



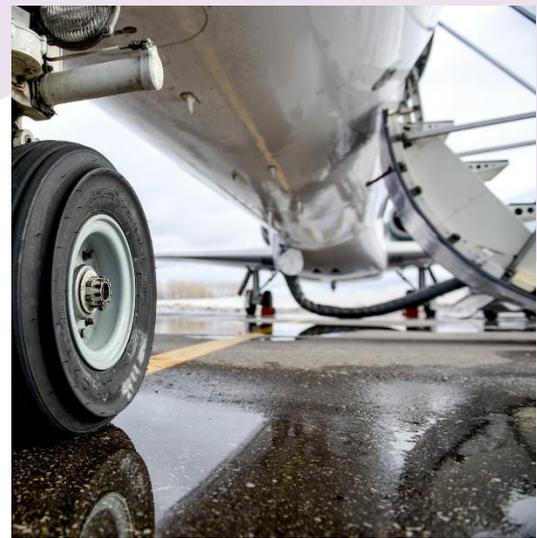
Bristol Airport

12 mppa Planning Appeal

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

Proof of Evidence: Carbon and
Climate Change, Addendum 1

Matt Ösund-Ireland



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Glossary of abbreviations

Table 0.1 Glossary of abbreviations

Abbreviation	Explanation
BAL	Bristol Airport Limited
CCCAP	Carbon and Climate Change Action Plan
CCC	Climate Change Committee
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)
DfT	Department for Transport
GGR	Greenhouse Gas Removal
MBU	Making Best Use
RTFO	Renewable Transport Fuels Obligation
SAF	Sustainable Aviation Fuel
mppa	million passengers per annum
UK ETS	UK Emissions Trading Scheme

1. Introduction

On 14th July 2021 the Department of Transport (DfT) published its *Decarbonising Transport: A Better, Greener Britain* strategy¹. This strategy recognises the existing work already being done to reduce emissions across all forms of transport and sets out the Government's plan for (p16): "*delivering the additional reductions needed to deliver transport's contribution to legally binding carbon budgets and delivering net zero by 2050.*"

1.1.1 On the same day, DfT published the following six further documents:

- a. The Jet Zero Consultation²;
- b. The Jet Zero Consultation: Evidence and Analysis³;
- c. The Government's Response to the Renewable Transport Fuels Obligation Consultation⁴;
- d. The Non-Zero Emission HGV Phase-Out Consultation;
- e. A Green Paper on a New Road Vehicle CO₂ Emissions Regulatory Framework; and
- f. The Rail Environment Policy Statement.

1.1.2 This Addendum to my Proof of Evidence⁵ and Rebuttal Proof of Evidence⁶ has been produced following the invitation from the Inspectors on 20th July 2021 to submit further evidence on the implications of these documents for the evidence presented by the parties to the appeal. This Addendum addresses the implications of the DfT documents for my evidence on the carbon and climate change impacts of the proposed development of Bristol Airport to accommodate 12 million passengers per annum (mppa) (the Appeal Proposal).

1.1.3 This Addendum refers to only four of the documents identified above, namely, the *Decarbonising Transport* strategy, the *Jet Zero Consultation*, the accompanying *Jet Zero Consultation: Evidence and*

¹ **CD9.134:** Decarbonising Transport: A Better, Greener Britain, Department for Transport July 2021, available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1002285/decarbonising-transport-a-better-greener-britain.pdf accessed 5 August 2021

² **CD9.135:** Jet Zero Consultation: A consultation on our strategy for net zero aviation, Department for Transport July 2021, available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1002154/jet-zero-consultation-a-consultation-on-our-strategy-for-net-zero-aviation.pdf accessed 5 August 2021

³ **CD9.136:** Jet Zero Consultation: Evidence and Analysis, Department for Transport July 2021, available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1002163/jet-zero-consultation-evidence-and-analysis.pdf accessed 5 August 2021

⁴ **CD9.137:** Targeting net zero - next steps for the Renewable Transport Fuels Obligation: Government response, Department for Transport July 2021, available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1001880/targeting-net-zero-next-steps-for-the-renewable-transport-fuels-obligation-government-response.pdf accessed 5 August 2021

⁵ **BAL/W7/2**

⁶ **BAL/W7/3**

Analysis report and the Government's Consultation Response to the Renewable Transport Fuels Obligation.

1.1.4 Appendix A to this Addendum is a Note produced by Mr Brass, which considers the information put forward in the *Jet Zero Consultation* documents in the context of the air traffic forecasts prepared for the Appeal Proposal.

1.1.5 In summary, the key points are as follows:

1. The UK Government's commitment to the aviation sector being net zero by 2050 is clear.
2. The pathway that will ultimately lead to achieving net zero aviation cannot be set out step by step at this stage, but different pathways have been considered and are available.
3. All pathways to net zero considered by UK Government anticipate accommodating an increase in passenger numbers of between 58 – 60%, including Bristol Airport at 12 million passengers per annum (mppa).
4. The UK Government does not anticipate the introduction of measures to limit the capacity of UK airports in order to meet its climate change commitments.
5. Overall, the direction of UK policy and legislation with respect to carbon and aviation has not changed.
6. The UK Government considers the aviation sector as being at the heart of the UK's economy and is committed to preserving the benefits it brings.
7. The UK Government will encourage the aviation industry to achieve carbon net zero through innovation, which itself provides huge economic opportunities. One means by which industry will be incentivised is through the operation of the UK ETS.
8. With regards to Bristol Airport, the draft Carbon and Climate Change Action Plan (CCCAP)⁷ that will be delivered as part of the Appeal Proposal is fully aligned with the Government's position and trajectory, in some instances reaching the Government's ambitions faster than the timeline set out by Government.
9. The Government's policy of 'Making Best Use' (MBU)⁸ remains current Government policy, to be given full weight in decision making.

1.1.6 **The *Decarbonising Transport* strategy and parallel documentation, including the *Jet Zero consultation*, do not alter the conclusions reached in my evidence, the *Environmental Statement*⁹ or the *Environmental Statement Addendum*¹⁰.**

⁷ CD9.148

⁸ CD6.4: Beyond the horizon - The future of UK aviation: Making best use of existing runways, Department for Transport, June 2018, available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/714069/making-best-use-of-existing-runways.pdf accessed 21 April 2021

⁹ CD2.5.44

¹⁰ CD2.20.1

2. Decarbonising Transport Strategy

2.1 Overview

- 2.1.1 The *Decarbonising Transport* strategy sets out the UK Government's plans to further decarbonise the transport sector, recognising that emissions reductions have been achieved but signalling the start of further work towards the UK Government's vision of transitioning to a wholly net zero economy.
- 2.1.2 The *Decarbonising Transport* Strategy is structured with two parts, with Part 1 presenting the UK Government's "*path to net zero transport in the UK, the wider benefits it can deliver, and sets out the principles that underpin our approach to delivering it*" and Part 2 setting out the UK Government's "*commitments and the actions needed to decarbonise transport*".

2.2 Clear commitments

- 2.2.1 The introduction to the *Decarbonising Transport* strategy frames the strategy in the context of the legal requirement for UK carbon emissions to be net zero by 2050, highlighting the importance of COP26 and the leadership role of the UK. It makes clear that (p14):
- "The UK Government is committed to moving as far, and as fast, as possible. This is about the pace of change as well as the destination."*
- 2.2.2 In so doing, the *Decarbonising Transport* strategy sets out a number of commitments made by UK Government to decarbonise all forms of transport. In terms of aviation, these commitments are as follows (p11):
- a. To consult on our Jet Zero strategy, which will set out the steps we will take to reach net zero aviation emissions by 2050.
 - b. To consult on a target for UK domestic aviation to reach net zero by 2040.
 - c. To consult on a target for decarbonising emissions from airport operations in England by 2040.
 - d. To further develop the UK Emissions Trading Scheme to help accelerate aviation decarbonisation.
 - e. To aim to agree an ambitious long-term global emissions reduction goal in the International Civil Aviation Organization by 2022.
- 2.2.3 The first three commitments (a-c) provide clear targets for the aviation sector. The first target is already implicit with the inclusion of international aviation emissions within the Sixth Carbon

Budget. The second and third targets (b-c) are new and signpost the continued direction of travel for policy and legislation. The extent to which BAL's draft CCCAP is consistent with and in some respects goes beyond the timeline in Decarbonising Transport is discussed in section 2.4 of this Addendum.

- 2.2.4 The *Decarbonising Transport* strategy and parallel documentation, including the Jet Zero consultation, makes the UK Government's position very clear, in expecting the aviation sector to be carbon net zero whilst continuing to accommodate increases in passenger numbers. This does not change and, indeed, supports the conclusions reached in my evidence, the Environmental Statement and the Environmental Statement Addendum.

2.3 Meeting Net Zero

- 2.3.1 Whilst the UK Government's commitment is clear, the *Decarbonising Transport* strategy (page 17) identifies that it cannot precisely plot each individual step to net zero over the next 30 years. What the strategy does is set out a series of "actions and timings" in order to achieve net zero in 2050, and the carbon budgets along the way.

- 2.3.2 In the *Decarbonising Transport* strategy (page 18) the UK Government recognises that "*[d]ecarbonising aviation is one of the biggest challenges across the global economy*", with the technological requirements necessary far outstripping those for equivalent land-based transport. The strategy goes on to set out the UK Government's commitment to reach net zero for UK aviation by 2050 (my emphasis):

"This, plus a projected increase in passenger numbers, and the need for global coordination, means that decarbonisation will require a consistent, long-term effort from government and industry, both in the UK and internationally. Through these efforts, we are determined to meet this challenge and are committed to UK aviation achieving net zero by 2050".

- 2.3.3 The *Decarbonising Transport* strategy (in addition to the *Jet Zero Consultation*) make the UK Government's position very clear; it is committed to the aviation sector becoming net zero by 2050, whilst continuing to accommodate increases in passenger numbers. This is reflected in the UK Government's overall approach to decarbonising transport, namely that "*it's not about stopping people doing things: it's about doing the same things differently.*" In practical terms, this means that "*[w]e will still fly on holiday, but in more efficient aircraft, using sustainable fuel.*"

- 2.3.4 My conclusion from this is that the UK Government's strategy does not envisage the introduction of measures to restrict passenger demand or airport capacity in order to achieve net zero or the carbon budgets.

2.3.5 As I explained in section 3.4 of my Proof of Evidence, the principal measure relied upon by Government in order to meet net zero and the Sixth Carbon Budget is the UK Emissions Trading Scheme (UK ETS), under which carbon emissions from international aviation are capped and subject to carbon trading. As I explained, the Government is working towards an integration of the UK ETS with the Carbon Offsetting and Reduction Scheme for International Aviation (CORSI) through ongoing consultation.

2.3.6 This is reiterated in the *Decarbonising Transport* strategy which highlights this as a commitment (page 11):

"We will further develop the UK Emissions Trading Scheme to help accelerate aviation decarbonisation".

And also on page 41 (my emphasis):

"Priority 6: Reducing carbon in a global economy:

UK aviation and shipping will achieve net zero emissions by 2050. Ahead of that, our domestic lead will act as a showcase to the world and bolster our call to action internationally, where cooperation and collaboration through the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO), will continue to be vital to decarbonise these industries. The UK will significantly reduce the impact of aviation on the environment through a combination of new aerospace technology such as electric and hydrogen aircraft, development and commercialisation of sustainable aviation fuels, operational efficiencies, and market-based measures. By continuing to build our capability and investing in R&D in the early 2020s, the UK will empower innovation in the sector. The UK will play an important role in the development and deployment of zero emission maritime technology, particularly where we have significant market share and can build on domestic expertise to capture early market share, such as small craft. Through demonstration at scale in the 2020s of the safety and reliability of technology, the UK maritime industry will sail ahead on a clear trajectory to net zero emissions before 2050".

2.3.7 Overall, the *Decarbonising Transport* Strategy does not change the conclusions reached in my evidence, the Environmental Statement or the Environmental Statement Addendum. Indeed, the direction of travel indicated by the Government is wholly supportive of the conclusions reached. In particular, in section 2.2 of my Proof of Evidence, I highlighted that the clear direction of travel in terms of climate change policy and legislation, including the Government's commitment to progressively tighter emissions targets which the Government is seeking to achieve through innovation and technological advancement. As I explained in paragraph 2.2.2 (point 4) of my Proof of Evidence, carbon emissions from international aviation is a matter that is only influenced by BAL but properly controlled at a national level by the UK Government. This approach is reflected in the *Decarbonising Transport* strategy.

2.4 Implications for the Draft CCCAP

- 2.4.1 The *Decarbonising Transport* strategy includes, on pages 9 to 13, a long list of commitments which are relevant to the draft CCCAP and many of which can be considered for inclusion within it.
- 2.4.2 Through the draft CCCAP⁷, BAL is consistent with the first of the targets identified in paragraph 2.2.2 above through the following commitments:
- a. That airport operations are to be carbon net zero by 2030 (including Scope 1 and 2 emissions); and
 - b. That Bristol Airport as a whole is to be carbon net zero by 2050 (including Scope 1, 2 and 3 emissions).
- 2.4.3 The Government's position is that airport operations (Scope 1 and 2) should be carbon net zero by 2040. The commitment in the draft CCCAP would see this target reached ten years earlier.
- 2.4.4 Overall, the approach in the draft CCAP is to set clear emission reduction targets, provide a programme of measures to be evaluated and implemented in the short, medium and long term, to provide annual reporting with independent verification, and to provide for regular review. I consider this approach to be in line with *Decarbonising Transport* and supportive of many of the commitments identified therein.

3. Jet Zero Consultation

- 3.1.1 The *Jet Zero Consultation* seeks consultation responses on the UK Government's strategy for net zero aviation and (page 4) is being carried out in the context of the UK Government's "*absolute commitment to reducing UK emissions in line with the Paris Agreement*" and the recognition that over time, aviation emissions will comprise an increasingly greater proportion of overall residual emissions due to the comparative difficulties with decarbonising the industry.
- 3.1.2 The stated aim of the *Jet Zero Consultation* is stated in the *Decarbonising Transport* strategy (page 10) is for "*aviation to decarbonise in a way that preserves the benefits of air travel and delivers clean growth of the UK sector by maximising the opportunities that decarbonisation can bring*". The *Jet Zero Consultation* document makes clear (paragraph 3.39) the UK Government's "*wholehearted support*" for flying, as a "*social and economic good*".
- 3.1.3 The *Jet Zero Consultation* reiterates the importance of aviation for the UK economy (paragraph 1.1), identifying that the sector is "*vital for trade and the distribution of goods, creates jobs, connects friends and family, and - crucially for an island nation - links us to the rest of the world.*" Furthermore (paragraph 1.8), *Jet Zero* recognises the huge economic opportunity that the transition to net zero offers in terms of the manufacturing sector.
- 3.1.4 The UK Government's proposed means of achieving aviation net zero recognises and reflects the economic importance of aviation. The *Jet Zero Consultation* makes clear that the UK Government's current position is that "*the sector can achieve Jet Zero without the Government needing to intervene directly to limit aviation growth*" (paragraph 3.41, my emphasis). The Government's desire (page 38) is to "*preserve the ability for people to fly whilst supporting consumers to make sustainable travel choices.*"
- 3.1.5 Referring again to *Decarbonising Transport*, the Government's aim is to reach the point where that growth is "*clean*" (page 10) . This reflects the thrust of the *Decarbonising Transport* strategy (page 4) that it is not about stopping people doing things but doing things differently.
- 3.1.6 This is reflected in the *Jet Zero Consultation: Evidence and Analysis* report which, at paragraph 2.12, explains about the role of market-based economic measures in achieving net zero (as a result of carbon trading)³ , but includes no indication at all of any intention to intervene to cap airport capacity. The Report reiterates that whilst there is much uncertainty, the DfT's analysis indicates that (paragraph 2.12): "*capping demand may not be necessary to reduce emissions to levels which can be offset by GGRs to achieve net zero*". The *Jet Zero* consultation document itself (page 38)

similarly discusses the role of “Influencing Consumers”, again showing that there is no intention to directly control demand.

- 3.1.7 This is borne out in the four “indicative pathways” (discussed below), which see net zero being achieved with between 58% and 60% growth in passenger numbers from a 2017 baseline. Annex A of the *Jet Zero Consultation: Evidence and Analysis* report states that this assumed growth is based on supporting the MBU policy, including “updating capacities for several airports where more up-to-date evidence has become available”. I note that the supporting data set published by the DfT on 13th August 2021 in response to the request from NSC¹¹, demonstrates that in formulating the Government’s position in *Decarbonising Transport* and the *Jet Zero Consultation*, it has been assumed that Bristol Airport will be at 12 mppa at 2030. These pathways are discussed in more detail in the evidence of Mr Brass in the Appendix to this Addendum.
- 3.1.8 In summary, the goal of both the *Decarbonising Transport* strategy and the emerging *Jet Zero Consultation* strategy is for the UK aviation sector to be net zero by 2050 whilst allowing the sector to grow and for the UK as a whole to realise the potential economic benefits of decarbonisation. This is fully supported by *Sustainable Aviation* which, on 22 June 2021¹², published the strengthened commitment of the UK aviation industry to achieving net zero and, on 14 July 2021, welcomed the *Jet Zero Consultation*¹³.

3.2 Flexible Pathway

- 3.2.1 The *Jet Zero Consultation* recognises that the pathway to achieving net zero aviation cannot be spelled out step by step at this stage. DfT identifies four “illustrative pathways” to net zero (pages 13-15), demonstrating how the level of reductions seen in the Committee on Climate Change’s (CCC) Balanced Pathway (or greater) can be achieved by focussing on fuels and technology, rather than capping demand. These are summarised in Table 2.1 in the *Jet Zero Consultation*. The implications for these pathways for the air traffic forecasts are discussed in the Appendix produced by Mr Brass.
31. These pathways show the following:
- a. That the Government’s position is that net zero aviation can be achieved even without reliance on “breakthroughs” in green technology;

¹¹ **CD9.[x]** available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1010795/jet-zero-consultation-dataset.ods accessed 20 August 2021

¹² <https://www.sustainableaviation.co.uk/news/uk-aviation-industry-strengthens-commitment-to-achieving-net-zero-and-launches-first-interim-decarbonisation-targets/>

¹³ <https://www.sustainableaviation.co.uk/news/response-to-the-release-of-the-governments-transport-decarbonisation-plan/>

- b. That the Government's clear intention is to see passenger demand grow between 58 and 60% from a 2017 baseline, whatever pathway is adopted; and
- c. That net zero aviation is anticipated to be achieved in circumstances where the aviation sector still produces residual emissions that require abatement outside the sector.

3.2.2 In respect of the role of Greenhouse Gas Removal (GGR) technologies, in paragraph 2.19 of *the Jet Zero Consultation: Evidence and Analysis* report, the DfT states that its analysis suggests that "*there would be sufficient GGR capacity to offset the residual aviation emissions that are estimated in all the scenarios we present below*".

3.2.3 The proposed approach in the *Jet Zero Consultation* is to prioritise in-sector reductions through technological and operational improvements and then (paragraph 3.42) seek to address residual carbon emissions through "*robust, verifiable offsets and additional greenhouse gas removals*".

3.2.4 The impact of the *Jet Zero Consultation* for future carbon pricing and the extent to which this impacts on the air traffic forecasts for the Appeal Proposal is discussed in the Appendix by Mr Brass.

3.2.5 Overall, the *Jet Zero* consultation supports the position set out in my Proof of Evidence. It does not necessitate any change to the assessment carried out in the Environmental Statement, or the Environmental Statement Addendum or the conclusions reached therein.

3.3 Making Best Use

3.3.1 Importantly, the *Jet Zero Consultation* puts beyond doubt the status and weight to be attributed to MBU. Footnote 39 on page 51 states as follows

"Beyond the horizon - the future of UK aviation: Making best use of existing runways (2018) and Airports National Policy Statement: new runway capacity and infrastructure at airports in the South East of England (2018) are the most up-to-date policy on planning for airport development. They continue to have full effect, for example, as a material consideration in decision-taking on applications for planning permission. The government is clear that expansion of any airport must meet its climate change obligations to be able to proceed".

3.3.2 With reference to my Rebuttal evidence, this end note re-affirms the position in my Rebuttal Proof of Evidence at paragraph 2.1.5 that "*[t]here can be no proper suggestion that MBU does not remain current Government policy attracting full weight.*"

4. Targeting Net Zero

4.1.1 In the *Government's Response to the Renewable Transport Fuels Obligation Consultation* its response to earlier consultation on the next steps for the, the DfT makes clear that it intends to increase and enhance the Renewable Transport Fuels Obligation (RTFO)⁴ target, further encouraging the use of low carbon fuels. The Government's response to this consultation has led to the following decisions (pp 8-10):

- The RTFO target to be increased from 9.6% in 2021 to 14.6% in 2032.
- To support recycled carbon fuels (i.e. those derived from waste plastic or waste industrial gases).
- To expand the scope of the RTFO to make hydrogen and renewable fuels of non-biological origin (RFNBOs) used in maritime, rail and non-road vehicles eligible for support.

4.1.2 These policy measures have not been considered in the CCCAP to date but will support its implementation.

5. Conclusion

- 5.1.1 The *Decarbonising Transport* strategy makes the UK Government's position clear; the aviation sector will achieve carbon net zero, whilst continuing to accommodate increases in passenger numbers. The *Jet Zero Consultation* is the first step towards a comprehensive strategy to achieve 'jet zero'. The Government's analysis has demonstrated how this might be achieved, whilst recognising that there can be no certainty yet over the particular pathway. For the purposes of this appeal, however, it is sufficient that:
- a. The Government is committed to achieving jet zero and the carbon budgets along the way.
 - b. The Government's analysis indicates that this can be achieved without limiting airport capacity.
 - c. This can be achieved in circumstances where aviation produces residual emissions, which will be offset by GGRs.
 - d. The Government will encourage innovation and technology in order to allow "green growth" to be achieved, which in itself represents a significant economic opportunity for the UK. This includes the impact that the UK ETS will have for incentivising innovation.
 - e. The draft CCCAP meets, and in certain respects exceeds, the expectations of Government as set out in *Decarbonising Transport*.
 - f. It is now beyond doubt that MBU remains up to date, current Government policy to be given full weight in decision making.
- 5.1.2 This is entirely consistent with and supportive of the position set out in my Proof of Evidence and Rebuttal Proof of Evidence, and is reflected in the approach to the assessment of carbon and climate change impacts in the Environmental Statement and Addendum.

Appendix A

Commentary in Relation to the Jet Zero Consultation and the Air Traffic Forecasts



Development of Bristol Airport to Accommodate 12 Million Passengers Per Annum

Air Traffic Forecasts

James Brass

Commentary in Relation to the Jet Zero Consultation and the Air Traffic Forecasts

Section 78 Town and Country Planning Act 1990 Appeal by
Bristol Airport Limited Relating to Bristol Airport, North Side
Road

Planning Inspectorate Reference: APP/D0121/W/20/3259234

North Somerset Council Reference: 18/P/5118/OUT

1. Introduction

1.1.1. On 14 July 2021, the Department for Transport published Decarbonising Transport: A Better, Greener Britain (CD9.134) and alongside it the Jet Zero Consultation (CD9.135), along with the Jet Zero Consultation: Evidence and Analysis report (CD9.136). These documents provide additional context for the air traffic forecasts submitted as part of the Appeal Proposal, as set out in the air traffic forecasting report prepared by York Aviation (CD2.21) and presented in my Proof of Evidence on air traffic forecasting (BAL/1/2). Given their specific focus on aviation, I have focussed on the Jet Zero Consultation and the Jet Zero Consultation: Evidence and Analysis report in this note.

1.1.2. This short note considers the information put forward in the Jet Zero Consultation documents and whether this information has any impact on the air traffic forecasts prepared for the Appeal Proposal. For the avoidance of doubt, at the outset, it is important to state that I do not believe that the Jet Zero Consultation results in a need to adjust the Appeal Proposal air traffic forecasts.

1.1.3. I have considered a number of issues that are covered within the Jet Zero Consultation that might influence the Appeal Proposal air traffic forecasts moving forward, namely:

- the Government's position in terms of the future growth of air travel;
- the potential for additional demand management measures to be imposed by Government;
- the carbon costs associated with achieving net zero and the extent to which higher carbon costs might influence demand in the future;
- the continued use of the Department for Transport Aviation Forecasts 2017 (CD6.02);
- the reliance of the Appeal Proposal forecasts on future aircraft technologies to deliver growth.

1.1.4. I consider each of these issues further below.

2. The Government's Position on Future Aviation Demand Growth

2.1.1. In Sections 2.4 and 2.5 of my Proof of Evidence on air traffic forecasting (BAL/1/2 Brass, June 2021, pp. 10-15), I established the policy context for the Appeal Proposal air traffic forecasts, both in terms of national and regional economic policy, and in terms of national aviation policy. I clearly demonstrated the UK Government's focus on:

- a 'Global Britain' with strong international linkages;
- 'Levelling up' the UK and creating strong international cities in each region and nation.

2.1.2. Furthermore, I established the link between the Government's economic policy and its long-term support for aviation growth to deliver economic development and prosperity as set out in national aviation policy.

2.1.3. In terms of the policy context for the air traffic forecasts and the Government's support for the long term drivers of air transport growth, the Jet Zero Consultation reinforces this position and confirms that the Government remains strongly supportive of future aviation growth. I note particularly the following statements at the very beginning of the Jet Zero Consultation:

"Aviation and the UK go hand in hand. We were pioneers of early flight, and the sector has long been at the heart of our economic success. It is vital for trade and the distribution of goods, creates jobs, connects friends and family, and – crucially for an island nation – links us to the rest of the world. Flight is essential for our Global Britain ambitions of openness as a society and an economy." (CD9.135, Page 8, Para. 1.1)

"The strategy will provide a clear 'Jet Zero' goal for the sector whilst allowing the different technological pathways to develop. It will ensure the UK is at the vanguard of progress on reducing aviation emissions and continues to drive international progress. And it will put partnerships at the heart of delivery – partnerships with industry, academia, NGOs and the public.

It is a strategy that will deliver the requirement to decarbonise aviation, and the benefits of doing so, whilst allowing the sector to thrive, and hardworking families to continue to enjoy their annual holiday abroad; we want Britons to continue to have

access to affordable flights, allowing them to enjoy holidays, visit friends and family overseas and to travel for business.” (CD9.135, Page 4-5, Foreword)

2.1.4. These excerpts from the Jet Zero Consultation make quite clear that supporting aviation growth to support the economy and to meet the demand for travel remains at the centre of the Government’s policy position.

2.1.5. I also note that the Jet Zero Consultation also confirms the continued applicability of the UK Government’s Making Best Use of Existing Runways policy (CD6.04):

“Beyond the horizon The future of UK aviation: Making best use of existing runways (2018) and Airports National Policy Statement: new runway capacity and infrastructure at airports in the South East of England (2018) are the most up-to-date policy on planning for airport development. They continue to have full effect, for example, as a material consideration in decision-taking on applications for planning permission. The government is clear that expansion of any airport must meet its climate change obligations to be able to proceed.” (CD9.135, Page 51, Endnote 38)

2.1.6. It is also worth noting the extent of air passenger demand growth envisaged within the Jet Zero Consultation. The Evidence and Analysis Report sets out four pathways to reaching net zero. Each of these includes a forecast of future UK air passenger demand by 2050. These pathways envisage the following future passenger growth:

- Pathway 1: Continuation of Current Trends – 60% increase in passenger numbers by 2050;
- Pathway 2: High Ambition – again, 60% increase in passenger numbers by 2050;
- Pathway 3: High Ambition with a breakthrough on Sustainable Aviation Fuels (SAF) – 58% increase in passenger numbers by 2050;
- Pathway 4: High ambition with a breakthrough on zero emission aircraft – again, 58% increase in passenger numbers by 2050.

2.1.7. This clearly indicates that the Government’s policy position is founded on growth in passenger demand in the UK of between 58% and 60% compared to a 2018 baseline¹.

The Appeal Proposal only makes up a small proportion of this total growth.

¹ It should be noted that this growth refers to total passenger demand. The Department for Transport Aviation Forecasts 2017 include a forecast for Bristol Airport but this is limited to the current planning restriction of 10 million passengers per annum (CD6.02, Page 86, Para. 5.46). Furthermore, the Department for Transport makes quite clear that individual airport forecasts should not be viewed as a cap on individual airport growth (CD6.02, Page 13, Para. 1.4).

2.1.8. Based on this analysis, I see no reason to believe that the Appeal Proposal air traffic forecasts need to be adjusted in the light of the Jet Zero Consultation from a policy perspective. The policy of the UK Government in terms of the importance of air transport growth to the UK economy remains the same and has been reiterated. It is also clear that the UK Government sees air passenger demand growth of between 58% and 60% as being compatible with achieving net zero. The Appeal Proposal would account for only around 3% of that future growth.

3. The Potential for Demand Management

3.1.1. The PCAA in its Statement of Case (Parish Councils Airport Association, February 2021, p. 13 para. 59) has previously suggested that Bristol Airport could be vulnerable to demand management measures and that, more generally, the future growth of air transport could be controlled by active demand management measures, perhaps through simply capping airports or overall demand or through the use of air passenger duty (APD) or similar tax measures. The Jet Zero Consultation: Evidence and Analysis Report makes clear that this is not something that is being contemplated by Government and that the pathways to net zero identified are not dependent on any form of demand management outside of carbon pricing:

“Apart from the application of a carbon price, none of our scenarios assume any additional demand management measures.” (CD9.136, Page 10, Para. 3.3)

3.1.2. As has already been discussed in some detail in the air traffic forecast report (CD2.21, Page 4, Para. 2.8) and in my Proof of Evidence on traffic forecasting (BAL/1/2, Pages 49-50, Section 4.7), the Appeal Proposal air traffic forecasts already include carbon pricing in the assessment of future growth rates, both for central case carbon costs and high case carbon costs. The forecasts also allow for potential higher APD in the future, although the Jet Zero Consultation would appear to rule this out.

3.1.3. On this basis, again, I believe there is no requirement to adjust the air traffic forecasts to reflect the information that has come forward through the Jet Zero Consultation. The Consultation has confirmed that the market mechanism for managing demand will be carbon pricing and this has already been considered in the forecasts.

4. Carbon Prices and the Potential Impact on Demand

4.1.1. The Jet Zero Consultation: Evidence and Analysis Report (CD9.136) sets out the carbon price assumptions associated with each of the four pathways to net zero set out (CD9.136, Pages 11-17). These prices are taken from the Department for Business, Energy & Industrial Strategy (BEIS) guidance on carbon pricing. The carbon prices assumed are as follows:

- Pathway 1: Continuation of Current Trends – BEIS central carbon price on all flights, reaching £231/tCO₂ in 2050 (2018 prices);
- Pathway 2: High Ambition – BEIS central carbon price on all flights, reaching £231/tCO₂ in 2050 (2018 prices);
- Pathway 3: High Ambition with a breakthrough on Sustainable Aviation Fuels (SAF) – BEIS high carbon price, reaching £346/tCO₂ in 2050 (2018 prices);
- Pathway 4: High ambition with a breakthrough on zero emission aircraft – BEIS high carbon price, reaching £346/tCO₂ in 2050 (2018 prices).

4.1.2. The higher carbon prices in Pathways 3 and 4 only have a very limited effect on future growth, reducing the growth in passenger numbers from 60% to 58% by 2050.

4.1.3. The carbon prices used in the Appeal Proposal air traffic forecasts are very similar to those used in the Jet Zero Consultation. The Appeal Proposal assumptions are indeed also based on guidance from BEIS but simply from a year earlier. There is very limited difference between the two. The carbon prices assumed through to 2040 are shown in the air traffic forecasting report (CD2.21, Page 23). I therefore regard them as being entirely consistent with those used in the Jet Zero Consultation.

4.1.4. Within the Appeal Proposal air traffic forecasts, different future paths for carbon prices are dealt with via the Monte Carlo growth rates model. Central carbon prices are consistent with the Core Case set out within the air traffic forecasts. If carbon prices are more in line with the high carbon price assumptions set out, this will simply push the Appeal Proposal air traffic forecasts more towards the Slower Growth Case (where a passenger throughput of 12 million passengers per annum (mppa) is reached by 2034). I would note, however, that the Jet Zero Consultation strongly suggests that the effect of higher carbon prices on demand is relatively limited. Hence, it is unlikely that high carbon prices on their own would result in Bristol Airport growing in line with the Slower Growth Case. In other words, high carbon prices would result in a

shift towards the Slower Growth Case but would not be sufficient to push the growth path all the way to the Slower Growth Case.

4.1.5. Again, on this basis, I conclude that there is no requirement to adjust the Appeal Proposal air traffic forecasts based on the carbon pricing scenarios put forward in the Jet Zero Consultation. The levels of carbon price considered in the pathways to net zero set out are consistent with those considered in the Appeal Proposal air traffic forecasts. I would also note that the impact of higher carbon prices on passenger demand set out in the Jet Zero Consultation is limited. This leads me to conclude that the air traffic forecast range identified in the Appeal Proposal, with the Core Case reaching 12 mppa in 2030, the Faster Growth Case reaching 12 mppa in 2027, and the Slower Growth Case reaching 12 mppa in 2034, remains entirely reasonable. It should, however, be further noted that it is now common ground that the Core Case and Slower Case are more likely than the Faster Case.

5. Continued Use of the Department for Transport Aviation Forecasts 2017

5.1.1. The Appeal Proposal air traffic forecasts use income and air fare elasticities drawn from the Department for Transport's Aviation Forecasts 2017. In this context, I note that the Jet Zero Consultation continues to use the Department for Transport's Aviation Forecasts 2017 as the basis for its forward forecasts of air passenger demand growth:

"Our scenarios are based on 2017 DfT forecasts of passenger demand and therefore do not take into account the impact of COVID-19 on aviation demand. To address the short-term fall in emissions, an uncertainty band has been added to the graphs covering 2020-2024." (CD9.136, Page 10, Para. 3.5)

5.1.2. I note that the analysis includes a four-year uncertainty band but that, fundamentally, the basis for the forecasts remains the 2017 UK Aviation Forecasts. By extension, this means that the Department for Transport is continuing to rely on the underlying income and air fare elasticities inherent within those forecasts.

5.1.3. On this basis, I, therefore, again conclude that there is no reason to adjust the Appeal Proposal forecasts based on the evidence presented within the Jet Zero Consultation.

6. Reliance of the Appeal Proposal Forecasts on Future Aircraft Technologies to Deliver Growth

- 6.1.1. Only one of the pathways to net zero set out is reliant on a significant breakthrough in terms of the delivery of zero emission aircraft technology. Pathway 4 to net zero, as set out in the Jet Zero Consultation, includes a *“breakthrough on zero emission aircraft”*. However, the Jet Zero Consultation also makes clear that *“the timelines for zero emission flight are still uncertain and depend on continual progression in battery, fuel cell and liquid hydrogen propulsion technologies. There is currently limited available evidence on the costs of these technologies”* (CD9.136, Page 7, Para. 2.11).
- 6.1.2. In the context of the Appeal Proposal air traffic forecasts, it is important to point out that the forecasts do not assume any take up of zero emissions aircraft prior to Bristol Airport reaching 12 mppa. All aircraft types are assumed to be already in operation. This can be seen in the fleet mix table set out in the air traffic forecasting report (CD2.21, Page 17).
- 6.1.3. There is, therefore, no requirement to consider the uncertainty around the delivery of these aircraft types highlighted in the Jet Zero Consultation within the Appeal Proposal air traffic forecasts. Again, therefore, I conclude that there is no requirement to adjust the Appeal Proposal air traffic forecasts based on the evidence presented in the Jet Zero Consultation.

7. Conclusions

7.1.1. In this Addendum I have considered a number of potential issues raised by the Jet Zero Consultation that might influence the Appeal Proposal air traffic forecasts. I have concluded in each case that there is no reason to suggest that amendments to the Appeal Proposal air traffic forecasts are required on the basis of the Jet Zero Consultation.

7.1.2. I have examined:

- the UK Government policy position in relation to air transport growth as reflected in the Jet Zero Consultation, identifying that the Government remains strongly supportive of aviation growth to support economic development and that its position is founded on increases in air passenger demand of between 58% and 60% by 2050;
- the potential for demand management measures in the future, identifying that the Consultation clearly states that the pathways to net zero do not envisage any demand management beyond carbon pricing, which is already considered within the forecasts;
- the carbon pricing assumptions within the Jet Zero Consultation: Evidence and Analysis report, finding them to be consistent with the assumptions already considered within the Appeal Proposal air traffic forecasts;
- the basis for the air traffic forecasts upon which the Jet Zero Consultation is based, highlighting that these are based on the Department for Transport UK Aviation Forecasts 2017. This means that, by extension, the income and air fare elasticities used within the Appeal Proposal air traffic forecasts are still being used by the Department in relation to the Jet Zero Consultation. There is, therefore, no reason to amend the Appeal Proposal traffic forecasts on the basis of possible changes to income and air fare elasticities;
- the reliance of the Jet Zero Consultation pathways to net zero on new aircraft technologies, identifying that only one pathway is reliant on a breakthrough in relation to zero emissions aircraft. The Appeal Proposal air traffic forecasts are not reliant on the delivery of zero emissions aircraft. Again, therefore, there is no reason to amend the Appeal Proposal air traffic forecasts on this basis.

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