



Bristol Airport

12 mppa Planning Appeal

Appeal Ref: APP/D0121/W/20/3259234

Summary Proof of Evidence:
Carbon and Climate Change,
Matt Ösund-Ireland



Report for

Bristol Airport Limited

Main contributors

M P Ösund-Ireland

Issued by

.....

Wood Group UK Limited

Doc Ref.

[https://woodplc-my.sharepoint.com/personal/matt_osundireland_woodplc_com/documents/bristol airport proof of evidence carbon rev000_am_moi.docx](https://woodplc-my.sharepoint.com/personal/matt_osundireland_woodplc_com/documents/bristol%20airport%20proof%20of%20evidence%20carbon%20rev000_am_moi.docx)

Copyright and non-disclosure notice

The contents and layout of this report are subject to copyright owned by Wood (© Wood Group UK Limited 2021) save to the extent that copyright has been legally assigned by us to another party or is used by Wood under licence. To the extent that we own the copyright in this report, it may not be copied or used without our prior written agreement for any purpose other than the purpose indicated in this report. The methodology (if any) contained in this report is provided to you in confidence and must not be disclosed or copied to third parties without the prior written agreement of Wood. Disclosure of that information may constitute an actionable breach of confidence or may otherwise prejudice our commercial interests. Any third party who obtains access to this report by any means will, in any event, be subject to the Third Party Disclaimer set out below.

Third party disclaimer

Any disclosure of this report to a third party is subject to this disclaimer. The report was prepared by Wood at the instruction of, and for use by, our client named on the front of the report. It does not in any way constitute advice to any third party who is able to access it by any means. Wood excludes to the fullest extent lawfully permitted all liability whatsoever for any loss or damage howsoever arising from reliance on the contents of this report. We do not however exclude our liability (if any) for personal injury or death resulting from our negligence, for fraud or any other matter in relation to which we cannot legally exclude liability.

Management systems

This document has been produced by Wood Group UK Limited in full compliance with our management systems, which have been certified to ISO 9001, ISO 14001 and ISO 45001 by Lloyd's Register.

Document revisions

No.	Details	Date
0	First issue for review by AM+NH	06 June 2021
1	First revision	14 June 2021



Contents

Glossary of abbreviations	4
1. Introduction	5
1.1 Qualifications and Experience	5
1.2 Scope of Evidence	5
2. Reasons for Refusal	7
2.1 Decision Notice	7
3. Assessment of Significance	8
4. Carbon and Climate Change Action	10
4.1 Progress to Date	10
4.2 Carbon and Climate Change Action Plan	10
4.3 Non-CO ₂ Impacts	11
5. Response to Issues Raised by Third Parties	12
5.1 Third Parties	12
5.2 Witness Response	12
6. Conclusions	20

Table 0.1	Glossary of abbreviations	4
-----------	---------------------------	---

Glossary of abbreviations

Table 0.1 Glossary of abbreviations

Abbreviation	Explanation
BAL	Bristol Airport Limited
CB6	Sixth Carbon Budget
CCCAP	Carbon and Climate Change Action Plan
CCC	Climate Change Committee
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)
EA	European Economic Area
ES	Environmental Statement
ESA	Environmental Statement Addendum
EU ETS	European Emissions Trading Scheme
IAS	International Aviation and Shipping
ICAO	International Civil Aviation Organisation
IEMA	Institute of Environmental Management and Assessment
mppa	million passengers per annum
OR	Officer's Report
ppmv	parts per million by volume
UK ETS	UK Emissions Trading Scheme
UNFCCC	United Nations Framework Convention on Climate Change

1. Introduction

1.1 Qualifications and Experience

- 1.1.1 My name is Matthew Peter Paul Ösund-Ireland and I hold a BSc(Hons) in Combined Science from the Polytechnic of Wales and a PhD in local air quality management and climate change tools for joined up policy from the University of Greenwich. I am a Chartered Environmentalist, a Member of the Institute of Air Quality Management (IAQM) and a Member of the Institute of Environmental Sciences. I am a Technical Director of Wood Group UK Ltd responsible for directing air quality and carbon management assessments undertaken by the company.
- 1.1.2 I have worked as a professional environmental scientist for 30 years as a consultant. I have been responsible for conducting air quality and carbon studies for transport schemes, including road, rail, shipping and aviation, and schemes in the oil and gas, energy, industry, mining and commercial development sectors.
- 1.1.3 I have worked on numerous airport projects including Birmingham, Bournemouth International, Heathrow, London City and Luton, the proposed airport at Cliffe in Kent and airports outside the UK. In this matter, I have been retained by Bristol Airport Limited (BAL) to advise on carbon matters concerning the proposed development of Bristol Airport to accommodate 12 million passengers per annum (mppa) (the Appeal Proposal). Specifically, I provided the technical review for the team that produced the carbon chapter for the Environmental Statement Addendum (ESA).
- 1.1.4 As a member of the IAQM I am bound by its Code of Professional Conduct which requires that members *maintain professional integrity at all times and be guided by the principle of applying the most appropriate science/practice for any given task. This requires members to display objectivity and refrain from being selective or partial when presenting data or facts for a written report or in oral form.* I confirm that I have complied with this professional obligation in preparing this proof of evidence.

1.2 Scope of Evidence

- 1.2.1 This Proof of Evidence relates to an appeal, made by BAL pursuant to Section 78 of the Town and Country Planning Act 1990, against the decision of North Somerset Council (NSC) on 19 March 2020 to refuse planning application reference 18/P/5118/OUT for the development of Bristol Airport to accommodate 12 mppa.

- 1.2.2 Details of the carbon and climate change assessment for the Appeal Proposal have previously been given in two documents:
- Chapter 17 of the ES included with the planning application; and
 - Chapter 10 of an addendum (ESA) to the ES, of November 2020, that presented an updated assessment using later data.
- 1.2.3 In my proof, I address the Reasons for Refusal given by NSC in its Decision Notice, and other comments by NSC and Rule 6 parties, where they relate to carbon and climate change in their respective Statements of Case.
- 1.2.4 I have structured my main proof of evidence as follows:
- Section 2: My response to the Reasons for Refusal;
 - Section 3: A summary of the policy and legislative context;
 - Section 4: A summary of the assessment presented in the ES and ESA;
 - Section 5: Carbon and Climate Change Action
 - Section 6: My response to issues raised by NSC and other parties; and
 - Section 7: My conclusions.
- 1.2.5 This is a summary of my proof.

2. Reasons for Refusal

2.1 Decision Notice

2.1.1 Greenhouse gas (GHG) emissions associated with the Appeal Proposal was identified as one of the reasons for refusing the application (Reason 3) in NSC's Decision Notice. This reason for refusal is as follows:

"3. The scale of greenhouse gas emissions generated by the proposed increase in passenger numbers would not reduce carbon emissions and would not contribute to the transition to a low carbon future and would exacerbate climate change contrary to the National Planning Policy Framework, policy CS1 of the North Somerset Core Strategy 2017 and the duty in the Climate Change Act 2008 (as amended) to ensure that the net UK carbon account for the year 2050 is at least 100% lower than the 1990 baseline."

2.1.2 The NSC Statement of Case expands on this in a number of respects.

2.1.3 In my main proof of evidence I respond to this reason for refusal and to the additional points raised by NSC and other parties in their Statements of Case.

3. Assessment of Significance

- 3.1.1 The assumptions made in the ES / ESA about future reductions in emissions from aviation can be described as a 'reasonable worst case' when compared to the five CCC assumptions of: Balanced Pathway; Headwinds; Widespread Engagement; Widespread Innovation; and Tailwinds. None of these assumptions is considered to be optimistic.
- 3.1.2 With reference to IEMA guidance, the assessment of significance was first considered in terms of the change in carbon emissions as a percentage of the planning assumption. Comparing to the assessments made for other airport expansions and having regard to the recent Appeal Decision for Stansted Airport, I conclude that the incremental increase in emissions from the Appeal Proposal is not significant when compared with the planning assumption of 37.5 MtCO₂ or, indeed, when compared with the lower figure of 23 MtCO₂ considered by the CCC.
- 3.1.3 In a second test of significance I considered whether the change in carbon emissions would prevent UK Government achieving net zero GHG emissions by 2050. Emissions from aircraft can only be influenced by BAL and are controlled at the national level, with UK Government providing clear mechanisms for capping aviation emissions within UK carbon budgets and encouraging the industry to drive emission reductions through innovation to make best use of existing runways. Those mechanisms include the Sixth Carbon Budget and the UK ETS / CORSIA, but Government clearly has the means to apply such additional mechanisms as it deems appropriate to meet its net zero target. In that context, it is clear that granting planning permission for the Appeal Proposal cannot prejudice the Government's ability to meet net zero in 2050.
- 3.1.4 Emissions from buildings and ground operations are under the control of BAL and are already being reduced. As described in section 4 below, BAL has produced a draft CCCAP to ensure Scope 1 and 2 emissions are net zero by 2030 and, indeed, has already taken a number of steps along that route. In this context too, therefore, I conclude that the emissions from buildings and ground operations arising from the Appeal Proposals are not significant.
- 3.1.5 Emissions from surface access can only be influenced by BAL but will fall in any event as a result of the general decarbonisation of the road vehicle fleet. Since 2020, BAL has offset surface access to the airport by passengers travelling via road and the draft Section 106 Agreement includes a number of measures to improve public and active transport access to the airport in addition to providing facilities for electric vehicle charging at the airport and implement staff travel plans, for example. All of these measures will enable BAL to continue influencing surface access emissions.

Again, therefore, I conclude that the surface access emissions from the Appeal Proposals are not significant.

- 3.1.6 Through its Carbon Roadmap BAL is already on the path to carbon net zero, both as its own activities and for the airport as a whole. This commitment is supported by national measures to control aviation emissions and can be strengthened through the Section 106 Agreement and implementation of the CCCAP.
- 3.1.7 In a context where aviation emissions are to be controlled at the national level, the proposed development complies with relevant national and local planning policies.
- 3.1.8 I consider that both tests of significance have been met and the carbon emissions associated with the proposed development are not significant.

4. Carbon and Climate Change Action

4.1 Progress to Date

- 4.1.1 In 2019, BAL published its Carbon Roadmap which set out how BAL will achieve a net zero airport with a target of becoming carbon neutral for our direct emissions by 2025. The roadmap provided baseline figures against which to measure progress, information on changes already implemented to reduce energy use, and actions to achieve carbon net zero.
- 4.1.2 The progress and commitments that BAL has made to date need to be considered within the context of the Airport Carbon Accreditation scheme launched in 2009 by the Airports Council International. The stated aim of this scheme is to encourage and enable airports to implement best practices in carbon management and achieve emissions reductions. BAL's progress and commitments to date have enabled Bristol Airport to reach ACA Level 3a neutrality. Achieving ACA Level 4 *transformation* and Level 4+ *transition* requires absolute emissions reductions and reliable offsetting of residual emissions.

4.2 Carbon and Climate Change Action Plan

- 4.2.1 BAL can demonstrate material progress in reducing emissions it directly controls and is actively progressing with guiding and influencing emissions it does not control. Implementation of the CCCAP would enable BAL to continue this progress, working towards the highest attainment level in the Airport Carbon Accreditation Scheme.
- 4.2.2 The CCCAP includes Key Performance Indicators and progress will be reported and published annually. The CCCAP itself will be reviewed every five years and is subject to both internal and external governance. BAL is committed to implementing the CCCAP and it is referred to in the draft s106 agreement.
- 4.2.3 If the actions in the draft Carbon and Climate Change Action Plan (CCCAP) are realised, then BAL will have achieved Level 4+ for Bristol Airport in terms of Scope 1, 2 and 3 emissions by 2050, excluding emissions from aircraft off the ground. The draft CCCAP states that by 2050 Bristol Airport as a whole will be carbon net zero. This means all of the companies that operate from or provide services to the airport, including BAL and the airlines, will be contributing to the UK's carbon net zero economy. This statement includes the assumption that airlines operating from Bristol Airport emissions would be fully compliant with UK Government carbon net zero policy and legislation in terms of aircraft emissions in flight as well as on the ground.

- 4.2.4 I consider the CCCAP to be robust and the appropriate mechanism for BAL to plan, implement, measure and report on its actions.

4.3 Non-CO₂ Impacts

- 4.3.1 The draft CCCAP also includes reference to non-CO₂ impacts, stating that:

"BAL is committed to considering all emission sources in the CCCAP, including the impacts of non-CO₂ emissions from aviation. Recent research has shown that impacts of non-CO₂ effects, including nitrous oxide, water vapour, nitrogen oxides and aerosols, may have a significant role in the global warming effect of air travel. At this time there remains scientific uncertainty in understanding these effects and what the consequent policy implications will be.

We will continue to monitor government policy in this respect, and reflect best practice in regular updates to the CCCAP as part of the five year review cycle. Where possible, BAL will take an active role in influencing airlines to consider the non-CO₂ impacts of their operations."

- 4.3.2 As stated above, the draft CCCAP includes a long term measure to guide absolute reductions in Scope 3 emissions monitoring scientific progress on quantifying non-CO₂ emission sources from aviation emissions and embedding best-practice.

5. Response to Issues Raised by Third Parties

5.1 Third Parties

5.1.1 A number of objections relating to carbon were made by the Parish Councils Airport Association (PCAA), the Campaign Against Climate Change (CaCC), Campaign to Protect Rural England (CPRE) Avonside, Isonomia, The Welsh Assembly, Winford Parish Council and Wrington Parish Council.

5.2 Witness Response

5.2.1 My response to the arguments put forward by objectors are set out below using headline topics.

International policies not satisfied: contrary to UNFCCC Article 3 and reliant on CORSIA

5.2.2 The proposed development would neither impede UK Government in meeting its international obligations nor require reliance on CORSIA.

5.2.3 Article 3 of the UNFCCC states, amongst other things, that:

(1) The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.

And

(3) The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. ...

5.2.4 I am advised that it is well-established that English law is a dualist legal system under which international law or an international treaty has legal force at the domestic level only after it has been implemented by a national statute. Therefore, UNFCCC treaty obligations only have effect in domestic law to the extent that they have been incorporated by an Act of Parliament. The same would be true of the Kyoto Protocol, the (unadopted) Doha Amendment and the Paris Agreement.

5.2.5 Nevertheless, it is important to understand the scope of these international treaties. Article 2(2) of the Kyoto Protocol makes it clear that:

The Parties included in Annex I shall pursue limitation or reduction of emissions of greenhouse gases not controlled by the Montreal Protocol from aviation and marine bunker fuels, working through the International Civil Aviation Organization and the International Maritime Organization, respectively.

- 5.2.6 This explains why section 30(1) of the Climate Change Act 2008 stated clearly that *“Emissions of greenhouse gases from international aviation or international shipping do not count as emissions from sources in the United Kingdom for the purposes of this Part ...”*.
- 5.2.7 For the same reason, international aviation was not included within the ‘Quantified emission limitation or reduction commitment’ percentages in Annex B of the Kyoto Protocol or, indeed, in the Nationally Determined Contributions to be declared pursuant to Article 4 of the Paris Agreement. As mentioned above, the Government’s website states that: *“The International Civil Aviation Organization (ICAO) is the United Nations agency established under the Chicago Convention (1944) to manage the administration and governance of international aviation, which includes responsibility for tackling international aviation emissions, which fall outside of states’ nationally determined contributions (NDCs) under the Paris Agreement.”*
- 5.2.8 Within that context, the recent UK Government announcement to reduce national emissions by at least 78% by 2035, compared to 1990 levels reinforces UK leadership in international climate change policy. The inclusion of international aviation and shipping within the legally binding carbon budget for the UK is actually a demonstration of UK Government policy going beyond the ambition of the UN treaties. Furthermore, the UK Government’s preferred position is that emissions from the aviation sector are included in within the UK ETS, requiring any use of CORSIA to be managed with an equivalent surrender of UK ETS allowances.
- 5.2.9 In my view it is very clear that the proposed development is not contrary to UNFCCC Article 3. It is also clear that emissions from the aviation sector will be controlled through the UK ETS and will only be integrated with CORSIA to the extent that Government considers appropriate. Furthermore, these are matters of Government policy, the merits of which (as I understand it) are not to be debated at local planning inquiries.

National policies not satisfied: contrary to the NPPF’s objectives for sustainable development, and not consistent with the UK Government’s declaration of a climate emergency and commitment to net zero by 2050

- 5.2.10 As I set out in Section 4 of my proof, national policies are satisfied and in my view the proposed development is consistent with the UK Government’s declaration of a climate emergency and commitment to net zero by 2050.
- 5.2.11 The inclusion of international aviation and shipping within the legally binding Sixth Carbon Budget removes any uncertainty about how emissions from aircraft movements will be managed by the UK Government. The UK ETS is an existing mechanism used by the UK Government to manage

aviation emissions that can be supplemented with CORSIA without compromising international and national requirements for carbon reporting. This mechanism does not require an aviation 'planning assumption' or the allocation of aviation emission caps to individual airports.

- 5.2.12 In relation to those non-aviation carbon emissions that are local to the airport and within BAL's control or influence, a key mechanism for delivering climate change objectives is the CCCAP which will be subject to Section 106 Agreement. The CCCAP includes specific actions to reduce emissions that are directly controlled by BAL and to reduce emissions that BAL can guide and influence. The CCCAP will require the provision of renewable and low carbon energy and associated infrastructure, not just for BAL's use but also for passengers and for business partners at the airport, including the airlines.
- 5.2.13 The CCCAP includes BAL's carbon vision to be carbon neutral in 2021 for Scope 1 and 2 emissions, reducing reliance on offsets to be carbon net zero by 2030. The CCCAP also includes BAL's carbon vision for Bristol Airport as a whole to be carbon net zero by 2050. This requires participation by all of the companies that operate from or provide services to the airport, including BAL and the airlines.
- 5.2.14 In relation to climate change adaptation, the ES included an assessment of flood risk, concluding the site is not vulnerable to climate change impacts. Although not directly relevant in planning terms, it is also worth noting that BAL has started the process of assessing business risks associated with climate change in accordance with the Taskforce on Climate-related Financial Disclosure. This is a business facing approach to assessing and addressing the risks and opportunities of climate change that is being promoted by HM Treasury.

Regional and/or local policies not satisfied: contrary to CS1, CS23 or DM50 of the Development Plan, would not contribute to the transition to a low carbon future, would exacerbate climate change and be incompatible with the declaration of a climate emergency

- 5.2.15 As I set out in Section 4 of my proof, local policies are satisfied and the proposed development is consistent with the UK Government's declaration of a climate emergency and commitment to net zero by 2050.
- 5.2.16 My response to this objection first considers local planning policy and then the transition to a low carbon economy.
- 5.2.17 With reference to Policy CS1 of the North Somerset Core Strategy, the CCCAP demonstrates BAL is committed to reducing carbon emissions, including reducing energy demand through good design, and utilising renewable energy where feasible and viable.

5.2.18 With reference to Policy CS2 of the North Somerset Core Strategy:

- The design of the Appeal Proposal will be aligned with BREEAM standard “very good” as agreed with NSC officers in addition to providing 15% of energy requirements from renewable power sources.
- The CCCAP includes specific short term actions to provide renewable energy sources (solar photovoltaics) on-site or near-to-site to meet a minimum of 15% of the building related energy requirements, medium term actions to develop a mobility hub on-site for EV charging infrastructure and the installation of electric and hydrogen charging infrastructure for cars, and long term actions to deliver the infrastructure required for airlines to operate low carbon aircraft (e.g. sustainable aviation fuel, electric power and / or hydrogen).

5.2.19 With reference to Policy CS23 of the Core Strategy and Policy DM50 of the Sites and Policies Plan Part 1, meeting the requirements of NPPF paragraphs 148, 150 and 151 and policies CS1 and CS2 of the Core Strategy demonstrate both Policy CS23 and Policy DM50 would be achieved.

5.2.20 Although not directly relevant in planning terms, it is also worth noting that BAL has started the process of assessing business risks associated with climate change in accordance with the Taskforce on Climate-related Financial Disclosure (TCFD) . This is a business facing approach to assessing and addressing the risks and opportunities of climate change that is being promoted by HM Treasury.

Legislation not satisfied: Climate Change Act and UK target to be carbon net zero by 2050

5.2.21 The proposed development would not prevent compliance with the carbon budgets nor meeting the UK target to be ‘net zero’ by 2050.

5.2.22 The inclusion of international aviation within the Sixth Carbon Budget removes the need for a ‘planning assumption’, but does not change the pathway to carbon net zero. Emissions from aircraft are controlled at a national level, with UK Government providing clear mechanisms for capping aviation emissions within UK carbon budgets and encouraging the industry to drive emission reductions through innovation to make best use of existing runways. Moreover, the UK Government has made it clear in its press release of 20th April 2021 that:

“The government will look to meet this reduction target through investing and capitalising on new green technologies and innovation, whilst maintaining people’s freedom of choice, including on their diet. That is why the government’s sixth Carbon Budget of 78% is based on its own analysis and does not follow each of the Climate Change Committee’s specific policy recommendations.”

5.2.23 Emissions from buildings and ground operations are under the control of BAL and are already being reduced. BAL has produced a draft CCCAP to ensure Scope 1 and 2 emissions are net zero by 2030. Emissions from surface access can only be influenced by BAL but will fall in any event as a

result of the general decarbonisation of the road vehicle fleet. Since 2020, BAL has offset surface access to the airport by passengers travelling via road and the Section 106 Agreement includes a number of measures to improve public and active transport access to the airport in addition to providing facilities for electric vehicle charging at the airport and implement staff travel plans, for example. All of these measures will enable BAL to continue influencing surface access emissions.

5.2.24 In the context of aviation emissions being controlled at a national level, the proposed development complies with relevant national and local planning policies.

Assessment insufficient: ES and ESA does not comply with TAG A5.2, there is no cumulative assessment for climate change effects arising with other airport expansion plans, no consideration of the human health impact of climate change, no consideration of the physical and transitional risks of climate change, the ES and ESA data do not present a worst case scenario, no consideration of emissions from land use changes, no consideration of tankering.

5.2.25 I consider the assessment to be sufficient. Each of these points is taken in turn below.

5.2.26 TAG A5.2 is addressed in the evidence provided by Mr Brass.

5.2.27 The assessment has contextualised the emissions against the 'planning assumption' used in setting the First to Fifth Carbon Budgets and has identified known emissions from other expansion projects where such forecast emissions are known. The assessment has also explained the effect of including international aviation within the Sixth Carbon Budget in the context of the UK ETS and CORSIA. These provisions will apply equally to all UK airports and to all domestic and international aviation to, from and within the UK. This is, by its very nature, a cumulative approach is that the carbon budgets and the UK ETS permits are set at a national level. There is, therefore, no need for any further cumulative assessment as the Sixth Carbon Budget is aligned with the UK's current Nationally Determined Contribution under the Paris Agreement and its Climate Change Act 2008 'net zero' target by 2050.

5.2.28 BAL has set out in its CCCAP its strategy for airport and surface access emissions from the proposed development to be carbon neutral in 2021 and carbon net zero by 2030.

5.2.29 In terms of airport and surface access emissions, this will be addressed through annual reporting of emissions, five year review of the CCCAP and demonstration of progress being made to being a carbon net zero airport (Scope 1 and 2) by 2030, noting that the vision is to reduce reliance on using offsets as far as practicable by that date. In terms of emissions from aircraft movements, these will be controlled nationally by UK Government using the existing UK ETS mechanism.

- 5.2.30 There is no requirement to undertake a human health impact of climate change. This is addressed as part of UK Government policy setting.
- 5.2.31 Climate change adaptation is addressed in the ES, which concludes that the site is not vulnerable to the impacts of climate change.
- 5.2.32 Any transitional risks of climate change are being addressed by BAL as part of its business planning to address the risks and opportunities associated with climate change in preparation for TCFD-aligned disclosures being mandatory from 2025. This is not a planning requirement and applies to business operations beyond the Proposed Development.
- 5.2.33 The assessment of changes in land use associated with the Appeal Development are included in Chapter 11 of the ES. This has not been determined in terms of carbon as any changes in the capacity to absorb carbon is considered negligible. Impacts on the changes in land use are addressed in the evidence of Mr Melling.
- 5.2.34 As far as 'tankering' is concerned, emissions factors in the EMEP/EEA approach used in the ES are based on real-world operations and data, as well as surveys of fuels use. The assessment therefore implicitly considers tankering based on the reasonable assumption that tankering at Bristol Airport is similar to Europe-wide operations of similar aircraft types on similar routes that have been modelled. This applies to both the 10 and 12 mppa forecasts. A EUROCONTROL paper on the effects of tankering states that the impact of tankering is approximately 2.21% extra fuel used for a 600 nautical mile round-trip and approximately 4.66% extra fuel for a 1200 nautical mile round-trip. This is considered to be within the error bounds of the GHG assessment due to inevitable uncertainty in flight forecasts. The OR, informed by advice from NSC's independent consultants Jacobs, supported the assumption that reported emissions represent a realistic worse-case increase and are not significant when measured against the relevant UK carbon budgets.

BAL has not published its carbon and climate change action plan, mitigations proposed by BAL in the ES and ESA would be insufficient to mitigate the increased emissions and the Carbon Road Map is not a sensible way to mitigate the increased emissions as it does not include aviation emissions, which are the majority of the emissions

- 5.2.35 The CCCAP is now published which sets out BAL's vision as follows:
- *By 2021 all our operations and activities are carbon neutral. This means all of BAL's Scope 1 and 2 emissions will be offset.*
 - *By 2030 all our operations and activities are carbon net zero. This means all of BAL's Scope 1 and 2 emissions will be minimised as far as practicable with any residual emissions being offset.*

- *By 2050 Bristol Airport as a whole will be carbon net zero. This means all of the companies that operate from or provide services to the airport, including BAL and the airlines, will be contributing to the UK's carbon net zero economy.*

5.2.36 With reference to Figure 4.2, aircraft movement emissions from the airport would be reduced in 2050 compared to 2017.

The effects of non-CO₂ emissions such as NO_x at high-altitudes, and the formation of contrails, are ignored despite the CCC's advice in the Sixth Carbon Budget report that the Government should set both CO₂ and non-CO₂ targets.

5.2.37 The climate change impact of non-CO₂ emissions from aircraft movements is known but there remains great uncertainty in the science. The impact of CO₂ emissions on global warming is long term (100+ years) whereas non-CO₂ effects are shorter-lived and largely depend on sustained aviation activity to maintain them. Moreover, the magnitude of these effects can depend on the conditions under which the activity occurs (e.g. the extent that contrails are formed depend on the temperature and moisture content of the atmosphere), unlike for well-mixed greenhouse gases which affect the climate similarly independently of where they occur.

5.2.38 The CCC states that (p374):

"It remains extremely challenging to accurately aggregate the effects of these non-CO₂ impacts into a CO₂-equivalence 'multiplier' for use within climate policy mechanisms."

5.2.39 With reference to paragraph 3.94 of *Aviation 2050 – the future of UK aviation* The Government's view on non-CO₂ remains that it:

"continues to support work on non-CO₂ emissions, their trade-offs with CO₂ and possible mitigation measures, none of which are yet well enough understood to be able to form policy with confidence that aviation's total climate impact would be reduced".

5.2.40 In the Appeal Decision for Stansted Airport, the Inspector notes:

"In this context, therefore, the potential effects on climate change from non-carbon sources are not a reasonable basis to resist the proposed development, particularly bearing in mind the Government's established policy objective of making the best use of MBU airports."

5.2.41 I note that the UK Government position on non-CO₂ impacts is:

"to continue negotiating in ICAO for increased environmental ambition and supports continued work on aviation's non-CO₂ climate impacts, their trade-offs with CO₂ and possible mitigation measures. The government keeps non-CO₂ emissions under review and reassesses the UK's policy position as more evidence becomes available."

5.2.42 In its Sixth Budget Report the CCC identifies a number of potential options that could reduce non-CO₂ impacts, including: use of low-aromatic sustainable aviation fuels (to reduce soot and therefore cirrus formation); development of low NO_x engine designs; re-routing of aircraft to avoid cirrus

formation zones in the atmosphere (although this would require more accurate forecasting, and may increase CO₂ emissions); or switching to electric propulsion or cleaner fuels in these zones.

5.2.43 The UK Government's position on non-CO₂ impacts was recently reiterated in the consultation outcome on implementing CORSIA stating that:

"The UK continues to negotiate in ICAO for increased environmental ambition and supports continued work on aviation's non-CO₂ climate impacts, their trade-offs with CO₂ and possible mitigation measures. The government keeps non-CO₂ emissions under review and reassesses the UK's policy position as more evidence becomes available."

5.2.44 My conclusion is that non-CO₂ emissions cannot be ignored and need to be acknowledged today so choices made in the technologies used to reduce aircraft emissions do not result in non-CO₂ impacts increasing; as the scientific understanding increases, the choices of technology will become better informed. BAL acknowledges this in its CCCAP and I consider this the most appropriate approach to address this issue.

6. Conclusions

6.1.1 The Decision Notice issued on 19 March 2020 identified carbon emissions as one of the reasons for refusing the applications:

"3. The scale of greenhouse gas emissions generated by the proposed increase in passenger numbers would not reduce carbon emissions and would not contribute to the transition to a low carbon future and would exacerbate climate change contrary to the National Planning Policy Framework, policy CS1 of the North Somerset Core Strategy 2017 and the duty in the Climate Change Act 2008 (as amended) to ensure that the net UK carbon account for the year 2050 is at least 100% lower than the 1990 baseline."

6.1.2 In my evidence I have considered each of the points raised by NSC in its Statement of Case and also the objections raised by third parties. My conclusions are as follows:

- a. BAL has properly assessed the carbon emissions from additional flights that will arise as a result of the Appeal Proposal. The assessment of aircraft related emissions is robust and can be considered reasonably worst case in terms of future technology impacts on emissions.
- b. BAL has examined the carbon emissions from expansion within the context of the 'planning assumption' that has been used in setting the First to Fifth Carbon Budgets and has also explained the legislative and policy context for the treatment of domestic and international aviation within the Sixth Carbon Budget and the UK ETS and CORSIA.
- c. The assessment shows that the Appeal Proposal will not compromise the UK's ability to meet its 2050 'net zero' carbon target or its budgets and nor will it compromise its ability to meet its Nationally Determined Contribution under the Paris Agreement.
- d. The non-CO2 effects of aviation are acknowledged so choices made in the technologies used to reduce aircraft CO2 emissions do not result in non-CO2 impacts increasing. As the scientific understanding increases, the choices of technology will become better informed.
- e. Non-aircraft movement emissions at Bristol Airport and surface access emissions are subject to national and local and planning policy, which seeks to control and reduce emissions.
- f. BAL's proposed Carbon and Climate Change Action Plan is robust and sets out how the Appeal Proposal will meet the requirements of the National Planning Policy Framework and would not be contrary to NSC Core Strategy Policies CS1, CS2 and CS23 or Policy DM50 of the Sites and Policies Plan.
- g. Furthermore, the Appeal Proposal is consistent with the UK's climate change target and its transition to a low carbon economy.
- h. In conclusion, it is my view that the climate change effects of the Appeal Proposal are not significant.

6.1.3 For the reasons stated in my evidence, I consider that reason for refusal 3 is entirely misconceived and that there are no proper grounds for refusing planning permission because of the climate change effects of the Appeal Proposal.

wood.

