together with our climate targets and our Zero Carbon City target because the leakier the buildings are the more difficult they are to heat and the more likely you are to use more energy to do that. At the moment, obviously, most of the energy that is being used is going to be associated both with emissions that might impact on air quality and also emissions that will impact on climate change.

Consequently, I am asking really about things like our Fuel Poverty Action Plan, what we are going to do about it and more installation programmes and also progress, I think, on our Solar Action Plan and how does that fit together with reducing some of those non-road emissions.

Stephen Inch (Senior Policy and Programme Officer, Air Quality, Greater London Authority): I think the short answer is very well. For the longer answer I think I would either need to write back to you or refer to some of our colleagues who have worked directly on that.

Leonie Cooper AM (Deputy Chair): Just finally, we have talked a bit about the Government's newly launched Clean Air Strategy that came out on Monday, which did mention wood burning stoves and not using wet wood and banning that sort of thing. I do not seem to remember any mention of diesel scrappage, which we have not really talked about today. Congratulations to the Mayor for the £23 million fund. Would you have hoped to have seen diesel scrappage coming out in Monday's strategy from the Government and is that something that we have got any chance of persuading them towards a national diesel scrappage plan?

Elliot Treharne (Head of Air Quality, Greater London Authority): I think we were disappointed that that was not set out clearly in the Government's Clean Air Strategy. As you know, one of the main criticisms previously of the draft Strategy was it did not include much on road transport. While it is good that they are starting to think about the impact of PM2.5, I think a lot of stakeholders have highlighted that NO₂ compliance is not yet done; we have a long way to go. It is a difficult journey and it is important that we help businesses and low-income families and charities, who have bought vehicles in good faith as a result of Government advice to switch, now that we better understand or publicly it is better understood the impact of those vehicles on air pollution, that help is made available to meet new standards like those put in place by the ULEZ.

This is a national issue. We are not the only city looking at these kinds of schemes and we think it is very important that there is national funding. Even if that national funding is unused locally, that there is national funding to try to minimise, as far as possible, some of the potential impacts of these schemes. I think that this goes more widely to a point that you raised, Leonie [Cooper AM], earlier, that I think the Mayor is disappointed that there was not more in terms of help for London. London has probably the biggest air quality challenge in the country. As you mentioned we have been excluded from the Clean Air Fund which we do find very hard to understand why that is, given the scale of the ambition, the speed that we are going at, the size of things like the Ultra-Low Emission Zone that we are doing. It is bigger and quicker than anywhere else in the country and therefore the impacts are potentially larger and some of that funding should be coming to London.

Accordingly, I know that the Mayor will continue to discuss this with [Government] Ministers. It is a huge priority and we will see where we end up.

Leonie Cooper AM (Deputy Chair): Thank you, yes.

Professor Martin Williams (Air Quality Research, King's College London): I was going to make some more sort of general remarks, however if you have got specific questions then do not let me cut across you.

Leonie Cooper AM (Deputy Chair): No, I was --

Professor Martin Williams (Air Quality Research, King's College London): Before I do make any remarks, just on the diesel scrappage scheme, I was not particularly surprised not to see it there because there are conflicting views on the effectiveness of diesel scrappage schemes. At the time when I was in Defra when, if you remember, the industry was having trouble selling cars back in, I do not know, the mid-2000s we looked at potential scrappage schemes then and while they were effective at turning over the fleet to help the industry sell new cars they did not have much of an effect on air quality.

Elliot Treharne (Head of Air Quality, Greater London Authority): If I may, just on that, having had this discussion extensively with Defra, what the Mayor has been proposing is very different to just a general national scrappage scheme.

Professor Martin Williams (Air Quality Research, King's College London): I was about to say that a focused scrappage scheme could be a lot more effective and that is a tricky thing for a national Government to do --

Elliot Treharne (Head of Air Quality, Greater London Authority): What we can bring in -- absolutely. Yes.

Professor Martin Williams (Air Quality Research, King's College London): Anyway, that aside. The general point I was going to make was how welcome it is and what an excellent move it is that the GLA and the Mayor can actually integrate climate and air quality policies in London. Would that it were replicated at national and international level? It is a very welcome thing that the GLA can do and it is good to see. The problem is that their hands are slightly tied by national policies and you are having to catch up in a way. Things like the renewable heat initiative, for example, that has been actively encouraging the use of wood burning amongst other things, you know, and we are trying to sort of rein back from that. However, it is a really excellent thing, I think, that you can integrate at this level.

Just to come back to the Clean Air Strategy as an example, there is a phrase in the section that deals with climate change and air quality where - it is not verbatim so do not let me try to quote the precise words - it is a phrase to the effect that the Government will talk to various departments involved to articulate the trade-offs between climate change policy and air quality policy. Now, my personal view is that if I were writing that I would have preferred to have seen "will articulate and minimise the trade-offs." This is the sort of thing that can be done at this level, at the GLA, and that is precisely what Elliot has been talking about doing which is a really welcome thing.

However, both nationally and internationally, and the UK is not alone in this, most other countries around the world and international bodies like the EU and the UN Climate Change Convention do not really integrate climate and air quality policies. That is really a big major failing, I think, because one of the big ways forward to improve public health and air quality is to integrate climate and air quality policies. You mentioned the electrical vehicle needing not zero carbon emissions. Well, we are moving that way, you know, the UK energy infrastructure now has made a huge leap forward in the last five or ten years and renewables now make up a big slice of the generating capacity, thus that integration of climate and air quality policies is really crucial and it is really good to see it happening here.

Leonie Cooper AM (Deputy Chair): Much done, much to do and certainly some of us choose tariffs from our energy providers or choose energy providers that only source from renewables. I do that myself as well as having a solar array of my own. There has been a lot of work done. I think “articulate, minimise and remove, as far as possible”, would be the full phrase I would like to see.

Professor Martin Williams (Air Quality Research, King’s College London): Yes, right. We should have drafted it!

Leonie Cooper AM (Deputy Chair): I think there are a number of cities around the country, obviously smaller than London, small places like Manchester and all that kind of stuff, I think they are joining with us and moving ahead as well. UK100, I think, has been trying to co-ordinate work here and the C40 Cities Group internationally has been doing that. Even in America, where I believe the President [Donald Trump] appears to be a climate change denier, there are many cities across America that are still very strongly committed to tackling climate change. Air quality still seems to be further down the list of things to do. Thank you very much that is very welcome.

Caroline Russell AM (Chair): Well, that brings us to the end of our session this morning. I want to thank you all for the all the information you have given us. Clearly, we are just at the beginning of getting to a point where every Londoner can trust the air they breathe and there is clearly some very serious work to be done on the Underground and it would be very good to understand more what those issues are when we get further information from TfL.

Subject: Summary List of Actions

Report to: Environment Committee

Report of: Executive Director of Secretariat

Date: 28 February 2019

This report will be considered in public.

1. Summary

- 1.1 This report sets out details of completed and ongoing actions arising from previous meetings of the Environment Committee.

2. Recommendation

- 2.1 **That the Committee notes the completed and outstanding actions arising from its previous meetings.**

Actions Arising from the Meeting on 16 January 2019

Minute Number	Topic	Status	For action by
6.	<p>Air Pollution in London</p> <p>During the course of the discussion, Members requested the following additional information:</p> <ul style="list-style-type: none"> The number of schools which have applied for the School Air Quality Audit and the number of successful applications the Mayor's campaign for green infrastructure at schools have received; How the occupational exposure limits for tube dust set by the Health and Safety Executive and Institute of Occupational Medicine relate to ambient air limits in UK law and the WHO guidelines and the Mayor's targets; An explanation of issues around schools air quality measures depending on the use of GLA Group land, including details relating to St Stephen's Church of England Primary School, Twickenham; and An update on the progress of the Fuel Poverty Action Plan and the Solar Action Plan, including how they work together to reduce non-road emissions, also details of the planned tightening of the low emission zone for non-road mobile machinery to 2040. 	Ongoing. Information requested on 31 January 2019.	<p>Elliot Treharne, Head of Air Quality, Greater London Authority (GLA)</p> <p>Stephen Inch, Senior Policy and Programme Officer (Air Quality), GLA</p> <p><i>Continued...</i></p>

	That authority be delegated to the Chair, in consultation with party Group Lead Members, to agree any output arising from the discussion.	Completed – See Agenda Item 5.	Scrutiny Manager
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Actions Arising from the Meeting on 6 December 2018

Minute Number	Topic	Status	For action by
5.	<p>Cold and Damp Homes in London</p> <p>During the course of the discussion, Members requested the following additional information:</p> <ul style="list-style-type: none"> • An explanation for why the amount of money allocated for energy and carbon reduction programmes in 2020/21, 2021/22 and 2022/23 is reducing; and • Examples of Housing Associations who want to improve homes but are discouraged by the regulator. 	<p>In progress. Chased on 31 January 2019.</p> <p>Completed – Attached as Appendix 2.</p>	<p>Programme Manager, Energy, RE:NEW, GLA</p> <p>Energy and Sustainability Consultant and Chair, BSI Retrofit Standards Task Group</p>

Actions Arising from the Meeting on 8 November 2018

Minute Number	Topic	Status	For action by
6.	<p>Carbon Emissions from Aviation</p> <p>During the course of the discussion, Members requested the following additional information:</p> <ul style="list-style-type: none"> • Confirm whether planes stack above London City Airport in order to prepare to land prior to 6am; • The outcome of the study on noise profiles generated by arrivals in London City Airport, via the Dulwich case study; • Written clarification on whether the demand for flights was greater for arrivals or departures between 6.30am to 7.30am; • A copy of the statutory consultation on expansion report; • Details of measures being taken to make Heathrow Airport more accessible by public transport; and • The targets for the number of people cycling regularly to Heathrow Airport. <p>That authority be delegated to the Chair, in consultation with party Group Lead Members, to agree any output arising from the discussion.</p>	<p>Completed – Attached as Appendix 1.</p> <p>In progress. Chased on 7 February 2019.</p> <p>Completed – See Agenda Item 5.</p>	<p>Director of Corporate Affairs, London City Airport</p> <p>Head of Emissions Strategy, Heathrow Airport</p> <p>Scrutiny Manager</p>

Actions Arising from the Meeting on 20 September 2018

Minute Number	Topic	Status	For action by
7.	<p>Embodied Carbon in Buildings</p> <p>That authority be delegated to the Chair, in consultation with party Group Lead Members, to agree any output arising from the discussion.</p>	<p>Completed – See Agenda Item 5.</p>	<p>Scrutiny Manager</p>

Actions Arising from the Meeting on 23 May 2018

Minute Number	Topic	Status	For action by
9.	<p>Plastics - Nappies and Period Products</p> <p>During the course of the discussion members requested the following:</p> <ul style="list-style-type: none"> • Further clarity on how reusable nappies are 40% better for the environment, including whether there is a clear comparison with disposable nappies; • Further information on when the plastics in disposable products are burned in incinerators what is the environmental impact from burning those plastics, whether if there was less plastic going through energy from waste plants would they run more efficiently and what the reusable nappy laundry market in north London looks like; and • What the advertising budget is for Absorbent and Hygienic Product Manufacturers Association's products. 	<p>In progress. Chased on 7 February 2019.</p> <p>In progress. Chased on 7 February 2019.</p> <p>In progress. Chased on 7 February 2019.</p>	<p>Real Nappies for London</p> <p>North London Waste Authority</p> <p>Absorbent Hygiene Products Manufacturers Association</p>

Actions Arising from the Meeting on 15 March 2018

Minute Number	Topic	Status	
4.	<p>Mid-term Review</p> <p>During the course of the discussion, members requested the following information:</p> <ul style="list-style-type: none"> • Details about the decentralised energy from waste heat projects that the Mayor was supporting, once those projects were in contract; and • A pan-London aircraft noise map once it is available. 	Completed – Attached as Appendix 4	Deputy Mayor for Environment and Energy

Actions Arising from the Meeting on 21 February 2018

Minute Number	Topic	Status	
5.	<p>Water Issues</p> <p>During the course of the discussion, Members requested the following additional information:</p> <ul style="list-style-type: none"> • A list by boroughs of blockages of fats, oils and greases in London; • Thames Water's estimate of London's current population and the process used to generate the figure; and • Further information on the assessed household charge offered by Thames Water for residents that are unable to have a water meter fit in their property. 	In progress. Chased on 31 January 2019.	The Director of External Affairs and Sustainability, Thames Water

Actions Arising from the Meeting on 17 January 2018

Minute Number	Topic	Status	For action by
6.	<p>Draft London Plan</p> <p>During the course of the discussion, Members requested the following additional information:</p> <ul style="list-style-type: none"> • A map of London to show where people are more than 800 metres away from a town centre; • The relationship between the biodiversity action plans, the supplementary planning guidance and the overall strategy in the London Plan; and • Further details on whether Sections 2.18(C) and 1.18(D) of the old London Plan are fully covered and protected by new policy areas: G6(B)(2), G3(C) and G4(B) of the London Plan. 	Completed – Appendix 3. In progress. Chased on 31 January 2019.	Deputy Mayor for Planning, Regeneration and Skills

3. Legal Implications

3.1 The Committee has the power to do what is recommended in this report.

4. Financial Implications

4.1 There are no financial implications to the Greater London Authority arising from this report.

List of appendices to this report:

Appendix 1 – London City Airport letter, dated 11 January 2019

Appendix 2 – Response from Energy and Sustainability Consultant and Chair, BSI Retrofit Standards Task Group

Appendix 3 – London Map

Appendix 4 – Letter from Shirley Rodrigues, dated 1 June 2018

Local Government (Access to Information) Act 1985

List of Background Papers: None

Contact Officer:	Clare Bryant, Committee Officer
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Ms Caroline Russell AM
Chair of the Environment Committee
City Hall, The Queen's Walk
London
SE1 2AA

Appendix 1

Friday 11th January 2019

Dear Ms Russell,

Environment Committee – 8 November 2018

I am writing in response to your letter dated 26th November 2018 following London City Airport's appearance at the Environment Committee.

I would like to apologise for the delay in my response to the request for further information, which I can now provide you.

Confirm whether planes stack above London City Airport in order to prepare to land prior to 6am.

Stacking of aircraft is a rare occurrence and London City Airport works closely with ACL and the airlines to further minimise the occurrence of any stacking of planes. Around 1% of arriving aircraft for the 06.00-07.00 slot are held in stacks. If aircraft are held, they are normally at a minimum altitude of at least 9,000ft and positioned over the sea, therefore, the noise impacts on people on the ground is insignificant. We have checked our data record for Q3 2018 and we can confirm that there has been no stacking of aircraft prior to 6 am.

Provide the outcome of the study on noise profiles generated by arrivals in London City Airport, via the Dulwich case study.

Bickerdike Allen Partners LLP (BAP) were commissioned by London City Airport to carry out a survey to monitor aircraft noise in East Dulwich to measure the noise level under the flight path of London City Airport arrivals and to see the effect of aircraft using London Heathrow Airport.

The figures demonstrated that the noise recorded at the property were significantly below London City Airport's sound insulation First Tier scheme eligibility.

When applied to a typical summer day of operations, the combined noise exposure level is estimated to be 47 dB LAeq, 16h.

On rare occasions, when runway 09 at London City Airport and runway 27 at London Heathrow are both operating, the worst-case situation for combined noise exposure level is 51 dB LAeq, 16.

That being said, London City Airport will continue to work with communities to identify and monitor locations of particular concern.

Provide written clarification on whether the demand for flights was greater for arrivals or departures between 6.30am to 7.30am.

As part of our planning permission from the London Borough of Newham, we have stringent measures in place that dictate operations at the airport and, in particular, air traffic movements.

Between 6.30 am and 6.59 am the maximum number of air traffic movements cannot exceed six, and in any given hour it cannot exceed 45.

During Q3 and Q4 in 2018, the average air traffic movements between 6.30am and 7.30 am were 8 arrivals and 10 departures.

I would like to thank you for taking the time to write to me requesting further clarification and I hope that my response is helpful.

If you have any questions, please contact me directly on 020 7646 0041 or by email liam.mckay@londoncityairport.com, and if you or the committee members would like to learn more about operations and commitment to sustainability, I would be delighted to host you for a tour of the airport.

Yours sincerely,



Liam McKay
Director of Corporate Affairs

Outstanding action from Energy and Sustainability Consultant and Chair, BSI Retrofit Standards Task Group

Request for information:

During the course of the meeting you agreed to provide examples of Housing Associations who want to improve homes but are discouraged by the regulator.

Response

You have asked me two questions - about the regulation of housing organisations' borrowing for retrofit, and about MVHR.

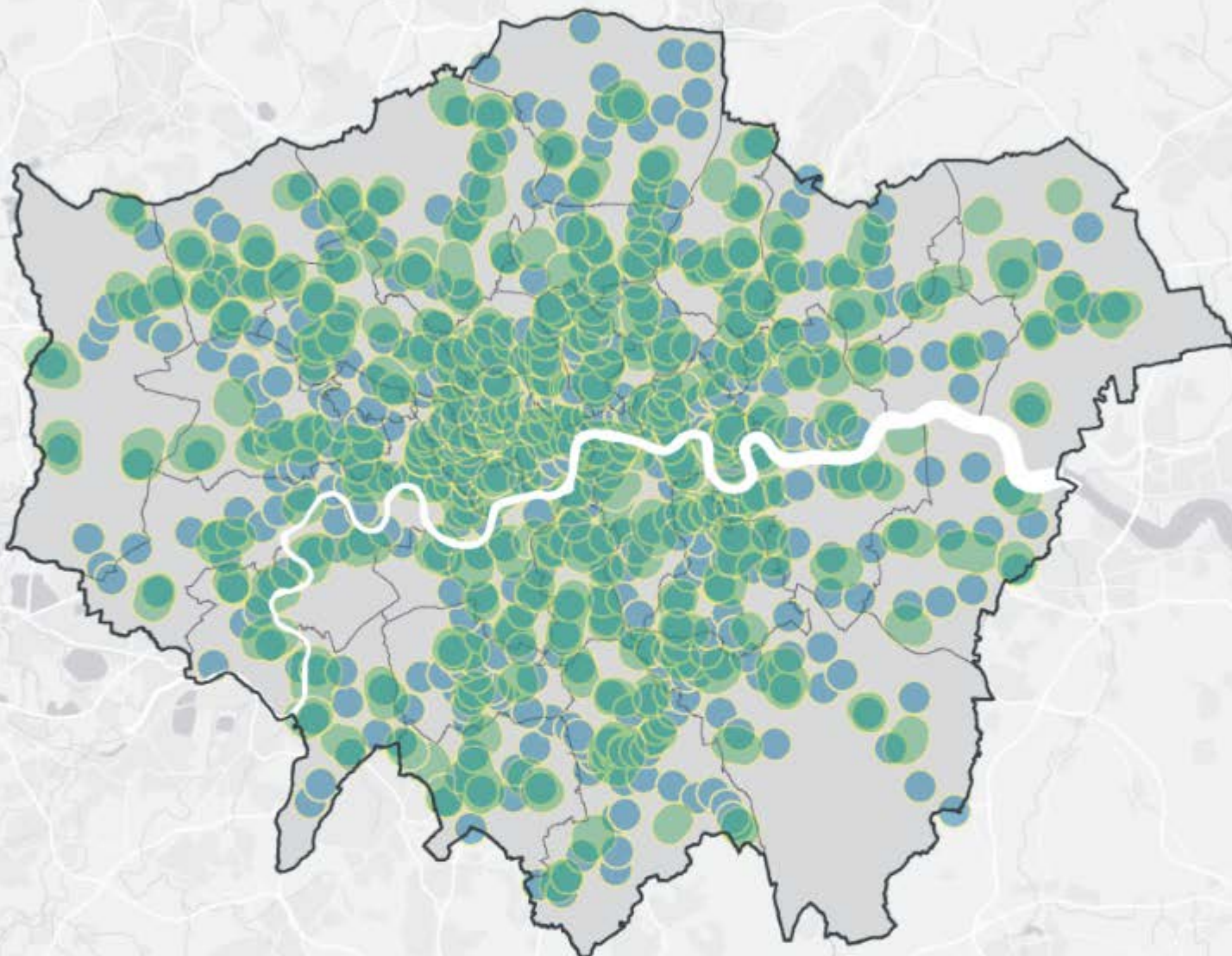
On the regulation issue, my point was that the Regulator of Social Housing, in succession to the Homes and Communities Agency, reportedly discourages social housing organisations from borrowing to fund retrofit of their housing stocks, whilst encouraging them to borrow for new-build developments (explicitly because building new homes is a Government priority). I would go further than this, and suggest that the Regulator also encourages social housing organisations to manage their stocks in an inappropriate 'commercial' manner, for example by valuing their housing assets and disposing of homes with low value. A consequence of this is that homes with low net present value (NPV) tend either to be redeveloped (which is fine) or to be disposed of to other organisations (e.g. private landlords) who are less able to invest in them or to address fuel poverty issues. The NPV assessment rarely takes into account occupants' costs (e.g. fuel), which are external to the calculation. I have no documentary evidence that the Regulator promotes these approaches, but several housing association clients have told me about them; I recall one asset manager suggesting that borrowing to improve existing homes is "frowned upon" by regulators "so we don't do it". It is also abundantly clear when working with social housing associations that they are 'development rich and asset management poor'.

We did try using MVHR in Thamesmead, unsuccessfully, in the run-up to the Condensation, Damp and Mould programme. There were several problems, which I think are generic to the use of MVHR in domestic retrofit. First, too many ducts - the ductwork is intrusive, takes up space, and is difficult to route discreetly within the insulated building envelope. In Thamesmead, the reinforced concrete cladding panels and internal partitions containing asbestos could not be penetrated for ductwork and made routing the ducts almost impossible, so we chose demand-controlled MEV (which is equally efficient but has half as many ducts). Second, maintenance - Peabody did not have the resources to visit homes every six months to change the MVHR filters, and occupants could not be relied upon to do it themselves. Third, effectiveness - the MVHR installations we tried did not solve the CDM problem, and at least one was switched off by the occupants, who considered it too noisy. These are all common problems with MVHR in retrofit, because MVHR is a new-build technology that does not fit easily into existing homes, and especially not into small ones. I think there is also a problem that amongst consultants some Passive House / EnerPHit 'zealots' tend to simply believe in MVHR as a component of the standard, rather than thinking about what type of ventilation is appropriate to a project. We are trying to address this in the Retrofit Coordinator training programme, which includes an entire module on ventilation.

I hope this answers your questions.

Sent via email on 23 January 2019

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Proximity to Town Centres
Walking distance

- 800m distance to a London Underground Station
- 800m distance to a Town Centre

Source: Transport for London (TfL)

Contains OS data © Crown copyright and database right (2017)

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Caroline Russell AM
Chair of the Environment Committee
Greater London Authority
City Hall
The Queen's Walk
More London
London
SE1 2AA

Date: 1st June 2018

Dear Caroline,

Re: London Assembly's Environment Committee Mid-term Review Meeting – 15th March 2018

Firstly, let me congratulate you on becoming Chair of the Environment Committee. I look forward to continue working with you and the Committee to make London cleaner, greener and ready for the future .

I am writing in response to Leonie's letter dated 19th April 2018 thanking my officers and myself for attending the London Assembly's Environment Committee mid-term review on 15th March 2018. As stated in Leonie's letter, I agreed to provide the following information:

1. Details about the decentralised energy waste heat projects that the Mayor was supporting, once those projects were in contract; and
2. A pan-London aircraft noise map once it was available.

Leonie also asked for any additional comments, and I have included some clarifications to the transcript. I have set out the requested information and transcription clarifications below.

1. Decentralised Energy Waste Heat Projects

The Mayor's Decentralised Energy Enabling Project (DEEP) is supporting a number of projects using waste/environmental heat. There are six DEEP projects that we have so far agreed to provide development support, and of those, the following involve waste or environmental (air, ground or water source) heat:

- TfL Forest Road, LB Waltham Forest – a feasibility study into utilising heat recovered from a tube tunnel cooling system and electricity substation to heat buildings by means of a district heating network.
- North Acton, OPDC/LB Ealing – study work to determine the feasibility of an area-wide heat network. The results identified a development cluster that has the potential to be supplied by an aquifer borehole.

Outside DEEP, we continue to support Islington's Bunhill Phase II that recovers waste heat from the Northern Line.

2. Pan-London Aircraft Noise Map

During the Committee meeting you asked whether there was a pan-London aircraft noise map. I stated that we were waiting for the long overdue Department for Environment, Food and Rural Affairs (DEFRA) noise mapping and that I would share the map with the Committee when it becomes available.

I should clarify that DEFRA is responsible for creating noise maps for most of the major noise sources, such as road and rail noise. The exception is airports, where the responsibility lies with the relevant airport operators.

Under the Environmental Noise Directive, major airports with over 50,000 plane movements annually are required to carry out noise mapping. All six of London's main airports produce noise action plans with noise contour mapping. These are produced annually and are publicly available on each airport's website.

With regard to helicopters, the current regulatory regime places very limited restrictions on the number of helicopters and the routes they can fly. As a result, it would be incredibly difficult to properly map the noise impact in the same way that it is done for airports.

As noise maps for major airports are readily available, the GLA does not intend to create a pan-London aviation noise map.

3. Transcript Clarifications

If you could please arrange for the following footnote and text to be included in the transcript answers to clarify the context:

- a) Page 7, the question from Caroline Russell AM (Deputy Chair): Can you flesh out a bit more the detail on your progress on the procurement of the energy supply company? In my answer '*...60 or so interested parties coming along or expressing interest. Then maybe 10 to 20...*' could you please add a footnote that '*48 attended the supplier day and 12 responded to the questionnaire*'.
- b) Page 13, the question from Joanne McCartney AM 'What reaction have you had from the Government about a Diesel Scrappage Scheme?' In my answer after '*...our own very targeted scrappage fund...*' please add '*...proposal for...*'.

- c) Page 14, the question from Joanne McCartney AM 'You can talk about restrictions, but enforcement is extremely difficult, isn't it?'. In my answer after '*... one of the reasons why we want a... please add '...new...'*'.

I trust the above provides the information you requested. Please do not hesitate to contact me should you require any further clarifications.

Yours sincerely

pp

A handwritten signature in black ink, appearing to be 'SR', with a large loop at the end.

Shirley Rodrigues
Deputy Mayor for Energy and Environment

Subject: Action Taken Under Delegated Authority

Report to: Environment Committee

Report of: Executive Director of Secretariat

Date: 28 February 2019

This report will be considered in public

1. Summary

- 1.1 This report outlines recent actions taken by the Chair under delegated authority, in consultation with party Group Lead Members, in accordance with the delegations granted by the Environment Committee.

2. Recommendations

- 2.1 **That the Committee notes the recent action taken by the Chair of the Committee under delegated authority, in consultation with the party Group Lead Members, namely to agree:**
- a) **An output for the 8 November 2018 meeting's discussion on aviation;**
 - b) **A response to the Government's consultation on proposals to ban the distribution and/or sale of plastic straws, plastic - stemmed cotton buds and plastic drink stirrers in England;**
 - c) **An output from the 20 September 2018 meeting's discussion on embodied carbon in buildings; and**
 - d) **An output from the 16 January 2019 meeting's discussion on air pollution in London.**

3. Background

Aviation

- 3.1 At its meeting on 8 November 2018, the Committee resolved:

That authority be delegated to the Chair, in consultation with Party Group Members, to agree any output arising from the discussion. [Aviation]

- 3.2 The Committee's report, *Aircraft noise*, was published on 23 January 2019.

Government's consultation on single use plastic

3.3 At its meeting on 23 May 2018, the Committee resolved:

That the following standing delegation of authority to the Chairman of the Committee, as agreed by the London Assembly at its Annual Meeting on 10 May 2018 and as set out below, be noted: To respond on the Committee's behalf, following consultation with the lead Members of the party Groups on the committee or sub-committee, where it is consulted on issues by organisations and there is insufficient time to consider the consultation at a committee meeting.

3.4 On 3 December 2018, the Committee responded to the Government's consultation on single use plastic: banning the distribution and/or sale of plastic straws, stirrers and plastic-stemmed cotton buds in England.

Embodied Carbon

3.5 At its meeting on 20 September 2018, the Committee resolved:

That authority be delegated to the Chair, in consultation with Party Group Members, to agree any output arising from the discussion. [Embodied Carbon]

3.6 A letter was sent to the Mayor on 30 January 2019.

Air pollution in London

3.7 At its meeting on 16 January 2019, the Committee resolved:

That authority be delegated to the Chair, in consultation with Party Group Members, to agree any output arising from the discussion. [Air pollution in London]

3.6 A letter was sent on 13 February 2019 to Transport for London.

4. Issues for Consideration

4.1 A copy of the report, *Aircraft Noise*, is attached as **Appendix 1**.

4.2 The report makes the following calls for action:

- The Independent Commission on Civil Aviation Noise should regulate noise disturbance more stringently, using lower thresholds for disturbance (taking into account WHO guidelines and the need for residents to keep windows open) and mapping the combined effect of all London's airports, especially Heathrow and City. The Mayor should support this work;
- Air traffic using Heathrow and City airports should not increase, and the proposed third runway at Heathrow should not go ahead;
- Flight paths should be rotated to give respite for those living under concentrated flight paths. Flight paths should be designed to minimise noise impacts: stacking, low-level overflying, and overlapping flight paths should be minimised;
- There should be no night flights, and limits on early morning flights should be retained, and preferably strengthened; and

- The severe levels of noise disruption now being experienced by some of London’s residents are not acceptable, and urgent, decisive action is needed across the board to alleviate it.

4.3 The Committee is recommended to note the report.

4.4 A copy of the Committee’s response to the Government consultation on single use plastic is attached as **Appendix 2**.

4.5 A copy of the Committee’s letter to the Mayor on embodied carbon is attached as **Appendix 3**.

4.6 A copy of the Committee’s letter regarding tube dust sent to the Director of Health, Safety and Environment at Transport for London is attached as **Appendix 4**.

4.7 The Committee is recommended to note the above actions taken under delegated authority.

5. Legal Implications

5.1 The Committee has the power to do what is recommended in this report.

6. Financial Implications

6.1 There are no financial implications to the Greater London Authority arising from this report.

List of appendices to this report:

Appendix 1 – *Aircraft Noise* report

Appendix 2 – Consultation response, dated 3 December 2018

Appendix 3 – Letter to the Mayor, dated 30 January 2019

Appendix 4 - Letter to the Director of Health, Safety and Environment at Transport for London

Local Government (Access to Information) Act 1985

List of Background Papers:

Member Delegated Authority Forms: 1017 [Aviation], 1039 [Embodied Carbon], 1038 [Government Response] 1037 [Air pollution in London]

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Email: clare.bryant@london.gov.uk

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Aircraft noise

January 2019

The London Assembly Environment Committee is a cross-party group of politicians elected by Londoners, representing their interests to the Mayor and other critical stakeholders. The committee has recently heard from residents and community groups about aircraft noise across widespread areas of London, particularly in south-east, north-east and south-west London. We have investigated the issues raised and taken evidence from London airports.

Paragraph
What we have learnt is deeply worrying. Disturbance to daily activities, including working, learning and relaxation, and to sleep, can have severe effects on people's health and wellbeing. Aircraft noise remains a serious issue and will inevitably be a greater problem if airports increase their traffic. We have identified the following key actions that London and its airports need to undertake to reduce the far too high levels of disturbance to daily lives:

We welcome your thoughts and comments on how aircraft noise over London and its impact on Londoners' wellbeing can be minimised.

You can get in touch with us at
EnvironmentCommittee@london.gov.uk

Calls for action:

- **The Independent Commission on Civil Aviation Noise should regulate noise disturbance more stringently, using lower thresholds for disturbance (taking into account WHO guidelines and the need for residents to keep windows open) and mapping the combined effect of all London's airports, especially Heathrow and City. The Mayor should support this work.**
- **Air traffic using Heathrow and City airports should not increase, and the proposed third runway at Heathrow should not go ahead.**
- **Flight paths should be rotated to give respite for those living under concentrated flight paths. Flight paths should be designed to minimise noise impacts: stacking, low-level overflying, and overlapping flight paths should be minimised.**
- **There should be no night flights, and limits on early morning flights should be retained, and preferably strengthened.**
- **The severe levels of noise disruption now being experienced by some of London's residents are not acceptable, and urgent, decisive action is needed across the board to alleviate it.**



Aircraft noise

January 2019

Concentrated flight paths

The air traffic control service, NATS, is continuing to review London's airspace management, and must urgently address a number of issues.

The recent adoption of more precise air traffic control (performance based navigation) has had the effect of concentrating flights arriving at City Airport into narrower corridors, by reducing the amount of variability from the flight path centre. **This has considerably reduced direct overflying for a number of people who were on the margins of the less precise flight paths, but it has greatly increased it for those who are under the current, narrower paths.**ⁱ

According to figures from the Civil Aviation Authority, there are still 331,000 people overflown by flights arriving at City, and 416,300 overflown by departures, all under the altitude of 4,000 feet (about 1,200m).¹ Unlike with Heathrow flight paths, there is no mechanism for predictable respite for the communities affected. City operates six monitors at fixed sites, mainly close to the airport, plus a further mobile monitor that can be moved in response to noise complaints. It therefore gets a clear picture of noise only across a small fraction of the people affected.

ⁱ The City Hall Greens find that the concentration of flight paths is clearly unfair.

London City Airport, and all airports, should provide predictable periods of respite for residents living under concentrated flight paths. City should also increase the number of noise monitors to cover its whole noise footprint.

Residents who spoke to the committee reported that the frequency of flights was much greater and the intervals between them much shorter. Residents from several areas across London, particularly in the north-east, south and west, have told committee members that they are woken up by one flight a minute, starting early in the morning.

Residents do not feel they have been consulted on these changes to flight path management. We are aware that there was a consultation exercise, but it did not succeed in involving these residents who now are affected by the change, and it does not seem to have succeeded in improving the changes to mitigate the impact on them. There was a sharp increase in noise complaints when the change was implemented.

The Mayor, among others, is concerned about the severe noise impacts of this concentration on residents affected, and has called for a fairer distribution of flight paths.

Another issue that particularly concerns residents is stacking. Aircraft arriving in London's airspace before they can be cleared to land circle around in designated paths. Where there are several aircraft flying the same circle, they do so at different altitudes to keep a safe distance

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apart, forming a stack of waiting aircraft. This circling near the destination airport can greatly increase the amount of overflying from a flight. The air traffic control service NATS told us that performance-based navigation should allow stacking to be reduced by better airspace management.

The review of flight paths should minimise stacking. It should also share the burden of overflying by establishing a range of flight paths which can be rotated between, including for City arrivals and departures. Better management of flights paths should not be taken to enable more flights.ⁱⁱ

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ⁱⁱ The Brexit Alliance Group dissents from the last sentence of this recommendation, recommending instead that any increase in flights should not adversely affect Londoners.

Reducing noise emissions

Aircraft generate noise from their engines, from friction with the air and from mechanical sources such as lowering landing gear. There is some hope that as aircraft technology and efficiency improves, and noise regulation becomes more demanding, individual aircraft will become quieter. This should be encouraged, particularly through regulatory demand for ever-reducing noise impacts. However, airlines are unlikely ever to be noiseless.

The World Health Organisation (WHO) has issued guidance showing that aircraft noise above 45 decibels on average is associated with adverse health effects.² Government guidance is much less stringent, using a disturbance threshold of 54 decibels (and it is disappointing that the recent Green Paper on aviation strategy does not remedy this).³ Compensation measures such as sound insulation are offered by the airports at higher thresholds again (57dB for City and 63dB for Heathrow).⁴

The noise level thresholds used to map the area over which aircraft noise causes disturbance to residents should be reduced, taking into account the WHO guidance.

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As we have previously recommended,⁵ Heathrow should lower its compensation threshold to match that of City, and both airports should work towards lower thresholds over time.

People need to have windows open at times and to enjoy the outdoors. Open windows are especially important on summer nights, to let the day's heat escape from homes. This is assumed in the design of building regulations to avoid overheating, which can itself disturb sleep and directly threaten health, especially for vulnerable residents. It will only become more important as London's summers are expected to get warmer in coming decades. Opening windows is also required for ventilation.

Open windows should therefore be assumed in setting reduced noise thresholds.

Even with the current thresholds, the number of people disturbed by noise would increase with any new runways or flight paths, and the amount of disturbance would increase with any increase in the frequency of flights on existing paths. Aiming to expand in the leisure market, City Airport already expects to increase its number of flights per year from around 80,000 to over 100,000 by 2021, towards its authorised limit of 110,000. The focus of these extra flights at peak

hours means that flights on existing paths would rise to 45 an hour: a 45 per cent increase.

Heathrow Airport proposes to construct a new runway which would enable it to grow from around 475,000 to around 740,000 flights a year. As well as adding to the overall level of air traffic, this would create new flight paths and affect around 200,000 more people with noise than a two-runway equivalent. Heathrow has also recently published plans to increase its flights to around 500,000 per year and change flight paths, including overflying new areas, even before any third runway.

Increases in the quantity of air traffic using Heathrow and London City airports, and inevitably overflying London's populated areas, should be opposed. Most urgently, we oppose the creation of a third runway at Heathrow.ⁱⁱⁱ



ⁱⁱⁱ The Brexit Alliance Group does not consider that this recommendation should apply to City airport, recommending instead that any increase in flights should not adversely affect Londoners.

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Flight altitude

One critical aim of the flight path review should be to increase altitudes over London. Noise experienced on the ground is greater the lower the aircraft are overhead. We heard face to face testimony from residents, and have received documentary evidence, of how low aircraft fly on approach to London City Airport—which is far lower than necessary.

Flights approaching over south London routinely descend to around 600m (around 2,000 feet) altitude at least 22km (14 miles) from London City Airport, and keep that altitude until beginning final descent around 6km from the airport. The aircraft therefore overfly densely-populated areas of London (including, in the case presented to us, Catford, Forest Hill, Herne Hill, Stockwell, Kennington and Southwark, in the boroughs of Lewisham, Southwark and Lambeth, along a track of around 16km—other City flight paths go over north-east London and Heathrow flight paths especially affect west and south London) at that altitude. Noise meter readings of up to 70–75 decibels from individual flights have been reported from outside homes in these areas. A continuous descent approach could greatly relieve the low altitude over the majority of this approach.

Flight path management must also take account of ground elevation. There are areas under current low-altitude flight paths 50 to 100m above sea level, with correspondingly reduced overflight heights. Low-level flight paths should avoid high ground.

Minimum flight path altitudes should be set and rigorously observed: we heard of flights tracked at up to 120m (400ft) lower than the normal altitude, including before 7am.

The review of flight paths should therefore maximise the use of continuous descent and ascent, aim to keep the remaining low-level approaches away from high ground, and ensure that minimum altitudes are observed.



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Overlapping flight paths

Because of the way the airports select flight paths according to weather conditions, parts of London are overflowed by aircraft from at least one of Heathrow and City airports on nearly every day of the year—up to 300 flights per day.⁶ Combined with concentrated flight paths, this can leave affected residents without respite and generates some of the worst impacts.

We have long argued that noise from London's airports must be mapped, monitored, managed and regulated together.

The Independent Commission on Civil Aviation Noise (ICCAN) should take a comprehensive view of noise across London, and lead to changes in noise management. It should also act as a single point of contact for Londoners with issues about aircraft noise, to make it easier to register views and make complaints. The Mayor should work with ICCAN to encourage and facilitate this work, and relevant boroughs should engage, perhaps via London councils, to ensure a strategic view across London.

This London-wide view of noise impacts should also inform London-wide airspace management and flight routing. London City Airport has said that the reason for its extended low-altitude approach route is that Heathrow flight paths cross above it, and so it cannot be raised without a comprehensive review of flight paths from at least these two airports.

The review of flight paths should minimise and seek to eliminate the overlap between City and Heathrow flight paths, especially where either is at a low altitude, and where the flight path from one airport is used in westerly operations and that from the other airport is used in easterly operations.

London City Airport and Heathrow are jointly mapping and monitoring overlapping flight paths and their noise effects in Dulwich, with a view to doing so in further areas later. However, they were unable to provide a specific time frame even for this initial study.

Heathrow and City should provide a timetable for their joint work to map overlapping flight paths and their noise impacts. The Mayor should encourage and facilitate this work.



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Night flights

Flights at night create the greatest health and wellbeing impacts, because they come at a time when other noise is less and disturb sleep. We have long opposed night flights.⁷

There are currently restrictions on scheduled arrivals during designated night hours, with none at City and a limited number at Heathrow.

However, scheduled arrivals begin early in the morning (6.30am for City and 6.00am for Heathrow, plus a limited number, on average around 16 a day, between 4.30 and 6.00am), and flights for these landing slots start reaching London airspace earlier. Some arrive so early they have to circle awaiting their permitted landing time.

There should be no night flights, and limits on early morning flights should be retained, and preferably strengthened, for example by extending the time of no or very limited flights to 7.00am.



Aircraft noise

January 2019

Contact

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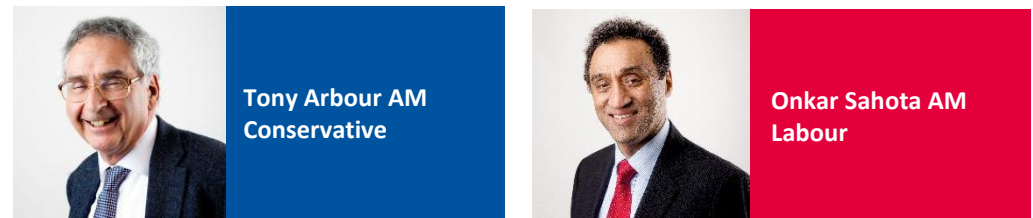
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For further information about the work of the Environment Committee, and to see our current investigations, visit [our website](#).

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About the Environment Committee



The Environment Committee examines all aspects of the capital's environment by reviewing the Mayor's strategies on air quality, water, waste, climate change and energy.

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Endnotes

¹ 331,000 people are overflown by arriving flights under 4000 feet, and 416,300 by departing flights under 4000 feet. Some people are affected by both; the CAA has not said how many this is, and therefore we can say only that the total number overflown is between 416,300 and 747,300. Source: *Report of the CAA's Post Implementation Review of the London Airspace Management Programme (LAMP) Phase 1A Module C: Airspace Change Proposal – London City Network Changes*. Available online at [http://publicapps.caa.co.uk/docs/33/CAP1692C_ModuleC_FinalV3\(P_LINKS\).pdf](http://publicapps.caa.co.uk/docs/33/CAP1692C_ModuleC_FinalV3(P_LINKS).pdf) accessed 19 December 2018

² *Environmental noise guidelines for the European region*. World Health Organisation 2018. Available online at http://www.euro.who.int/_data/assets/pdf_file/0008/383921/noise-guidelines-eng.pdf?ua=1 accessed 21 December 2018. The measure of average noise used is the Lden measure, which averages noise across the Day, Evening and Night.

³ *Aviation 2050: the future of UK aviation*, UK Government Green Paper, December 2018. Available online at <https://www.gov.uk/government/consultations/aviation-2050-the-future-of-uk-aviation> accessed 21 December 2018.

⁴ Heathrow and City airports at the Environment Committee meeting of 8 November 2018. Transcript (see pages 8-10) available online at <https://www.london.gov.uk/moderngov/mgChooseMDocPack.aspx?ID=6432&SID=17630> accessed 21 December 2018

⁵ See 2013 response to Airports Commission consultation, available online at <https://www.london.gov.uk/about-us/london-assembly/london-assembly-publications/london-assembly-night-flights-consultation> accessed 21 December 2018

⁶ *South East London: no respite from aircraft noise*, Tim Walker, 2018. Available online at <http://hacan.org.uk/wp-content/uploads/2018/08/No-aircraft-noise-respite-for-London-SE23-August-2018.pdf> accessed 21 December 2018

⁷ See 2013 response to Airports Commission consultation, available online at <https://www.london.gov.uk/about-us/london-assembly/london-assembly-publications/london-assembly-night-flights-consultation> accessed 21 December 2018

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Caroline Russell AM

Chair of the Environment Committee

3 December 2018

Rt. Hon Michael Gove MP

Secretary of State, Department for Environment, Food and Rural Affairs

(sent by email to Plastics.Consultation@defra.gsi.gov.uk)

Dear Secretary of State,

Over the last few years, the London Assembly Environment Committee has considered the challenges London faces in respect of single-use plastics. In 2017, we published a report on bottled water, which made a number of recommendations to the Mayor to reduce London's reliance on single-use plastic water bottles.¹ In the report, we suggested that the Government and the Mayor trial a deposit return scheme for plastic bottles in London.

In 2018, we published a report on unflushable single-use plastics that pollute the City's sewers, such as period and incontinence products, baby and wet wipes.² I am happy to share our learning and express our support for the proposed bans on plastic straws, cotton buds and drink stirrers. On behalf of the committee I also take this opportunity to urge the Government to be more ambitious; single-use wet wipes containing plastic should be included in this ban and more measures should be introduced to stem the flow of plastic bottles and unflushable products ending up in our rivers and oceans.

Questions 6, 10, 30, 40

The committee supports the proposals to introduce a ban on plastic straws, plastic stemmed cotton buds and plastic drink stirrers. The committee also supports the exemptions for medical and specialist purposes, until appropriate alternatives have been developed and are accessible.

Questions 23, 38, 46

While the committee supports the proposed bans, our research has shown how harmful other single-use plastic products are. In the consultation paper, cotton buds being flushed

¹ London Assembly Environment Committee, Bottled Water, April 2017 - https://www.london.gov.uk/sites/default/files/environment_committee_-_bottled_water_-_report.pdf

² London Assembly Environment Committee, Single-use plastic: unflushables, August 2018 - https://www.london.gov.uk/sites/default/files/environment_committee_-_plastic_unflushables_0.pdf

down toilets were identified as a particular disposal problem. However, this applies to many other products. No wet wipe, period or incontinence product currently on the market disintegrates fully when flushed. As with cotton buds, when these products are not picked up during the treatment process, they find their way into rivers and oceans. We heard that Thames 21 collected nearly 10,000 wet wipes from just one location over a two-year period and that the banks of the Thames are being re-shaped with a build-up of wet wipes and mud.³

Ultimately, the committee would like to see the government ban unflushable single-use wet wipes which contain plastic. However, in the absence of a ban, the government should consider mandating that the labels of unflushable products should display, in a prominent position, proper disposal information and information for the consumer about the presence of plastic in the product.

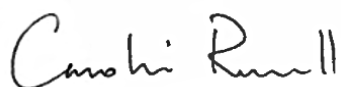
Unflushable single-use plastic products are inconsistently labelled despite industry guidance. As disposable labelling is voluntary, many unflushable products currently omit 'do not flush' symbols from their packaging, or place the symbols where they are less obvious. We also strongly suggest that there should be a statutory format to make it easier for consumers to understand and remember the message to "bin it, don't flush it". This would also increase consumer awareness of the environmental damage that their unflushable plastic products could cause when flushed down toilets.

Reusable products are gaining popularity over single-use unflushables. New reusable products such as nappies, wipes and period pants or pads are now widely available, allowing people to manage their continence and periods in an environmentally friendly way. Consumers should continue to be encouraged to use reusables in all areas of their life.

Where plastic waste is still produced, recycling must be encouraged and enabled. I would like to take this opportunity to urge the government to consider the recommendations set out in our two reports, in particular, a plastic bottle return scheme, a ban on wet wipes and a consistent labelling standard for plastic unflushables. These measures would significantly reduce the amount of plastic causing devastation to our rivers and seas.

If you would like more information or have any questions, please get in touch via environmentcommittee@london.gov.uk.

Yours sincerely



Caroline Russell AM

Chair of the Environment Committee

³ <https://www.theguardian.com/environment/2018/may/02/wet-wipes-boom-is-changing-the-shape-of-british-riverbeds>



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30 January 2019

Dear Mayor,

London has a monumental challenge to reduce its carbon emissions in response to the current climate emergency. We welcome your zero carbon city goal. However, following the IPPC report which prompted the Assembly to agree a Climate Emergency motion and your subsequent pledge, this target will need to be brought forward from 2050 and you will need additional powers and funding from Government to make it possible. If London is to meet this ambitious carbon reduction goal, while also tackling the severe housing crisis, reducing embodied carbon must be a priority.^{1 2}

Progress has been made in reducing the operational emissions from London's homes and workplaces. But the carbon emitted in extracting and processing building materials, assembling them into a building, and dealing with them after the building goes out of use can add up to as much as or more than the operational emissions over a building's lifetime.³ London will not make its contribution to the carbon reductions the world needs to make without drastically reducing these embodied carbon emissions.

Reducing embodied carbon

There are many practical steps that can be taken to reduce embodied carbon. Architects and designers can produce designs that require less material, and that use lighter and lower-carbon materials, especially recycled.⁴ Builders and suppliers can adopt energy-saving and low-waste methods. There are a host of emerging technologies that enable lower-carbon construction, from precision off-site manufacture to design for disassembly and electronic ledgers of building components and their characteristics.⁵ Materials from old buildings are a resource and recognising them as such rather than treating them as 'waste' offers great benefits.

¹ The Brexit Alliance Group supports energy efficiency, but does not accept the characterisation of the current situation as a climate emergency, does not agree with the Mayor's zero carbon city goal, and does not consider that additional powers or funding for the Mayor are required for this purpose.

² The GLA Conservatives do not believe there is a climate emergency.

³ London Assembly Environment Committee meeting, 20 September 2018, [transcript](#) page 3

⁴ Concrete in particular is responsible for significant carbon emissions, and savings can be achieved if the amount used is reduced and/or it is substituted for a lower-carbon material—see [Designed, sealed, delivered—offsite manufactured homes](#), London Assembly report August 2017 page 22

⁵ [Designed, sealed, delivered—offsite manufactured homes](#) covers offsite manufacture in detail—see in particular pages 21-23

Public policy, especially for a city like London that aspires to lead the world in sustainability, needs to enable and incentivise the adoption of low-carbon building. We would like to see the Mayor leading the transition towards low carbon homes by demonstrating the ambition needed to cut embodied carbon across the full range of mayoral policy areas.

Embodied carbon guidelines

As low-carbon measures very often save money as well, they are obvious wins. For example, designing the building to use less material and reducing waste in the construction process. As well as reducing construction waste, precision off-site manufacturing can also reduce utility bills and operational carbon.⁶ In many cases with the more established technologies, it is only lack of awareness and knowhow that means they are not already standard across the building design and construction industries. Mayoral guidance, referring where appropriate to methodologies and guidance from professional and expert bodies such as RICS, BRE, UK Green Building Council, RIBA and CIBSE, should help developers to know how to reduce carbon throughout their development processes. The Mayor should develop this guidance urgently and keep it up to date as knowledge increases. We would like to see the Mayor working towards delivering a design code for London's housing sector, to deliver the quantity of environmentally friendly homes that London needs.

The guidance should cover measures that can be taken at many stages in the supply chain. We would like to see an ambition for encouraging integrated supply chains across the construction sector, or at least collaboration between different links in this chain and those working on different stages of the construction, operation and deconstruction processes. Additionally, awareness of latest design technologies and methodologies such as BIM (building information modelling) and DFMA (design for manufacture and assembly) can help developers to judge the most time and cost-effective ways to reduce embodied carbon in their products and should be promoted, along with the latest research from expert bodies such as the BRE and UKGBC.

The guidance, and future stages of mayoral policy, should include post-use factors such as demolition and materials re-use and recycling, to ensure that these issues are acknowledged by developers who may currently have a limited exposure to their financial implications. Addressing post-use factors makes good business sense as well as being environmentally beneficial, for example by enabling developers to reduce the amount spent on new capital resources and inputs.

Embodied carbon assessments

These guidelines, and decisions on specific developments, can be improved using databases of building performance and the characteristics and implications of different materials and methods.

The policy proposed in the current Draft London Plan, of requiring referable developments to produce an embodied carbon assessment, will add to these databases in a London context. We therefore welcome the proposal as a useful measure in itself.

⁶ London Assembly Environment Committee meeting, 20 September 2018, [transcript](#) pages 2 and 18, and [Designed, sealed, delivered—offsite manufactured homes](#) pages 28-29

We, like embodied carbon experts such as the UKGBC and BRE, recommend that the embodied carbon assessment should be produced not just for the planning consent stage, but should be redone on completion of the building.⁷ Assessments at this stage will be more realistic than the initial assumptions, and will show the impact of discussions with the supply chain and other decisions made in the course of the project. This will greatly increase the quality and utility of the database. To encourage the sharing of knowledge and good practice around the industry, assessments should be made available rather than kept within the GLA. The GLA should also work with Defra and BEIS and the industry to secure the establishment of a UK-wide set of emissions factors for different materials and processes.

As detailed authenticated data from the supply chain becomes available on the components of specific buildings, this should be reported as part of assessments. By holding this data, the GLA (or another appropriate repository) can enable the efficient and sustainable use, maintenance and eventual deconstruction and re-use of the building and its materials.

Also, the GLA should ensure that the assessment requirement is applied consistently and as appropriate to major refurbishments as well as new builds. Including refurbishment in the embodied carbon database will enable informed consideration of the full merits or demerits of refurbishment compared to rebuilding.

Assessments should cover materials becoming available as part of demolition, disassembly or stripping of old buildings in the process of redevelopment or refurbishment. As well as informing carbon assessments, exchanging this information could help link sources and users of recyclable and re-usable materials.

Embodied carbon standards, requirements and incentives

The building industry can be slow to change. For most developments, industry standards and their attendant economies of scale and simplicity guide choices more than the latest innovations or highest specifications. Therefore, a policy needs to include incentives and standards to drive better methods through the market.

We were disappointed that the draft London Plan ambition for major developments to reduce their 'construction carbon' was removed following consultation.⁸ Unless this can be re-included, we recommend that a future revision of the London Plan, any associated supplementary planning guidance and/or other Mayoral policies must set standards for embodied carbon. This could be a fixed requirement like the zero-operational carbon standard, or it could be a benchmark with incentives either side, such as s106 credits for exceeding the standard and penalties for missing it. This will need to be supported by specific GLA Key Performance Indicators, with ambitious targets for reducing embodied carbon across London's new buildings over time, as there were for operational carbon emissions in the lead-up to the zero-operational carbon standard. As building types vary in their carbon characteristics, it is likely to be necessary to set different standards for different building types. The data gathered in the current phase of the policy can inform the setting of these standards and the level of incentives, if applicable.

⁷ London Assembly Environment Committee meeting, 20 September 2018, [transcript](#) pages 14 and 26

⁸ The Brexit Alliance Group is not disappointed that the construction carbon element was removed from the zero carbon standard and does not wish to see it re-included.

Setting a standard rather than requiring certain methods or materials gives room for innovation and ingenuity, and minimises the risk of perverse incentives.

This standard-setting approach to embodied carbon should be implemented in the London Plan and other mayoral policies with some urgency—certainly no later than the next major revision of the London Plan. To enable the industry to prepare to meet this standard, the Mayor should announce a date as soon as possible for it to come into operation within the next five years. However, the Mayor will need to lobby for changes at national level to enable this transition. In particular, the UK Government should as far as possible remove the perverse incentive created by charging VAT on building refurbishments and improvements but not on new builds.⁹


A preliminary step to a London-wide standard could be to implement an embodied carbon standard in developments funded or directly supported by the Mayor. The UK Government should also be encouraged to follow this example. We would also like to see the Mayor lobby the Government to strengthen its own guidance, particularly that produced by The Ministry of Housing, Communities and Local Government and the Homes and Communities Agency. Supporting a transition to low-carbon homes at national level means that developers can benefit from economies of scale on new techniques, building materials and expertise required.

Other mayoral policies can also contribute to reducing embodied carbon. The Mayor's Economic Development Strategy, as it develops towards the circular economy model, should encourage producer responsibility and the retention of asset ownership by those who can re-use the materials. Buildings are often leased. They could be leased by developers, or materials could even be leased to developers by manufacturers further up the chain.

May I take this opportunity to thank the GLA officers who attended the committee's meeting of 20 September 2018 and provided other support and advice to the committee's work.

I look forward to receiving your response to this letter no later than Friday 29 March. Please copy in EnvironmentCommittee@London.gov.uk.

Yours sincerely,



Caroline Russell AM
Chair of the Environment Committee

⁹ The Brexit Alliance Group notes that the discretion of the UK Government to vary VAT rates is currently limited by an EU Directive, and calls upon the government to remove VAT on building refurbishments when the UK leaves the EU.

**Caroline Russell AM**

Chair of the Environment Committee

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13 February 2019

Jill Collis

Director of Health, Safety and Environment
Transport for London (via email)

Dear Jill Collis,

Tube dust

We are aware of longstanding concerns about high levels of airborne particulate matter (PM) in the air of London's underground rail network. Whilst these concerns have previously been partly allayed by arguments that these particles are less harmful than those causing such concern as part of outdoor air pollution, questions continue to be raised. The Mayor in 2017 agreed work by the Department of Health's independent expert Committee on the Medical Effects of Air Pollutants (COMEAP).¹

We understand that the conclusion of this work is contained in a *Statement on the evidence for health effects in the travelling public associated with exposure to particulate matter in the London Underground*, issued by COMEAP in January 2019. This finds that 'We cannot rule out the possibility that there is a health risk from exposure to underground PM. Given that there is strong evidence that both long- and short-term exposure to particle pollutants in ambient air are harmful to health, it is likely that there is some health risk associated with exposure to underground PM. With regards to toxicity of underground PM, the evidence is limited and there is no strong suggestion that underground PM is significantly different to ambient PM.'²

The statement shows that concentrations of PM on London Underground platforms are typically much higher than in ambient outdoor air. A number of measurements from

¹ See Mayoral Answers 2017/3044 and 2017/3955..

²

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/769884/COMEAP TfL Statement.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/769884/COMEAP_TfL_Statement.pdf)

different studies are reported, from $250\mu\text{g}/\text{m}^3$ to $492\mu\text{g}/\text{m}^3$ $\text{PM}_{2.5}$. Previous statements of Tube dust concentrations have revealed some levels over $1,000\mu\text{g}/\text{m}^3$.³ These compare to measurements from beside busy London roads quoted in the COMEAP statement of $16\mu\text{g}/\text{m}^3$ and $26\mu\text{g}/\text{m}^3$.

TfL statements about Tube dust concentrations tend to refer to occupational exposure limits and guidelines. The relevant occupation exposure limit is $4,000\mu\text{g}/\text{m}^3$ respirable dust, set by the Health and Safety Executive (HSE). There is also a guideline level of $1,000\mu\text{g}/\text{m}^3$, set by the Institute of Occupational Medicine (IOM). These levels are 8-hour averages.

For comparison, the limit and guideline for $\text{PM}_{2.5}$ in ambient air are $25\mu\text{g}/\text{m}^3$ (a limit set in EU and UK law, to come in to force in 2020 and which the UK Government has pledged not to weaken as part of exiting the EU) and $10\mu\text{g}/\text{m}^3$ (a guideline set by the World Health Organisation, which the Mayor has adopted as a goal for 2030). These are annual averages, but there is also an hourly concentration limit of $50\mu\text{g}/\text{m}^3$ for the broader category of PM_{10} , which is to be exceeded for no more than 35 hours in total in the course of a year.⁴ It is clear that both measured concentrations of Tube dust and the occupational exposure limit and guideline to which TfL refers are several times higher than those in outdoor air.⁵

We have been told that TfL accepts the findings of the COMEAP statement, including the encouragement to continue to find practicable ways of reducing PM levels on the Underground network.⁶ We have some information about TfL's efforts to reduce PM. This includes, from June 2017, that there is a team of around 50 staff cleaning tunnel dust in engineering hours when trains are not running.⁷ There was a trial of a tunnel-cleaning train from about 2010 to 2014, but this was found not to be feasible.⁸

The COMEAP statement reported that an expanded cleaning regime was introduced by TfL in 2017, with 46 stations and five tunnel sections cleaned with industrial vacuums and

³ For example Mayoral Answer 2017/0482, which reported that in 2016 nine readings from four central London stations (out of 110 taken across the network in a survey that year) were over $1,000\mu\text{g}/\text{m}^3$, with the highest at around $1,300\mu\text{g}/\text{m}^3$. See also *Air quality on the Tube 2016* (the most recent published report at <https://tfl.gov.uk/corporate/publications-and-reports/environment-reports>) which shows top readings as high as $1,760\mu\text{g}/\text{m}^3$ (station) and $1,810\mu\text{g}/\text{m}^3$ (train) in 2014/15 and levels recorded over $1,000\mu\text{g}/\text{m}^3$ in most years. Some levels of over $1,000\mu\text{g}/\text{m}^3$ also seem to be implied by the wording of statements in Mayoral Answer 2017/1654 and the TfL *Health, Safety and Environment report 2017/18* (page 53).

Please note that, for clarity, we are giving all concentrations in $\mu\text{g}/\text{m}^3$ (millionths of a gram of particulates per cubic metre of air), though occupational health limits and guidelines are generally given in mg/m^3 (thousandths of a gram of particulates per cubic metre of air) and some TfL publications follow this practice. Some numbers are therefore accurate only to the nearest $0.01\text{mg}/\text{m}^3$ or $10\mu\text{g}/\text{m}^3$.

⁴ *London Environment Strategy, Evidence Base* (pages 3-4). <https://www.london.gov.uk/what-we-do/environment/london-environment-strategy>. PM_{10} comprises all particles up to 10 millionths of a metre in diameter. It therefore includes $\text{PM}_{2.5}$ so its level will always be higher than the level of $\text{PM}_{2.5}$ in the same air. A limit on PM_{10} therefore implies a lower level of $\text{PM}_{2.5}$.

⁵ The COMEAP report notes that elevated concentrations are also found in other indoor environments. A study of $\text{PM}_{2.5}$ in non-smoking London homes found an annual average concentration of $28.4\mu\text{g}/\text{m}^3$ and peak concentrations around $400\mu\text{g}/\text{m}^3$ in houses with gas cooking.

⁶ London Assembly Environment Committee meeting of 16 January 2019.

⁷ Mayoral Answers 2017/1652 and 2017/1654. With about 45 per cent of the 400km London Underground network actually underground, this could equate to about 3.6km of tunnel to keep clean per person

⁸ Mayoral Answer 2017/1652

magnets. It reports that cleaning whole tunnel sections was found to be much more effective at reducing particulate levels than cleaning only stations and platform approach tunnels.⁹ However, the monitoring in 2017 did not provide information about how long the post-cleaning reduction lasts. To understand this, TfL is currently cleaning one line, including walls and subway tunnels, and taking PM measurements before, during and following the clean. We understand from GLA officers that this work is also on a trial basis, to identify the most effective cleaning techniques, timings, sequencing, frequency and locations, and other potential effective techniques like sealing to prevent resuspension, electrostatic precipitation, and regenerative braking. The GLA has assured us that TfL is working to achieve the lowest possible levels of particles in the Underground air, to ensure that staff and customers breathe the cleanest air possible.¹⁰

As well as continuing to work to reduce tunnel dust, COMEAP recommended that TfL should continue to monitor PM concentrations and the levels of particular metals, and the effect of various factors influencing PM concentrations. It also called for TfL to share its data and samples with researchers, which we understand from the GLA TfL is doing.

We also understand from GLA officers that there are no plans to make specific information about Underground air quality, for example daily updates, available to the travelling public.

If you have any comments, clarifications or updates on our understanding of the situation set out in this letter, I would be pleased to receive them.

Specifically at this stage, we also request answers to the following questions:

1. TfL's website has an *Air Quality on the Tube* summary and a Dust Monitoring consultants' report from 2016. Has there been similar monitoring since then? If so, please supply and publish the reports.
2. Please supply information (including results) on any other London Underground air quality monitoring from 2016 onwards, on measures to reduce or keep down dust and air pollution levels on the Underground, on assessment data so far on the effectiveness of these measures, and on any investigations into the health impacts of Underground air pollution on staff.
3. When was the COMEAP statement first communicated to TfL a) in draft and b) in a final version?
4. For purposes of comparing different limits and guidelines, and for comparing measured concentrations in the air, is there a difference between PM_{2.5} and 'respirable dust', as regulated by the HSE? And similarly between PM₁₀ and 'inhalable dust'? If so, what is the difference and how does it affect concentration measurements?

⁹ 44 per cent reduction in PM from cleaning whole tunnel sections, compared to 8 per cent reduction from cleaning focused on the stations.

¹⁰ London Assembly Environment Committee meeting of 16 January 2019.

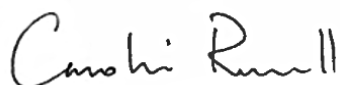
LONDON ASSEMBLY

Please provide this information by Wednesday 13 March. Please copy your response to the committee's support staff at EnvironmentCommittee@london.gov.uk.

If some of the information will take longer to supply, please provide available information first, and then send additional information afterwards.

Thank you very much in advance for your help.

Yours sincerely

A handwritten signature in black ink that reads "Caroline Russell". The signature is written in a cursive style with a large initial 'C' and 'R'.

Caroline Russell AM
Chair of the Environment Committee

Subject: Response to Environment Committee Outputs

Report to: Environment Committee

Report of: Executive Director of Secretariat

Date: 28 February 2019

This report will be considered in public

1. Summary

- 1.1 The Committee is asked to note the response from the Mayor of London its letter on plastic waste. It is also asked to note the Report Impact Review for the Committee's report, *Single-use plastic: unflushables* and the Impact Review for the Committee's response to the draft London Food Strategy.

2. Recommendation

- 2.1 **That the Committee notes the Mayor's response to the Committee's letter on plastic waste attached as Appendix 1 of the report; and**
- 2.2 **That the Committee notes the Report Impact Review for the Committee's report, *Single-use plastic: unflushables*, and the Impact Review of the Committee's response to the draft London Food Strategy of the report attached as Appendices 2 and 3.**

3. Background

- 3.1 At its meeting on 8 November 2018, the Environment Committee noted the action taken under delegated authority by the former Chair, now Deputy Chair, of the Committee. A letter was sent to the Mayor on 1 October 2018 on waste from plastic. A copy of the Mayor's response to this letter is attached at **Appendix 1**.
- 3.2 The Committee noted its report, *Single-use plastic: unflushables*, at its meeting on 20 September 2018. The report is available on the Greater London Authority's (GLA) website [here](#)¹. A Report Impact Review is attached as **Appendix 2**.

¹ https://www.london.gov.uk/sites/default/files/30-08-2018_micro_business_final_and_agreed_.pdf

3.3 On 14 June 2018, the Environment Committee delegated authority, in consultation with party Group Lead Members, to agree a response to the consultation on the draft London Food Strategy. The Committee's response to the Mayor's draft London Food Strategy was agreed with input from Members of the Health Committee and Economy Committee. The response was noted at the 20 September 2018 Environment Committee meeting. Since then analysis of the Mayoral response to the Committee's recommendations has been produced and is attached at **Appendix 3**.

4. Issues for Consideration

4.1 It is recommended the Committee note the response from the Mayor attached as Appendix 1 and the Impact Reviews attached as Appendices 2 and 3.

5. Legal Implications

5.1 The Committee has the power to do what is recommended in the report.

6. Financial Implications

6.1 There are no financial implications to the GLA arising from this report.

List of appendices to this report:

Appendix 1 – Mayoral response dated 21 November 2018

Appendix 2 – Report Impact Review - *Single-use plastic: unflushables*

Appendix 3 - Report Impact Review – *Environment Committee's response to the draft London Food Strategy*

Local Government (Access to Information) Act 1985
List of Background Papers: None
Contact Officer: Ian Williamson, Scrutiny Manager
Telephone: 020 7983 6541
E-mail: environmentcommittee@london.gov.uk

Leonie Cooper AM
Chair of the Environment Committee
City Hall
The Queen's Walk
More London
London SE1 2AA

Our ref: MGLA021018-4280

Date: 21 NOV 2018

Dear Leonie,

Thank you for your letter of 1 October about plastic waste. I am sorry for the delay in responding.

As you know, my overall approach to cutting waste is set out in my London Environment Strategy. Significantly cutting food waste and single-use plastics, boosting household waste recycling performance, and taking a circular economy approach to avoid materials becoming waste in the first place all form a key part of the Strategy. Plastics are also part of this strategy, and I would like to thank you for your continued work to raise awareness and action on this important issue.

I have answered each of the points raised in your letter below:

Household waste recycling performance

As part of the London Environment Strategy, local authorities are expected to produce a waste reduction and recycling plan by 2020, which should include local targets that contribute to my London-wide targets. Resources are made available through the London Waste and Recycling Board to support boroughs in producing these plans.

Once waste reduction and reuse opportunities have been exhausted, giving residents straight forward and easy recycling collection services will be key to driving up recycling rates through greater consistency and harmonising waste and recycling services. Waste authorities are required to provide a minimum level of recycling service, offering collections for the six main dry recycling materials and separate food waste enabling greater certainty of how to correctly dispose of materials. Furthermore, I continue to support the Recycle for London behaviour change campaign, which provides information to Londoners on how to recycle properly. Through these measures, my aim is for London to significantly improve on its current poor recycling levels.

Single-use plastics

I want London to lead the way on reducing single-use plastics. As you know, earlier this year, I launched a programme of work to focus on reducing the impact of single-use plastic bottles. This includes:

- A pilot water refill scheme in five areas in London;

MAYOR OF LONDON

- 20 new drinking water fountains across the city through a pilot with Zoological Society of London's #Oneless campaign; and
- A new £5 million partnership with Thames Water to install over 100 more drinking water fountains over the next three years.

Since I launched the five pilot water refill schemes in London, momentum has continued, resulting in over 2,000 water refill stations in London offering free tap water refills to the public. The pilot drinking water fountain project partnership with #Oneless, to install up to 20 drinking water fountains by the end of this year, has also shown some fantastic results. Just two fountains installed at Liverpool Street Station have dispensed the equivalent of 30,000 half litre plastic bottles from Mid-July to October, demonstrating the demand for improving drinking water infrastructure and the potential impact this has on reducing single-use plastic water bottles. I have already phased out single-use plastic bottles, cups and straws in City Hall and I will work with the rest of the Greater London Authority (GLA) group to reduce single-use plastics by 2019.

Producer and government responsibility and the Plastic Pact

With regards to your point about producer responsibility, the Government is expected to consult on new Extended Producer Responsibility (EPR) regulations later this year. This will involve the whole supply chain that manufactures, processes, distributes and sells products that contain plastic, including supermarkets. From the proposed government approach, we will get a better understanding of the link between the EPR regulations and the Plastic Pact. I will then take a view on whether signing up to the Pact will be effective in helping deliver my targets. My officers will be responding to the EPR consultation and will make a strong case to the Government to reduce plastic waste through increased producer responsibility. We will highlight the importance that new materials and alternatives to plastic must also be environmentally friendly and not cause further impacts to our environment, and the requirement for better and consistent labelling so people know to dispose of waste correctly.

In the London Environment Strategy, I also set out a host of measures that are required by the Government and manufacturers to drive resource efficiency and increase recycling performance. They include new funding for recycling services and measures to ensure packaging material is easily recyclable. Specifically, these involve:

- setting minimum standards of design for reuse and recyclability and strengthening the Extended Producer Responsibility requirements for packaging materials, specifically plastics.
- introducing tax relief, such as variable rates of VAT, on materials innovation that reduces waste and reliance on virgin materials, and increases materials reuse, repair and remanufacture.
- establishing other performance metrics and targets, including materials productivity and carbon, such as my Emissions Performance Standard.
- requiring businesses to separate materials for recycling to help drive up recycling performance.

In addition, I recently wrote to the Secretary of State for Environment, Food and Rural Affairs, Michael Gove, on a wide range of waste matters including the need for robust markets and demand side measures on plastic packaging and designing out waste.

MAYOR OF LONDON

You will have heard the recent announcement in the Autumn Budget 2018 with regards to plastics. I am pleased to see that the Government has responded to our calls to introduce tougher measures and requirements on manufacturers to drive out single-use and hard to recycle plastics from the supply chain, but I would still like to go further.

Waste infrastructure and the circular economy

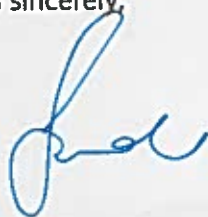
I am ensuring that London continues to lead on circular economy activities by embedding circular economy policies and principles through the London Environment Strategy, as well as through my other strategic plans: the London Plan, Economic Development Strategy, and the GLA Group Responsible Procurement policy.

I also want to see London's waste sites optimised to support circular economy activities like reuse and repair, providing environmental and social benefits by creating new products, jobs and apprentices. My London Plan sets a 100% net waste self-sufficiency target by 2026, whereby local authorities must identify and safeguard suitable sites to meet this target. My officers have developed an interactive online map of all London's permitted waste facilities. This tool will help boroughs and the waste industry to identify suitable sites for new waste infrastructure, and importantly help identify opportunities to intensify existing sites to maximise their operational capacity and avoid building surplus facilities.

Chinese restrictions on processing poor quality materials for recycling from the UK will only reinforce the need to ensure products, especially plastics, are designed for reuse and recyclability. These need to be supported by high-quality collection services to ensure they get recycled, and not rejected to landfill or incineration. The Government's recent announcement of a new tax on the manufacture and import of plastic packaging containing less than 30% recycled plastic will also help drive out single-use poor quality plastics.

Thank you again for writing to me.

Yours sincerely,



Sadiq Khan
Mayor of London

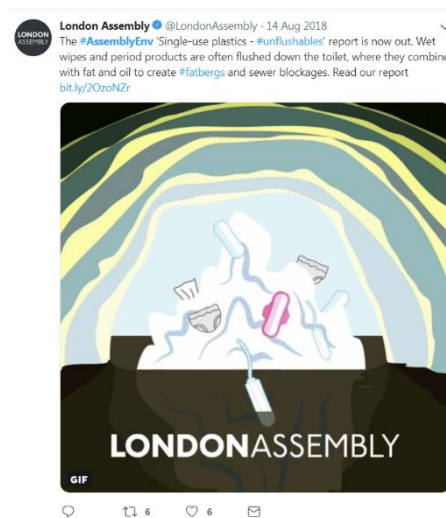
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Single-use plastic: Unflushables

Published on 14 August 2018

Media coverage

- The report received good media coverage, with print, online, radio and television news items.
- The report was written about in articles by Huffpost, the Evening standard and the Guardian as well as in trade publications.
- The Chair was interviewed on BBC London news and on LBC



Impact and engagement

- The Chair and Deputy Chair hosted the Women’s Environment Network Environmenstrual event at City Hall on 19 October. The Chair was invited to speak about the report and the Deputy Chair hosted a panel discussion.
- Following the report, the Committee submitted a response to the Government consultation on banning single-use plastic straws, drinks stirrers and cotton buds. The Committee supported banning these products but called for the Government to go further, considering the Committee’s recommendations in the *Unflushables* report and the bottled water report from 2017.
- Following the report, Water UK have announced a new standard for truly flushable wet wipes, which the committee called for in Recommendation 5.¹

Mayoral response

- The Mayor’s response to the report was sent on 15 November 2018.
- The response was overall positive. The Mayor agreed with many of the concerns raised in the report and committed to undertake action on half of the recommendations. However, the Mayor suggested that some of the work would be more appropriately carried out by other organisations or bodies.
- In his response, the Mayor thanked Caroline Russell AM, and the Committee for their efforts compiling this report, and for the recommendations. He stated, “It effectively highlights, and makes some useful recommendations to address, the growing problem of sewer misuse and the environmental issues associated with plastic containing products commonly misperceived as flushable..”
- See below for a full breakdown of the recommendations and the Mayor’s response.

¹ <https://www.bbc.co.uk/news/business-46835573>

Committee’s recommendation	RAG rating	Mayoral response
<p>Recommendation 1: The Mayor should work alongside Thames Water and local authorities to develop a ‘block buster borough scheme’. All boroughs, especially those with above average sewer blockages, should work with the Mayor to develop a programme of work to reduce these blockages.</p>		<p>The waste water network is owned and managed by Thames Water who currently run their own education activities, which aim to stop residents from putting the wrong items down their sinks and toilets causing blockages. The Greater London Authority (GLA) has supported Thames Water with previous campaigns and will continue to support any block buster schemes led by Thames Water.</p> <p>Thames Water’s Customer Challenge Group advises Thames Water and holds them to account. The Group’s focus includes problem plastics, microplastics and unflushables. The water industry recognises more research is needed to fully understand the impacts and help prioritise the interventions that will be most effective. Thames Water are involved in the work that UK Water Industry Research (UKWIR) is doing in areas such as developing a ‘flushability protocol’ and projects such as ‘sink to river, river to tap — a review of potential risks from nanoparticles and microplastics’. My officers have a seat on Thames Water’s Customer Challenge Group to represent London’s priorities and identify where I can support campaigns that act on the research findings. Through this group I will continue my focus on limiting the environmental impacts of plastic waste, as well as ensuring the water industry continues to press ahead with the microplastics research and impact mitigation work.</p> <p>I am also promoting the use of renewable fuels (e.g. biodiesel and hydro-treated vegetable oil) made from used cooking oils and fats (both unflushable waste products), for use in in GLA Group and borough fleets in the transition to low emission transport. This will help to divert this valuable resource from the waste water network and from causing fatbergs.</p>
<p>Recommendation 2: During the next update of its guidance, the London Waste and Recycling Board (LWARB) should include the offer of a reusable nappy incentive as a tool for boroughs to increase their recycling rate. Boroughs should partner with midwives and health visitors to communicate to new parents and carers the availability of</p>		<p>LWARB’s Resource London programme already encourages boroughs to promote and introduce local reusable nappy schemes.</p> <p>With unflushable waste only making up around 5 -10 per cent of the household waste stream and limited opportunities for recycling, Resource London has focused its resources on supporting boroughs to reduce waste and boost recycling of the six main dry recycling materials and food waste. This is to meet my minimum level of household recycling service by 2020. The Government, in its recent Autumn Budget statement, made a commitment to help drive out single use plastics from the</p>

<p>reusable nappies and the need for responsible disposal of nappies and period products. LWARB and boroughs should also explore the possibility of incentivising reusable menstrual products as a complement to this scheme, for example by working with schools and health visitors.</p>		<p>supply chain. I support this commitment and consider that Public Health England is better placed to work with the Government on action to further promote reusable nappies.</p> <p>Resource London has prioritised its efforts into helping local authorities to reduce food waste and residual waste, and to drive up recycling rates. For example, Resource London provided support to the London Borough of Ealing to introduce controls on residual waste and a separate food waste service. This resulted in a fall in residual waste, a five per cent increase in recycling performance, and a £.7 million annual saving through service efficiencies and on waste disposal costs.</p>
<p>Recommendation 3: Under the accreditation review, the Mayor’s London Healthy Schools initiative should ask schools to demonstrate that they are period positive. This would mean using period positive language to reduce stigma about menstruation, informing children about binning not flushing, and promoting the range of reusable and disposable period products available. The Mayor should also lobby Ofsted and the Department for Education to ensure this is included in the curriculum and national standards and guidance.</p>		<p>My Healthy Schools London programme promotes a whole school approach to pupil health and wellbeing. Information about periods is delivered in schools via their Personal Social Health Education (PSHE) policies and curriculum. To achieve Healthy Schools London (HSL) Awards, schools must provide information about how PSHE is embedded across the whole school including having a Relationships and Sex Education (RSE) policy. New Department for Education (DfE) guidance for Relationships Education, RSE and Health Education will become mandatory in September 2020. Furthermore, for HSL, schools need to demonstrate how PSHE is included in the curriculum as well as citing schemes of work, resources and partners that are used in school. My HSL Team will be responding to the DfE consultation on the Guidance for RSE asking them to include a period positive message within the guidance. Information on the consultation can be found on the DfE website.</p> <p>More information about HSL and the criteria for achievement is available through the following link: www.healthyschools.london.gov.uk. Under the resources section, we have included a link to the work of Plan International UK who are promoting their ‘Menstrual Manifesto: how we change the conversation about periods in the UK’. The link to their work is here: https://plan-uk.org/act-for-girls/girls-rights-in-the-uk/break-the-barriers-our-menstrual-manifesto.</p>

<p>Recommendation 4: The Mayor should write to the Environment Secretary requesting a statutory format to display proper disposal information and the presence of plastic in unflushable products.</p>		<p>I support this recommendation and believe the appropriate route to do this is through my response to the current Department for Environment Food & Rural Affairs (Defra) consultation on banning certain single use plastics.</p> <p>I am supporting innovative products and services that reduce environmental impact through my Entrepreneur’s Programme. Recent winners include, in 2017, two London University students that created a product called Twipes. These are eco-friendly antibacterial wipes that can dissolve in water in 3 hours. In 2018 two students from another London University won the award having developed flushable sanitary products called Polypop.</p>
<p>Recommendation 5: Along with water companies, Ofwat should be involved in developing an independent testing model and standard for flushable products. These companies should seek input from environmental experts to ensure that new products do not leave environmentally damaging residue. Water companies should liaise with designers, manufacturers and retailers on the merits of having the standard displayed prominently on their packaging.</p>		<p>I agree that water companies should have a role in the development, but should not necessarily be setting the standards for flushable products. There is likely to be a role here for UK Water Industry Research and Water UK in representing the water companies by working with designers and manufacturers of these products in a coordinated way. The water industry currently has its own Water Industry Standard for flushability, but it differs from standards used in the manufacturing industry. This points to the need for an independent standard setter to develop a single standard which drives the manufacture of genuinely flushable products that cause no harm to the environment. I would however, question the suggestion that the economic regulator of the water sector (Ofwat) is the correct body to oversee the production of a standard. I would suggest this is a role for Defra in policy terms and potentially the Environment Agency, in operational and regulatory terms. There is possibly a role for the International Organization for Standardization (ISO) in developing an industry standard.</p>
<p>Recommendation 6: The Mayor should write to the Environment Secretary supporting a ban for unflushable wet wipes that contain plastic and advising that only products that have passed a robust flushability standard are allowed on the market.</p>		<p>As for recommendation 4, I support this recommendation. I believe the best route to do this is through my consultation response to Defra recommending the scope of banned items should include unflushable products that contain plastic.</p> <p>As also referenced in recommendation 4, I am supporting innovative products and services that reduce environmental impact through my Entrepreneur’s Programme</p>

<p>Recommendation 7: LWARB should investigate recycling for unflushable waste in London.</p>		<p>This is a national issue and one best placed for Government to investigate and address. In my London Environment Strategy, I called on the Government to set minimum design standards for reuse and recyclability, and to strengthen Extended Producer Responsibility (EPR) requirements to help design out hard-to-recycle materials and put more of the disposal costs on product manufacturers. In developing my response to the Government’s expected consultation on EPR I will reiterate the need to investigate recycling opportunities for unflushable waste where it exists. My officers have worked with LWARB and suppliers to look at this in the past, including an assessment of two nappy recycling projects submitted to LWARB’s open calls for expressions. In both cases a viable model was not found for such a product at scale. This could change with the Government’s proposals to strengthen Extended Producer Responsibility requirements on materials used to make nappies and other sanitary products.</p>
<p>Recommendation 8: The GLA Group should provide bins in its men’s toilets for unflushable single-use products and encourage other public and private sector organisations to adopt this approach.</p>		<p>I recognise that unflushable waste arises from men’s toilets as well as women’s and am committed to reduce this waste stream. In my London Environment Strategy, I committed the GLA group to lead by example in its own operations. This includes, for example, cutting unnecessary use of single use plastic bottles and other disposables across our estate. Functional Bodies are developing implementation plans demonstrating how they will achieve this ambition and I will ensure specific action is taken which is directed towards reducing unflushable waste. I will also ensure that my officers raise the issue of bins in men’s toilets for unflushables. Discussions on this have already commenced and I expect to be able to instigate suitable measures in the near future.</p>
<p>General Comments:</p>		<p>In the longer term, solutions such as the Tideway Tunnel will help limit unwanted sewage pollutants from reaching the River Thames. Actions set out in my London Environment Strategy to reduce sewage pollution reaching London’s rivers will also contribute to tackling the problem.</p> <p>My officers are also engaging with Thames Water on their emerging London 2100 project — a longer-term adaptive plan for securing London’s future drainage and wastewater provision.</p>

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London Food Strategy – GLA response

The Committee discussed the Mayor's draft Food Strategy on 14 June 2018 and submitted comments on 12 July.

The GLA's response to the consultation submission was sent on 14 November 2018 and the final strategy and action plan published on 11 December.

The response was overall positive. The GLA agreed with many of the points made and said that the final strategy and action plan would cover many of the recommendations. The GLA thanked the Assembly for the comprehensive consultation response. It made specific responses to most of the recommendations. These are summarised in the table below, with updates of how the points are taken forward in the final strategy.

Committee's recommendation	GLA response	Update on final strategy or other comment
Much more detail on actions, particularly measurable objectives, milestones and targets. Targets should be specified, with milestones for progress assessment on the way to final outcomes.	An Implementation Plan will be published alongside the final LFS which will contain more detail on the actions that will be taken to deliver the LFS, along with metrics where appropriate.	The implementation plan contains some more detail on these areas, but not always as much as sought. It had been said that the implementation plan would come ahead of the final strategy to enable further feedback.
Priority target on childhood obesity, by decreasing the promotion and accessibility of unhealthy food and promoting physical activity.	The LFS now contains a target for tackling child obesity, as set out in chapter 4.	There is material on improving the food environment, reducing the promotion and availability of unhealthy food. There are new support actions on water-only primary schools, free school meals, school food standards and reducing salt, sugar and fat levels in food. Healthy Schools, which includes physical activity, is referenced in the strategy.
Clear statement and quantification of benefits of food work to support a case for more dedicated resources and/or resources for food work from other parts of the GLA Group.	To maximise [the GLA's limited Food Strategy] budget, it has largely been used to leverage further resources from partners, and this will continue in the coming years. Additional activity has been integrated across the full range of Mayoral strategies, officers working on the Food Programme have collaborated with other teams in the GLA	The response re-states the existing approach to dealing with limited resources. The Mayor did not agree to additional actions to quantify the benefits to secure more resources.

	<p>and other parts of the GLA group, particularly TfL, in the production of the LFS. Several actions in the London Food Strategy complement those in other strategies, and officers will work together across policy areas to maximise opportunities for good food outcomes.</p>	
<p>Avoid the same document attempting to serve policy experts and public. Separate public-facing document with Ten Tips or similar, engaging parents at home on childhood obesity, and professional-facing document to guide action and enable accountability.</p>	<p>To make the LFS as accessible as possible and encourage a wide audience, the final LFS now includes a series of infographics. These will also be published separately on London.gov.uk along with an EasyRead version of the LFS. In addition, we will explore the suggestion to produce a standalone 'Top Tips' document.</p>	<p>The EasyRead version is available alongside the full strategy on london.gov.uk.</p>
<p>More detail on GLA's role in promoting healthy food procurement and provision in other public institutions such as hospitals.</p>	<p>Further references have been included in the LFS, particularly in chapter 3.</p>	<p>New material in Chapter 3 includes phasing out single-use plastics. New material on partner roles includes mention of prisons, care homes. Some details in the Implementation Plan, but just a page on all Chapter 3 actions.</p>
<p>Food growing, security and resilience</p>		
<p>Work on food security and resilience under climate change should inform work under Environment Strategy and Economic Development Strategy.</p>	<p>Further wording has been added to the narrative of the LFS regarding the resilience and security of London's food system.</p>	<p>Some material added on Brexit and climate change. Actions for Mayor and external partners to measure resilience merged into one in the mayoral support section.</p> <p>Delivery of this recommendation will be in implementation of the three strategies, and can be kept under review.</p>

<p>Seek opportunities to support London’s food growers, including more emphasis on Green Belt farmers and other commercial producers.</p>	<p>References to food production in London’s Green Belt have also now been included. The team and I look forward to your in-depth review of food growing in London’s Green Belt and urban fringe.</p>	<p>References were added but not new actions. Response to Green Belt Farming report forthcoming.</p>
<p>Understand and capitalise on environmental as well as community value of urban food growing spaces.</p>		<p>There are additional mentions of the environmental value that food growing spaces have, but little new action to capitalise on it.</p>
<p>Do not stop looking for opportunities to establish more food growing spaces.</p>	<p>The Food Programme will continue to support food growing across the capital. Chapter 5 of the LFS has been strengthened with additional actions on food growing.</p>	<p>The final strategy says it is important to get food growing in new developments, green spaces and the public realm. And that the Mayor has a role in supporting bids to the Good growth Fund, and supporting local food with City Hall and GLA Group procurement.</p>
<p>Make links with health sector to tap into social prescribing as a source of users for food growing spaces.</p>	<p>The LFS now commits the Mayor to producing a Vision for Social Prescribing and for this to <i>‘explore the potential for health care professionals to increase the number of social prescriptions for fruit and vegetables and referrals to community food growing schemes, using food to improve Londoners’ physical and mental well-being.’</i></p>	<p>This was already in the Health Inequalities Strategy: mention in the Food Strategy will help to make the inter-sector links.</p> <p>The Vision has now been produced and does reference food growing activities.</p>
<p>Also make links to social housing sector. Encourage community groups and allotments to hold lessons on food growing and cooking.</p>		<p>The social housing sector is not mentioned specifically in relation to food growing, but there are points about directing people to food growing and to food growing areas in new developments and protecting existing allotments and community gardens.</p>

Healthy food		
Reduce advertising for unhealthy food and drink (as proposed)	Following consultation on this proposal and the significant support for it demonstrated by both stakeholders and the public, the Mayor will be directing Transport for London to introduce restrictions on advertising that promotes less healthy food and/or less healthy non-alcoholic drink across the TfL advertising estate. The Mayor will go further by also using the TfL advertising estate to promote the consumption of healthier food and healthier non-alcoholic drink.	The junk food advertising ban is (at the time of agenda drafting) to come in from 25 Feb 2019. This was welcomed by the Health Committee on 23 November 2018.
Work with Government and others to enable free school meals to every child in London.	As well as the existing action in the draft LFS relating to Healthy Schools London, several additional actions relating to schools have been included in the LFS. These include an action to work in partnership with Public Health England to increase the number of water-only primary schools and an action to lobby Government to provide universal free school meals for all to help tackle child obesity and food insecurity and produce further guidance to support all schools to implement the School Food Standards.	
More detail on pilot projects to support affordable and healthy food to disadvantaged communities.	Further information on this pilot programme will be available in early 2019.	There is now a pilot programme with five boroughs to produce Good Food Retail Plans. Bids have been invited from BIDs and boroughs for £5,000 grants.

<p>Review the inclusion of alcohol in the advertising ban</p>	<p>The scope of the proposed restrictions is specifically aimed at reducing child obesity. Wider public health issues associated with children’s awareness and consumption of alcohol are included in objective 5.3 of the Mayor’s Health Inequalities Strategy which commits to steps being taken to reduce the use of, and harms caused by, tobacco, illicit drugs, alcohol and gambling.</p>	<p>The argument that alcohol advertising does not affect child health was put forward in the draft strategy and at the Committee’s meeting, but was rejected by the Committee.</p> <p>The actions in the Health Inequalities Strategy are positive but do not address the specific recommendation.</p>
<p>Food poverty</p>		
<p>Food insecurity and food poverty a fundamental part of the final strategy. Zero Hunger goal.</p>	<p>‘London should be a Zero Hunger City’ has been included in the narrative to Chapter 1.</p>	
<p>Establish baseline, set targets for improving.</p>	<p>The Mayor has committed to measuring household food insecurity in London. The action relating to measuring household food insecurity in Chapter 1 of the draft LFS has been strengthened in the final LFS to reflect this commitment.</p>	<p>In the strategy, the action is to develop a measure, so the strategy does not contain a baseline or timed targets towards the overall Zero Hunger goal. Data collection on food insecurity is to be included in the GLA’s survey of Londoners in Spring 2019.</p>
<p>Clarify terminology around food poverty/insecurity and how London’s measures relate to national measures and policies, so language is clear and understandable to all.</p>	<p>To provide more clarity, a definition of food insecurity has been included in the narrative of chapter 1.</p>	<p>The definition (‘Food insecurity is when an individual or household has insufficient or insecure access to food due to resource constraints.’) could be improved in terms of language accessibility. It could also be specifically related to national policies.</p>
<p>Further action (beyond food banks) to tackle food insecurity fully</p>	<p>I welcome the Assembly’s support for the proposal for the Mayor to encourage stakeholders to donate surplus food to food banks. As noted surplus food donation is not the long-term solution to food insecurity, and this has been made clearer in the LFS.</p>	<p>There are several points in the Action Plan for the GLA and partners to tackle food insecurity, including to reduce reliance on food banks.</p>

<p>Support/encourage food banks and supermarkets to bring surplus perishable food to people.</p>	<p>There is an action in chapter 1 stating that businesses should donate more surplus food to food redistribution charities or provide financial donations or sponsorship to school holiday hunger programmes such as Kitchen Social. This incorporates supermarkets, which have a role to play, as highlighted by the Assembly’s consultation response.</p>	
<p>More detailed plans for supporting older people, including targets for local authorities in working together to support healthy eating for older people.</p>	<p>Further reference to older people has been included in the introductory narrative to chapter 1 and the action for the Mayor to <i>‘champion the importance of good food for older people by encouraging better coordination and collaboration between local authorities, to maximise the role of good food in relieving the burden of malnutrition and social isolation on the NHS’</i> remains in the final LFS. Further detail around this action will be developed in the coming months.</p>	<p>This seems to be a significant step towards the recommendation. The detail can be reviewed as it emerges.</p>
<p>Advise schools and teachers on how the school or LA can help students at risk of food poverty.</p>	<p>Further detail has been added to this action in chapter 1 of the LFS.</p>	<p>The action is to work with stakeholders to explore the role schools can play. This is an early step towards the recommendation.</p>

<p>Eliminate holiday hunger— extend Kitchen Social</p>	<p>In addition to continuing to support Kitchen Social, officers working on the GLA’s Food Programme will coordinate a 2018 School Holiday Meals Provision workshop in partnership with the Mayor’s Fund for London and use an ongoing ‘Kitchen Social Learning Forum’ to convene providers delivering holiday provision projects across London, map existing provision and share best practice. This will help inform future targeted approaches for the areas of most need in London.</p>	<p>Continuing Kitchen Social and looking to learn from it is a step towards the recommendation, but this does not appear at this stage to represent a scaling-up to fully eliminate holiday hunger.</p>
<p>The strategy should address future food poverty risks and opportunities, such as exiting the EU</p>	<p>Exiting the EU without a deal could potentially have a considerable effect on food supply, standards and costs. To highlight this issue, the LFS contains several further references to the potential impacts of Brexit and the work of the London Resilience Forum in this area.</p>	
<p>Economy</p>		
<p>More modelling and encouragement of potential economic shifts (such as animal to plant, processed to home-made, etc.) to enable business and worker response.</p>	<p>Significant shifts in the market could result in significant shifts in business and employment opportunities. Officers working on the GLA’s Food Programme will continue to work with GLA Economics to monitor any such shifts and respond as appropriate to ensure opportunities are maximised.</p>	<p>Although acknowledging the issue and continuing existing readiness to respond to shifts, there does not seem to be a commitment to new action to address the recommendation.</p>

<p>Engage stakeholders —businesses to label origin and nutrition of food —businesses to ensure workers, including night shifts, have access to healthy food in staff canteens</p>	<p>I fully agree with the need to engage the full range of stakeholders, including businesses, for the final LFS to have the maximum benefit for Londoners and will continue to engage businesses. Work to engage businesses is already underway and examples include collaboration with the Consumer Goods Forum on their Collaboration for Healthier Lives initiative, businesses engaged with the Healthier Catering Commitment, and working with food businesses to improve access to apprenticeship levy funding.</p>	<p>The work with businesses is broadly in line with the recommendation.</p> <p>Some points on night and shift workers specifically addresses one of the Committee’s points. Food labelling may require further engagement with businesses.</p>
<p>Environmental impacts</p>		
<p>Include target to reduce food waste by 50 per cent by 2030</p>	<p>I welcome the Assembly’s support for the inclusion of environmental issues in the LFS, including the Mayor’s target of a 50 per cent reduction in food waste by 2030 in line with Sustainable Development Goal 12.3.</p>	<p>The strategy says the Mayor “has committed to become a Champion 12.342, dedicated to inspiring ambition and mobilising action toward achieving UN Sustainable Development Goal (SDG) 12.3, cutting by half global retail and consumer food waste, and reducing food losses along production and supply chains by 2030.”</p> <p>This is some way short of setting a 50 per cent food waste reduction target for London. The Mayor’s contribution to a global target is hard to quantify or test.</p>
<p>All unavoidable food waste to anaerobic digestion and/or composting</p>	<p>The Mayor is also committed to increasing recycling rates for inedible food waste. As highlighted in the final LFS, through his London Environment Strategy’s minimum level of service, local authorities are required to collect household food waste separately by 2020.</p>	<p>This re-states the original policy. While working in the same direction, it does not go as far as meeting the recommendation.</p>

<p>Set out clearer plans to work with partners such as WRAP and LWARB to tackle food waste</p>	<p>Further detail has been included in the LFS and accompanying Implementation Plan.</p>	<p>The material referred to (including 20 per cent food and drink waste reduction by 2025, work to reduce single-use packaging, TRiFOCAL and FoodSave projects, mandatory separate food waste collections, C40 Cities projects to be launched, London’s carbon footprint from food imports, work with restaurants) appears positive, but is outlined only briefly and so does not fully satisfy the recommendation for clearer plans.</p>
<p>Encourage protection and promotion of food growing spaces for biodiversity value. Use the food growing potential of parks and other public green spaces. Work with local authorities, Sustain. Specifically fruit and nut trees in Mayoral tree planting programmes and promote them with others.</p>	<p>Food growing spaces have great benefits for biodiversity and further references to biodiversity have been included in both chapters 5 and 6. As discussed above, chapter 5 has also been strengthened with additional actions on food growing.</p>	<p>The additions are positive, but at a general level. There are not specific references to using parks or to fruit/nut trees.</p>
<p>Animal welfare</p>		
<p>Work with RSPCA and government towards labelling of non-pre-stunned meat.</p>	<p>I welcome your support for the inclusion of animal welfare standards in the draft LFS’s definition of good food and in the actions set out in Chapter 3 and Annex 3 (Annex 2 in the final LFS). Officers working on the Food Programme recently met with RSPCA Assured after they requested a meeting to introduce their animal welfare standards scheme. Labelling for products containing meat that has not been pre-stunned before slaughter was not discussed, but officers will ask for an update on this and feed back to the Assembly.</p>	<p>Further information is awaited.</p>

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Subject: Deputy Mayor for Environment and Energy

Report to: Environment Committee

Report of: Executive Director of Secretariat

Date: 28 February 2019

This report will be considered in public

1. Summary

- 1.1 The Committee will discuss with the Deputy Mayor for Environment and Energy, Mayoral progress on the Mayor's own commitments and responses to recommendations from the Assembly.

2. Recommendations

- 2.1 **That the Committee notes the report as background to putting questions to the Deputy Mayor for Environment and Energy on Mayoral progress and notes the subsequent discussion; and**
- 2.2 **That the Committee delegates authority to the Chair, in consultation with party Group Lead Members, to agree any output arising from the discussion.**

3. Background

- 3.1 The current Mayor, Sadiq Khan, has been in office for approaching three years, pursuing an agenda including commitments made in his election campaign and at the outset of his mayoralty, and initiatives brought forward since then. The Assembly has also made recommendations on a number of issues in these three years, and the Mayor has responded positively to many of them.
- 3.2 The Committee invites a Mayoral representative to answer questions from time to time. The last appearance at the Environment Committee by the Deputy Mayor was in March 2018.

4. Issues for Consideration

- 4.1 The Committee has invited the Deputy Mayor for Environment and Energy, Shirley Rodrigues, to answer questions on Mayoral progress, including on the Mayor's own initiatives and recommendations of the Assembly.

4.2 The following officers from the Greater London Authority (GLA) will be attending alongside the Deputy Mayor:

- Andrew Dunwoody, Policy and Programme Manager;
- Andrew Jones, Policy and Programme Manager;
- Abby Crisostono, Senior Policy and Programmes Officer;
- Elliot Trehane, Policy and Programmes Manager (Air Quality and Hydrogen); and
- Simona Webb, Principal Policy and Programme Officer (EFL Delivery Manager).

5. Legal Implications

5.1 The Committee has the power to do what is recommended in the report.

6. Financial Implications

6.1 There is no financial implication to the GLA arising from this report.

List of appendices to this report:

None.

Local Government (Access to Information) Act 1985
List of Background Papers:
None
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Subject: Environment Committee Work Programme

Report to: Environment Committee

Report of: Executive Director of Secretariat

Date: 28 February 2019

This report will be considered in public

1. Summary

- 1.1 This report notes and updates the Committee's work programme for the 2018/19 London Assembly year. The programme was originally agreed in May 2018 and is updated at each meeting.

2. Recommendations

- 2.1 **That the Committee considers how it will take forward the Assembly's opposition to the expansion of Heathrow airport, noting the Committee's previous work on aviation;**
- 2.2 **That the Committee notes its previously agreed work programme for the 2018/19 Assembly year, as set out in the report;**
- 2.3 **That the Committee notes the schedule of its provisional meetings for 2019/20, which is subject to agreement at the Annual Meeting of the London Assembly on 2 May 2019;**
- 2.4 **That the Committee delegates authority to the Chair, in consultation with the party Group Lead Members, to agree any scrutiny arrangements and outputs before the first formal meeting of the Committee in the 2019/20 Assembly year.**

3. Background

- 3.1 The work programme for 2018/19 was originally agreed in May 2018, at the Committee's first meeting of the Assembly year.
- 3.2 A similar report will be submitted to each subsequent Committee meeting to track the Committee's work and propose any changes, including confirming dates and adding topics as required.
- 3.3 In January 2019 the Committee published a short report on aircraft noise, restating its opposition to the expansion of Heathrow airport. This report can be found at **Agenda Item 5**.

4. Issues for Consideration

Mayoral progress

- 4.1 At the present meeting, the Committee is questioning the Deputy Mayor for Environment and Energy on Mayoral progress, including delivery of Mayoral commitments and actions in response to recommendations by this Committee. A covering report on this topic can be found at **Agenda Item 7**.

Work programme for the rest of 2018/19

- 4.2 The table below sets out the remaining dates for the Environment Committee for the rest of the 2018/19 Assembly year.
- 4.3 The work programme is subject to change in the future as the Committee develops proposals for its work. Dates may be used for formal committee meetings, informal meetings, site visits or other activities for the Committee. The work programme also provides for the Committee to respond to any matters that arise during the year.

Meeting Date	Proposed topic
3 April 2018	Committee meeting Air Pollution around Schools (to be confirmed)

Provisional meeting dates in 2019/20

- 4.4 The GLA Oversight Committee has agreed the following provisional meeting slots for the Environment Committee in 2019/20. The meeting slots are subject to agreement at the Annual Meeting of the London Assembly on 2 May 2019:

- 22 May 2019, 10.00am;
- 27 June 2019, 10.00am;
- 24 July 2019, 10.00am;
- 18 September 2019, 10.00am;
- 10 October 2019, 10.00am;
- 7 November 2019, 10.00am;
- 5 December 2019, 10.00am;
- 15 January 2020, 10.00am;
- 13 February 2020, 10.00am; and
- 12 March 2020, 2.00pm.

5. Legal Implications

- 5.1 The Committee has the power to do what is recommended in the report.

6. Financial Implications

6.1 There are no financial implications arising from this report.

List of appendices to this report:

None.

Local Government (Access to Information) Act 1985

List of Background Papers: None

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