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29 May 2015

My reference: EF – DCC  
Please ask for: Guy Denington

Dear Sirs

**Airports Commission consultation – air quality assessment – 8<sup>th</sup> May 2015**

Although we are pleased that the Commission has fulfilled its undertaking to carry out dispersion modelling to better predict air quality conditions resulting from the three airport expansion proposals, it cannot be acceptable to allow only a three week consultation period for such a technically complex environmental impact. The restricted time precludes affected Councils and residents from giving the information proper consideration, or seeking specialist advice. Reluctantly our response is therefore mainly limited to fairly “high-level” observations.

We are also confining ourselves to commenting on the two Heathrow proposals for:

- (i) a new north-west runway (NWR) and
- (ii) an extended northern runway (ENR).

In our response of 27<sup>th</sup> January to the Commission’s consultation on the airport’s expansion options, we concentrated our air quality comments in our answer to question five. We would ask the Commission to refer to that part of our response alongside these subsequent comments. Although our immediate concerns are focussed on the possible impacts within our borough, we are very much aware of the impacts to residents living closer to the airport, for instance residents living in 47,000 properties will suffer higher nitrogen dioxide levels, if the north-west runway is built [5.7].

All references in square brackets refer to section/paragraph numbering in the air quality assessment document, or appendix figures.

### National, regional and local Planning implications

Bearing in mind the Commission's objective in the Air Quality Appraisal Module: 'to improve air quality consistent with EU Standards and local planning policy requirements', we think it is right to point out that the air quality findings are not consistent with Planning policy.

The latest air quality assessment shows that both expansion proposals would increase emissions of NO<sub>2</sub> and PM<sub>10</sub>, and increase concentrations of NO<sub>2</sub> in an area extending to the Royal Borough. They would also contribute to exceedences of the EU Limit Values for NO<sub>2</sub> and potentially delay compliance with meeting the EU Limit Values for NO<sub>2</sub>.

This cannot be reconciled with the National Planning Policy Framework (NPPF) which requires the planning system to have an environmental role to minimise pollution, and as a core principle to help reduce pollution. Importantly the NPPF recommends that: 'Planning policies should sustain compliance with and contribute towards EU limit values, or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with the local air quality action plan'.

National Planning Practice Guidance points out that: 'Concerns could arise if the development is likely to generate air quality impacts in an area where air quality is known to be poor. They could also arise where the development is likely to adversely impact upon the implementation of air quality strategies and action plans and/or, in particular, **lead to a breach of EU legislation**'.

In the absence of a National Policy Statement on Airports, we feel the approach adopted by the National Policy Statement for National Networks relating to road and rail is appropriate in that: 'The Secretary of State should refuse consent where, after taking into account mitigation, the air quality impacts of the scheme will affect the ability of a non-compliant area to achieve compliance within the most recent timescales reported to the European Commission at the time of the decision'.

We do not believe the air quality assessment as it now stands show that either of the proposed options complies with national policy, or guidance. The London plan, as the relevant regional policy, requires developments to be at least 'air quality neutral' and to not lead to further deterioration of existing poor air quality such as areas designated as Air Quality Management Areas. The assessment has not addressed whether an expanded Heathrow could be air quality neutral, indeed it shows negative air quality impacts which do not meet London Plan requirements.

In short it would appear that the air quality assessment has not had due regard to Planning policy, guidance or requirements.

### Technical points arising from the modelling along A4 corridor

Modelling results show [table 5.7] the A4 link between Fulham Palace Road and Earls Court Road having an annual mean NO<sub>2</sub> of 48.6 µg/m<sup>3</sup> including an additional 0.5 – 0.6 µg/m<sup>3</sup> from the north-west runway proposal. This underlines our concern

that the overall proposal is not helping us meet the national objective level of  $40 \mu\text{g}/\text{m}^3$ . Furthermore we are not given any information on whether this is reflected further east towards Knightsbridge.

Given the current level of exceedences on the Earls Court one-way system and associated roads which connect with the A4, it does not follow that only Cromwell Road exceeds the NO<sub>2</sub> objective [Fig 5.4 Annual mean NO<sub>2</sub> objective] or the objective in 2030 [Fig 5.13] even though the wider study area traffic simulation indicates that all major routes in the borough were included.

[Table 6.7] The ENR proposal is predicted to contribute  $0.4\text{-}0.5 \mu\text{g}/\text{m}^3$  NO<sub>x</sub> resulting in a range between  $37\text{-}45 \mu\text{g}/\text{m}^3$  which may sound modest until compared with the prediction for Marylebone Road, the worst situation in central London, of  $48.6 \mu\text{g}/\text{m}^3$ .

#### Technical points arising from the modelling of airport emissions

The selection of sensitive receptors [3.4] near the airport has been based on PCM roadside maps i.e. national scale modelling used by Defra for reporting exceedences. We would expect this to instead have been derived from an advanced dispersion model, such as ADMS airport, which was used on the airport emissions for the principal study areas (and also incorporates all the features of ADMS urban). It is unclear within the assessment scenarios [3.5] what these include; a summary of all the key components should be provided.

Only receptors conforming to EU monitoring and modelling requirements are included in the study. Therefore no locations closer than 4m to roads [3.6] have been assessed, where exceedence of the objective is likely. This is not appropriate for a study of this type which seeks to assess the impact of the proposals.

It is regrettable that levels of fine particles, PM<sub>2.5</sub>, have not been assessed [3.6] bearing in mind their health impact (Public Health Indicator 3.01) and the requirement for EU Member States to assess and reduce population exposure to concentrations of PM<sub>2.5</sub> by 2020.

We note that restricting aircraft engine ground running has been excluded from emissions inventory [3.7] but at [6.6 measure 7] attention is given to mainly electric GSE fleets at airports such as Los Angeles International. The promoter's claim that if 95% of the GSE fleet at Heathrow was electric a 60% reduction in NO<sub>x</sub> emissions could be achieved has not been examined. Also excluded are the extensive car parks, the reason given being that they only make a minor contribution and yet cold starts cause significantly more emissions than free-running on roads.

Road (surface access sources) [3.7.2] emissions have been derived from Defra's Emission Factor Toolkit: EFT, version 6.0.2 issued in June 2014 rather than the later version issued in November 2014, which in turn was not used for road ground support equipment (GSE) where the Heathrow Airport 08/09 emission inventory report was used instead. The use of the latest tools is necessary to adequately assess impacts.

It is not clear why the ADMS-Airport v3.4 model used for the dispersion modelling [3.8] of aviation sources was not used for the surface access sources too, but

instead have been combined at a later stage therefore preventing the use of the chemistry module, [3.8.1 NO<sub>x</sub> to NO<sub>2</sub> Conversion]. In addition other features such as displaying the output as coloured contour plots, rather than concentrations attributed to receptor points only, could have been provided.

We cannot agree with the statement [3.7] about verification of the modelling that: 'It is judged that the performance of the Heathrow airport dispersion model is good, and no adjustment of airport model NO<sub>x</sub> concentrations are required.' Only one site near Heathrow was compared with modelled data and an underestimate of 28 µg/m<sup>3</sup> NO<sub>x</sub> at this site means that the model is likely to underestimate the baseline and future scenarios. A more valid exercise would be to compare a number of monitoring sites and a separate evaluation undertaken for the Gatwick and Heathrow sites. In addition the results should be compared with the LAEI maps for 2009 and 2025 as a further validation exercise.

Also at [3.10 and assumptions] reference is made to the model being verified and adjusted so that confidence can be placed in the predictions, but we could not find any adjustments.

We are uncertain as to what extent the optimistic assumed modal shift from road to rail has been taken into account in the surface traffic modelling. As remarked in our previous response, rail improvement schemes currently in prospect will not achieve sufficient capacity to induce more than a marginal shift to rail transport. Heathrow Airport Ltd claim a shift to 50% public transport is achievable. Whilst this has been discounted in the appraisal it is not clear what surface access modal share has been assumed for the purposes of the dynamic modelling.

Predictions appear to have only been carried out to 2030 with 125 million passengers, even though the airport will not reach capacity until 2050 with 148 million passengers, which is a substantial increase with a corresponding extra demand on surface transport. In other words the assessment has failed to estimate the worst case scenario.

We have not found any significant evidence that the growth of freight generated by an enlarged Heathrow has been factored in i.e. the contribution of HDVs. There is also insufficient appraisal of the redistribution of all vehicle types onto local roads. Furthermore all roads with less than 5,000 vehicles/day have been excluded from the wider study area, along with the removal of source sector contributions for motorways, trunk roads, primary A roads and aircraft from the background concentrations. It is therefore likely that predicted levels have been underestimated as shown in the Heathrow verification exercise [Appendix F].

In addition only roads with a substantial change in traffic characteristics have been included in the Wider Study Area however it is not clear how 'substantial change' has been defined. A summary of the traffic data used in the assessment has not been provided; this along with more information on the traffic modelling undertaken and assumptions incorporated into the scenarios should be provided.

Supreme Court Ruling and reliance on improved vehicle technology

We note the admission that the NWR option is likely to delay compliance with the annual mean NO<sub>2</sub> limit value, but in the light of the recent Supreme Court ruling, and the European Court of Justice already initiating infraction proceedings, this implies that the Government may have to resign itself to the imposition of fines from the European Court for continuing breaches of the limit value. If a proportion of these fines are passed on to London boroughs, this is obviously a serious matter for each Council, and the Commission should reconsider its findings in view of the ruling.

There is a continuing reliance on predicted improvements in vehicle technology to reduce exhaust emissions despite evidence that on-road performance of vehicles produced to latest Euro standards falls short of the specification. The sensitivity testing [ref: 3.11] is very limited and has only been applied to Euro 6c light duty vehicles in 2030.

#### Mitigation of air pollution impacts

We understand that the appraisal has taken into account mitigation by design but not additional measures [5.7.1], although the principal mitigation measures proposed by the respective promoters have been evaluated. We have to assume that the costs of mitigation schemes are not reflected in the appraisal.

It is not clear how far the proposers' estimates for reducing emissions from road transport by various means of mitigation [5.6.3, 5.6.4] has been factored into the predictions, although we note that no work has been done to assess the proposers' airport congestion charging scheme, or the Commission's ultra low emission zone, despite the claim that the NWR proposal could, with congestion charging, reduce road traffic to 2013 levels.

The main mitigation measure that the proposers of the NWR and ENR options are relying on to reduce the air quality impacts of road traffic, is their intention to increase public transport use by passengers and airport staff travelling to/from the airport, to as much as 50% [5.6.3]. The Commission concludes that "it is not clear whether this is deliverable". TfL, which is likely to have a good understanding of public transport capacity currently planned, regards these assumptions about future public transport use to be unrealistic and over optimistic.

Consequently these assumptions lead to the modelling work underestimating road traffic use, allowing air quality impacts on roads such as the A4 and A40 to be under-predicted. The assessment should have included additional scenarios to show the impacts of differing rates of public transport use. If public transport use is lower than predicted, then this could have negative impacts for air quality. This does not appear to have been recognised in the assessment.

The other surface transport related mitigation measure is the introduction of a congestion charge [5.6.3 measure 8] for people travelling to the airport, which has been put forward by Heathrow to mitigate the 3<sup>rd</sup> Runway option. If the charge was high enough and the scope of the scheme wide enough this could reduce overall traffic levels, but it is very uncertain whether a sufficiently stringent scheme would be generally accepted. Without additional analysis of various options as part of the new air quality assessment, there is no indication of how effective such a scheme might be in reducing NO<sub>2</sub> levels.

It is interesting that the Commission has considered it necessary to put forward their own additional mitigation measures - not proposed by the airport. Its main proposal is the possible implementation of an Ultra-Low Emissions Zone (ULEZ) [5.6.4] similar to the one currently being promoted by TfL for the central London area. However, although the Commission considers that such a scheme at Heathrow could potentially reduce NO<sub>2</sub> concentrations, as with the possible congestion charging scheme, it is not possible to accurately predict its air quality impacts as this will depend on the nature and geographic scope of an ULEZ.

At the airport, vehicle emissions could also be reduced by improving the infrastructure for Ultra Low Emission Vehicles (ULEVs) – e.g. by providing electric charging points and hydrogen re-fuelling stations, both airside and landside [5.6.1]. Unfortunately it is not possible to forecast the uptake of ULEVs, since the provision of infrastructure does not guarantee its use.

#### Fine particle concentrations and construction impacts

The omission of PM<sub>10</sub> and PM<sub>2.5</sub> from the local air quality assessment work cannot be justified on the presumption that airports have little impact on concentrations of fine particles (PM<sub>10</sub> and PM<sub>2.5</sub>). It means that no evidence has been produced to show that Heathrow could be expanded without increasing exposure to PM<sub>10</sub> and PM<sub>2.5</sub> as well as NO<sub>2</sub>, even though an expanded airport is predicted to release around 100 tonnes a year of PM<sub>10</sub> and PM<sub>2.5</sub> into the atmosphere,

However with regard to construction impacts, this is a serious flaw in the assessment, when it is known that there is effectively no known safe level of particulate matter, The UK is required by the EU to assess and reduce population exposure to concentrations of PM<sub>2.5</sub> by 2020. The construction phase is likely to be considerable and relying on compliance with codes of practice is not sufficient for a project of this magnitude.

#### Health Impact assessment

The omission of a comprehensive health impact assessment remains a major flaw in the evaluation of the proposals, we note the monetised mortality and hospital admissions estimates used in the economic analysis (i.e. £688.3m for ENR and £10.8m for NWR) but little account is taken of overall morbidity and health damage over a life-time, or of health effects resulting from the combined environmental impacts. No full impact pathway assessment has been carried out [Appendix G].

No attention is given to emerging medical evidence that the long-term health impacts of lower concentrations of nitrogen dioxide and fine particles are worse than previously thought, and so no allowance has been made for this potentially greater than estimated impact.

#### Influence of climate change

If unchecked the warming effect of climate change will have a noticeable effect on air pollution episodes, the formation of nitrogen dioxide in relation to ground level ozone and the dispersion of particles, but this has not been modelled, and is only mentioned [appendix H]. There is no qualification of the appraisal results to acknowledge the uncertainties due to climate change.

The omission of the effects of climate change although partially explained is bound to cast further doubt on the accuracy of 2030 predictions.

### Conclusions

Planning policy, guidance and regional requirements appear to have been disregarded.

The appraisal lacks transparency throughout. It would help if the components to the modelling and their significance were more explicit and summarised. After only an initial read a number of technical queries have arisen, but without further time other inconsistencies and matters for clarification cannot be identified.

There are a number of omissions e.g. the lack of PM2.5 assessment and pollution predictions beyond 2030. There are also a number of questions about the measures proposed by Heathrow to reduce emissions and doubts about their effectiveness.

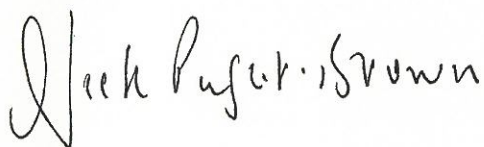
Some inputs are entirely lacking, such as the effect of climate change, and the influence of some of the assumptions are not clear e.g. the future modal split between road and public transport access.

The absence of a proper health impact assessment has not been addressed since our previous response and underlines the limitations of the air quality assessment. Most importantly despite shortcomings in the appraisal, both Heathrow expansion schemes show that the NOx limit values would be exceeded near the airport and the expanded airport road traffic emissions would add to concentrations along the A4 corridor. This would obviously be detrimental to the health of those exposed.

The overriding impression given by the appraisal is that it does not support the case for expansion of the airport.

Bearing in mind the threat of European Court fines for breaches of the limit values, the two expansion proposals should not be recommended. The Commission should postpone reaching any conclusions until the Government publishes its action plan for meeting the limit values. In the meantime further work is needed to address the weaknesses evident in the air quality assessment as outlined above.

Yours faithfully

A handwritten signature in black ink, appearing to read "Nick Pugh". The signature is written in a cursive, flowing style.