

**LONDON LUTON AIRPORT EXPANSION**  
**ISSUE SPECIFIC HEARING 5 (ISH5) – AIR QUALITY**  
**POST HEARING SUBMISSIONS**  
**HERTFORDSHIRE COUNTY COUNCIL, NORTH HERTFORDSHIRE DISTRICT COUNCIL, DACORUM BOROUGH**  
**COUNCIL**

**1. INTRODUCTION**

- 1.1 This document sets out the post hearing submissions and summarises the oral submissions made jointly by Hertfordshire County Council, North Hertfordshire District Council and Dacorum Borough Council (together, “**the Hertfordshire Host Authorities**”) at Issue Specific Hearing 5 (“**ISH5**”) held on 28 September 2023 in relation to Luton Rising’s (“**the Applicant**”) application for development consent for the London Luton Airport Expansion Project (the “**Project**”).
- 1.2 ISH5 was attended by the Examining Authority (the “**ExA**”), the Applicant, the Hertfordshire Host Authorities, together with a number of other Interested Parties.
- 1.3 Where the ExA requested additional information from the Hertfordshire Host Authorities on particular matters, or the Hertfordshire Host Authorities undertook to provide additional information during the hearing, the Hertfordshire Host Authorities’ response is set out in or appended to this document.
- 1.4 This document does not purport to summarise the oral submissions of parties other than the Hertfordshire Host Authorities, and summaries of submissions made by other parties are only included where necessary in order to give context to the Hertfordshire Host Authorities’ submissions in response.
- 1.5 The structure of this document generally follows the order of items as they were dealt with at ISH5 set out against the detailed agenda items published by the ExA on 19 September 2023 (the “**Agenda**”).

- 1.6 In addition, the Hertfordshire Host Authorities have included in this note, responses to the Supplementary Agenda Questions published by the ExA on 19 September 2023, where these are relevant to them.

**2. SUMMARY OF ORAL SUBMISSIONS MADE**

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<b>2. Post-Covid implications for air quality</b>	
<p>The Applicant will be asked to explain how air quality in Luton has changed following the Covid pandemic (with reference to any relevant local air quality and health datasets) and whether this has any implications for the air quality baseline and future scenario assessments.</p>	<p>The air quality assessment is dependent upon the transport modelling, and the Hertfordshire Host Authorities refer to their comments in their Post Hearing Submission for ISH 4 in respect of such matters. If the transport modelling is lacking then the findings of the air quality assessment will be undermined.</p> <p>The Hertfordshire Host Authorities note that Environmental Statement Vol.5 Chapter 7 (Air Quality), Rev. 1 June 2023 [AS-076] does not itself mention Covid 19. The impact of Covid 19 on air quality is only briefly mentioned in one of the associated appendices (ES Vol.5 Appendix 7.2 Air Quality Baseline Data [APP-062]) in relation to monitoring data for 2020 and 2021 showing lower nitrogen dioxide (NO2) concentrations (in paragraph 1.3.21), and lower concentrations for 2020 of benzene, toluene, ethylbenzene &amp; xylenes (BTEX) (in paragraph 1.3.25).</p> <p>The air quality assessment sensitivity testing included in ES Vol.5 Appendix 7.4 Air Quality Sensitivity Tests [APP-064] does not account for the potential impact of Covid.</p>
<b>3. Construction air quality assessment</b>	
<p>The Applicant will be asked to explain a number of construction stage assumptions (including working hours, plant on-times, types of plant used</p>	<p>The Code of Construction Practice [APP-049] is wide ranging and includes water, noise, community engagement, pollution incident control, in addition to dust management, site waste management and soil management.</p> <p>Noting that more than one host authority is affected by construction impacts, in order to implement appropriate controls for each relevant host authority there will need to be a high level of co-ordination and</p>

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<p>and in-combination climate change impacts). Construction mitigation measures will be considered with reference to the Code of Construction Practice (CoCP) [APP-049] including any necessary odour and dust monitoring and mitigation measures.</p>	<p>communication between the Applicant and affected host authorities. The Hertfordshire Host Authorities may wish for further controls to be applied through Section 61 Prior Consent notices, and procedures and protocols will need to be agreed in advance of works taking place, as referenced in the Code of Construction Practice [APP-049]. Good communications with the relevant host authorities will be vital to all aspects, particularly with regard to co-ordination and responses to complaints and incidents. The relevant Local Authorities need to be made aware of who will be the lead contractor for works that will be carried out in each district.</p> <p>The Code of Construction Practice [APP-049] requires a Dust Management Plan (DMP) to be developed by the lead contractor. The relevant host authority would need to be consulted on the DMP where construction works occur within the district or are within 350m of the district boundary, to agree on procedures, measures and monitoring and also the assignment of a construction phase liaison officer for the Applicant. Requirement 8 in the DCO [REP2-003] set out that management plans in Code of Construction Practice to be approved in writing by relevant planning authority, following consultation with the relevant highway authority.</p> <p>Andy Talbot of WSP, air quality expert for the authorities, stated that he was not aware of any discussions on this matter, but that if any monitoring measures were to be set he would expect those to be set based on existing Greater London Authority 'The Control of Dust and Emissions During Construction and Demolition, Supplementary Planning Guidance' (July 2014) (related Institute of Air Quality Management (IAQM) guidance including 'Guidance on the assessment of dust from demolition and construction' (August 2023 update) and for 'Guidance on Monitoring in the Vicinity of Demolition and Construction Sites' (2018) to also be taken into account).</p> <p>The IAQM 'Guidance on Monitoring in the Vicinity of Demolition and Construction Sites' recommends the following Site Action Levels* for different types of monitoring:</p> <ul style="list-style-type: none"> <li>• PM10 concentrations of 190 µg/m<sup>3</sup> averaged over a 1-hour period;</li> <li>• Dust deposition using Frisbee-type Deposition Gauges: 200 mg/m<sup>2</sup>/day, averaged over a 4-week period;</li> <li>• Dust deposition using glass slide deposit gauges: 25 soiling units (su) per week, measured as a running 4-week average;</li> </ul>

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	<ul style="list-style-type: none"> <li>• Dust deposition using sticky Pads: 5% effective area coverage (EAC) per day, measured over a 1-week period;</li> <li>• Dust flux using sticky pads where both EAC and absolute area coverage (AAC) are measured over a 1-week period, where the Site Action Level is 'High' or above.</li> </ul> <p>Monitoring of PM10 should be included for sites where a 'high risk' from dust impacts has been determined. Dust deposition and flux should be implemented where there is a 'medium' risk. Daily visual on and off site inspections should suffice where there is 'low risk'. Whilst ES Vol.5 Chapter 7 Air Quality [APP-034] provides an initial assessment of dust risk, the lead contractor will need to confirm the risk level before undertaking the work.</p> <p>*Note: the Site Action Level is the threshold above which further investigation or action is instigated.</p>
<b>4. Operational air quality modelling and assessment</b>	
<p>The Applicant will be asked to explain a number of modelling and assessment assumptions (including runway modal split, terrain, fit with predicted/ modelled backgrounds, back-up generation and road network changes). Assessment conclusions will be discussed.</p>	<p>The SoCG with North Herts Council [REP2-023] notes that “NHDC requested details on the modelled impacts of additional traffic generated by the Proposed Development on AQMAs in Hitchin.”. The status is 'ongoing'.</p> <p>A review of the Applicant’s ES Vol.5 Chapter 7 Air Quality [APP-034] and associated appendices was undertaken on behalf of the Hertfordshire Host Authorities in June 2023. This review was presented in the Hertfordshire Host Authorities’ Relevant Representations [RR-1119, Chapter 2].</p> <p>The key remaining matters of concern regarding the assessment were presented in the Hertfordshire Host Authorities Principal Areas of Disagreement Summary Statement [AS-057] as:</p> <ul style="list-style-type: none"> <li>• The methodology in relation to assessing ammonia emissions; and</li> <li>• The method for modelling ammonia and nitrogen deposition.</li> </ul> <p>The Hertfordshire Host Authorities PADSS [AS-057, page 2] requested confirmation of agreement on the methodology between the Applicant and Natural England. These matters are also included in the Hertfordshire Host Authorities’ Local Impact Report [REP1A-003, page 28].</p>

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	<p>At a meeting on 20 July 2023 between NHDC and the Applicant to discuss the Statement of Common Ground. The minutes produced by the Applicant (not yet provided by the Applicant to PINS) record that:</p> <p><i>“NHDC request LR to address the line on details of modelled impacts around Hitchin AQMA as requested by NHDC, LR to prepare a short technical note on the results.”</i></p> <p>Subsequently, the North Herts Council Statement of Common Ground [REP2-023] notes that <i>“NHDC requested details on the modelled impacts of additional traffic generated by the Proposed Development on AQMAs in Hitchin”</i>. Those details have yet to be received from the Applicant, and the current status is ‘ongoing’.</p> <p>The traffic and air quality modelling by the Applicant needs to identify congestion hotspots, and any measures required to address this. Engagement on the Statement of Common Ground [REP2-023] is ongoing and includes the following:</p> <ul style="list-style-type: none"> <li>• Details on modelled impacts of additional traffic generated by the Proposed Development in Hitchin [REP2-023 page 62]</li> <li>• Future monitoring considerations including short-term levels, PM2.5 and ultrafine particles [REP2-022 page 66, REP2-023 page 63, REP2-024 page 57 - 58]</li> <li>• Use of emissions inventories [REP2-022 page 66, REP2-023 page 63, REP2-024 page 58]</li> </ul>
<p>The Applicant will be asked to provide a brief overview of the Operational Air Quality Action Plan [APP-065]. The levers available to the Applicant to ensure implementation of proposed mitigation will be discussed.</p>	<p>The Operational Air Quality Action Plan (OAQAP) [APP-065] references air quality monitoring to be undertaken by the Applicant under the GCG Framework. The Hertfordshire Host Authorities have included a response for this under Agenda Item No. 6 – Green Controlled Growth.</p> <p>The OAQAP [APP-065] highlights the significance of the air quality monitoring as part of the GCG Framework [APP-218]. The OAQAP [APP-065, Section 2.8] states:</p> <p><i>“2.8.1 Air quality monitoring is a suitable method for future review of air pollution concentrations in the local area. Details of the air quality monitoring which will be carried out as part of the Green Controlled Growth Framework are detailed in Green Controlled Growth Appendix D Air Quality Monitoring Plan [TR020001/APP/7.08].</i></p>

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	<p><i>2.8.2 Air quality monitoring is currently carried out across the Luton area by Luton Rising, LLAOL and Luton Borough Council and this will continue post-consent.”</i></p> <p>Future air quality monitoring needs to be approved independently, involving the Hertfordshire Host Authorities, and not remain the sole responsibility of Luton Rising, LLAOL and Luton Borough Council. The Hertfordshire Host Authorities wish to be involved in the process and agreeing on the monitoring strategy.</p> <p>In addition, in the OAQAP [APP-065] paragraph 2.8.4, item d., the Applicant commits to “<i>Complete an annual aircraft emission inventory.</i>” The Hertfordshire Host Authorities would like to see this commitment extend to all airport sources – not just aircraft – and be based on real activity data.</p> <p>Andy Talbot of WSP, air quality expert representing the Hertfordshire Host Authorities, stated that human health should be considered within the context of the Green Controlled Growth Framework.</p>
<b>5. Water Treatment Plant and aviation fuel</b>	
<p>The Applicant will be asked to explain how it proposes to determine whether or not odour mitigation is required for the water treatment plant and associated sewage sludge storage and what implications this has for users of Wigmore Valley Park.</p>	<p>Odour is considered in the Environmental Statement Vol.5 Chapter 7 Air Quality, Rev. 1 June 2023 [AS-076] but without mention of the water treatment plant and associated sewage sludge storage that is raised in PINS' agenda item.</p> <p>Fiona Ross, representing the Hertfordshire Host Authorities, stated that provided that there is a commitment by the Applicant to employ appropriate means to minimise the risk of detectable offensive odours from a water treatment plant and associated sewage sludge storage extending beyond the Applicant's site boundary then this should not be an issue. The Hertfordshire Host Authorities' position is that these measures need to be clearly set out in the OAQP [APP-065].</p>
<p>The Applicant will be asked to comment on the frequency and circumstances in which fuel jettisoning occurs,</p>	<p>It is understood that fuel dumping is rare and only in the event of an emergency.</p> <p>However, <b>Roger Pitman</b>, air quality expert for North Herts Council indicated that he had experience of one incident involving dumping of aviation fuel that impacted on a residential district in Hitchin. He stated</p>

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<p>whether any specific operational controls apply to fuel jettisoning and what records are kept of such events.</p>	<p>that this was reported to the CAA and Luton airport and yet he received no detailed response or explanation of what led to this event. Therefore, the Hertfordshire Host Authorities would like to ensure in future that there is more open reporting of when and where fuel dumping takes place and the ability for local authorities to have responses to individual events.</p> <p>The ExA set an action on the Hertfordshire Host Authorities to provide information to the Applicant regarding a single previous incidence of suspected fuel dumping referenced by Mr Pitman. Mr Pitman sent details to the Applicant on 29 September 2023 of the correspondence between himself on behalf of North Herts Council, the CAA, and Luton Airport in relation to a suspected fuel dump, affecting residential properties in Hitchin, as follows:</p> <p><b>(1) <u>Complaints received on morning of 30/09/2020 :</u></b></p> <p>We have received reports this morning of a suspected aircraft fuel dumping incident that affected the following neighborhoods around 19.30 hrs last evening (Tuesday 29/09/2020):</p> <p>Millard Road Estate  Rosehill Estate  Purwell Estate  Highover Estate</p> <p>The following text was recorded when the complaint was registered:</p> <p>Customer wanted to speak to an officer regarding air pollution. He advised that last night, himself and the whole road noticed that air pollution was coming from somewhere or somewhat. The air pollution was very strong like there has been a spillage. He spoke to the Police who were unaware. All the neighbours were very concerned and shut their windows. He phoned the emergency env. health number who advised they couldn't help so he went back to the Police on 101 who advised to call 999.</p> <p><b>(2) <u>Further complaints received by NHDC Thursday 01/10/20:</u></b> We have received 3 further complaints of a similar nature, the earliest time reported as being noticeable was 6pm.</p>

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	<p>(3) <u>30/09/2020 I Reported the details above to the CAA with further details supplied on 01/10/2020</u></p> <p>(4) <u>12/10/2020 CAA provided a response with a reference:</u> In this particular instance, the Safety Intelligence team have referred your submission to us in the Airspace Related Environmental Enquiries (AREE) team for our consideration and comment. Your email has been transposed onto our system and has been given reference <b>798320 dated 05/10/2020.</b></p> <p>If you wish to pursue this matter, we respectfully suggest that you should contact Luton Airport to see if they had any reports of fuel dumping and also ask the airport to confirm the same with Terminal Control at NATS Swanwick.</p> <p>(5) These details were forwarded to <a href="mailto:communityupdate@ltn.aero">communityupdate@ltn.aero</a> on Wednesday 4<sup>th</sup> November 2020.</p> <p>No response was ever received from Luton Airport or further response from the CAA on this matter.</p> <p>The Hertfordshire Host Authorities would be glad to know:</p> <ul style="list-style-type: none"> <li>• if this incident was ever recorded by the airport operator</li> <li>• if it was an incident that was planned</li> <li>• if it was an unplanned incident</li> <li>• if the airport and airline concerned were aware that impact was likely on an urban residential area</li> <li>• whether the airport had agreed to the fuel dump</li> <li>• what was the quantity of fuel dumped, from what height, and what location</li> <li>• what was the flight that dumped the fuel, and what was its flight trajectory at the time of the dump.</li> </ul>
<p>The Applicant will be asked to provide further explanation relating to assessment</p>	<p><b>6. Green Controlled Growth (GCG) thresholds and limits</b></p> <p><b>PM 2.5 and Health Impacts from Fine Particles</b></p>



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<p>locations in Table 4.2 of the GCG framework [APP-218] and the proposed Level 1 and Level 2 thresholds. The principle of continuing to grow whilst making only a small contribution to breach of an air quality level/ limit will be explored in light of the Airports National Policy Statement (ANPS) requirement to demonstrate that, with mitigation, the scheme would be compliant with legal obligations that provide for the protection of human health and the environment. The Applicant will be asked to explain how financial contributions may be made to the wider air quality improvement programme.</p> <p>Monitoring standards and air quality measures in the 'toolbox of interventions' will also be discussed.</p>	<p>The Hertfordshire Host Authorities have raised concerns in their Local Impact Report [REP1A-003], at paragraph 7.7.14, regarding the ability of the Green Controlled Growth (GCG) framework to account for and address short-term pollution events in relation to e.g. PM2.5, which can trigger adverse health impacts, noting that the GCG framework addresses annual mean concentrations only.</p> <p>Long term research summarised by the World Health Authority (WHO) has identified health impacts associated with short term and longer-term exposures.</p> <p>Short-term exposure (over hours or days) can lead to a range of health impacts including lung function, coughing, wheezing and shortness of breath, exacerbation of asthma, increases in respiratory and cardiovascular hospital admissions and mortality. (increased mortality from all causes, cardiovascular disease, respiratory disease and lung cancer). Longer term exposures can be associated with increased mortality from all causes, cardiovascular disease, respiratory disease and lung cancer.</p> <p>For the purposes of regulation, particulates (PM10 and PM2.5) are classified in terms of size fractions by weight (i.e. micrograms per cubic metre or <math>\mu\text{g}/\text{m}^3</math>). Particulate number (PN) is now considered to represent a closer risk to health associated to human exposures, but is not a metric used in general air pollution regulations.</p> <p>The thresholds proposed in the GCG address annual mean concentrations only. This does not account for short-term pollution events which can trigger acute health impacts. It is not clear how short-term pollution events – especially in-relation to PM2.5 – will be captured and addressed by the Applicant to ensure that airport is not the cause. For PM2.5, the Hertfordshire Host Authorities have considered it is appropriate to adopt the World Health Organisation interim target 3 for the 24-hour mean concentration of <math>37.5 \mu\text{g}/\text{m}^3</math>, not to be exceeded more than 3-4 days per year. Additionally, the thresholds proposed in the GCG specifically address compliance with statutory limits for annual mean concentrations on a calendar year basis which does not allow the Applicant to quickly address conditions affecting chronic health impacts; in this regard, the Host Authorities would suggest that thresholds for continuous monitoring are set as rolling annual mean concentrations.</p> <p>Growing scientific evidence indicates that there is no effective safe level in terms of human exposures to fine particulates (including PM2.5). In September 2021, the WHO published updated Air Quality</p>

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	<p>Guidelines. The guideline for annual mean PM2.5 concentrations was reduced from 10 µg/m<sup>3</sup> to 5 µg/m<sup>3</sup> to reflect the evidence.</p> <p>The Hertfordshire Host Authorities have also raised concerns in their Local Impact Report <b>[REP1A-003]</b>, at paragraph 7.7.15, that the indicative continuous monitoring method proposed by the Applicant would not be able to reliably capture such short-term events.</p> <p>The Hertfordshire Host Authorities remain concerned that the indicative ('AQ-Mesh') continuous monitoring method proposed by the Applicant would not meet Defra's reference method equivalence criteria for particulate monitoring* <b>[REP1A-003]</b>, paragraph 7.7.15]. Indicative methods are generally not fit for purpose for demonstrating compliance and cannot be relied upon to capture short-term pollution events.</p> <p>(* According to Defra, for a PM10 or PM2.5 instrument to be used for ambient air quality reporting purposes it either needs to be the European Reference Method or to have been proven equivalent to the European Reference Method.)</p> <p>The updated PADSS <b>[REP2-058]</b>, page 42 - 43] reiterated the concern regarding the lack of short-term PM2.5 monitoring provision.</p> <p>The Applicant in its Response to Relevant Representations Part 2A of 4 (Local Authorities) <b>[REP1-021]</b>, page 27] states that "...the Applicant is happy to liaise with the councils on the details of future monitoring proposals." Also, the Applicant recognises the introduction of the government's Environmental Improvement Plan interim target for annual mean PM2.5 for 2028 "...is likely to require an increased level of accuracy in monitoring concentrations of PM2.5 prior to 2040. Reflecting the interim target in the GCG Framework may require modifications to the overall monitoring approach, including equipment and any subsequent analysis" <b>[REP1-017]</b>, paragraph 4.1.6, page 4].</p> <p>These statements by the Applicant are welcomed, in-particular the willingness to discuss the matters of limits and thresholds, and appropriate continuous monitoring methods. The Hertfordshire Host Authorities expect to continue to engage with the Applicant on these issues to reach agreement on a suitable approach.</p>

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	<p>The Hertfordshire Host Authorities wish to be involved in agreeing the monitoring strategy, to include agreeing the locations, siting and choice of suitable monitoring equipment.</p> <p>The Hertfordshire Host Authorities consider that an emissions inventory for all airport related activity should be updated annually based on actual recorded activity data and be a significant part of the ongoing GCG monitoring strategy.</p> <p>The Hertfordshire Host Authorities would like the Applicant to make a commitment that the GCG measures would be reviewed in line any proposed airspace changes affecting London Luton Airport's flightpaths.</p> <p><b>Ultra-Fine Particles</b></p> <p>The Hertfordshire Host Authorities have also raised issues in relation to monitoring for fine particulates [REP2-022 page 66, REP2-023 page 63, REP2-024 page 57].</p> <p>The Hertfordshire Host Authorities note the 2018 report for Defra by the <a href="#">Air Quality Expert Group (AQEG) 'Ultrafine Particles (UFP) in the UK'</a>.<sup>1</sup> The report highlights that current regulation for the control of particulate emissions are based on total mass of particulates within a specified size range, PM10, PM2.5, PM1 etc. In particular, the following points from the Report are noted:</p> <ul style="list-style-type: none"> <li>• <b>Page 10-11</b> - Emissions of UFP arise primarily from combustion sources and especially transport-related sources which burn sulphur-containing fuels. Emissions from road transport affect all areas with major roads, emissions from shipping are important on the main shipping routes, and emissions from aviation are significant in the vicinity of major airports. <b>Recommendations:</b> Continuous monitoring of UFP concentrations and size distributions currently takes place at only three UK sites, all of which are in the southeast of England. The current measurement strategy is focused on the urban and traffic sources. It is insufficient to determine exposure from poorly understood UFP emission sources such as airports and shipping / ports, and also the way in which existing policies to reduce PM10 and PM2.5 are affecting UFP exposure. <b>The group therefore recommends</b></li> </ul>

<sup>1</sup> [1807261113\\_180703\\_UFP\\_Report\\_FINAL\\_for\\_publication.pdf \(defra.gov.uk\)](#) [Accessed 19:58, 5 October 2023]

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monitoring in other parts of the country, including the establishment of at least one permanent site monitoring in the vicinity of a major airport. There is also a need for research to further understand the chemical composition of ambient UFP, as well as enhanced numerical models to simulate and predict the behaviour of UFP in the atmosphere.

- **Page 18 - 1.6 -** Legislation pertaining to ambient UFP - There are no ambient air quality standards for UFP in the UK or anywhere else in the world. However, the EU (and consequently also the UK) has particle number emission standards for new vehicles. This is currently the only such legislation worldwide. The Euro 5 and Euro 6 standards specify a PN emission limit of  $6.0 \times 10^{11}$  solid particles per test-cycle km for compression ignition (diesel) vehicles (EC Directive, 2008). Whilst these regulations limit the emissions of UFPs to the environment from one key source, they do not in themselves regulate the exposure of the public to UFPs.
- **Page 23 - Key Points** · Emissions inventories show that combustion sources, and especially those related to residential wood burning and transport (road traffic, aircraft, shipping) are the main sources of ultrafine particle emissions in the UK and Europe. · Reductions in fuel sulphur content and the use of diesel particle filters is leading to a reduction in emissions from transport sources. · Emission factors are more uncertain than for particle mass metrics (PM2.5 and PM10). · Emissions from some potentially important sources such as domestic wood burning are very poorly known. · Future projections show an increasingly important contribution of UFP from aviation. The report compares size fractions for Particulate Aviation emissions, and the results show that 100% of PM10 emissions are attributable to smaller PM2.5 particles, and nearly 70% can be attributed to PM1 emissions, highlighting the significance of the smaller particle size fractions from aircraft.
- **Page 27 -** A recent study on ambient measurements of particle number concentrations under the landing approach near airports in the U.S. suggests significant emissions of UFPs occur from aircraft.
- **Page 33 -** In the inventory aviation is now recognized as a significant source of (semi-volatile) PN. The particle number inventory is summarised below by sectors, showing the increasing significance of aircraft as a source of particle number emissions.

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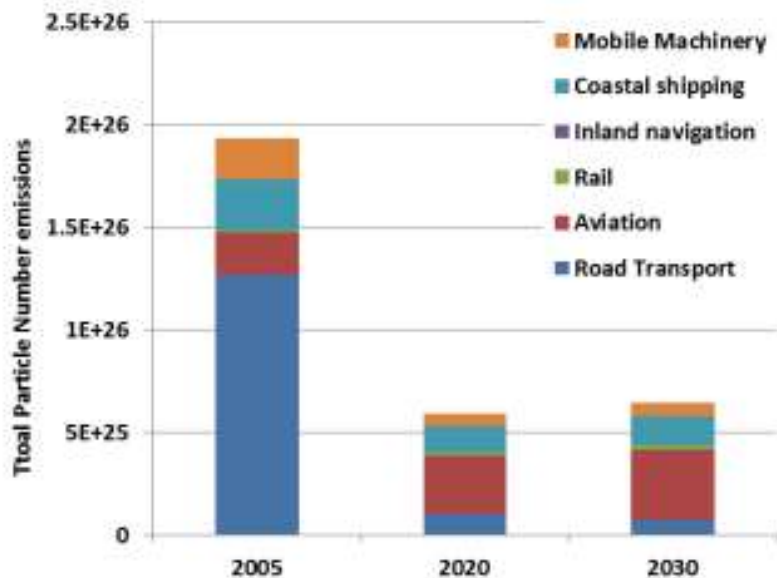


Figure 10. U.K. transport sector total particle number emissions in 2005, 2020 and 2030 excluding International shipping. (Aviation = airport LTO's up to 1000 m) (data from TNO).

The Hertfordshire Host Authorities also note the following [Statement from DEFRA<sup>2</sup>](#) on the significance of particle numbers:

*Exposure to airborne PM is associated with a range of adverse effects on human health including effects on the respiratory and cardiovascular systems, leading to hospital admissions and mortality. There is increasing evidence that fine (PM<sub>2.5</sub>) and ultrafine particulate matter (<100nm) plays a more significant*

<sup>2</sup> [Particle Numbers and Concentrations Network - Defra, UK](#) [Accessed 19:57, 5 October 2023]

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	<p><i>role than previously thought, although as yet the precise toxicological mechanisms are not clearly understood. There is also evidence to suggest that particle number concentrations and chemical composition are of greater significance than particle mass concentrations in the determination of certain health effects. Particle number concentration is the total number of particles per unit volume of air (for example <math>\text{cm}^{-3}</math>), whereas particle mass concentration is the total mass of particles per unit volume of air (for example <math>\mu\text{g m}^{-3}</math>). Particle mass concentrations are typically dominated by larger sized particles.</i></p> <p><b>Delay between identifying an exceedance and remedial action being taken</b></p> <p>The Hertfordshire Host Authorities note that under current proposals there will be a significant time lag between identifying an issue through monitoring to determining whether it is related to airport activity and whether controls under the GCG framework would apply. The Hertfordshire Host Authorities consider that there needs at least to be some criteria established where any investigation or follow-up is instigated based on air quality monitoring. Unless specific air quality monitoring stations are established at locations on or very close to the airport perimeter, this exercise will otherwise most likely be futile. For any monitors situated more than 1km from the airport boundary, the airport will always have open to it the defence that the emissions are coming from elsewhere. Therefore, if the GCG air quality thresholds are to be meaningfully managed in relation to airport emissions, there will have to be a dedicated set of monitoring stations ideally on the airport perimeter.</p> <p>The emphasis on dialogue offered by Arup on behalf of the Applicant is suggesting that the only likely exceedances will be from road traffic.</p> <p>This suggests the Applicant does not want to have to look closely at the potential of airport and aircraft related emissions to significantly impact on air quality.</p>