

PROOF OF EVIDENCE**Carbon Emissions**

On behalf of

LUTON BOROUGH COUNCIL

Town and Country Planning (Inquiries Procedure) (England) Rules 2000

Dr Mark Hinnells PhD, MSc, MA, BA

APPLICANT: London Luton Airport Operations Limited

APPLICATION SITE: London Luton Airport, Airport Way, Luton

DESCRIPTION OF DEVELOPMENT: Variation of Conditions 8 (passenger throughput cap), 10 (noise contours), 22 (car parking management), 24 (Travel Plan) and 28 (approved plans and documents) to Planning Permission 15/00950/VARCON (dated 13th October 2017) for the dualling of airport way/airport approach road and associated junction improvements, extensions and alterations to the terminal buildings, erection of new departures/arrivals pier and walkway, erection of a pedestrian link building from the short-stay car park to the terminal, extensions and alterations to the mid-term and long-term car parks, construction of a new parallel taxiway, extensions to the existing taxiway parallel to the runway, extensions to existing aircraft parking aprons, improvements to ancillary infrastructure including access and drainage, and demolition of existing structures and enabling works and for the construction of multi-storey car park and pedestrian link building.

PINS REF: APP/B0230/V/22/3296455

LPA REF: 21/00031/VARCON



Proof of Evidence of Mark Hinnells on Carbon Emissions on behalf of Luton Borough Council

Luton Airport Public Inquiry

Planning Application – 21/00031/VARCON

Report ref ED16760 Luton Borough Council

Customer:

Luton Borough Council

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1 Name and qualifications

1. My name is Dr Mark Hinnells. I have worked professionally in energy and environment policy since 1990.
2. I am a Principal Consultant with Ricardo Energy and Environment (Ricardo), a trading name of Ricardo-AEA Ltd. I have been at Ricardo first as senior and more recently as Principal since 2017. At Ricardo I lead work aiming at significant carbon emissions reductions for large sites including airports. Recently I have led on estimating future energy demand, and explored options for mitigating carbon emissions across several airports. This work supports a mix of airport DCO applications, planning applications to local planning authorities, and carbon management planning.
3. Other recent projects have included work on a net zero carbon strategy for the water industry, and working with a number of local authorities to shape plans for local net zero carbon targets. I have supported a range of projects to decarbonise the rail network, and a portfolio of measures to deliver major reductions in carbon emissions for public sector sites including prisons, hospitals and MOD sites. This wider view of carbon emissions allows me to put aviation in the context of carbon emissions across the economy.
4. My three decades in energy and environmental policy spans Government, academia and the private sector. Prior to joining Ricardo I spent time as a renewable energy developer and took wind and solar projects through the planning system.
5. Prior to that I was involved with Government policy development on secondment for three years to what was then DETR, and covering tax (including development and implementation of the Climate Change Levy) and regulatory frameworks (including supporting development of an Energy White Paper redesigning then operating power station consents under section 36 of the Electricity Act 1989).
6. I spent 8 years advising on energy labelling and minimum efficiency standards for appliances at EU level, developing and interpreting technical economic and environmental findings for policy implementation. I spent 8 years in post-doctoral research at the Environmental Change Institute on developing low carbon scenarios for the UK building stock, and what Government can do to deliver change using a combination of information, economic instruments and regulation. I have spent several years teaching on the MSc programme at the Centre for Alternative Technology, Machynlleth.
7. I have an MA and PhD from the Manchester Metropolitan University (1996) and an MSc in Renewable Energy and Built Environment from the University of East London and Centre for Alternative Technology.

8. My expertise in relation to these proceedings covers matters relating to climate change policy and in particular the assessment and mitigation of carbon emission impacts due to airport operations.
9. I acted as expert witness on carbon emissions for North Somerset Council at Bristol Airport, and Uttlesford District Council at Stansted Airport, at appeal and public inquiry, following both councils' refusal of expansion proposals on grounds which included carbon.
10. I am extremely mindful of the seriousness of the collision between climate change policy and infrastructure development. The rapid change in policy, combined with long timeframes of asset development like airports, mean that climate change may not be fully considered in previous decisions of government. Indeed I have recently published in the Expert Witness Journal on the subject¹, with particular reference to roads and airports.
11. The evidence which I have prepared and provide for this appeal in this Proof of Evidence is true and I confirm that the opinions expressed are my true and professional opinions. As such, I understand my duty to the Inspectors and I have complied with that duty. All of the opinions expressed in this Proof of Evidence are mine. This Proof of Evidence has been prepared on the basis of material that I have read myself. Where there is a range of opinion on an issue within this Proof of Evidence, I have indicated the range of opinions and set out my reasons for the opinion that I have expressed.

¹ <https://www.paperturn-view.com/?pid=MjM237800&p=61>

2 Instructions and scope of evidence

2.1 Instructions

12. I was instructed by Luton Borough Council (hereafter LBC) in August 2020 to review the information on carbon emissions and climate change impacts prior to submission of planning Luton Airport's application– 21/00031/VARCON.
13. I was then appointed to review the application once submitted in March 2021 before going to Development Management Committee on 30 Nov 2021. The information I reviewed at that stage was primarily that contained within the Environmental Statement for the proposed development, together with an Outline Carbon Reduction Plan, alongside relevant local planning policy and guidance. I provided two statements on that application on 4 June 2021 and an update on 29 November 2021.
14. I was instructed by LBC in June 2022 to provide evidence to this inquiry. I have reviewed the Environmental Statement Addendum (January 2021 and a second Addendum July 2022) together with changes to policy with regard to aviation and climate change.

2.2 Scope of evidence

15. This proof of evidence sets out policy surrounding and impacts from carbon emissions on climate change related to the planning application. Climate Change policy has been evolving rapidly in the period between the application being submitted and now, and it will continue to evolve up to the time of a decision.
16. My evidence includes consideration of unmitigated impacts; the potential effectiveness of proposed mitigation measures, secured via condition, and/or through a Section 106 Agreement, and/or through a Unilateral Undertaking. In addition, I take into account the effect of government policy to reduce emissions from surface transport, national policy on buildings energy and carbon emissions, and from aviation.
17. However, I am not providing evidence on planning policy or the planning balance as this evidence is provided on behalf of LBC by Mr Gurtler.

2.3 Basis for advice and risk of conflict of interest

18. I have supported Luton Rising, (a company which is 100% owned by LBC) who own the airport, in the development of plans to decarbonise the ground based activities for a proposed DCO application for Luton Airport which aims to increase passenger numbers to 32mppa.
19. I have supported Luton Rising to explore options to achieve net zero for all Luton Rising investments and operations.

20. Ricardo has in the past audited the airport under Airport Carbon Accreditation Scheme for its operator LLAOL (owned by AENA), though I have not been involved in that work.
21. In all of my involvement with the airport, my position has consistently been to support the meeting of LBC objectives, particularly the aim to achieve net zero carbon emissions by 2040. All parties (LLOAL as applicant, the LPA and Luton Rising) have been aware of this position from the outset. I therefore do not feel any conflict of interest in assessing the impacts of the proposal at various stages.

2.4 My experience of the site

22. I have not visited the site since commencing work on these issues, though I have visited the site on a number of occasions both as a consultant and user, and am familiar with the airport and its operations and impacts. Carbon impacts are global in nature rather than local so the lack of a recent site visit does not affect my confidence in the conclusions set out in this Proof of Evidence.

3 Advice to the Development Management Committee on climate change

3.1 Advice in May 2021

23. My Advice in May 2021 was not decisive. This was partly because we were expecting, and then got, an Outline Carbon Reduction Plan. At the same time, policy and precedents against which the application should be assessed has evolved rapidly (see Appendix 1 for a chronology). Hence there was a need for an updated note in November 2021.

3.2 Advice in November 2021

24. Between the original advice note in May 2021 and the Proposed Development Control Committee Meeting Government updated policy to meet its more demanding carbon targets:
- The **Transport Decarbonisation Plan (CD11.12)** and with it the **Jet Zero consultation (CD11.16)** (both 14 July 21) which proposed supporting improved technology (including efficiency, Sustainable Aviation Fuels, electric and hydrogen aircraft, and offsets and removals of remaining carbon emissions) over capacity constraint in order to achieve net zero carbon emissions from aviation.
 - A Consultation on Sustainable Aviation Fuel Mandate (CD11.27)** (23 July 21) a key technology with proposals for a mandate for up to 75% SAF by 2050. So-called Sustainable Aviation Fuel still has the same tailpipe emissions as conventional kerosene fuel, but can be manufactured from wastes biomass or even recycled CO2 emissions to capture carbon in manufacture. There are many routes to making SAF, some lower carbon and lower energy than others. On average SAF has a net 60-75% or more saving in carbon emissions relative to aviation fuel.
 - The UK Hydrogen strategy (CD11.64)** (17 August 2021), important since hydrogen has a long term role in decarbonising the hard-to-decarbonise sectors, including in the medium term public service and freight, and long term, aviation, so the airport will need to plan to make provision or at least ensure plans are not incompatible with hydrogen supply.
 - Updated Carbon Valuation for use in policy assessment (CD11.65)**, (2 Sept 2021) which will underpin policy including decisions on (for example) UK Emissions Trading Scheme, a Mandate on Sustainable Aviation Fuel and Air Passenger Duty. The value of carbon has increased by a factor of 10 today, 4 by 2030 and 2 by 2050. If fuel costs go up through policy, then this may need reflecting in ticket prices, and this may significantly impact calculations of cost effectiveness of airport expansions.

- e. **Decision on requests to review Airports National Policy Statement (ANPS) (CD11.66)**– (6th Sept), where Ministers considered whether there was a need to review the Airport National Policy Statement at the present time, and concluded they did not need to, but may revisit after the publication of decisions following Jet Zero. The clear implication is that Government considers ANPS, and by implication its sister publication for smaller airports, MBU, still stand.
 - f. The Governments over-arching **Net Zero Strategy (CD11.09)** (19 Oct 21) was published just before COP26 in Glasgow, reinforced the strategy of delivering technology change rather than behaviour change.
 - g. At COP26 in Glasgow, the UK government announced an **International Aviation Climate Ambition Coalition (CD11.67)**, (10 Nov 21), where countries committed to ambitious action on international aviation emissions, including through a new global goal and promotion of cleaner fuels and technologies. Among other things, member states of the coalition have committed to working together raise the ambition of the (currently relatively unambitious) CORSIA offsetting scheme via ICAO (the International Civil Aviation Organization). In a sense this is the culmination of policy in that the government recognises that capacity constraint is not a policy that can be sold internationally, whereas ambition on technology is.
 - h. **The Union Connectivity Review (CD11.68)** (26 November 21) reinforced the technology development over capacity constraint view of restraining aviation emissions. There is an opportunity for the UK Government to adopt a more interventionist approach to slot assignment at London airports in support of domestic routes where there is not a viable road or rail alternative.
25. The updated advice to the LBC Development Management Committee (dated 26/11/21) also noted
- a. **CCC recommendations on 6CB (CD11.07)**. CCC recommendations are not policy. Government said it would take on board the recommendations, including bringing international aviation under the carbon budget, but was explicit in not accepting individual policy measures.
 - b. **Stansted appeal decision (CD15.01)**. Inspectors stated that MBU is a recent expression of govt policy, that it thoroughly tests potential implication in terms of climate change and given in full knowledge of govt commitment to CCA. This was reinforced by the High Court decision in October 2021.
 - c. **Jet Zero consultation (CD11.19)** – My updated advice to Development Management Committee (at para 9c) noted that “*Government did not take on board the capacity constraint that CCC advocated, and Jet Zero was explicit that MBU and APF are the most up to date national aviation policy and still carry full weight, and the consultation*

lays the ground for a 60% increase in passenger numbers. Net zero in this context will be very hard to deliver...However, under the Climate Change Act, the Secretary of State still has a duty to meet net zero, and if technology does not deliver the carbon savings anticipated in Jet Zero, Government may need to revisit the issue of capacity constraint."

26. In summary, assessing the application against policy in December 2021:
 - a. The increase in capacity does not need additional physical development but is achieved within existing facilities. There is no embedded carbon and no additional investment in facilities at risk.
 - b. The additional capacity is achieved largely by bigger aircraft. The increase in flights is <1% of current total (going from 141k to 142k).
 - c. Emissions from aircraft can be addressed by national policy, and the airport and its customer airlines (with or without the development) will have to meet UK policy objectives. The proposal is within the bounds of modelling under Jet Zero and under MBU.
 - d. Emission reductions can be further influenced through securing conditions or obligations, including a Carbon Reduction Strategy which should be reviewed regularly, eg in line with UK policy and in line with UK Carbon Budgets.
27. On this basis my recommendation to the Development Management Committee was that whilst climate change as a challenge was both significant and urgent, there was not sufficient reason to refuse the application on climate change grounds.

4 Policy and planning decisions since the LPA decision

28. The following policy and planning decisions have been made since the committee meeting to consider the proposed expansion at Luton. The decisions are listed in chronological order, earliest first, because earlier decisions may have been taken into account in later decisions.

4.1.1 IPCC AR6

29. The International Panel on Climate Change released its 6th Assessment report (AR6), which updates the fifth Assessment Report in 2014, and is the first Assessment Report since the Paris Agreement. AR6 is divided into three sections, working group I on the physical science base was released 9 August 2021. Working Group II (on Impacts, Adaptation and Vulnerability) was released on 28 February 2022 and Working Group III on Mitigation Options on 4 April 2022. For the record I was a reviewer of several chapters of the WGIII report.
30. IPCC conclusions include (my emphasis):

- a. It is unequivocal that human influence has warmed the planet and widespread and rapid changes in the atmosphere, ocean, and biosphere have occurred.
 - b. The scale of recent changes across the climate system are unprecedented.
 - c. Human-induced climate change is already affecting many weather and climate extremes in every part of the globe. Evidence of observed changes in extremes such as heatwaves, heavy precipitation, droughts, and tropical cyclones, as well as reductions in ice, snow cover and permafrost, and, in particular, their attribution to human influence, has strengthened since the Fifth Assessment Report (AR5).
 - d. The earth has warmed by 1.1 degrees since the period 1850-1900.
 - e. Warming of 1.5°C and 2°C will be exceeded between 2020 and 2040 unless deep reductions in carbon dioxide (CO₂) and other greenhouse gas emissions (especially methane) occur in the coming decades.
 - f. With increasing CO₂ emissions, carbon sinks are projected to be less effective at slowing the accumulation of CO₂ in the atmosphere.
 - g. Many changes due to past and future greenhouse gas emissions are irreversible for centuries to millennia, especially changes in the ocean, ice sheets and global sea level.
 - h. Natural drivers and internal variability are overlaid on human-caused changes, with little effect on long term global warming. Natural drivers and internal variability are important to consider in planning for the full range of possible changes.
 - i. Changes in several climatic impacts and drivers would be more significant at 2°C compared to 1.5°C global warming and even more widespread and/or pronounced for higher warming levels.
 - j. Low-likelihood outcomes, such as ice sheet collapse, abrupt ocean circulation changes, some compound extreme events and warming substantially larger than the expected range of future warming cannot be ruled out.
 - k. From a physical science perspective, limiting human-induced global warming to a specific level requires limiting cumulative CO₂ emissions, reaching at least net zero CO₂ emissions, along with strong reductions in other greenhouse gas emissions.
 - l. Scenarios with low or very low greenhouse gas (GHG) emissions would make a discernible difference in global surface temperature within around 20 years.
31. In particular it is important to understand that the language of IPCC has become ever clearer about the science of human induced climate change (it is now unequivocal) and the need for action on greenhouse gas emissions ever more urgent. An article in Scientific American

commented thus, and I could not agree more: *“In the past, IPCC scientists have bent over backward to be calm and not to overstate the case. But in the latest report, the tone was alarmed. That’s good because when the facts are alarming, it is rational both to be alarmed and to convey that alarm to others.”*² We have seen over the last year a succession of fires and floods during which anyone could see the effects of climate change unfolding in real time, and the science of attribution of particular events to climate change is becoming stronger.

32. It is important to understand and not understate the urgency of dealing with climate change, when considering UK obligations in the Climate Change Act and subsequent policy decisions.

4.1.2 Inspectors Decisions on Bristol Airport

33. Inspectors allowed the Bristol Airport appeal (**CD15.05**) against the refusal for expansion from 10 to 12mppa and granted planning permission on 2 February 2022. Inspectors recognised carbon emissions and climate change was a serious issue but there was nothing in policy to justify withholding grant of consent.
34. Indeed as a witness for the LPA that refused the consent, I had argued that The National Planning Policy Framework para 7 stated that the purpose of the planning system is sustainable development, i.e. *“meeting the needs of the present without compromising the ability of future generations to meet their own needs”*) and para 148, that *“The planning system should support the transition to a low carbon future”* and *“shape places in ways that contribute to radical reductions in greenhouse gas emissions”*, and these two paragraphs when taken together, argued against consent. However, it was argued by the airport that NPPF para 188 explained *“The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively”*. The inspectors on behalf of the Secretary of State found that pollution control regimes should be assumed to operate effectively and that planning permission should be granted (**CD15.05 Paras 153-155**).
35. The High Court is to hear an appeal against the Secretary of State’s decision on 8-9 November 2022.

4.1.3 Court Decisions on Southampton Airport

36. A claim for Judicial Review of the approval at Southampton Airport (**CD15.03**) was dismissed on 28 April 2022. One of the grounds of challenge was cumulative impact of airport growth and whether the ES should have taken this into account. This argument was not supported by the decision of the High Court.

² www.scientificamerican.com/article/ipcc-youve-made-your-point-humans-are-a-primary-cause-of-climate-change/

4.1.4 FoE etc v Secretary of State for BEIS

37. In a case brought by FoE Good Law Project, and Client Earth the High Court concluded **(CD15.02)** on 18 July 22 that the Secretary of State for Business Energy and Industrial Strategy did not discharge his duty under s.13 and s 14 of the Climate Change Act, and the Net Zero Strategy lacked any quantitative assessment of the contributions expected to be made by individual policies to reductions in GHG emissions, and further there was a shortfall of 5% of emissions meaning targets would not be met. The Court has ordered the Secretary of State to lay before Parliament a fresh report under section 14 before the end of March 2023, and then refused the Secretary of State's application for permission to appeal.

4.1.5 The Jet Zero Strategy

38. Decisions on the Jet Zero Strategy (CD11.19) were published on 19 July 2022, following the initial consultation, together with a fleet of supporting evidence and analysis. The direction of travel of policy was unchanged and indeed reinforced, which was to plan for increased aviation, and not constrain capacity through the planning system, but to mitigate impacts through technology and market trading mechanisms, both still to be developed.
39. The strategy expected 2019 to be a peak in emissions, and sets ambitious in-sector targets of 35.4 MtCO₂e in 2030, 28.4 MtCO₂e in 2040, and 19.3 MtCO₂e in 2050, with remaining emissions offset to net zero, committing the sector to achieve Jet Zero by 2050 .
40. In terms of detailed commitments:
- a. P.4 The sixth carbon budget will formally include the UK's share of international aviation and shipping emissions, which will allow for these emissions to be accounted for consistently with other sectors (note legislation to deliver this has yet to be laid before Parliament).
 - b. P.8 Government included a five year delivery plan as part of the Strategy. This sets out the actions that will need to be taken in the coming years to achieve net zero by 2050, structured around the three principles (International leadership, Delivery in partnership, and Maximising opportunities) and six measures (System efficiencies, SAF, Zero emission flight, Markets and removals, Influencing consumers, and addressing non-CO₂ warming impacts).
 - c. P.9 Government has "*an ambition for all airport operations in England to be zero emission by 2040. We will issue a Call for Evidence this autumn to gather information on the scope and implementation route to see this achieved*"
 - d. P.9 Government has "*an aspiration is for zero emission routes connecting different parts of the UK by 2030*" (zero emission includes hydrogen and battery electric or hybrid options).

- e. P.8 Government has *“a target for domestic flights to reach net zero by 2040, and next year will launch a consultation on how this will be implemented. Our domestic aviation market is well-suited to pioneer new types of aircraft and can provide an early link to the market for greenhouse gas removals.”*
- f. P.9 Government believes *“Our General Aviation sector is well placed to encourage the early adoption of innovative zero emission aircraft, and we will use newly commissioned research to develop ambitious policies to allow this sector to pioneer zero emission flight.”* The General Aviation, business and private sector is strong at Luton and can play a nationally important role in early technology development and deployment, with the right supporting policy and investment framework, both locally and nationally.
- g. P.9 Government believes *“Carbon markets will have a key role in delivering Jet Zero, and greenhouse gas removals (GGRs) are needed to address residual emissions. By establishing a price signal on emissions and a decarbonisation trajectory, carbon markets help decarbonise and incentivise investment in technologies that reduce carbon emissions. We will seek to enhance the effectiveness of the UK Emissions Trading Scheme (UK ETS) working with the devolved administrations through the UK ETS Authority and we will work through the ICAO to increase the environmental ambition of CORSIA.”*
- h. P.10 Government will *“consider whether the provision of environmental information could encourage consumers to choose the most environmentally friendly flight”*.
- i. P.10 Government concluded *“Our analysis shows that the sector can achieve Jet Zero without the Government needing to intervene directly to limit aviation growth, with knock-on economic and social benefits. The Government’s position on demand management is described in further detail in the Government response to the consultations which has been published alongside this Strategy.”*
- j. P.10 committed to reviewing the Strategy every five years and Government *“will use these reviews to take stock of how emerging technologies are developing, whether they are developing at the pace required and if they are being adopted by the sector. If we find that the sector is not meeting the emissions reductions trajectory, we will consider what further measures may be needed to ensure that the sector maximises in-sector reductions to meet the UK’s overall 2050 net zero target.”* Further, Government *“will need to regularly review the sector’s progress and adapt our approach depending on progress made. We will monitor progress against our emissions reduction trajectory annually from 2025 and review the overall trajectory as part of the five year review process (starting in 2027).”*

- k. At ICAO's 41st Assembly, *"we will negotiate for agreement on a long-term aspirational goal for the CO2 emissions of international aviation that is aligned with the temperature goal of the Paris Agreement"*.
41. The above measures are, however, outside the planning framework. With specific reference to planning policy, Jet Zero stated:
 - a. P.53 para 3.61 *"The Government's existing planning policy frameworks, along with the Jet Zero Strategy and the Flightpath to the Future strategic framework for aviation, have full effect and are material considerations in the statutory planning process for proposed airport development"*
 - b. P.54 para 3.62 *"It is vital that local communities and the wider public have confidence that the impacts of airport expansion have been properly considered. Applicants should therefore provide sufficient detail regarding the likely environmental and other effects of airport development to enable communities and planning decision-makers to give these impacts proper consideration. Applicants should engage with the relevant planning authority at an early stage of the planning process to agree an appropriate approach."*
 - c. P.54 para 3.63 *"Planning authorities and applicants should consider all relevant policy, guidance and other material considerations that may assist appraisal for airport development proposals and decision-making. Applicants should clearly set out their approach and findings in an accessible way that can be easily understood by the general public and decision-makers. The Government recognises the importance of a clear and consistent approach in relation to the assessment of a development's impacts in the process, and will keep under review whether further guidance is needed to assist airport planning decision-making, with particular reference to environmental impacts."*
42. In comparing the final strategy with the consultation paper, the Jet Zero Strategy assumes an increase in passengers from 283m in 2018 (modelled) to 482m in 2050, an increase of 70%. The consultation on the other hand assumed 291m in 2018 (actual) to 461m, an increase of 60%. Government has thus reaffirmed a commitment to growth and policy that climate change concerns should be dealt with through technology and trading.
43. At the same time, the way savings have assumed to be delivered in Scenario 2 (High Ambition) now policy, has changed:
 - a. The tendency to **bigger aircraft** is further exaggerated, so the 70% increase in passengers is with only a 35% increase in ATMs, rather than as the consultation paper, a smaller 60% increase in passengers, with a larger 45% increase in ATMs. Average passengers per plane is assumed to go from 129 per plane now, to 145 in 2050 in the consultation, to 166 in 2050 in the final strategy.

- b. Average **efficiency improvement** is still 2% which is at the limit of what advisers thought possible, and which may prove difficult to achieve given the limited power to enforce efficiency standards on international travel.
 - c. **Sustainable Aviation Fuel** (SAF) uptake is targeted at 10% by 2030 and 50% (rather than 30%) by 2050, so uptake is both earlier and faster, through a new SAF Mandate.
 - d. **Zero emission aircraft** (hydrogen or electric) are now assumed to be 5% of ATM's in 2040 and 27% (instead of 21% of total ATMs in the consultation) by 2050
 - e. **Carbon price** is assumed to be £378/t (current prices) in 2050 instead of £231/t in the consultation, a 64% increase, and more than a factor *four* on current carbon prices.
 - f. **Trading** (ie UK ETS, CORSIA and further offsets) account for as much as 64% of savings against projected emissions.
44. Critics will understandably point to the large tail pipe emissions in 2050 and the fact that remaining emissions will still be higher in 2050 than they were in 2019. But Government sees ways to ensure emissions will be offset, to achieve net zero. Critics will further challenge the validity, certainty, and additionality of offsets. But such arguments are not for a planning inquiry and are for another day. The application has to be assessed against current policy and there is nothing in the Jet Zero strategy as a statement of current policy to justify refusal.

4.1.6 Manston Airport

45. After a previous decision on Manston was withdrawn for reconsideration, the Secretary of State finally consented Manston Airport (**CD15.06**) on 18 Aug 22. The decision letter dealt with climate change policy (including Decarbonising Transport, the Aviation Strategy and 6th carbon budget, and final publications of decisions on Jet Zero) and the impacts of the proposal in climate change terms, in paras 139-150. Specifically
- a. Para 148. *"The Examining Authority concluded that the Development's Carbon Dioxide contribution of 730.1 Kt CO₂ per annum (N.B. at full capacity on a worst-case scenario assessment), would according to the Applicant have formed 1.9% of the total UK aviation carbon target of 37.5 Mt CO₂ for 2050, will have a material impact on the ability of Government to meet its carbon reduction targets, including carbon budgets [ER 8.2.74]. The Examining Authority concluded that this weighs moderately against the case for development consent being given [ER 8.2.75]."*
 - b. Para 149. *"However, the Secretary of State is satisfied that Government's Transport Decarbonisation Plan and the Jet Zero Strategy, which set out a range of non-planning policies and measures that will help accelerate decarbonisation in the aviation sector, will ensure Government's decarbonisation targets for the sector and*

the legislated carbon budgets can be met without directly limiting aviation demand. For this reason, he does not accept the Examining Authority's view that carbon emissions is a matter that should be afforded moderate weight against the Development in the planning balance, and considers that it should instead be given neutral weight at the most."

- c. Para 150. *"For the reasons set out in the paragraphs above, the Secretary of State is content that climate change is a matter that should be afforded neutral weight in the planning balance."*

4.2 Implications of recent decisions

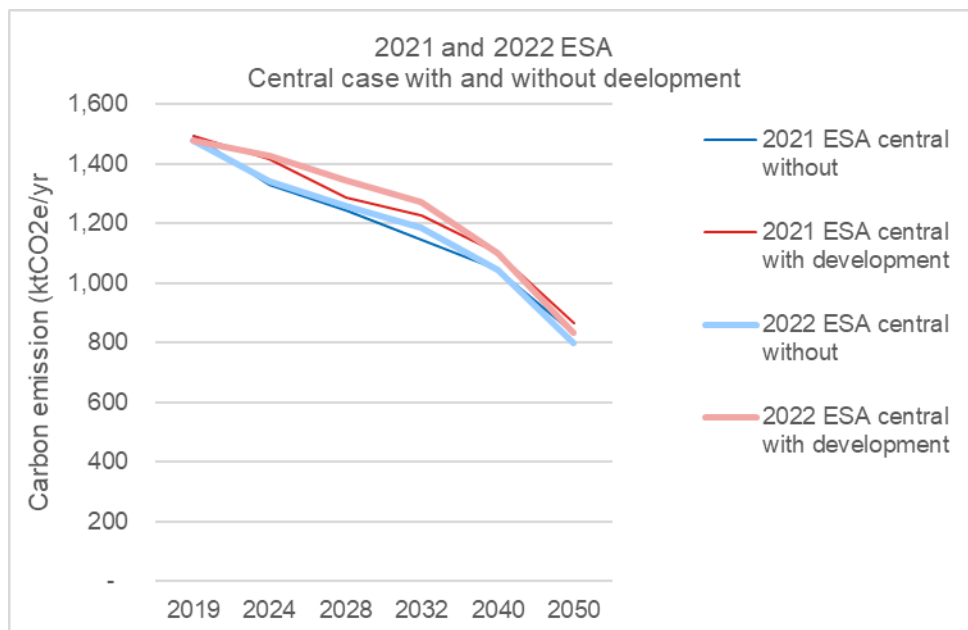
46. In conclusion, government policy is plainly that climate change can be dealt with by non-planning solutions, and without the need for capacity constraint, and has both framed policy, and made subsequent decisions at Manston (**CD15.06**), on this basis. Legislation has yet to be implemented. Markets for trading carbon have yet to be established. Technology has yet to be commercialised. Nevertheless, the Government has been clear in its policy at least as far as the first review point in 2027.

5 Assessment of the ESA and mitigation measures

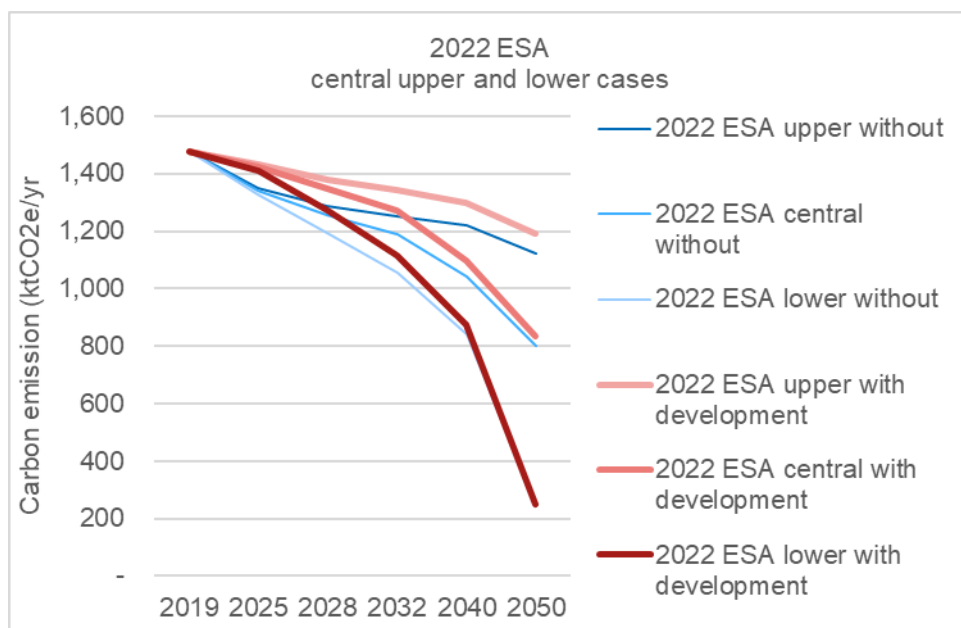
5.1 The ESA July 2022

47. My initial conclusions on the original January 21 Environmental Statement Addendum (ESA2) were that (in para 46 d of my initial analysis (**CD4.03**) dated 28/05/2021 the graph shows no significant impact, ie the uncertainty surrounding projections is greater than the impact of the additional 1mppa or 5.5% extra passengers). In terms of the carbon emissions against a 37.5MtCO₂ planning assumption (still valid until 2032, when aviation becomes part of the 6th carbon budget), the projected increase is not a significant increase.
48. However, I should point out that emissions in both the 'with' and 'without development' cases did not get to net zero so additional measures would be needed *in both cases*. Government Policy is to develop such measures by non-planning policy means, so the effectiveness of non-planning policy was not felt to be affected by whether (in this case) the development went ahead or not.
49. In Figure 1 below, carbon emissions in the ESA dated July 22 (ESA4) are compared with the original ESA of January 21 (ESA2). Taking the central emissions cases, for the 'with development' and 'without development' scenario, in ESA2 and ESA4 shows that emissions projections between the two ESAs are overall within 1% of each other, though 5% higher in 2028 and 4% lower in 2050.

Figure 1 Central Case with and without development (based on Table 7.9 ESA2 January 2021 and Table 5.7 of ESA4 July 2022)



50. In Figure 2 below, I unpack the uncertainty with regard to projections. The uncertainty is down to assumptions about other government policy largely associated with aircraft, as well as assumptions about fleet mix, fuel type etc. The uncertainty (or perhaps better stated as the policy opportunity, because emissions can be influenced by non-planning policy) is much higher than the difference between the 'with development' case and 'without development' case. There are significant opportunities for the emissions from the 'with development' case to be below the 'without development' case. Whether this will happen is down to two things. First the conditions or obligations secured if the consent is allowed, and second, government policy. LPAs and inspectors/Secretary of State can determine the first and would give significant weight to, and normally apply the second.

Figure 2 Uncertainty in the ESA 2022 (based on Table 5.7 of ESA July 2022)

51. To unpack some of the assumptions and mitigations further

- a. In an indication of how quickly policy is moving, ESA4 is already out of date because it doesn't take into account the final Jet Zero Strategy issued in July 2022 (CD11.19). Table 5.5 of the ESA4 assumes SAF central case of 3% by 2028, 6% by 2032 and 30% by 2050. Government policy in Jet Zero sets a target of 10% SAF by 2030 and 50% by 2050, so better than the central case and closer to the low emissions scenario.
- b. Further, Para 5.5.9 of ESA4 says "*The introduction of zero emission aircraft (electric and hydrogen) into the fleet has not been accounted for in this assessment.*". Again, this is already out of date since in Jet Zero the Government saw hydrogen and electric propulsion as vectors for Domestic flights, as well as potential for innovation in hydrogen and electric within the General Aviation market (which is a significant market in the form of business aviation at Luton). Jet Zero saw hydrogen and electric entering into service from 2035, and battery electric and hydrogen together as being 4% of carbon savings by 2050, with 5% of ATMs as zero emission by 2045 and as much as 27% of ATMs by 2050. Government set a target for domestic aviation to be net zero by 2040.
- c. There remains significant uncertainty over the interaction of UK Emissions Trading, CORSIA, and any further offsets or carbon removals about which CCC have concerns, and which could account for as much as 64% (according to Jet Zero) of emissions reductions and take resulting emissions to Net Zero, but I see that this is

for Government rather than the applicant or the inspectors, to manage and develop markets.

52. Table 5.9 of ESA4 (Assessment of significance: aviation emissions and recent airport planning applications) is helpful in both contextualising the development and presenting a cumulative impact assessment of successive airport developments. This table shows that this application is the smallest increase of the recent airport planning applications (at only 25% of the additional emissions of recent proposed expansion) apart from Southampton which was too hard to quantify, and was very much a special case.

5.2 Mitigations and conditions– the Outline Carbon Reduction Plan

53. LBC has a policy of achieving net zero emissions by 2040 (**CD11.42**) including the airport ground based activities. The Government in Jet Zero has a commitment to net zero for the economy including international aviation.
54. An Outline Carbon Reduction Plan was submitted in May 2021 (**CD4.05**) and set out the roadmap for achieving a net zero airport for Scope 1 and 2 emissions, as well as indicating the approaches by which LLAOL can influence Scope 3 emissions.
55. LLAOL has committed to develop the Outline Carbon Reduction Plan into a detailed Carbon Reduction Strategy, within twelve months of the grant of planning permission (proposed condition 29). The outline plan included
- a. Short Term (2020-2025) mitigation measures for achieving net zero carbon by 2050 (Table 4.1)
 - b. Medium Term (2026-2031) mitigation measures for achieving net zero carbon by 2050 (Table 4.2)
 - c. Long Term (2032-2050) – Indicative mitigation measures for achieving net zero carbon by 2050 (Table 4.2)
56. The Outline Carbon Reduction Plan is a significant step forward but again it is out of date in that it does not take into account the Jet Zero strategy, which sets an ambition for all airport operations in England to be zero emission (not net zero) by 2040 based on work by Mott McDonald for DfT (**CD11.55**), and there will be a consultation later in the year on how to achieve this.
57. Given the rapidly changing policy environment, I would recommend that the way that planning conditions or obligations would be met require transparency in the final Carbon Reduction Strategy and how the airport proposes to meet policy, likely to be zero emissions in several key areas outlined below.

58. The need for transparency is supported by the Jet Zero Strategy (**CD11.19**), p.54 paras 3.62-3, (See my para 40 above for a full quote). Where it says that it is vital that local communities and the wider public have confidence that the impacts of airport expansion have been properly considered. Proper consideration includes appropriate mitigations so the net impacts can be determined, and those mitigations can be expected to be the subject of appropriate conditions or obligations.
59. In order to deliver these targets and reflecting Jet Zero Strategy (and in particular para 3.62), it is my firm conclusion and recommendation that the following clear measures should be secured by condition or obligation for inclusion in the final Carbon Reduction Strategy to be submitted for agreement to the Local Planning Authority (see LPA recommended condition 29):
- a. **Clear measures to deliver decarbonisation of existing buildings:** to show how the current airport buildings can contribute to the UK target of a 78% reduction from 1990 levels by 2035, as enshrined in the 6th Carbon Budget, and then achieve zero emission by 2040 e.g. through moving to electric heating and cooling, and though storing heat which might normally be dumped for use elsewhere on the site, or at a different time.
 - b. **Clear measures to deliver onsite or near site generation:** be clear how the airport will as it suggests in the Outline Carbon Reduction Plan, supply at least 25% of energy used by the airport (or by LLAOL) from on-site renewables (or near to site private wire if on site cannot be achieved) by end of 2026 and 50% by 2030 (the remaining power is assumed to continue to be bought from renewable sources).
 - c. **Clear measures to support UK targets on EV uptake.** The Outline Carbon Reduction Plan states (p21) *"In partnership with LLAL and LBC provide the infrastructure for 40 to 60 electric vehicle (EV) charging points by 2030, considerate of EV charging requirements, in line with the planned phase out of new petrol and diesel cars in the UK by 2030"*.

The Government has recently updated its Transport model (WEBTAG, **CD11.69**) and notes *"We are updating the fleet assumptions used in TAG in a staged manner, reflecting recent accelerations in the uptake of electric vehicles (EVs) but holding off fully reflecting the ambition set out in the Transport Decarbonisation Plan (TDP) until the constituent planned policies have been further defined."* Already WEBTAG projects 36% of vehicles on the road by 2030 to be EV. The airport has some 10,000 car parking spaces, and a ratio of 40-60 chargers to 10,000 car parking spaces (around 0.5% of spaces) would simply not provide for 36% uptake of EVs. Though as battery range increases, not all EVs will need to charge on a journey, or may not need to charge at the airport. But the final Carbon Reduction Strategy needs to show

how it meets Government policy in line with expected EV uptake outlined in WEBTAG.

- d. **Clear measures to deliver zero emission service vehicles** within the airport. Vehicles may be electric or hydrogen or other technology, but need a plan for purchasing, appropriate contractual mechanisms for delivery partners, tenants, airlines or airline partners, and need appropriate fuel supply provision.
- e. **Clear measures to deliver more efficient aircraft**, through, for example, operating a shadow carbon price based on BEIS carbon valuations, eg for landing fees to support modernisation of the aircraft fleet.
- f. **Clear measures to deliver UK targets on Sustainable Aviation Fuel** given the assumptions in Jet Zero of 10% by 2030 and 50% by 2050, and any changes as Jet Zero is reviewed in 2027.
- g. **Clear measures to deliver Zero emission flight infrastructure**. The final Jet Zero strategy foresees 4% of abatement from Zero emission (hydrogen and electric) flights by 2050. This is based on smaller aircraft and shorter journeys moving to zero emission flight for 5% of ATMs by 2045 and 27% of ATMS by 2050. The strategy also stated Government will “*encourage the adoption of innovative zero emission aircraft and aviation technology in General Aviation*”. Thus, given the general aviation, business, and private flights from Luton, plus its domestic routes, there is a need for the final Carbon Reduction Strategy to support its airline customers to employ electric and hydrogen aircraft.

6 Summary and conclusions

60. The advice I gave to the Development Management Committee was that:

- a. Climate change was, and is, a serious issue (and the most recent IPCC AR7 amplifies this further).
- b. It will be extremely challenging to meet all of local targets for ground based emissions, national targets for ground based emissions, surface access emissions, and aviation emissions.
- c. Whatever questions there may be surrounding the sufficiency and deliverability of current policy, Government is clear what policy is, and it relies on allowing airport expansion and dealing with emissions through non-planning mechanisms, specifically technology development and market trading solutions. Ultimately the Secretary of State has a duty to meet the target of net zero in the Climate Change Act as amended.

- d. Based on current government policy there are no policy grounds for refusal on the basis of climate change.
61. Nothing has changed to alter that advice, indeed the publication of the Jet Zero Consultation: Summary of responses and government response **(CD11.18)** and the Jet Zero Strategy **(CD11.19)** reaffirms the Governments position.
62. Nothing has changed in ESA4 to alter this position.
63. Should planning permission be granted with appropriate conditions and obligations as proposed by the Council, there is more certainty that local carbon targets for net zero ground based activity and contributions towards national carbon targets (including the target for zero emission airports), can be secured by 2040, than would be the case in the 'without development' scenario (namely the current planning permission ref 15/00950/VARCON) which contains no such planning conditions or obligations.
64. The mitigations envisaged (which would be secured through the Carbon Reduction Strategy) are as outlined in section 5 above, namely:
- decarbonising existing buildings;
 - securing conditions to deliver a given percentage of on site or near to site renewable energy;
 - appropriate support to drive increased use of EVs (to the airport);
 - appropriate zero emission vehicles used by and at the airport; and
 - through SAF and zero emission flight infrastructure.

Appendix 1 – Chronology of policy

Table 1 Changes to legislation, policy, and guidance since 2008 and planning application timelines

Date	Changes	Planning application timeline
		Various expansions from 1938 to 1999 owned by the council and later in Public private partnership, with 4.4m passengers by 1999
2008	Climate Change Act 2008 (CD11.01). Though emissions from international aviation and shipping (IAS) were excluded, the Act placed an obligation on CCC to provide advice and on the secretary of state to include IAS by 2012	
Sept 2009	CCC advice on a framework for reducing global aviation emissions (CD11.02) including constraining global emissions to 2005 levels and addressing the need to incorporate the non-CO2 warming effects of aviation.	
2010-2011		Full planning application for dualling of airport way/airport approach road and associated junction improvements, extensions and alterations to the terminal buildings, Ref. No: 12/01400/FUL
Dec 2012	Government published ' International aviation and shipping emissions and the UK's carbon budgets and 2050 target '. (This decision allowed aviation to continue to increase by offsetting their emissions elsewhere in the economy).	
Dec 2015	Paris Agreement (countries who are signatories should return all emissions to net zero)	
October 2016	CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation) sets a framework for carbon neutral growth (ie no new and additional emissions from growth), from 2020 onwards, until 2035 at the present time (CD11.24)	
Dec 2016	Sustainable Aviation CO2 Road-Map provides an update to the Road-Map published by Sustainable Aviation in 2012. This report	

	explored the potential for the UK to accommodate growth in aviation to 2050 without significantly increasing CO2 emissions, through improvements in carbon efficiency.	
October 2017	DfT UK Aviation Forecasts (CD10.05)	
June 2018	DfT ' Beyond the Horizon: The future of UK aviation, making the best use of existing runways ' (MBU). (CD10.13)	
June 2018	DfT ' Airports National Policy Statement: new runway capacity and infrastructure at airports in the south east of England ' (CD10.15)	
Dec 2018	DfT ' Aviation 2050 — the future of UK aviation Consultation and supporting documents ' (CD10.14)	
Feb 2019	Latest revision of NPPF , replacing previous versions from March 2012, and July 2018, though all versions of the NPPF include a statement similar to para 7 (purpose of the planning system is sustainable development, i.e. " <i>meeting the needs of the present without compromising the ability of future generations to meet their own needs</i> ") and to para 148, that " <i>The planning system should support the transition to a low carbon future</i> " and " <i>shape places in ways that contribute to radical reductions in greenhouse gas emissions</i> " (2021 version is CD09.05)	
Feb 2019	CCC advice on aviation warning that stronger action may be needed beyond constraining aviation emissions to 2005 levels	
May 2019	CCC ' Net Zero – The UK's contribution to stopping global warming ' which explores emissions across all sectors of the UK economy including aviation	
June 2019	Climate Change Act 2008 (2050 Target Amendment) Order 26 June 2019 (CD11.03), which changed the UK carbon emissions reduction target from an 80% to a 100% reduction	
Aug 2019		Request for screening pursuant to Regulation 6 of the Town and Country Planning (Environmental Impact

		Assessment) Regulations 2017 to increase the passenger cap from 18 mppa to 19 mppa Ref. No: 19/01006/EIASC. EIA Not Required
Sept 2019	CCC letter: Net-zero and the approach to international aviation	
Oct 2019	Airports Council International (ACI) Commit To 'Net Zero' by 2050	
Feb 2020	Sustainable Aviation Group publish Decarbonisation Road-Map: A Path to Net Zero	
Feb 2020	ANPS declared illegal in R (Friends Of The Earth) v Secretary Of State For Transport And Others	
March 2020	DfT ' Decarbonising Transport: Setting the Challenge A consultation paper ' (CD11.08)	
June 2020	CCC Reducing UK emissions: 2020 Progress Report to Parliament	
July 2020		Request for screening pursuant to Regulation 6 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. - To increase the passenger cap from 18 mppa to 19 mppa at london Luton Airport. Ref. No: 20/00826/EIASC. Status: Environmental Impact Required
October 2020	Government response to the CCC Progress Report to Parliament. This report provides an update to the Government's approach to reaching net zero in 2050 and impact of Government policy	
Dec 2020	The Sixth Carbon Budget: UK's Path to Net Zero (CCC) (CD11.07)	
December 2020	A letter from the CCC to the Secretary of State advising on the UK's 2030 Nationally Determined Contribution to the Paris Agreement ³	

³ www.theccc.org.uk/publication/letter-advice-on-the-uks-2030-nationally-determined-contribution-ndc/

Jan 2021		Variation of Conditions 8 (passenger throughput cap), 10 (noise contours), 22 (car parking management), 24 (travel plan) and 28 (approved plans and documents) to Planning Permission 15/00950/VARCON (dated 13th October 2017) to accommodate 19 million passengers per annum and to amend the day and night noise contours. Ref. No: 21/00031/VARCON Status: Pending Decision
20 April 2021	High level recommendations of the CCC on the 6th Carbon Budget (6CB) accepted , ie a 78% cut in carbon emissions compared to 1990 levels, by 2035, including International Aviation and Shipping (IAS)	
June 2021	CCC Reducing UK emissions: 2021 Progress Report to Parliament (CD11.39)	
14 July 21	The Transport Decarbonisation Plan (CD11.12) and with it the Jet Zero consultation (CD11.16) (both) aiming at net zero carbon emissions from aviation.	
23 July 21	Consultation on Sustainable Aviation Fuel Mandate (CD11.27) with proposals for a mandate for up to 75% SAF by 2050.	
17 August 2021	The UK Hydrogen strategy (CD11.64) hydrogen has a long term role in decarbonising the hard-to-decarbonise sectors, including aviation	
2 Sept 2021	Updated Carbon Valuation for use in policy assessment (CD11.65) which will underpin policy including decisions on (for example) UK Emissions Trading Scheme, The value of carbon has increased by a factor of 10 today, 4 by 2030 and 2 by 2050	
6th Sept	Decision on requests to review Airports National Policy Statement (ANPS) (CD11.66) Ministers concluded there was no need to review the Airport National Policy Statement at the present time.	
19 Oct 21	The Governments over-arching Net Zero Strategy (CD11.09) was published just before COP26, reinforced the strategy of delivering	

	technology change rather than behaviour change.	
10 Nov 21	At COP26 in Glasgow government announced an International Aviation Climate Ambition Coalition (CD11.67) , where countries committed to ambitious action on international aviation emissions, including raise the ambition of CORSIA	
26 Nov 21	The Union Connectivity Review (CD11.68) reinforced the approach of technology development over capacity constraint	
2 February 2022	Bristol Airport appeal allowed (CD15.05) against refusal for expansion. Inspectors recognised carbon emissions and climate change was a serious issue but there was nothing in policy to justify withholding grant of consent	
28 April 2022	Judicial Review of the approval at Southampton Airport dismissed (CD15.03).	
June 2022	CCC Reducing UK emissions: 2022 Progress Report to Parliament (CD11.40)	ESA4 submitted by the airport
on 18 July 22	FoE Good Law Project, and Client Earth win High Court judgement (CD15.02) that the Secretary of State for Business Energy and Industrial Strategy did not discharge his duty under s.13 and s 14 of the Climate Change Act, and the Net Zero Strategy lacked any quantitative assessment of the contributions expected to be made by individual policies to reductions in GHG emissions, and further there was a shortfall of 5% of emissions meaning targets would not be met.	
19 July 2022	Decisions on the Jet Zero strategy (CD11.19) , following the initial consultation, together with a fleet of supporting evidence and analysis. The direction of travel of policy was unchanged and indeed reinforced, which was to plan for increased aviation, and not constrain capacity through the planning system, but to mitigate impacts through technology and market trading mechanisms, both still to be developed.	
18 Aug 22	Secretary of State consents Manston Airport (CD15.06) , following a series of	

previous decisions overturned or set aside. The decision letter dealt with climate change policy and operationalised the policy that climate change impacts will be dealt with through technology and market mechanisms not through planning policy



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