

**The Heathrow Community Engagement Board
Transport, Environmental and Noise Advisory Group (TENAG)**

Fifth Meeting: Thursday, 13th February 2020 at 6.00 – 8 p.m. at the Institution of Civil Engineers,

In attendance

TENAG	Kris Beuret OBE (Chair), Arthur Leathley, Bob Mclellan, Christine Taylor, Guido Liguori, John Stewart, Martyn Hurst, Nicholas Ward, Robert Buick, Susan Parsons, Tim Henderson.
Temple	Dr Ross Hunter (independent specialist emissions and air quality)
HAL	Andrew Chen (Head of Emissions Strategy), Joss Watson (Health and Air Quality)

Apologies

Peter Bradley, Mark Frost, Peter Le Blonde, Lynda Addison OBE and Derek Rawlings

Summary

1. The TENAG strategy for the forthcoming year was discussed and agreed (attached separately). The key approach was to continue to feed into the consultation and DCO process based on cumulative evidence from past and future TENAG meetings. This process had already commenced by feeding into HCEB's response to last year's HAL consultation.
2. Apart from the four evening meetings planned (April 30th, 2nd July, 8th October, 3rd December) it was agreed that some members would visit the Colne and Crane Valleys and report back to the main group (date to be arranged). Continued scrutiny of surface transport as well as freight and construction issues were priorities and also to consider HAL's Environmental Growth Plan.
3. The main business of the evening was to discuss emissions and air quality which took the form of discussions around some initial thoughts from TENAG's independent specialist (slides attached) followed by broader questions and answers from HAL. All present welcomed the open and collaborative approach. The summary below is the result of the issues discussed, TENAG's challenges and HAL's response.

Update note

Since this meeting, the judgment from the Court of Appeal on the Judicial Review against the Government's policy on Heathrow expansion has been published. The Government has decided not to appeal but HAL have announced today that they will seek permission to appeal the judgment from the Supreme Court. Whatever happens it is clear that the DCO process will be suspended and next steps are uncertain. HCEB's view is that there will continue to be a need for representing the community and we will update you with further information shortly.

Discussion Topic	Heathrow response	TENAG View/Action
<p>1. Modelling</p> <p>Air quality modelling assessment, with this being verified using monitoring data which is used to adjust the modelling to make it more accurate. In relation to Heathrow the key causes of poor air quality at the airport and in surrounding areas is emissions from surface traffic and also with contributions other localised emissions sources such, commercial/residential heating and industrial plant.</p> <p>There are debates between experts about the modelling process and the Heathrow Advisory Transport Forum (HATF) have set up a working group which includes TfL to attempt greater consensus.</p> <p>A brief description of the modelling approach and overview of key issues (predominantly based on those picked up in the TfL consultation response associated with this for the assessment undertaken by the TENAG independent expert are provided in slides 6-9 of the slide pack accompanying this note.</p> <p>The model presented in the PEIR model has been subject to verification by a factor of 4 (meaning the original modelling data has been quadrupled having been compared to suitable monitoring data within the area covered by the model). This is very high and suggest some underlying concerns and shortcomings associated with the approach to and data underpinning the modelling assessment using monitoring data.</p> <p>Could the modelling and monitoring data be trusted? The consultation to date has not fully describe all aspects of the methodology, underlying data and how this has been applied. When would this be available?</p>	<p>Heathrow's dispersion modelling team has held several meetings with TfL during which the use of data / factors as well as the overall assessment methodology have been discussed.</p> <p>A significant amount of technical detail has been provided to TfL to justify the approach taken (provided post-AEC). This detail will be replicated for the Environmental Statement (ES) and provided in technical appendices.</p> <p>Heathrow intends to prepare a Statement of Common Ground (SoCG) with TfL on the modelling methodology. For the ES, a range of sensitivity tests will be undertaken in order to provide information of the probability envelope of impacts.</p> <p>Heathrow intends to use the most up to date data / factors available at the time of application. The model adjustment factor is expected to reduce considerably for the ES, albeit in the experience of the modelling team, calculated Road-NO_x adjustment factors of this nature are not unusual in congested urban environments.</p> <p>Heathrow recognises that it is important to demonstrate that the assessment approach is robust, therefore Heathrow has established the Heathrow Air Quality Expert Review Group (AQERG) to provide an independent technical review of assessment work. AQERG has been consulted on all outputs produced to date.</p>	<p>Discuss the results of the HATF working group</p> <p>HAL should lower thresholds and not relying on averages</p> <p>TENAG would like to share the Heathrow SoCG to comment on.</p> <p>TENAG could seek membership to the AQERG and/or be sent papers for comment.</p>

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<p>2. Pollutants - Nitrogen dioxide</p> <p>Concern that the modelling undertaken in the PEIR a high verification factor of c 4 was applied for NO₂ – is this too high? Also is it best practice to use a number of factors so as to be representative of the significantly differing emissions rates associated with individual road types (urban/rural/motorway) that display different vehicle speeds, vehicle mixes etc? Further justification for use of a single verification factor in the modelling is required. This is outlined on slide 5 of the slide pack accompanying this note.</p>	<p>As stated above Heathrow’s dispersion modelling team has held several meetings with TfL during which the use of data as well as use of verification factor have been discussed. Further information supporting the justification for a single adjustment factor has been prepared and shared with TfL. The ratios between modelled and measured Road-NO_x have been considered at all sites to consider if different adjustment factors could be used in different areas or situations. Information to this level of detail will be provided in support of the adjustment factor used in the assessment for the DCO application</p>	<p>It is clear that the reach and impacts of pollutants is based on imperfect data and research.</p> <p>Standards based on new research should be set and development stopped if exceedances occur</p> <p>The information with regard to the verification factor should be shared with TENAG.</p> <p>There is no mention of whether any non-exhaust emissions might be subject to an enhanced assessment approach (when compared with the current approach), bearing in mind their significance in terms of proportion of PM emissions from road transport by the time the scheme is operational.</p> <p>There is also no real commitment to mitigation or perhaps whether the scheme could work towards the tighter WHO thresholds.</p>
<p>3. Pollutants - Particulates (PM₁₀ and PM_{2.5}) and Ultra-fine particulates (UFPs)</p> <p>Whereas Nitrogen Dioxide is a threshold pollution (above a threshold is detrimental health effect and below this the impact much reduced), particulates are non-threshold – i.e. any presence in ambient air is associated with health impacts. An increases proportion of particulates from road transport come from tyres, brakes and road dust re-suspension and so will be an issue even with electric vehicles. There are currently no UK standards for UFPs. Worryingly a lot less is known about the impacts of UFPs including upon health and they can be found 15 miles from the airport. Research is</p>	<p>PM is a key pollutant of concern around the world due to the proven effects on human health. The range of adverse health effects from PM exposure is broad, but they are predominantly to the respiratory and cardiovascular systems. The risk of various outcomes has been shown to increase with exposure and there is little evidence to suggest a threshold below which no adverse health effects would be anticipated. Particles are deposited selectively throughout the respiratory tract at locations determined primarily by their size. Larger size classifications include the fractions of smaller size, hence a given PM₁₀ concentration will include a fraction that is PM_{2.5} and a smaller fraction that is UFP and a given PM_{2.5} concentration will include a UFP fraction.</p> <p>Measurement of PM₁₀ and PM_{2.5} over many years has allowed links between concentrations and health impacts to be established so that exposure targets can be established. The annual average World Health Organization (WHO) air quality guidelines for PM₁₀ and PM_{2.5} are 20 µg/m³ and 10 µg/m³ respectively. The EU limit values and UK Air Quality Objectives (AQOs) against which PM₁₀ and PM_{2.5} were assessed in the PEIR are 40 µg/m³ and 25 µg/m³ respectively.</p> <p>UFP has been considered in sporadic studies over the past twenty years, whilst PM₁₀ has been monitored and studied using consistent methodologies for much longer. Given the shorter timeframe over which UFP has been</p>	<p>There is also no real commitment to mitigation or perhaps whether the scheme could work towards the tighter WHO thresholds.</p>

<p>ongoing (Kings College, Los Angeles, Netherlands).</p>	<p>monitored and investigated and the ongoing discussions relating to particle size distributions and emission sources, no exposure targets and guidelines against which concentrations can be assessed have been established.</p> <p>Whilst the sources of UFP and PM_{2.5} can differ, fine particles have been considered through our assessment of PM_{2.5}. UFP (PM_{0.1}) is a component of PM_{2.5} and the effect of the DCO Project on PM_{2.5} concentrations is being considered both in relation to local concentrations (Air Quality and odour chapter) and population exposure across a wider area (Health chapter)</p> <p>Heathrow supports research into UFP around airports and is currently supporting occupational exposure research study carried out by Kings College London.</p> <p>Heathrow supports International Civil Aviation Organization (ICAO) efforts to manage particulate emissions from jet engines and uses the landing-charge regime to incentivise the newest, cleanest, and most quiet aircraft possible.</p>	
<p>4. Pollution from aircraft There was debate about this impact with disagreement about the height limit cut off for measurement with ranges from 1000 (DfT) to 3000 feet (International Civil Aviation Organisation – ICAO). In the Netherlands there is concern about excess nitrogen deposition impacting nature sites with emissions at higher altitudes contributing to increased ‘background’ levels which eventually mix over a wider area and fall to ground. (NB: TENAG have further references to inform this debate.)</p>	<p>The National Emissions Ceilings Regulations 2018 set limits for total anthropogenic emissions of certain pollutants in the UK, including nitrogen oxides (NOx). In the context of aircraft emissions, the regulations define anthropogenic emissions as those within the landing and take-off cycle (up to 3000ft). To assess the implications of the Project on compliance with these limits, the total tonnes of NOx (project increment or total) has been calculated and will be reported within the ES.</p> <p>The reason that aircraft emissions above the landing and take-off cycle are not considered in the detailed air quality assessment, is that due to dispersion in the atmosphere they have a small impact on air quality at ground level. This is the case when considering pollutant emissions from aircraft within holding patterns as they await to land, which will typically be at a height of approximately 8,000 ft.</p> <p>Reducing the requirement for aircraft to circulate in stacks reduces the potential for them to burn fuel whilst doing so and is beneficial from an emissions perspective. It is more efficient if aircraft can land straight away upon approach rather than having to wait for a landing slot. For this reason, a guiding design principle of the Airspace Change Process is that it should seek to minimise fuel burn and subsequent pollutant emissions per flight.</p>	<p>Are emissions at height really as negligible as claimed? What height should the measurement be set?</p> <p>The response presented does not adequately address the issue. What guidance will the assessment adhere to – up to 1,000 ft or up to 3,000 ft?</p>

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<p>5. Impacts of Construction Traffic There was little information about this at the recent consultation. As construction is phased there is a need for projections to take into account peaks and continual growth over time – not just selected dates. This is outlined on slide 8 of the slide pack accompanying this note.</p>	<p>Construction traffic was included in modelled traffic flows in 2022 for the PEIR. The ES will include air quality dispersion modelling completed for years 2022 to 2029 and 2035 (including construction traffic)</p>	<p>TENAG to adopt a watching brief</p>
<p>6. Boundary issues Will the massive growth in development outside of the HAL boundary be captured? How widely will the impact of the airport be taken account of in estimates of air quality?</p>	<p>The spatial extent of the detailed study area considered within the assessment, is based on where potential changes in pollutant concentrations could result in significant environmental effects, through for example, changes in traffic flows on the public highway. The approach applied in determining the detailed study area is in accordance with the EIA Scoping Opinion published by PINS on the 2nd July 2018. The Scoping Opinion was informed by a period of consultation led by the Planning Inspectorate and reflects consideration of feedback received from prescribed and non-prescribed consultees, including HSPG and Highways England. The Infrastructure Planning (EIA) Regulations 2017 (the EIA Regulations) requires Heathrow to submit an ES which is based on the most recent scoping opinion adopted.</p> <p>The impact of traffic generated by airport related development outside of the airport boundary for which Heathrow is seeking consent through the DCO is taken account via transport modelling and the air quality assessment. Further developments, that are not reasonably foreseeable at the time of our assessment will need to be assessed on their own merits as future planning applications with a transport and subsequent air quality assessment to support this.</p>	<p>This is a piecemeal approach to what is going to be major development in the area. TENAG is challenging this approach both in general and in co-operation with other groups such as HATF and LAs</p>

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<p>7. Consultation with the local community It was felt that there was insufficient awareness or clarity about the new HAL local area-based health consultation and the way in which areas have been included and location grouped.</p>	<p>The Local Liaison Group (LLG) is a chance for representatives from the community to come together to discuss their views and opinions on important local issues. The aim of the LLG is to provide community members with a forum to speak with representatives from Heathrow, share ideas, let us know what the airport is doing well and flag those areas where we could make improvements.</p> <p>The scope of the LLG is flexible and will evolve as the process develops, forming an engagement channel that is bespoke to each community.</p> <p>Once established, we will look to have 1/2 members from each area form a central Community Liaison Group that would represent community issues across the whole project.</p> <p>Local Liaison Groups take place within the following areas:</p> <ul style="list-style-type: none"> ○ Iver & Richings Park ○ Brands Hill, Colnbrook & Poyle ○ Stanwell Moor ○ Stanwell ○ Hatton, Bedfont & North Feltham ○ Heston, Cranford & Cranford Cross ○ Harmondsworth, Sipson & Harlington ○ Longford 	<p>HAL to improve liaison with local community</p>
<p>8. Health Impacts There is a need to have the right policies and strategies to safeguard not just vulnerable people but the whole population. Clearly there are additional health issues within the compulsory purchase zones.</p>	<p>The Heathrow Expansion Health Impact Assessment (HIA) has adopted the World Health Organization definition of health and will set out the likely significant effects on health outcomes, along with appropriate mitigation and monitoring requirements. The assessment considers effects on both the general population and also vulnerable groups including children, elderly and disabled people.</p> <p>The study area for the HIA is defined by the Local Planning Authorities in the Greater London area, together with the Local Planning Authorities in the Fully Modelled Area (the area covered by the traffic modelling), and the Core Air Quality Objective Assessment Area (core study area for air quality assessment immediately around the Airport). Pollutant concentrations have been modelled across this area for the HIA.</p> <p>For residents who live in the Compulsory Purchase Zone, and would be required to relocate, measures such as the Home Relocation Support Service (to be launched as part of the Home Purchase Bond), would provide information on the services to help guide owners and residents through the DCO application and home relocation process. The interim Property Polices (consulted on at the Airport Expansion Consultation 2019) are also of relevance.</p>	<p>Health impacts are broader including mental, social and well as physical. Both TENAG and the HCEB as a whole will continue to explore these issues as well as providing a voice for those affected.</p>

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<p>9. Greenhouse gases There is a need to further scrutinise greenhouse gas emissions associated with Heathrow Expansion issues. It is likely that it will lead to very substantial addition GHG emissions over its lifetime that will materially impact upon UK level GHG emissions and the ability of the UK to meet future GHG emissions (net-zero by 2050). This impact is insufficiently addressed in the PEIR and further analysis is required.</p>	<p>As explained within the PEIR, the assessment methodology is based upon reporting carbon emissions in a way which is consistent with that adopted by the UK in reporting international aviation emissions. This is necessary to satisfy the requirements of the ANPS. This specifically requires Heathrow to provide evidence of the carbon impact of the DCO Project “such that it can be assessed against the Government’s carbon obligations”. Therefore, a consistent approach is required to facilitate a valid comparison.</p> <p>Heathrow recognises that due to continued growth in aviation and emission reduction in other industries and activities, which can be achieved more rapidly than they can for aircraft, the proportion of total UK carbon emissions generated by the aviation sector is projected to grow in the future. This means that by 2050 the proportion of UK wide emissions from aviation will be higher than it is today. This is accounted for in the Government’s target to bring all greenhouse gas emissions to net zero by 2050. Through a combination of increasingly efficient and lower emitting aircraft technology, the increased use of sustainable aviation fuels and increasingly efficient operating practices, growth in aviation can be compatible with achieving this target. It is however acknowledged that the residual CO₂ emissions from UK aviation in 2050 will require the implementation of carbon capture and sequestration technologies to achieve the net zero target.</p>	<p>This response does not address the issue. It does not specify exactly how the Heathrow expansion is in line with the overarching legislative commitment for net zero in 2050?</p> <p>This topic area may have been taken over by other events, however TENAG could look to hold a GHG emissions focussed meeting in the future.</p>
<p>10. Mitigation There are choices here and local communities should have opportunities to discuss options, priorities and trade-offs.</p>	<p>Last year, Heathrow carried out a statutory consultation on proposals for the expansion of the airport – the Airport Expansion Consultation. As a result of feedback received during the Airport Expansion Consultation, continued stakeholder engagement and our further environmental studies, we have developed a number of localised material changes to the expansion proposals. While these do not fundamentally change the nature of the overall Project, they are considered sufficiently material. We would therefore like to share and seek feedback on them before we finalise our Development Consent Order (DCO) application for submission. We have also provided further information and updates on certain aspects of the Project, with more detail than was available at the Airport Expansion Consultation.</p> <p>This will include more detail on our mitigation proposals, including our proposals for mitigating effects on air quality. The consultation will begin on 15 April and run for 8 weeks. We will continue to engage with TENAG in relation to our mitigation proposals as we prepare our DCO application.</p>	<p>Need deliberative engagement – HCEB to liaise with HAL to organise</p>