

Heathrow Expansion DCO Consultation Response Carbon and climate change

September 2019

1. Overview

- 1.1 This paper sets out the Mayor's response on carbon and climate change to the statutory consultation by Heathrow Airport Limited (HAL) on its expansion proposals.
- 1.2 The Mayor has a legal duty to produce plans and policies for mitigating climate change. The current Mayor's 2018 London Environment Strategy and 1.5C compatible climate action plan provide a detailed plan for tackling the climate emergency from a London perspective. In these documents, the Mayor outlines his ambition for London to become a zero carbon city by 2050.
- 1.3 The impacts of climate change are already being felt and the imperative to act to reduce carbon emissions has never been greater. Expansion at Heathrow airport will exacerbate the climate crisis.
- 1.4 The aviation sector makes up 2% of global carbon emissions and is projected to grow by 2-4 times by 2050. In the UK, aviation currently makes up 7% of carbon emissions and by 2050 will represent over a quarter of carbon emissions¹. ².
- 1.5 The UK's 2008 Climate Change Act requires the government to set 5-year carbon budgets, at least three budgets in advance, and has recently been updated with a new net zero carbon target for 2050. This new level of ambition is to reflect the Paris Climate Agreement which aims to pursue efforts to limit global average temperature increase to within 1.5°C. Given the climate emergency, it is vital that we do not take actions that will materially affect meeting the UK's or London's carbon budgets or targets.
- 1.6 However, expansion at Heathrow airport will have a material impact on the ability to stay within both UK and London specific carbon targets and budgets.
- 1.7 In assessing compatibility with the UK's climate targets, HAL should not refer to the current Airports National Policy Statement (NPS) as it is now out of date in respect to climate change, given the amendment to the Climate Change Act. Instead, HAL needs to demonstrate how expansion at Heathrow will not prevent the UK reaching net zero by 2050, rather than the 80% target that the NPS assumes. In order to do this, a full assessment is needed that takes account of all planned expansion at UK airports and the

¹ 25% by 2050 but this is under the previous 80% reduction target by 2050.

² DfT: Aviation 2050 – The future of UK aviation

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/769695/aviation-2050-web.pdf

new tighter carbon target set for the aviation sector by the Committee on Climate Change (CCC) in its advice to Government on the 2050 net zero target.

- 1.8 Furthermore, the most significant climate impact associated with Heathrow expansion is by far the cumulative emissions from the additional international flights. Whilst HAL does estimate this impact at an additional **184MtCO₂e**, the Preliminary Environmental Information Report (PEIR) fails to include these emissions in its carbon materiality assessment because the government does not currently include emissions from international aviation within its target, expecting that such emissions will be offset through the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). Whilst this may be in line with current government guidelines, it is unlikely to remain so for long, given that the CCC has advised the government that the UK should not rely on offsetting emissions internationally to meet its 2050 net zero carbon target, and that the CORSIA scheme is not compatible with achieving net zero globally. HAL must therefore show how expansion at Heathrow airport will not prevent the UK reaching net zero by 2050, when including international aviation emissions.
- 1.9 At a London level, as a result of the proposed expansion at Heathrow, aviation would account for nearly 30% of London's carbon emissions in 2050 (compared to 17% without expansion). This will make a material impact on London's ability to meet its zero carbon target for 2050.
- 1.10 In order to demonstrate that HAL can credibly facilitate the assumed reduction in the carbon intensity of aviation out to 2050, more detail must be provided on the infrastructure that will be put in place to enable larger or electric planes, and those using biofuels, to use the airport. To this end, HAL must also detail the tariff structures and landing charges, that will drive the uptake of more efficient and lower carbon aircraft.
- 1.11 Finally, to ensure actual carbon emissions resulting from the expansion are managed, HAL must agree carbon emission limits, with the levels set based on the advice of the CCC. Budgets could be set on a five year basis, to align with national carbon budgets.

2. The Mayor's strategies and the London context

- 2.1 The 2018 London Environment Strategy sets out an ambition for London to be a zero carbon city by 2050. It has been independently assessed as a 1.5°C Paris Agreement-compliant strategy but only in the absence of expansion at Heathrow. It sets a series of carbon budgets at the London-level. As is typical for a city, London's budgets only account for those emissions within the city boundary, i.e. emissions associated with take-off and landing (defined as the first 1,000m of flight) and energy use in ground operations at Heathrow, London City and six small airfields (i.e. those London airports within the Greater London Authority boundary).
- 2.2 HAL does not list (in appendix 2.1) the London Environment Strategy as a relevant local strategy that should be considered when assessing the impact of Heathrow expansion on carbon and GHGs. Going forward, HAL should consider the impact of expansion on

London's carbon budgets as set out in the London Environment Strategy (2018).

- 2.3 London's carbon budgets have been set without an allowance for an increase in emissions from Heathrow, since the strategy was published prior to the government's decision on the third runway at Heathrow. They are based on ambitious policies for building retrofit and the decarbonisation of heat and road transport. Other than on new development and transport, the Mayor has limited powers to reduce emissions and is heavily reliant on national government policy and action to achieve the carbon budgets which, for many areas, has yet to be implemented.
- 2.4 Under the Mayor's carbon budgets, further emission reductions from buildings and road transport are unrealistic as they are already at the limit of ambition. Increased emissions from aviation in London would therefore require widespread deployment of negative emission technologies to reach zero carbon by 2050. This is a particularly risky approach as many of the required technologies have not yet been developed or tested at scale.
- 2.5 London's emissions have peaked and are currently 31% lower than 1990 levels (31MtCO₂ in 2016 compared with 45MtCO₂ in 1990)³ and will need to fall to around 5MtCO₂ by 2050⁴.
- 2.6 Based on the assumptions in the PEIR, the impact of expansion at Heathrow on London's carbon targets can be estimated as follows:
- Additional emissions from landing and take-off (LTO) and Auxiliary Power Unit (APU) at an expanded Heathrow will comprise 0.42MtCO₂e (in the unmitigated scenario).
 - Additional emissions associated with surface transport (with mitigation scenario) are estimated in the PEIR to be 0.17MtCO₂e in 2050. However, we believe this to be an underestimate, based on the assumptions taken about surface transport movements – see response on surface access.
 - Heathrow expansion will therefore increase total emissions by at least 0.6MtCO₂e in 2050 (but more in earlier years).
 - Without expansion, aviation will take up 17% of London's carbon budget in 2050. Heathrow expansion takes up an additional 12% of London's carbon budget in 2050 so that aviation would account for nearly 30% of London's carbon emissions in 2050.
- 2.7 Expansion at Heathrow will therefore clearly have a material impact on London's ability to meet its zero carbon target, which will in turn impact the national government's ability to meet its climate targets.
- 2.8 Because it is unlikely that deeper cuts can be made in other sectors (which already need

³ Table 0.1 of document (LEGGI_2016_interim.xls at <https://data.london.gov.uk/dataset/leggi>)

⁴ This ~5MtCO₂ represents a 90% reduction on 1990 levels and will be offset through negative emissions technologies such as carbon capture and storage or tree planting.

to be near zero by 2050), an expanded Heathrow airport will increase the reliance on currently unavailable and unproven negative emission technologies.

- 2.9 In addition, these emissions may be difficult to reduce at a later date; for example, if zero emission aircraft do not materialise, it will make longer-term targets harder to achieve.

3. Preliminary assessment of impacts on national carbon targets and budgets

- 3.1 HAL should not be able to self-determine on whether their application will have a 'material' impact on meeting UK carbon budgets. Despite HAL itself finding that the DCO project will have a "significant negative effect", it argues that the assessment of impact of the project on UK carbon budgets is "separate" and goes on to find that the impact is "not material". This demonstrates that decisions around materiality should only be done at a national level by an independent body such as the Committee on Climate Change; see section on monitoring below. An independent assessment of the materiality of the carbon impacts associated with expansion would clearly result in the refusal of this application.

- 3.2 Furthermore, when considering the materiality of impact HAL must consider the *cumulative* impacts of both carbon emissions associated with both ground operations, take-off and landing and also from *international flights*:

- Since the PEIR concedes that international flight emissions account for 95% of the carbon impacts of Heathrow expansion, it is unacceptable to then consider Heathrow's impacts without including international air travel and conclude that "there is no material impact on the UK's ability to meet its obligations." The CCC's advice is clear that these emissions cannot and should not be merely offset elsewhere.
- It is unclear how the conclusion that "there is no benefit in undertaking a cumulative GHG emissions assessment" has been arrived at. The evidence presented shows that there are significant cumulative impacts associated with the additional international flights – the report estimates an additional **184MtCO₂e** over the period to 2050, or a **38% increase** in emissions relative to the baseline. Since CO₂ is a long-lived GHG, the cumulative impacts must be considered, rather than just a snapshot of the emissions emitted in one specific year.

- 3.3 The PEIR claims that expansion at Heathrow would be possible without offsetting international emissions via CORSIA and without jeopardising the UK's climate targets. The basis for this conclusion is the analysis done at the NPS stage for the proposed North West Runway. However, this analysis was done prior to both the government adopting a net zero target for 2050 and prior to the CCC's recent and damning progress report⁵ that the UK is already off target for meeting its 4th and 5th carbon budgets. The UK now has a target for net zero emissions by 2050 and it is therefore imperative that

⁵ CCC (2019). Reducing UK emissions – 2019 progress report to Parliament
<https://www.theccc.org.uk/publication/reducing-uk-emissions-2019-progress-report-to-parliament/>

the environmental impacts are assessed against this target before any conclusion is drawn.

- 3.4 The existing 2050 emissions cap for the aviation sector (37.5MtCO₂e) is based on an 80% reduction in UK emissions by 2050. With the government's commitment to net zero by 2050, the emissions cap for aviation will need to fall to 30MtCO₂e, according to the CCC. The impact of Heathrow expansion needs to be assessed against this revised cap, along with planned growth at other UK airports. HAL claims it will account for roughly 50% of the allowed aviation emissions in 2050 under the previous 80% reduction target⁶ and may be lower once certain mitigation measures are taken into consideration (analysis of the impact of additional mitigation measures is to be done at a later date). However, the emissions from Heathrow will account for a much greater share of emissions (~65%) from the sector with the adoption of a tighter UK carbon target.
- 3.5 With other airports also planning to expand, it is not credible for HAL to claim that they can take up two thirds of the UK's revised aviation emissions cap and not impact the UK's climate targets. HAL needs to articulate how the additional emissions associated with Heathrow expansion would fit within a national NPS that takes account of all planned airport growth (across the UK) within the new 30MtCO₂ aviation quota for 2050. It should also demonstrate that emissions in the shorter term align with revised carbon budgets due to be reviewed next year. As part of this, HAL must agree an annual carbon sub-cap or sub-budget for the airport, that it will commit to keep within, and monitor compliance.
- 3.6 HAL should consult again once its analysis of the project's effect on the net zero target has been carried out, since this is a significant issue that will inevitably lead to refusal of the DCO if it is not dealt with. The information provided is inadequate and is not sufficient for any consultee to understand the likely significant carbon impacts of its proposals.

4. International emissions offsetting

- 4.1 HAL's carbon neutral growth aspiration means that growth in CO₂ emissions from additional flights after expansion will be offset through carbon credits. This will be largely done by the airlines through CORSIA.
- 4.2 However, the credibility of offsetting via CORSIA is overstated as it is not global in coverage and currently only extends to 2035. There is also no guarantee yet of high quality offsets. The Committee on Climate Change (CCC) has said that the scheme is not compatible with achieving net zero globally and that relying on reductions elsewhere to offset international flights is risky and places an unfair burden on other nations. The

⁶ Paragraph 9.14.18. of the PEIR states that "the Aviation 2050 strategy also states that the Government wishes to adopt the CCC's recommendation to limit CO₂ emissions from UK aviation to 37.5MtCO₂ by 2050. Heathrow's percentage of this target has been calculated to decrease from 53.6% in 2017 to 53.1% in 2050 in the DCO Project without mitigation scenario. The emissions from the DCO Project with mitigation scenario, which will be assessed at ES stage, are anticipated to be lower."

CCC advises that the UK should not rely on offsetting emissions internationally to meet its 2050 net zero carbon target.

- 4.3 Given the shortcomings of CORSIA around quality of offsets, limited timeframe and limited coverage, HAL cannot therefore claim that participation of the airlines in CORSIA demonstrates that airport expansion will be carbon neutral. HAL's efforts must be focused on demonstrating that it can keep emissions, including from international aviation, within an agreed cap.

5. Risk assessment and contingency

- 5.1 Reaching net zero is reliant on very steep reductions in carbon across all other sectors, with them becoming near carbon neutral by 2050, whilst overall emissions from aviation across the UK fall only by 20% (as passenger numbers increase by 60%). HAL's plans should include contingency in case other sectors are not able to reach complete carbon neutrality by 2050. It is extremely risky from a global climate perspective for HAL to plan to max out its CO₂ emissions envelope, without considering the broader context in which it pollutes.
- 5.2 In developing a "with mitigation" scenario, HAL must question whether additional mitigation measures exist to drive emissions down further, beyond the overambitious and potentially unrealistic mitigation assumptions already being taken in the "without mitigation" scenario. HAL must provide reputable evidence that the assumptions for reducing emissions further in the "with mitigation" scenario are credible and likely.

6. Annual monitoring and introduction of caps

- 6.1 Annual monitoring on the absolute levels of carbon emitted is extremely important but current proposals to do so by HAL are very vague. What will be measured needs to be clearly specified, and include emissions from international flights departing from the airport and emissions associated with increased surface vehicles movements. The CCC should have a formal role in the monitoring Scrutiny Panel to ensure robust oversight of carbon aspects and advise on caps for each airport and track overall emissions from all airports, given their statutory role.

7. Infrastructure and incentives for zero emissions aircraft

- 7.1 HAL must track progress in implementing measures to enable longer-term reductions, for example ensuring infrastructure is put in place to enable zero carbon aircraft to use the airport.
- 7.2 HAL states it has ensured that the masterplan fuel infrastructure is capable of facilitating the **distribution of sustainable aviation fuels** but there is little detail of how this will be done and what additional supporting infrastructure would be needed to facilitate a shift to significant biofuel use, for example how biofuels would be transported to site (whether via HGVs or pipes). HAL should provide more detailed plans for the required sustainable fuel infrastructure, along with the associated surface access

impacts.

- 7.3 Heathrow claims its **current tariff structure (including landing charges)** provide incentives to airlines to pay less for operating quieter, less polluting aircraft and the PEIR suggests Heathrow will review whether these charging structures should change over time and add in additional metrics in line with developments in technology. This is an important driver towards the use of low carbon sustainable fuels or new electric technology and needs further consideration. HAL should provide evidence that current landing and other charges do actually drive the uptake of more efficient aircraft, in order to demonstrate that this will be a credible mechanism for driving improvements in future and a move over to zero emission aircraft.
- 7.4 The ecological survey work to inform the baseline has not been completed and there are substantial gaps. This means it is not possible to fully evaluate the ecological impacts of the scheme on all sites and species. This is particularly important because likely significant effects are predicted on ten Natura 2000 / Ramsar sites (rather than on eight sites identified in the National Policy Statement assessment). A further consultation exercise should be conducted once the survey work has been completed so that the consultation is meaningful, and the responses can be taken into account before the application is made. At present the PEIR does not comply with regulation 12(2) of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 to the extent that the consultation bodies cannot develop an informed view of the likely significant environmental effects of the development. This undermines the credibility of the PEIR.
- 7.5 Detailed air quality modelling outputs are not available for specific European protected sites. All European protected sites in London already exceed the critical load that will cause damage to the special interest of the protected site. The information provided does not allow an evaluation of the likely impact upon these sites.
- 7.6 A number of non-statutory Sites of Importance for Nature Conservation will be adversely impacted. The most significant impact is on the Lower Colne SMI which is one of the best river systems in London. The proposed diversion of river channels into a culvert under the new runway will sever the ecological corridor created by the waterways for several hundred metres – although the total length of watercourse (both main river and ordinary watercourses) that will be culverted is unclear. This will impede the passage of fish, bats, otters and other species using the corridor to the detriment of the wider ecology of the Colne catchment and the Colne Valley Regional Park. This is exacerbated by the proposed infilling of a number of lakes which form valuable complementary habitat to the riverine habitat.
- 7.7 Compensatory habitat created elsewhere within the Colne and Crane catchments would not mitigate for the loss of the ecological corridor function of this part of the Colne Valley, particularly with respect to the movement of fish and other species, such as otters, that are dependent upon riverine habitat. It is pertinent to note that over the past 10 years, over 17.5km of river channel across London has been restored or enhanced. The London Environment Strategy includes a target to restore and enhance

another 10km of river corridor by 2025 and 40km by 2050. Culverting such a large section of an important river system would be a retrograde step.

- 7.8 The PEIR suggest that there will be habitat enhancement and habitat creation in the wider River Colne and Crane catchments to compensate for the loss of key habitats (the rivers, lakes and associated woodland) but there is no detail about how this would be achieved or any indication that a process to identify suitable compensation sites is underway. It is best practice for a scheme of this size to have started a process of identifying suitable sites to deliver compensation early in the process, given the complexity and timescales involved in securing land and permissions. Notwithstanding the fact that we believe that any compensatory habitats will be inadequate to offset the negative impacts of severing the river corridor there is no assurance that they can be delivered in time to provide mitigation before the impacts occur.
- 7.9 In addition to direct land take, the ecological (and social) function of these non-statutory sites are likely to be significantly impacted by the operation of the airport through increased noise and the greater likelihood of pollution incidents from run-off from the new and existing runways. The PEIR does not set out how the existing pollution control measures will be further improved to prevent the discharge of contaminated water to the Colne and its tributaries.

8. Biodiversity Offsetting

- 8.1 HAL has committed to providing a net gain to biodiversity, calculated through the use of a biodiversity offsetting metric. The losses to biodiversity have been calculated (insofar as this is possible without a full ecological baseline), but because the design of the proposed habitat creation and green infrastructure has not been fully developed it is not yet possible to calculate the likely gains. This is a major limitation as little confidence can be provided that biodiversity net gain can be achieved within the current constraints.
- 8.2 A bespoke biodiversity offsetting metric has been developed for this project. This is reportedly closely aligned with that published by Defra (2012) and has been agreed with Natural England and the Environment Agency. The revised Defra metric (Defra Metric 2.0) is scheduled to soon be released and if this becomes available within a reasonable timescale the new metric, or principles of it, should be adopted for the Environmental Statement chapter. Notably, the Defra Metric 2.0 includes connectivity as a factor, which the current Defra metric (and the bespoke metric developed for this scheme) does not. The revised metric would be more appropriate to address the concerns and uncertainty regarding habitat fragmentation and loss of connectivity as a result of the development.
- 8.3 The Environmental Statement should clearly state how the mechanism for ensuring ecological enhancements will be implemented and monitored. Preferably through a combination of biodiversity management plan(s) and a clear governance structure for their implementation, which may include formation of a biodiversity steering group comprising various stakeholders with defined responsibilities to provide oversight over

the lifetime of the project. This should be appropriately secured through the DCO.

- 8.4 There will be limited opportunities to deliver biodiversity net gain locally and, therefore, the compensatory works will be in areas at some distance from where the losses occur. Failure to provide compensation close to the impact would reduce access to open space and nature for local communities. Access to nature is an important function of local wildlife sites (Sites of Importance for Nature Conservation) in London and is a key objective of the Mayor's London Environment Strategy and London Plan policies.

9. Aerodrome Safeguarding

- 9.1 Bird strike has been considered in connection with the proposals for biodiversity offsetting, but there is no clear reference to Civil Aviation Authority (CAA) Guidance – notably, CAP 772 Wildlife Hazard Management at Aerodromes. In our experience, compliance with CAA guidance is often cited as a significant constraint on the delivery of habitat creation or green infrastructure projects in the proximity of London airports. Where there is deviation from CAA documents and guidance, the rationale for so doing should be clearly explained to give confidence that the ecological offsetting and green infrastructure enhancement proposals do not conflict with aerodrome safeguarding requirements thereby preventing their implementation.

10. Opportunities provided by the proposal

- 10.1 The development does provide the opportunity for creation of new habitats and enhancement of existing habitats in the Colne and Crane Valleys on the basis that the development has committed to providing biodiversity net gain. However, there is no certainty that these would be adequate in terms of meeting a commitment to achieve biodiversity net gain or be in sufficient proximity to the area of impact to ensure ecological connectivity and provide adequate access to nature for those most affected by the proposal.
- 10.2 The proposed Green Loop provides a potential opportunity to create new access to green space and natural habitats for some local residents if it provides improved connections into the wider network of the Colne Valley Regional Park - but this is likely to be compromised by the proximity of a bigger and busier airport.