Climate arguments

A detailed guide to Chapter 7 of LBA's Environmental Statement on Climate Change and a summary of relevant laws and policies

Climate experts have told us that LBA's expansion plans would mean a huge increase in greenhouse gas emissions - just when we should be reducing them as far and as fast as possible. So how can LBA claim otherwise and why might the City Plans Panel of Leeds City Council (LCC) believe them?

A detailed analysis of LBA's application reveals they have been economical with the truth. We need to help LCC understand how LBA have done this and make sure that members of the City Plans Panel take into account the relevant law and local policies.

This guide aims to:

- Explain how LBA have seriously downplayed the quantity of emissions that would be caused by expansion
- Describe the laws and policies under which LCC can reject LBA's application.

There is only one reason we have produced this – to help you write a detailed objection without the need to trawl through the application. Please object!

There are three sections:

- Emissions – The Big Picture
- Emissions – More Detail
- The Legal Stuff

Emissions – The Big Picture

What LBA says about increased emissions in its planning application

Even if you only use LBA's own assessment, its expansion plans would significantly increase annual emissions from the airport in the next 10 years and beyond. Let's examine LBA's figures.

In Table 7-3 on page 18, LBA estimate that in 2018, the total amount of emissions from the airport was 326 kilotonnes (kT) CO2e per year (CO2e is a term for describing different greenhouse gases in a common unit).

If the planning application is approved, that would increase to 491kT CO2e per year by 2030 (see Table 7-7, page 28) - an increase of 165 kT CO2e per year.

In 2030, the airport would be releasing about 1,000 kT (or 1 Mt) of CO2e emissions every 2 years when we urgently need to reduce them to net zero. If we don't achieve that, we cannot keep global temperature rise below 2C above pre-industrial levels. That would mean catastrophe on a scale never experienced before by human beings.

LBA also assumes that there would be some expansion of passenger numbers even if its application were to be rejected. This neatly masks some of the impact of the development. They call this the 'without development' scenario and forecast that the emissions from the airport would grow to 349 kT CO2e per year by 2030 (see Table 7-5, page 21). This means that expansion under 'with development' would result in an additional 142 kT CO2e every year by 2030 compared to the smaller expansion resulting from 'without development'.

So, by LBA's own forecasts, expansion under the development would mean that the airport would be releasing between 142 kT and 165 kT additional CO2 every year by 2030.

To put some context around this, that 2030 figure of 491 kt CO2e amounts to almost 50% of the emissions that Leeds as a whole is entitled to emit under the Zero Carbon Roadmap (1020 kt CO2e in 2030).

This is completely unacceptable, and more than enough evidence to reject the application.

However, analysis of the way LBA has calculated emissions shows that these figures actually represent a *gross under estimate* of the likely impact.

How LBA downplayed emissions caused by expansion

Table 7.1 on page 3 details the requests made to LBA by the Planning Department before the application was produced and LBA's response to those requests. The Planning Department is interested in a precautionary estimate of the full climate impact, without any emissions being omitted. In particular, they request the inclusion of aircraft arrivals and non-CO2 effects at altitude. There is more explanation of these later in this guide, but, in short, air travel doesn't just release carbon dioxide into the atmosphere, other potent greenhouse gases are also released which have global warming effects as well, particularly at altitude. These non-CO2 effects roughly double the CO2 effects. Secondly, expansion of LBA will lead directly to additional arrivals as well as additional departures, which means that the emissions from both should be counted.

In Table 7-1, LBA says that it will not include these effects in their main figures. Instead, LBA says that it will provide a 'sensitivity assessment'. A sensitivity assessment entails calculations where these factors are included, and compares them to calculations where they are not included. However, there is nothing in the document that covers this - a major omission, and one that is at odds with their promise in Table 7-1.

Section 7.6.36 gives it away:
"The above assessment does not consider the implications of radiative forcing or has quantified the CCD emissions from arrivals. Since the assessment of significance relies in part on context the comparisons would need to be on a like for like basis. It follows therefore that if radiative forcing and arrivals CCD emissions is considered for emissions from the Development, they should also be considered in the national comparisons, in which case the overall conclusions would not be changed".

In other words, "you requested the inclusion of arrivals and non-CO2 effects at altitude, we agreed to do that – but then we don't". In addition to that, LBA's statement is not even accurate. If these factors were included in calculations of the UK's aviation emissions, these emissions would be roughly a factor 4 larger, which means that aviation would take up a much larger share of the UK carbon budget. Therefore, aviation in all of the UK would need to be reduced much more aggressively than if these contributions are ignored, implying much more aggressive reductions /restrictions for LBA. The assessment that LBA provides for this is therefore inaccurate.

As the Planning Department recognises, what matters for the climate emergency (and our chance to avert catastrophe by meeting the Paris Agreement target) is the *total* contribution of this development to climate change (including additional arrival passengers, and including non-CO2 effects at altitude).

What matters for Leeds, and what's within LCC's responsibility, is how much of Leeds' carbon budget (adopted by LCC) would be used up by the emissions associated with the airport it expands; and how these emissions compare to the annual emissions targets that are compatible with Leeds' Zero Carbon Roadmap and Climate Emergency Declaration.

These two aspects should matter most for the climate impact assessment of this development - they are LCC's responsibilities. However both of these are dealt with incompletely and inaccurately.

The Accurate Impact of Expansion

Here is what a more accurate account of the climate impact of the airport would look like and how it compares to LBA's figures.

LBA estimate total emissions in 2030 to be 491 kT CO2e in the with-development case vs. 349 kT CO2e in the without-development case (Table 7-12). So the difference between with-development and without-development is 142 kT CO2e.

Including non-CO2 effects at altitude (using a factor 2 as estimated by the UK government's Committee on Climate Change) and including the emissions from the additional arrival passengers, total emissions in 2030 would instead be 1227 kT CO2e in the with-development case (2.5 times larger than LBA's estimate) and 675 kT CO2 in the without-development case. These figures have been calculated by Climate Change researchers at Leeds University.

So, the difference between with-development and without-development is actually 552 kT CO2, when these factors are accounted for. In other words, including non-CO2 effects and additional arrival passengers as LCC requested, the airport will be emitting **1.2 Mt CO2e every year** by 2030 and the difference in emissions in 2030 between the with-development case and the without-development case is a factor **3.9 larger than LBA's estimate.**

Further, when LBA compares the emissions resulting from the expansion to Leeds annual carbon budget for 2030 (based on the Leeds Carbon Roadmap that LCC has adopted), LBA omits not only arrivals and non-CO2 effects at altitude, it also **excludes international flights**. With those omissions, they claim the airport will use up 5.3% of Leeds annual carbon budget for 2030. But these figures are highly misleading as they exclude the largest factors!

Including non-CO2 effects at altitudes, arrivals and international flights, you get figures **23 times larger** than the one LBA provided! That is, the emissions from the airport are not 5.3% of Leeds annual carbon budget for 2030, they are in fact 120% of it. So the airport itself exceeds the carbon budget for the whole city in 2030! And of course, it's infinitely larger than the net-zero emissions LCC promised for 2030 in the climate emergency declaration.

Emissions – More Detail

More detail and arguments if you want it (or skip to the legal stuff)

Non-CO effects caused by air travel

As was said above, air travel doesn't just release carbon dioxide into the atmosphere, other potent greenhouse gases are also released which have climate damaging, global warming effects as well. These non-CO2 effects roughly double the carbon effects. The UK Committee on Climate Change

says: “Overall, non-CO2 effects from aviation warm the climate and approximately double the warming effect from past and present aviation CO2 emissions.” See box 6.1 on p68 of the UK Committee on Climate Change technical report: https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-Technical-report-CCC.pdf

LCC were aware of this and that it is standard practice for airports to omit this on the grounds of being too complex. LCC specifically said (in Table 7.1) that non-CO2 effects should be included in LBA’s assessment.

The Court of Appeal decision in February 2020 on Heathrow’s third runway stated that non-CO2 effects from aviation are an ‘obviously relevant factor’ and should be taken into account. In addition, LCC asked LBA for a ‘worst case scenario’ so it is not reasonable to exclude all non-CO2 effects.

The Court of Appeal also said that the ‘precautionary principle’ should be applied to non-CO2 effects and measures should be adopted to prevent environmental harm. That means erring on the side of caution and LBA have not done this. The real impact of LBA’s emissions should be double the figures provided.

Emissions from outbound flights, or inbound flights - or both?
When allocating responsibility for aircraft greenhouse gas emissions, it is standard practice to split those emissions 50/50 between the departure airport (outbound flights) and the arrival airport (inbound flights). To do otherwise would be double counting.

While this makes sense for existing flights, it is not valid when calculating the emissions from the *additional* flights that result from the expansion of an airport. If LBA did not expand, there would be no *additional* departures, no *additional* arrivals, no *additional* emissions. But expansion of LBA will lead directly to additional arrivals as well as additional departures, which means that the emissions from both should be counted.

LCC actually requested that LBA include both arrivals and departures (see Table 7.1) unless they could demonstrate that the flights would take place anyway from another airport, eg Manchester. In table 7.1, LBA admit that this cannot be proven, but then only say that they will consider arrivals through a ‘sensitivity assessment’ which actually means that the emissions figures they calculate exclude arrivals. That means the additional emissions figures used for LBA’s ‘With Development scenario’ should be doubled.

Efficiency improvements
LBA assumed that aircraft will become more efficient over time and so their emissions will reduce. LBA seem to have assumed an improvement of

roughly 2% per year. This significantly exceeds the 1.4% annual efficiency improvement used by the UK Committee on Climate Change, who advise government on climate change. And 1.4% was their most optimistic assessment. Therefore LBA's 2% assumption is highly implausible - a 'best case scenario' not a 'worst case scenario'.

Climate change impacts beyond 2050

LCC asked LBA to forecast emissions for the next 60 years. LBA declined to provide this – instead they gave figures up to 2030 and only a 'high level assessment' up to 2050. But the climate damage caused by increased emissions from expansion would continue beyond 2050. The recent Court of Appeal decision said that climate impacts cannot be ignored after 2050 because they will continue after that date.

Equally important, LBA did not calculate the cumulative effects of additional emissions up until 2050 – they stopped at 2030, assuming no growth beyond 2030, and then just gave one single estimate for 2050. What matters for climate change are total emissions, i.e. the sum of emissions over time.

So once again. LCC are minimizing the impact of expansion.

Worst case scenario?

LCC specifically asked LBA for a 'worst case scenario' assessment of the climate damaging impact of its proposals. They have not done that. In addition to the issues above, it is entirely plausible that the additional flights to/from LBA would trigger additional connecting flights at other airports in the UK and abroad. The resulting additional emissions should also have been estimated. Overall, it is abundantly clear that LBA have failed to provide a 'worst case scenario'.

No further passenger increase between 2030 and 2050

In 7.3.29 LBA said they assumed there would be no increase in passengers and no change to destinations between 2030 and 2050. But is this credible? In December 2019, the West Yorkshire Combined Authority forecast 9 million passengers by 2050 (see para 2 in Background: https://www.yourvoice.westyorks-ca.gov.uk/airport_2019engagement) and the Dept for Transport's 'Aviation Forecasts 2017' assumes 8 million passengers by 2050 (see Table 63 in: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/878705/uk-aviation-forecasts-2017.pdf)

Investment in new airline fleet post-COVID

In Table 7.3 LBA say that "Fuel consumption was ... adjusted to account for future efficiencies from new aircraft types and operational efficiencies." But

will airlines buy new aircraft after COVID nearly sent them bankrupt? How reasonable is it to assume that budget airlines will still have the money available to invest?

Cumulative emissions impact

When assessing the climate damaging impact of expansion, cumulative emissions are what matters. The net effect would be the cumulative emissions from any additional flights from 2020 (or at the latest 2023) until there are either no more flights from LBA or these flights are truly zero-emission. The UK Committee on Climate Change and the Leeds Climate Commission both agree that there is no realistic prospect of zero emission commercial flights in the short to medium term. Even using LBA's flawed methodology, they accept that expansion would cause a total of 2,860 kT CO2 per year in just 6 years (see Table 7-9) - an extra 449 kT compared to the 'without development' scenario (see Table 7-5).

Zero emission aviation – no realistic prospect within LBA's timeframe

In September 2019, the UK Committee on Climate Change concluded that the development of new aviation technologies and zero carbon fuels is "highly speculative and should not be relied upon." https://www.theccc.org.uk/wp-content/uploads/2019/09/Letter-from-Lord-Deben-to-Grant-Shapps-IAS.pdf. In December 2019, Leeds Climate Commission stated that the new technologies needed to make flying zero emission are not going to be available in the short to medium term - see https://www.leedsclimate.org.uk/sites/default/files/Leeds%20Climate%20Commission%20Position%20Paper%20on%20Aviation%20FINAL.pdf. In January 2020, Leeds City Council publicly accepted that expanding aviation is "fundamentally incompatible" with reaching net zero until flying can be made zero emission - see: https://democracy.leeds.gov.uk/documents/s198403/Climate%20Emergency%20Cover%20Report%20191219.pdf. Allowing expansion would be 'fundamentally incompatible' with LCC's aim to achieve net zero by 2030.

Emissions from the current terminal building are 1.3% of all LBA's emissions

Although LBA has made much of the proposed new 'green' terminal building, their application accepts that increased emissions from expansion would overwhelmingly result from additional flights. Para 7.4.4 notes that "Greenhouse gas emissions from flights are the dominant source at 92%." Emissions from the current terminal building itself account for 1.3% of all emission associated with LBA.

Passenger growth must be limited to "at most 25%"

The UK Committee on Climate Change has forecast that: "Aviation is likely to be the largest emitting sector in the UK by 2050, even with strong progress on technology and limiting demand." In September 2019, they also stated that

we must limit aviation passenger growth to a maximum of 25% from 2018 to 2050. They said: “In the absence of a true zero-carbon plane, demand cannot continue to grow unfettered over the long-term. Our scenario reflects a 25% growth in demand by 2050 compared to 2018 levels.” - see https://www.theccc.org.uk/wp-content/uploads/2019/09/Letter-from-Lord-Deben-to-Grant-Shapps-IAS.pdf. LBA wants to increase from 4 million passengers per year now to 7 million in 2030 - an increase of 72% in 10 years. This is completely incompatible with UK Committee on Climate Change advice.

Conclusion

There are five major flaws in the calculation methods used by LBA:

- Exclusion of all non-CO2 effects
- Exclusion of inbound flight emissions for the additional flights caused by the development
- Failure to assess emissions beyond 2050
- Failure to assess cumulative emissions from 2020 to 2050 (or from 2020 to 2080, as requested by LCC)
- Exclusion of international flights in comparison to Leeds’ emission targets

Taken together, this means the applicants have failed to comply with LCC’s request for a ‘worst case scenario’. They have underestimated the impact of expansion by a factor of approximately 4 and the comparison with Leeds’ emissions targets by more than an order of magnitude.

Finally, 7.3.47 states: “In terms of mitigation, IEMA recommends that mitigation should in the first instance seek to avoid greenhouse gas emissions. Where greenhouse gas emissions cannot be avoided…” These additional emissions can easily be avoided by rejecting the application. Airport expansion and increasing emissions are not inevitable ‘facts of life’. It is a matter of choice.

The Legal Stuff

There is a substantial amount of law and policy guidance that LCC could apply to reject the application.

Leeds Climate Emergency Declaration and ‘Roadmap’
Leeds City Council issued a Climate Emergency Declaration in March 2019 and committed to a Carbon Reduction Roadmap which aims to achieve 100% emissions reduction by 2030.

Leeds Core Strategy

Decisions on planning applications must take into account the Leeds Core Strategy. And there are several parts of it that support a rejection of the application due the impact of CO2 emissions.

One of the key challenges noted in para 2.42 is that of: “Ensuring that the physical development and growth of the District is *managed in a sustainable way*”. Following the NPPF, the Core Strategy states at para 4.1.1: “The intent of the Strategy is to provide the broad parameters in which development will occur, *ensuring that future generations are not negatively impacted by decisions made today*.”

Para 4.9.12 acknowledges that: “At international, national and regional levels, airports play an important role as an element of key transport infrastructure. However, *air travel raises a number of concerns regarding its impact on climate change through the generation of emissions and also the local impact on the environment* (including transport trips)…” With regard to managing the development of LBA, Spatial Policy 12 of the Core Strategy states: “The continued development of Leeds Bradford International Airport will be supported... *subject to: … (iii) Environmental assessment* and agreed plans to mitigate adverse environmental effects, where appropriate”

Clearly the environmental impact of expansion is serious, given the huge increase in CO2 emissions, and mitigation of those additional emissions is not possible.

Para 4.10.1 states: “The District’s environmental resources are crucial, not just in ensuring quality of life, but also sustaining life itself. The natural world regulates the atmosphere and climate... *We have an obligation to protect our environmental resources and to pass on to future generations the natural wealth that we have inherited…”*

Finally, the Core Strategy contains a section on climate change. Although some of the details in that section are now out of date, its overall aim is clear. Para 5.5.35 notes that: “Leeds is a growing city and *all new development that is not carbon neutral adds to total emissions from Leeds* (both on site emissions and emissions associated with transport).” Air travel is clearly a form of transport.

Para 5.5.35 goes on to say: “Therefore, ***there is a strong policy imperative to constrain emissions from all development as soon as possible***” and confirms that: “The Core Strategy climate change policies are designed so that new development contributes to our ambitious carbon reduction targets.”

<u>Climate Change Act, Paris Agreement and EIA regulations</u>

The Climate Change Act commits the UK to achieving net zero by 2050 and is consistent with the UK's commitment to the Paris Agreement. Together they form the policy context for any developments that would increase emissions.

The Environmental Impact Assessment regulations require that any proposed development is considered against the UK's environmental protection objectives, chief of which are the 2050 net zero commitment and the Paris Agreement.

Court of Appeal decision on Heathrow's third runway

In this case, the relevant law was different from the law that applies to LBA's application. However the Court did not limit its findings on the relevance of the Paris Agreement, non-CO2 impacts and post-2050 climate impacts to decisions under the Planning Act. In other words, it's decision affects applications on smaller planning applications like LBA, which are covered by the Town & Country Planning Act. .

National Planning Policy Framework

The National Planning Policy Framework (NPPF) supports 'sustainable development'. That means ensuring the ability of future generations to meet their needs is not compromised by current developments. Objective three of the NPPF states: "Achieving sustainable development means that the planning system has three overarching objectives...: c) an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment… mitigating and adapting to climate change, including moving to a low carbon economy." It goes on to say: "The planning system should support the transition to a low carbon future in a changing climate... It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions… and support renewable and low carbon energy and associated infrastructure."

The NPPF (para 149) states that Local Planning Authorities must take climate change into consideration in line with the policy and provisions of the Climate Change Act (2008).