

**Re-determination of Manston Airport: Response from Chris Lowe, Interested party: 20014275
Planning Act 2008 and the Infrastructure Planning (Examination Procedure) Rules 2010
Re-determination of the Application by RiverOak Strategic Partners Limited (“the Applicant”) for an Order
granting Development Consent for the reopening and development of Manston Airport in Kent.
CONSULTATION ON THE INDEPENDENT AVIATION ASSESSOR’S DRAFT REPORT AND THE
REPRESENTATIONS RECEIVED ON THE STATEMENT OF MATTERS**

CONTENTS

- 1 The Independent Assessor's report**
- 2 Other Issues arising since the Examination In Public (EIP) in 2019**
- 3 Climate Change**
- 4 Conclusion**

**ANNEX 1 Jet zero: our strategy for net zero aviation
Response from the Aviation Environment Forum (AEF)**

Thank you for inviting responses to the Independent Assessor's Report (IAR) and on other matters:
TR020002-005841-211020 FINAL - Consultation Letter - Second Round of Consultation Manston Airport
DCO.pdf

1 The Independent Assessor's report

The Independent Assessor states the basis of their report: “The ExA Report therefore forms the starting point for this Assessor’s Report. The purpose of this assessment is to consider the ExA Report and test whether there have been any material changes, including in respect of policy, demand and/or capacity, since its publication which would affect its conclusions in respect of the need case.” (IAR Paragraph 202)

I am very pleased with the Independent Assessor's Conclusion, Section 6:

“Overall, the Independent Assessor concludes that there have not been any significant or material changes to policy or the quantitative need case for the Proposed Development since July 2019 that would lead to different conclusions being reached (compared with the previous ExA conclusions) with respect to the need for the Manston development. ”

I fully support **that conclusion, and trust the Secretary of State will again Refuse this Application.**

However I would also add the following to reinforce the Conclusions of the IAR's Report.

1.1 Aircraft Load Factors Effect on ATMs and HGV Trips

No Night Flights' document NNF30

In the No Night Flights' document NNF30, Paragraph 6, they state:

“Under questioning, it also was clear that Dr Dixon had assumed an average tonnage per ATM of under 20 tonnes.**1** This is less than a third of the average tonnage per ATM previously achieved at Manston. This means that the number of cargo ATMs p.a. that Dr Dixon forecast has been artificially inflated and cannot be relied on. If the total tonnage she predicted were to be handled with the same efficiency of previous operations at Manston, the number of cargo ATMs p.a. would be just 5,409 by Year 20. Even this number takes no account of whether a new airport at Manston could offer a dedicated cargo service at a price that would attract this level of business to the airport. In addition, 5,409 cargo ATMs p.a. is significantly more annual cargo ATMs than has ever been achieved at the old airport and is not a realistic forecast.

1 Azimuth volume III, page 1 ”

Clearly this means that even if the IAR has under-estimated the realistic changes in air freight demand, it would still not be sufficient for Manston to achieve 10,000 ATMs.

Furthermore an average 20 tonnes per ATM would mean a huge increase in road vehicle movements because any surface transport of the air freight would need to be rapid to justify the extra costs of using air freight, and so could

Re-determination of Manston Airport: Response from Chris Lowe, Interested party: 20014275

not wait to aggregate loads to reduce road traffic.

So this would also be impracticable on the current road network, and would also need many more HGV drivers.

1.2 Costs of freight transport

Although the Applicant may acknowledge that air freight is much more expensive than other modes, what may not have clear that the actual cost of the physical journey between airports is only part of the overall total costs.

The example in the previous section, that the Applicant's assumed tonnage per flight is far too low, also means that the cost per tonne would be even higher than assumed.

This is because small loads need more handling and as noted, above more separate road vehicles, which also increases costs.

Furthermore as this example shows, the transports costs are subject to Duty and VAT, so that Manston's higher costs would be multiplied by these extra costs.

Sea Freight

Goods : £5000

Freight : £310

UK Duty : (6.5% of £5310) = £345

Import VAT :

20% of (£5000 + £310 + £345)

= 20% of £5655

= £1131

TOTAL DUTY & VAT : £1476

(Source: <https://www.shippo.co.uk/faqs/sea-or-air-freight-what-s-for-me/>)

Air Freight

Goods : £5000

Freight : £1200

UK Duty : (6.5% of £6120) = £403

Import VAT :

20% of (£5000 + £1200 + £403)

= 20% of £6603

= £1321

TOTAL DUTY & VAT : £1724

So Manston would even less economic than its competitors.

1.3 HGV Drivers, Use of Rail Transport and the Channel Tunnel

An issue that has not been mentioned in the Independent Assessors Report is shortage of HGV drivers.

This might imply a greater need for air freight to bypass the need for HGV drivers between the UK and the continent.

However Manston's location means that HGV drivers would still be needed here to transport goods to and from Manston, and as the UK is no longer a welcoming place for non-UK drivers, it is liable to suffer driver shortages for the for-seeable future, given the poor work conditions here. In addition, the restrictions on employing non-UK drivers add to these problems.

Furthermore, freight trains are transporting increasing amounts to and from the UK.

For example Tesco aims to greatly increase fresh food from Spain via chilled rail trains.

See for example:

[REDACTED]

Transfesa, the rail service provider, also operates the Barking rail terminal, so is well placed to expand its services, and this despite the need to change rail gauge en route.

A later report this year demonstrates its value as it is being expanded because of HGV driver problems:

[REDACTED]

This article also notes the climate benefits of doing so, due to the very low transport emissions if using rail in contrast to road transport: "To put it into context, by shipping 65,000 containers by rail, we save about 22 million road miles a year."

Tesco's confidence in the reliability of using of the tunnel, reinforces the IAR's view that blockage of the Tunnel (last sentence of Paragraph 5.26, page 32) is highly unlikely.

This is great news for Kent's road system, reducing the number of HGVs coming through the county, with huge

Re-determination of Manston Airport: Response from Chris Lowe, Interested party: 20014275

benefits for air quality and noise as well.

1.4 Gatwick Second Runway

Another factor that adds to the reasons that there is no need for a Manston airport, is Gatwick's proposal for second runway. The IAR doesn't mention it, and although the Examination and Approval for Gatwick, will take a couple of years plus construction time, that is no longer than the time needed for Manston to be fully operational.

The extra passenger capacity would also mean more bellyhold capacity, as well as allowing additional air freight aircraft, so this further reduces any potential need for Manston.

1.5 A 'Need' for an airport in order to 'create' jobs

Some respondents claim there is a 'need' for employment in Thanet, and that the airport could help fulfil that 'need'. However, Thanet is no different from other parts of the UK in suffering a lack of people able to fill the available job vacancies.

For example, construction jobs do not depend on Manston going ahead, because there is a great shortage of relevant people and in addition all Kent Districts have high targets for building houses and all of the associated infrastructures. So there is a huge shortage of suitable people, and allowing Manston to go ahead would increase that problem, and if Manston paid higher wages to attract staff in order to meet the planning timescales, the local house building targets would greatly suffer.

House Building targets are set in law, so are far more important than enabling the racing horses or fast cars, mentioned by the Applicant, to be imported by air.

2 Other Issues arising since EIP in 2019

2.1 East Midlands Airport (EMA)

On 3 March 2021 Rishi Sunak, the Chancellor, announced the designation of 8 new freeports in the UK.

The East Midlands Freeport is the only inland freeport to be created, the other seven are coastal locations, and do not include Ramsgate.

The airfreight operations of EMA will be central to much of the freeport business within the 'EMA Gateway and Industrial Cluster' (EMAGIC) in which it is located.

The EMA is upgrading its infrastructure so that aircraft can load and unload more efficiently at busy times. Work started in 2019 to accommodate the cargo capacity that is being enhanced. Aircraft that serve the Fed Ex/TNT, UPS, Amazon and Royal Mail operations use the east apron, a large concrete area at the M1 end of the airfield. This is being widened to allow up to four additional aircraft to be on stand at any one time. Also at the east side of the airport a new UPS facility is taking shape. The £ 114m development will double the size of its operation at EMA making it the company's largest air logistics facility outside the US.

The Airport's own 2015 Plan suggests they will be able to cope with increasing tonnage, year on year, so would strongly defend their market share against any newcomer, such as Manston, and would have the upper hand as their existing turnover could, if necessary, fund lower charges to prevent a new airport succeeding.

So clearly the 'Freeport' designation and EMA's expansion means it will have no problem in coping with whatever air freight traffic may develop in the coming decade.

In contrast a new airport at Manston would have to grow rapidly to repay the huge costs of the development, which would be very difficult against existing successful competition.

This reinforces the IRA's Conclusions that there is no 'Need' for Manston, and therefore it could not be successful.

2.2 Ramsgate Conservation Area

The Conservation Area Appraisal Report (CAAR) commissioned by Heritage England, was produced after the 2019 EIP.

The Summary of that Report says:

Ramsgate Conservation Area is of exceptional historic and architectural interest as a coastal resort town and working harbour with a fine array of heritage assets spanning the seventeenth to the twentieth century, representing a complete cross section of the society which lived, worked and visited Ramsgate over more than three centuries of growth and change. This special interest can be broken down into the following key elements:

Re-determination of Manston Airport: Response from Chris Lowe, Interested party: 20014275

- A place built to appreciate views of the sea and sunlight. Ramsgate is special for the well-preserved eighteenth, nineteenth and twentieth-century seaside resort developed with fashionable housing, guest houses, hotels, public gardens and promenades running along clifftops to exploit the dramatic, south-east facing views over the English Channel and the 'amphitheatre' of the Royal Harbour. The area has a unique skyline of special architectural interest in views back from the harbour and sea.

- The Royal Harbour. The Royal Harbour is a remarkable piece of eighteenth-century civil engineering of national importance both for its design and its role in national and international trade during the eighteenth- to twentieth centuries.

There is great significance not only in the surviving eighteenth- and nineteenth-century harbour infrastructure, but also in the harbour's continued use. The harbour arms allow extraordinary views back inland, in which the historic growth and exceptional historic building stock of Ramsgate can be understood.

- Eighteenth and nineteenth-century resort development. The residential areas beyond the town centre are defined by a remarkable survival of eighteenth- and nineteenth-century terraced housing and villas, as well as shops, public houses, places of worship and light industrial works, which is almost unique on a national scale. These neighbourhoods provide a complete cross section of the society which lived, worked and visited Ramsgate during its heyday as a coastal resort, which is of fundamental significance to the character and appearance of the conservation area. The network of alleyways, ginnels and passages which criss-cross these neighbourhoods, as well as the historic town centre, are significant in breaking down the urban grain, enhancing pedestrian access across the conservation area and creating picturesque, channelled views.

- Network of squares and gardens. The conservation area is a focus of genteel eighteenth- and nineteenth-century residential squares, lawns and crescents.

These spaces are of historic interest as a fundamental part of the planned formal development of eighteenth- and nineteenth-century Ramsgate, but also provide enclosed, tranquil spaces which relieve the hard, urban townscape and are often of intrinsic aesthetic value. Large, mature street trees or trees in private gardens which are prominent in views also play an important role in softening the hard, urban townscape.

- Clifftop promenades. The clifftop promenades are a very important feature of Ramsgate's special interest and provide evidence of the evolving national trends and fashions in seaside leisure and recreation through the surviving structures and spaces. These wide, open spaces are lined with set-piece buildings, many of great architectural and historic interest. The length and accessibility of the clifftop promenades facilitates stunning views out to sea and across the working harbour, which change in character throughout the year.

- Pre-resort town survivors. The town centre contains many significant heritage assets which pre-date the growth of Ramsgate as a fashionable resort and provide a sense of the town's relative prosperity from sea trade during the seventeenth and eighteenth centuries. The early-eighteenth-century brick and flint houses with Dutch gables are particularly significant in this context. This collection of buildings places Ramsgate in a national context of expanding international and national naval commerce during the seventeenth and eighteenth centuries.

- Public buildings and works. The conservation area includes many examples of public works which testify to the civic pride and confidence of Ramsgate during the nineteenth and twentieth centuries, and which span a very wide range of architectural styles and building types that were popular at different times during this period. This includes major infrastructure projects like Royal Parade and Military Road, as well as grand public buildings like St George's Church and the Clock House. Historic street surfaces and furniture, where it survives, greatly enriches the streetscape and complements the architectural and artistic interest of the historic buildings in the area.

- High quality of undesignated buildings and structures. Many buildings in the conservation area are not listed, but share the fine-grained architectural detailing, extensive use of vernacular materials (especially flint) and historic interest as their listed neighbours. The high quality of the 'ordinary' building stock in Ramsgate means that almost every street is rich in texture, detailing and historic interest.

This is a fundamental part of the special character of the conservation area.

- Evocative street names. Street names within the conservation area have very strong associative power and locate the development of Ramsgate in a specific time and place. The town's association with the Napoleonic Wars and Regency high society is particularly pronounced, with names such as Nelson Crescent, Plains of Waterloo and Liverpool Lawn. Street names are often given on historic street signs, either of stone or iron, which add to the richness of the townscape.

It firmly places Ramsgate architecture and townscape as of national historic importance. The report is expert evidence of what would be put at risk if Manston were to reopen.

Re-determination of Manston Airport: Response from Chris Lowe, Interested party: 20014275

Following the Secretary of State's Brief to Arup, the focus has rightly been on 'need', the most fundamental decision criterion, however, the Applicant continues to assert unsubstantiated and illusory benefits.

The CAAR in contrast, is clear evidence of a unique and precious heritage that Manston would severely damage.

Even before publication of the CAAR, the Examining Authority's Report had already noted in Clause 8.2.184 that: "The Proposed Development would adversely affect the tourism industry in Ramsgate."

So the impact of the proposal on Ramsgate would be disastrous in terms of noise and disturbance with severe implications for both health and well-being, and would greatly increase the future investment needed to support the heritage and local economy, contrary to the aims of the recently designated Heritage Action Zone and the draft Local Plan.

2.3 Revised National Planning Policy Framework and new Environment Act

Both the revised National Planning Policy Framework (NPPF) and the Environment Act 2021 require proposals to 'protect and to enhance and to improve biodiversity'.

In addition the Environment Act will set clear statutory targets for the recovery of the natural world in four priority areas: air quality, biodiversity, water and waste, and includes an important new target to reverse the decline in species abundance by the end of 2030. It sets in law new tools to help meet those targets, which will at last enable us to lift the grim graphs of species decline upward towards a Nature-positive 2030.

For example, my previous Evidence has shown the large negative impact on Air Quality, so this adds to the existing requirements to reduce air pollution.

Clearly the Application fails to do any of these things, and the relative minor efforts at enhancement are far too small in comparison to the damage caused by both the construction and operation of the new airport.

In addition evidence arising since 2019, shows that the construction of the airport and its associated infrastructure would cause huge damage as well as creating huge climate change emissions.

So this alone is sufficient reason to refuse the Application.

2.4 Airspace Change Proposal to the Civil Aviation Authority (CAA)

In April 2021 the Applicant was notified by the CAA that the air space change application had failed to gain approval at the first 'Gateway assessment'.

The Applicant began the process in 2019 to secure approval from the CAA for its use of airspace and procedures for safe and efficient operations to and from the airport. The CAA CAP 1616 process for airspace change is carried out in 7 stages, with 14 steps. It also includes four process 'Gateways' beyond which an application is not allowed to proceed until approved by the CAA.

The first is the Develop & Assess Gateway which follows submission of an options appraisal. The appraisal looks at issues including, in the case of Manston, how many flights go over Ramsgate and how many go over St Nicholas-at-Wade. It includes safety assessment, and looks at what options there are for issues such as the noise impact on health and quality of life: air quality; greenhouse gas impact; capacity; access; fuel burn and associated costs such as training and operations.

As part of this, the Applicant was required to produce a comprehensive list of route designs with options that minimise the time spent overland by designing tracks that route over the sea as much as possible. This is required to reduce impact on communities such as Ramsgate and Herne Bay. For Ramsgate overland flight cannot be designed out because of the close proximity of the town to the airport site and its direct alignment with the runway approach. In February 2020 'Stage 1 Define' was accepted by the CAA.

The Applicant submitted 'Stage 2 Develop and Assess' in May 2020, essentially flight paths for departing and approaching aircraft. Some 14 months later it is that submission that has now been rejected by the CAA.

The CAA says the Applicant submission did not meet two of the five criteria because of "errors and inconsistencies".

The CAA stated: "The CAA has completed the Develop and Assess Gateway Assessment and is not satisfied that the change sponsor (Applicant) has met the requirements of the process up to this point.

Re-determination of Manston Airport: Response from Chris Lowe, Interested party: 20014275

The CAA does not approve progress to the next step.

The change sponsor is now able to reconsider its submission before resubmitting it for further review by the Civil Aviation Authority at a future Develop & Assess Gateway.

It is important to note that whether an Air Change Proposal passes a gateway successfully or not does not predetermine the CAA's later final decision on whether to approve the airspace change proposal. This decision is not an explicit or implicit comment on the merits or otherwise of this ACP. This will come at the decision-making stage (Stage 5)."

The CAA CAP1616 airspace change process takes not less than two years to complete.

The Applicant has now spent two years getting to Stage 2 but it now obliged has to revise and resubmit the Options Approach before being re-assessed. It may still be reused next time, if it re-applies.

CAA approval of the Airspace Change Proposal is mandatory before commercial aircraft would be allowed to use Manston. Given the stringent safety, health and environmental criteria embodied embodied in the process there is significant doubt that the Applicant could ultimately gain approval.

Without approval by the CAA the airport would not be able to operate.

2.5 New Thanet Parkway Railway Station

The new Thanet Parkway railway station is currently under construction near the A299 at Cliffsend outside Ramsgate. The cost of £ 34.5m is funded by Central Government, SELEP, Kent County Council, Thanet District Council and Network Rail. The station will boost passenger rail connectivity between East Kent, London and the wider Kent area by providing access to mainline and high speed passenger services to and from Thanet. The project will improve employment opportunities and investment at Discovery Park Enterprise Zone, surrounding business parks in Thanet and beyond.

As a facility for passengers, not freight, this investment was predicated in large part on the proposed allocation of some 4000 houses and a mixed used business park development on the former Manston Airport site. The existing railway station at Ramsgate is incapable of providing adequate parking facilities. If on Redetermination the Secretary of State were to approve the DCO this would seriously undermine the substantial public investment in Thanet Parkway and have irreversible consequences for the long term transport and housing strategies for this part of East Kent. This is but one small part of the huge opportunity cost that would be borne if the DCO were to be granted.

2.6 Location

Manston is geographically challenged, has little infrastructure and is poorly served by road links. It has no rail head for freight and is not on the fuel pipeline.

All these factors mean it relies on roads not only for the freight traffic, but also to keep the airport operational, so is totally unsuitable location for a new airport.

3 Climate Change

The Secretary of State also asks:

"4 The Secretary of State notes that the "*Decarbonising transport: a better, greener Britain*" and the "*Jet Zero consultation: a consultation in our strategy for net zero aviation*" was published on 14 July 2021. The Secretary of State invites comments from the **Applicant** and **any Interested Party** on whether this results in any change in whether the Development would be consistent with the requirements of national policies."

3.1 Secretary of State's Requirements

The Secretary of State has himself provided an answer in his Foreword to *Decarbonising Transport: Setting the Challenge* (DfT 2020a), when he said: "*Climate change is the most pressing environmental challenge of our time. Transport has a huge role to play in the economy reaching net zero. The scale of the challenge demands a step change in both the breadth and scale of ambition and we have a duty to act quickly and decisively to reduce emissions. The associated benefits of bold and ambitious action to tackle transport emissions are also significant.*"

Re-determination of Manston Airport: Response from Chris Lowe, Interested party: 20014275

We can improve people's health, create better places to live and travel in, and drive clean economic growth."

Clearly increasing aviation emissions by allowing the Application, is unacceptable, as it is a step change in the wrong direction, and conflicts with the Secretary of State's intentions and the UK's commitments at COP 26, as well as the Climate Change Act.

3.2 Exceeding the Legal limit on UK Emissions

The Aviation Environment Federation illustrates the problem on:
<https://www.aef.org.uk/campaigns/challenging-airport-expansion/>

This shows that for the Sixth Carbon Budget the Committee on Climate Change has assumed that a Net Zero economy in 2050 can have up to 23 Mt of CO₂ from UK aviation, but all scenarios, even including 2050 without expansion, exceed that limit.

They also show '2050 with expansion' which includes, Heathrow, Gatwick, Stansted, Luton Bristol,, Manston, plus other airports and omissions, and this clearly greatly exceeds the permitted limit.

The 23 Mt limit assumes that other sectors will actually meet their limits, which cannot be guaranteed, so it would be totally irresponsible to allow Manston to go ahead because it adds to the current likelihood of the UK's aviation emissions exceeding the limit.

3.3 Changes in UK Emissions Targets

It should be noted that the Sixth carbon budget was based on the 2016 baseline. Since then the UK Government has tightened the UK targets

At the G7 meeting in Cornwall member states committed to long-term targets to reach net zero emissions by 2050, and to reductions in the next decade. The UK led with a goal of cutting emissions by 68% by 2030 and 78% by 2035, based on 1990 levels. Targets for carbon emissions from UK international aviation will be included from 2033 onwards, adding to those for domestic aviation which are already included.

On 17 June 2021 the Climate Change Committee published two progress reports, showing the UK lagging behind on its key goal of 78% cuts to greenhouse gases by 2035 and making recommendations on how to get back on track.

Lord Deben, the committee chairman, said:

"The targets are remarkable and have set a major example to the world. But the policy is just not there. We are in the decisive decade for tackling climate change. The Government must get real on delivery. Global Britain has to prove that it can lead a global change in how we treat our planet. Get it right and UK action will echo widely. Continue to be slow and timid and the opportunity will slip from our hands."

To open a new cargo hub at a time like this would be the height of geopolitical, economic and environmental folly when the government has committed to targets that they are already struggling to meet.

Likewise the AEF evidence on Government proposals for decarbonising aviation are expressed in their Jet-Zero-Response, (shown below, Annex 1) where they state, in relation to 'CO₂ emission reduction trajectories':

Q8: "We disagree that the scenarios overall represent a coherent vision for decarbonising aviation, as the 'levers' for delivering emissions cuts haven't been costed, no robust policy plans are proposed for delivering them (including overcoming key challenges), and the scenarios don't present a sufficient range of future possibilities.

The strategy commits to the use of carbon pricing as a key policy mechanism for decarbonising aviation, yet the carbon prices used in the scenarios are average BEIS prices from 2018, designed for delivering an economy-wide emissions cut of only 80% - not the net zero target to which we are now committed. Higher carbon prices are likely to be needed in order to achieve this more ambitious target, as published by BEIS in September 2021. Even then, it is not clear whether these prices will be sufficient as a proxy for the high abatement costs associated with reducing aviation emissions in the scenarios. We would have expected to see not a fixed price, but a variable price according to the assumptions made about the introduction of new technologies, SAF and GGR. In line with the 'polluter pays principle' (which the

Re-determination of Manston Airport: Response from Chris Lowe, Interested party: 20014275

Government says in section 3.35 that it supports) and with CCC advice on mitigation for aviation, we would expect the aviation industry to pay for the measures needed to decarbonise its operations, and to pass on these costs to consumers. The carbon values used in the scenarios very likely underestimate the future costs to the industry and consumers.

In the modelling presented, however, a shift to faster technology take-up than would otherwise be expected (2% rather than 1.5% annual fuel efficiency improvement), as in the High Ambition scenario which the Government supports, appears to occur without any additional costs being incurred. Even the 1.5% per annum improvement assumed in the 'continuation of current trends' scenario could be considered optimistic. While there may be evidence that this rate has been achieved in the past, it is not clear to us why the Government believes it will continue in future, rather than the lower rates that were used in the DfT's 2017 aviation emissions forecasts. At that time, under the central demand forecast future the annual improvements assumed were 0.62% for 2016-30, 1.31% for 2030-2040, and 1.45% for 2040- 2050. The 'evidence and analysis' document indicates that the 1.5% figure is 'based on central case from ATA research' though without a page reference or similar we have been unable to see how the number has been derived.

As with fuel efficiency improvements, there is no modelling of the cost for airlines to invest in GGR ("abatement outside the sector") or in zero carbon fuels, nor in fact any policy proposals for ensuring that these measures are delivered. We therefore have very little confidence in the claim that the sector can decarbonise while allowing for passenger growth rates of 60% and continued airport expansion. While the consultation claims that options exist for allowing a similar level of carbon abatement to that modelled by the Climate Change Committee while accommodating much higher levels of passenger growth, in the absence of costs or measures to deliver these options, it would be a very risky strategy to allow growth to take place now, including investment in new airport infrastructure, in the hope that new technologies somehow arise in future. "

In addition, in response to Q10, they identify other scenarios which would reduce aviation emissions but would also reduce number of flights:

"A number of alternative, evidence-based scenarios exist, many of which incorporate analysis of costing and whole-economy resource limits in a way that DfT's scenarios don't. These include:

- UK FIRES 'Absolute Zero' analysis (which concludes that given the likely change of technological development there may be no room for any aviation activity in the UK by 2050)
- Centre for Alternative Technology, 'Zero Carbon Britain', 2019, which advocates reducing aviation demand by 2/3 by 2030 "

In particular they say:

"In a Foreword to the net zero strategy document, Boris Johnson claimed that we will still be flying in 2050 "but our planes will be zero emission allowing us to fly guilt free". While zero emissions technologies should be encouraged, it is dangerous to assume that we will be able to rely on them, and in so doing, overlook the policy actions that are needed today to reduce the sector's climate impact. Even the industry has said it is very unlikely we will see zero-emission aircraft this side of 2050 except on very short routes. And the Government's own net zero plans admit that aviation CO2 in 2050 will need to be compensated for by large-scale Greenhouse Gas Removals. GGR technology is still in its infancy however: the world's largest carbon removal plant, which started running in Iceland last month, is capable of capturing just three seconds of the world's CO2 emissions per year."

and for so-called 'sustainable aviation fuel' say:

"The net zero strategy also announced the Government's ambition to deliver 10% sustainable aviation fuel (SAF) by 2030, and its offer of £180 million funding to support the development of SAF plants in the UK. The SAFs that are currently available however, which the Government plans to showcase by using them in the planes of delegates leaving COP26, are produced principally from used cooking oil. Producing at least as much CO2 once burnt as traditional jet fuel, these fuels are neither zero emissions nor scalable."

Their other answers provide additional evidence which demonstrates that aviation will need to reduce flight numbers until other measures for reliably reducing emissions at an acceptable cost, are developed.

3.4 Emissions from the construction and operation of the airport and the associated infrastructure

Re-determination of Manston Airport: Response from Chris Lowe, Interested party: 20014275

An impact of increasing concern is the 'embodied carbon' of any new construction and also the carbon damage to soils caused by construction or changes.

Natural England, the national body responsible for England's natural environment, has assessed the great value of that environment and how to use Nature-based solutions to protect and enhance that environment.

This is described and explained in: **Carbon storage and sequestration by habitat: a review of the evidence (second edition)** Ruth Gregg, Jessica Elias, Isabel Alonso, Ian Crosher, Paul Muto and Mike Morecroft
20th April 2021 Natural England research Report NERR094.

The report explains the value of natural habitat for carbon and biodiversity, and emphasises that The protection of existing habitats is also vital, as their biodiversity and carbon stocks may have taken centuries to millennia to become established and are quickly lost if disturbed.

So land must not be disturbed if the benefits of undisturbed land are to be retained.

The built environment accounts for 40% of the UK's annual carbon footprint, so the Applicant's proposals to demolish and rebuild existing buildings as well as building new buildings adds even more carbon emissions than any previous use of the site.

As for the actual buildings and infrastructure, 'Carbon Footprint' (<https://www.carbonfootprint.com/construction.html>) explains this as follows:

PAS 2080 is a the 'standard' developed within the construction industry that describes how carbon should measured & managed and reported throughout all project stages - including operational use. It provides a very useful process for a responsible construction businesses to follow across all projects.

Measure all project emissions- along the full value chain.

Include building materials -assess the embedded carbon emissions and environmental impacts of your materials - including support for **Environmental Product Declarations (EPDs)** and Lifecycle Assessments (including PAS2050).

Consider lifetime emissions and also end life - so-called 'capital carbon', 'operational carbon' and 'user carbon' needs consideration.

Clearly this has not been done in any detail, and even without that the huge amounts of excavations, earth moving and new concrete etc., would add up to very large carbon impacts.

So the evidence of COP 26 in Glasgow this year showing the need to reduce emissions not add to them means the Application is unacceptable.

3.5 The real answer

The real answer has been recognise by the BEIS:

“A BEIS paper '*Net Zero: principles for successful behaviour change initiatives*', argued instead that a “technological and behavioural lens” is needed to tackle aviation emissions. The paper recommended reducing the demand from frequent business flyers, promotion of domestic tourism, and enabling people to choose more efficient airlines. Counter to the Prime Minister’s ‘guilt-free’ flying rhetoric, it said:

'Success here may ultimately be marked by a shift in social norms, from international in-person meetings being a sign of importance to being an immoral indulgence or embarrassment'.

And that: ‘Frequent flyer’ should not be a badge of pride'.

The paper also argued that for the Government to approve airport expansions without any conditionality for decarbonisation sends a “hugely impactful signal”.

This is clearly the reality we face, and the “technological lens” that should be applied to air freight is to manage it using artificial intelligence and computer power so that as much as possible goes in bellyhold, rather than dedicated freighters, especially as dedicated freighters are invariably older and much noisier than passenger aircraft.

The Committee on Climate Change has issued: “Independent Assessment: The UK's Net Zero Strategy”
<https://www.theccc.org.uk/publication/independent-assessment-the-uks-net-zero-strategy/>
and this includes their Comments, with my highlighting in **bold**:

Re-determination of Manston Airport: Response from Chris Lowe, Interested party: 20014275

Page 4 “**Demand measures.** There is less emphasis on consumer behaviour change than in the Committee’s scenarios. **The Government does not address the role of diets or limiting the growth of aviation demand in reducing emissions, while policies to reduce or reverse traffic growth are underdeveloped. These options must be explored further to minimise delivery risks from an increased reliance on technology and to unlock wider co -benefits for improved health, reduced congestion and increased well-being.** ”

Page 7: “Under the Climate Change Act, the UK has adopted ambitious territorial emissions targets aligned to the Paris Agreement. The Sixth Carbon Budget requires an emissions reduction of 78% from 1990 to 2035 (63% from 2019 to 2035), effectively halving the time to meet the 2050 target that the UK adopted prior to the Paris Agreement. The UK has pledged a Nationally Determined Contribution of a 68% reduction from 1990 to 2030, on the way to Net Zero in 2050.³

These are comprehensive targets covering all greenhouse gases and all sectors, including international aviation and shipping, intended to be delivered entirely in the UK without recourse to international carbon credits. ”

Page 12, Figure 2 Sectoral ambition compared to the CCC Balanced Pathway (2035) states that:

“**Government ambition is lower for Fuel Supply and Aviation**”, so the Government target for 2035 emissions for this sector are approximately double that recommended by the CCC.

Unfortunately, the Government target for 'Buildings' emissions is lower than CCC's but in reality are unlikely to achieve because existing buildings are so hard and expensive to decarbonise, and thousands of new buildings will not be decarbonised until 2025 or later, so will also need decarbonising.

Page 13: “Another clear difference from the Committee’s scenarios is on the contribution from changes in behaviour. The Net Zero Strategy, and the earlier Transport Decarbonisation Plan, include ambitious goals for shifting travel choices away from private cars, such as by doubling cycling from 2013 to 2025. **However, the Strategy has nothing to say on diet changes away from meat and dairy, or on limiting growth in flying.**

These actions are valuable for reducing emissions directly and for wider effects — diets with less red meat will tend to be healthier and release land for carbon sequestration, and **reduced flying cuts non-CO₂ climate effects from aviation (which are of comparable size to the CO₂ effects).** We note that in each of these areas there is a possibility of progress even with little policy action, given the strong public desire to act on climate change and the possible lasting impacts of the pandemic. **However, Government leadership, public engagement and wider policy can help accelerate these shifts.**

Substantial progress will be needed from technologies to compensate for a lack of ambition on behaviour change. The Government plans assume this comes from sustainable aviation fuels and rapid improvements in new aircraft efficiency in aviation, while in agriculture it appears to come from improving productivity or innovations in the likes of animal health and feed additives. The exact plan is currently unclear in the absence of a specific strategy for decarbonising agriculture and land use. These ambitions are clearly very stretching, and progress will need to be monitored closely. ”

Page 14: “

Page 15: “We are therefore pleased that the Government’s plans include steps to deploy key emerging options, which will both reduce emissions in the 2020s and increase optionality thereafter:

> **Rapid deployment of a portfolio of low- and zero-carbon electricity generation technologies to meet the 2035 power decarbonisation target, which will keep in play scenarios for Net Zero with considerably higher electricity demand (e.g. due to larger roles for electricity-hungry options such as ‘green’ hydrogen from electrolysis, direct air capture of CO₂ and sustainable aviation fuels). Development of these options must proceed with vigour – the UK’s emissions targets will be missed if delivery were to fall short in some areas, without credible options to go further elsewhere. Keeping in play behavioural options such as diet change and measures to limit growth in aviation will also be important in managing risks of progress falling off track.”**

Page 26: “The Net Zero Strategy commits to zero-carbon power by 2035, and more action on industry, CCS, landfill, GHG removal and sustainable aviation fuel.”

Page 28: “

The strategy also aims to achieve Net Zero in domestic aviation by 2040 and to phase out the sale of new non-zero-emission domestic shipping vessels.”

3.6 Other climate Issues

The Applicant claims that the new airport would be “Green”. However this needs much clearer definition as it could just refer to the 'green' fields and hedges around the site.

Furthermore a 'green' airport is nothing special, for example in 2002 the oft-mentioned East Midlands Airport implemented an Environmental Management System (EMS) with ISO 14001 accreditation for managing its local environmental impact and all UK airports are working towards being greener.

Making the airport itself 'green' is not difficult but it only produces a small reduction in emissions compared to the much greater, and more damaging, emissions from the aircraft and all the other transport involved in the airport.

So this is no reason to allow these proposals.

Re-determination of Manston Airport: Response from Chris Lowe, Interested party: 20014275

3.7 Climate Change Conclusions

For all these reasons a new Manston Airport must be refused.

4 Conclusion

As there is no need for the airport and there are major unacceptable adverse impacts which greatly exceed any potential benefits, the Application must be refused.

Re-determination of Manston Airport: Response from Chris Lowe, Interested party: 20014275

ANNEX 1 Jet zero: our strategy for net zero aviation

Response from the Aviation Environment Forum (AEF)

Q6. Do you agree or disagree that UK domestic aviation should be net zero by 2040?

Agree

Why?

We agree, but this needs to be seen and presented in context. While the target is probably achievable, it will have limited impact on overall emissions. Given that domestic aviation is responsible for only 4% of total aviation emissions, even complete decarbonisation of these flights will represent only a small step towards the sector-wide net zero. It would be misleading to suggest that the testing of small aircraft running on hydrogen or electric power indicate that decarbonisation of long-haul flight is within easy reach and ministers should avoid any such implication.

Q7. How do you propose that net zero domestic aviation by 2040 could be implemented?

The domestic target should be achieved using zero carbon technologies (which given likely technology readiness and range are best suited to these flights), and should exclude the use of SAF, offsets or removals, in order to drive technology innovation and save other options for longer-haul flights. In order to create appropriate investor confidence and private sector investment the Government should adopt a policy that no domestic routes will be able to operate after 2040 unless they are using zero carbon aircraft, with a progressive phase-out being introduced from the mid-2020s. Government subsidy should, meanwhile, be focused on public transport alternatives where they exist (between mainland cities for example) rather than on the aviation sector, as overland transport is both cheaper to decarbonise and more energy efficient.

Q8. Do you agree or disagree with the:

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know?
continuation of current trends scenario?			X			
high ambition scenario?			X			
high ambition with a breakthrough on SAF scenario?			X			
high ambition with a breakthrough on zero emission aircraft scenario?			X			

Comments:

This question is difficult to answer as it is unclear whether it asks respondents to agree that the scenario should or could be pursued, as distinct from whether they think it is likely to arise. We therefore neither agree nor disagree with the scenarios individually.

We disagree that the scenarios overall represent a coherent vision for decarbonising aviation, as the 'levers' for delivering emissions cuts haven't been costed, no robust policy plans are proposed for delivering them (including overcoming key challenges), and the scenarios don't present a sufficient range of future possibilities.

The strategy commits to the use of carbon pricing as a key policy mechanism for decarbonising aviation, yet the carbon prices used in the scenarios are average BEIS prices from 2018, designed for delivering an economy-wide emissions cut of only 80% - not the net zero target to which we are now committed. Higher carbon prices are likely to be needed in order to achieve this more ambitious target, as published by BEIS in September 2021. Even then, it is not clear whether these prices will be sufficient as a proxy for the high abatement costs associated with reducing aviation emissions in the scenarios. We would have expected to see not a fixed price, but a variable price according to the assumptions made about the introduction of new technologies, SAF and GGR. In line with the 'polluter pays principle' (which the Government says in section 3.35 that it supports) and with CCC advice on mitigation for aviation, we would expect the aviation industry to pay for the measures needed to decarbonise its operations, and to pass on these costs to consumers. The carbon values used in the scenarios very likely underestimate the future costs to the industry and consumers.

Re-determination of Manston Airport: Response from Chris Lowe, Interested party: 20014275

In the modelling presented, however, a shift to faster technology take-up than would otherwise be expected (2% rather than 1.5% annual fuel efficiency improvement), as in the High Ambition scenario which the Government supports, appears to occur without any additional costs being incurred.

Even the 1.5% per annum improvement assumed in the 'continuation of current trends' scenario could be considered optimistic. While there may be evidence that this rate has been achieved in the past, it is not clear to us why the Government believes it will continue in future, rather than the lower rates that were used in the DfT's 2017 aviation emissions forecasts. At that time, under the central demand forecast future the annual improvements assumed were 0.62% for 2016-30, 1.31% for 2030-2040, and 1.45% for 2040- 2050. The 'evidence and analysis' document indicates that the 1.5% figure is 'based on central case from ATA research' though without a page reference or similar we have been unable to see how the number has been derived.

As with fuel efficiency improvements, there is no modelling of the cost for airlines to invest in GGR ("abatement outside the sector") or in zero carbon fuels, nor in fact any policy proposals for ensuring that these measures are delivered. We therefore have very little confidence in the claim that the sector can decarbonise while allowing for passenger growth rates of 60% and continued airport expansion. While the consultation claims that options exist for allowing a similar level of carbon abatement to that modelled by the Climate Change Committee while accommodating much higher levels of passenger growth, in the absence of costs or measures to deliver these options, it would be a very risky strategy to allow growth to take place now, including investment in new airport infrastructure, in the hope that new technologies somehow arise in future.

Q9. Do you think there are alternative evidence-based scenarios we should be considering?

Yes

Q10. What are the alternative evidence-based scenarios you think we should be considering?

Comments:

A number of alternative, evidence-based scenarios exist, many of which incorporate analysis of costing and whole-economy resource limits in a way that DfT's scenarios don't. These include: • CCC's aviation analysis for the Sixth Carbon Budget • UK FIRES 'Absolute Zero' analysis (which concludes that given the likely change of technological development there may be no room for any aviation activity in the UK by 2050) • Centre for Alternative Technology, 'Zero Carbon Britain', 2019, which advocates reducing aviation demand by 2/3 by 2030 • WWF-UK 'Keeping it Cool', 2018

Q11. Do you agree or disagree that we should set a CO2 emissions reduction trajectory to 2050?

Agree

Why?

We welcome the fact that the Government has committed to inclusion of international aviation (and shipping) emissions in the sixth carbon budget. This budget period does not begin, however, until 2033. Given that UK aviation emissions were, in 2019, higher than ever before and that the sector is anticipated to be one of the hardest to decarbonise, it is essential to set out a pathway to decarbonisation immediately, to ensure that projections of future emissions reduction are in fact being delivered, and to inform decision-making in relation to airport development.

Q12. How do you think the trajectory should be set?

On something else:

Both are needed.

Why?

An in-sector emissions trajectory is needed in order to drive innovation. A net trajectory is needed to make clear the extent to which GGR will be needed, and the pace at which the industry should be making appropriate investments. Together, these will help inform the proposed five-year reviews of whether the UK has the right mix of in-sector and out-of-sector policies.

The net trajectory should, however, include only greenhouse gas removals and, for flights to domestic and EEA destinations, UK ETS credits. Other offsets based on avoided emissions should not be regarded as legitimate for compliance with the trajectory. Use of SAF should be included under the net, not the actual trajectory, since actual CO2 from aircraft using SAF are at least as high as those from kerosene.

Re-determination of Manston Airport: Response from Chris Lowe, Interested party: 20014275

Q13. Do you agree or disagree with the in sector CO2 emissions trajectory set out which has CO2 emissions of 39 Mt in 2030, 31 Mt in 2040, 21 Mt in 2050 and why?

We have answered this question and the following question together since the trajectories are closely related. We note that these figures fall within the range that CCC has modelled for aviation and within industry modelling (assuming that higher forecast emissions in 2030 result from not taking the effects of the Covid-19 pandemic into account, rather than policy choice). We have several concerns about the proposed trajectories however.

- 1) Significantly different assumptions have been made by CCC in relation to the level of aviation demand that can be accommodated under these trajectories. This matters, partly because so many airports are currently in the process of applying for growth. Given the weaknesses in the Government's emissions modelling as outlined above, and the failure to present policy measures that would ensure that emissions reductions are delivered in line with the trajectory, no new capacity should be released until it is clear that UK aviation emissions are falling. To expand airports now risks creating stranded assets or locking in a growth pathway that may not be compatible with net zero.
- 2) It is currently impossible to feel confident that 21 Mt GGR will be available annually for the aviation sector by 2050. Greater ambition is needed on cutting actual emissions as is a pathway for delivering GGR that ensures that it is paid for by the industry.
- 3) Any trajectory that allows aviation emissions to increase beyond their pre-pandemic level is unacceptable. The pandemic has created an opportunity for the Government to act decisively to bring down aviation emissions and to ensure that the 2019 level is never exceeded. Given the cumulative nature of CO2, and the aviation industry's track record of emissions growth, emissions must begin a downward trajectory now.
- 4) The trajectory allows for 7-16 Mt offsets or removals by 2030. Our view is that only carbon removals or – where relevant – UK ETS credits should be included. Other offsets based on avoided emissions, and from the voluntary carbon market or CORSIA should not be counted in the trajectory This would follow CCC's advice in relation to compliance with carbon budgets, and would ensure that only genuine reductions in line with an economy-wide net zero trajectory are counted.

Q15. Do you agree or disagree that we should review progress every five years and adapt our strategy in response to progress?

Disagree

Why?

We would support an approach of checking progress in the context of a review of carbon budgets once IAS has been included. In the meantime, there are so many uncertainties that a more regular review is needed. This must begin with proposals for a meaningful set of policies and enforcement mechanisms.

Q16. Do you agree or disagree with the overall approach to improve the efficiency of our existing aviation system?

Nether agree nor disagree

Why?

Efficiency improvements are frequently cited as a reason for airspace change which is in fact being driven by a desire to increase airspace capacity. Efficiency improvements, both operational and technological, have not historically been sufficient even to offset growth from aviation, highlighting the importance of testing any proposed efficiency measures against an emissions reduction trajectory.

Airspace change can create noise disbenefits (such as concentrating noise, or exposing people to significant noise for the first time) when it takes place in lower level airspace, and many proposals have been strongly resisted for this reason by our member groups. The current process for assessing the noise impact of airspace change is delivered by the CAA but without any meaningful policy underpinning from the Government in terms of appropriate targets for reducing community noise exposure. The need to address noise concerns may constrain the ability to fully optimise the system for emissions reduction.

The Government is proposing that all airport operations in England should be zero emission by 2040 for scope 1 and scope 2 emissions. This seems a good aim, but relates very largely to buildings and surface transport, and should not be considered an aviation emissions policy since these emissions are out of scope of the proposed trajectory.

Q17. In your opinion, to ensure we maximise efficiency within the current aviation system, what more could be

Re-determination of Manston Airport: Response from Chris Lowe, Interested party: 20014275

done or done differently?

Several possible measures that should be considered as part of a policy plan. The process of slot allocation could be reformed to encourage flights with the highest level of efficiency. This has been an area of Government interest in the past, but the practical difficulties for implementation have prevented progress. Further consideration should also be given to the role of airport charges. While noise and NOx charges are common, lessons learned demonstrate that schemes should be reviewed regularly to ensure appropriate differentiation is maintained for the current fleet. Effective taxation can also play a role. The availability of relatively cheap kerosene will delay efficiency improvements unless taxed to reduce the price differential, something that has been made possible on departures to EEA destinations in the post-Brexit UK-EU air services agreement. Inefficiency could also be taxed, for example by supplementing APD with a charge for taxing empty seats on aircraft, or empty capacity on a freighter.

Q18. Do you agree or disagree with the overall approach for the development and uptake of SAF in the UK?

Our view is that further analysis is needed to understand the extent to which SAF can deliver aviation emissions mitigation. Much of the aviation industry is arguing strongly that SAFs can, with appropriate government investment, radically change the trajectory of future aviation emissions. We are doubtful, however, about whether the kind of SAFs that are currently available should be regarded as offering either (a) genuine aviation emission reductions or (b) a scaleable solution. We are concerned in particular that the Government's modelling assumes significant uptake of SAFs without any modelling of additional cost, and assumes that all SAFs generate zero emissions, a claim not even made by the industry or planned for by Government in its SAF mandate consultation. We welcome the fact that both the aviation industry and the Government recognise that crop-based fuels are problematic for reasons of competition with agricultural and other land use needs. The current focus, however on turning wastes, principally fats and agricultural wastes, into aviation fuel comes with its own problems. When burned in an aircraft engine SAFs release at least as much CO₂ as kerosene, but it is assumed that some of the CO₂ has been captured in advance of its use through previous absorption by plants. In this way they represent a kind of 'advance offset', though in the case of wastes considerable energy is likely to have been lost and CO₂ released in the process. For waste fuels, however, an additional calculation is typically made of benefits arising from the avoidance of methane release associated with wastes being left in landfill sites. As a result, use of some waste-based fuels is sometimes claimed to be over 100%, suggesting that taking a flight could actually lower atmospheric CO₂. This is plainly wrong.

While we support the principle of Lifecycle Analysis, we believe that an additional appraisal needs to be made of how each fuel performs compared not with the current approach to CO₂ mitigation from other sectors as the counterfactual but with a scenario in which all sectors of the economy are on a pathway to net zero. No mandate levels should be set, in our view, in advance of such analysis. 'Avoided emissions' in one sector as a result of SAF use, as with offsetting, should not be claimed as emissions reductions in another in a net zero world where all sectors will need to achieve net zero emissions. In the long run, waste must be reduced and methane release must be minimised in addition to aviation achieving net zero. The use of waste as a fuel for aircraft therefore offers limited real emissions reduction, and will not be a scaleable solution in the longer term. The danger of providing subsidy or other incentives for the production of these fuels is that investment in real, long-term solutions may be delayed, and the false impression may be created that the industry is on a meaningful decarbonisation pathway, at relatively low cost, without any need for demand limits.

We recognise that theoretical options exist for the production of net zero carbon fuel, through the direct air capture of CO₂ which is then combined with hydrogen generated through electrolysis of water using renewable electricity. No such fuel is yet on the market however and it is likely to be both very expensive and very energy intensive to produce. Appraisal needs to be made of the impact of providing sufficient renewable energy to generate such fuel using green hydrogen. Our view is that, in line with the 'polluter pays' principle, airlines should pay the cost of its own decarbonisation. If the cost of this type of fuel were to be internalised in ticket prices, it would be likely to significantly increase the cost of flying – an effect that must be incorporated into the Government's modelling. Finally, it is important to note that the most recent scientific evidence suggests that aviation's total warming impact to date is around three times higher than that estimated by looking only at CO₂. Some SAFs may be able to mitigate non-CO₂ impacts to varying extents but none eliminate them. Policies to tackle aviation's non-CO₂ impacts therefore need to be developed and – again – appropriately costed.

Q19. What, if any, further measures, do you believe, are needed to support the development of a globally

Re-determination of Manston Airport: Response from Chris Lowe, Interested party: 20014275

competitive UK SAF industry and to increase SAF usage?

We are uncomfortable with the idea that a SAF policy will focus on developing fuel for export. SAF should only be increased to the extent that this will help to deliver economy-wide net zero emissions. Setting an appropriate policy framework that makes clear that the industry needs to make the necessary investment in its own decarbonisation is the best way to do this, beginning with the kind of net-zero compliant life cycle appraisal we have discussed above. We will be responding to the SAF mandate consultation which considers some of the detail of how to approach this issue.

Q20. Do you agree or disagree with the overall approach for the development of zero emission flight in the UK?

Neither agree nor disagree

Why?

The Jet Zero consultation features a number of electric and hydrogen powered aircraft on its front cover. It claims that “Zero emission flight technologies such as hydrogen-electric and battery-electric aircraft have already been demonstrated in the UK. Continued investment in these technologies could support a significant reduction in global aviation emissions.” The evidence that DfT itself has commissioned to date does not however support this claim. In 2018, the Department for Transport and the Committee on Climate Change jointly commissioned

“Understanding the potential and costs for reducing UK aviation emissions”

(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785685/ata-potential-and-costs-reducing-emissions.pdf). The study’s findings, summarised in Table ES-2, notably included that ‘all electric propulsion’ was not anticipated to be possible for any of the aircraft sizes considered until after 2055 – too late for the UK’s legislated net zero target. The CCC’s most recent analysis – the aviation paper published alongside the sixth budget advice in December 2020, is based meanwhile on modelling that ‘does not have a role for hydrogen turbine or hydrogen fuel cell planes by 2050’.

The ‘evidence and analysis’ document accompanying this consultation quotes several industry sources as claiming that small hydrogen-powered or all-electric aircraft could potentially enter the fleet between 2030 and 2035 and incorporates some of these aspirations into its ‘high ambition’ scenario. It acknowledges, however that ‘the timelines for zero emission flight are still uncertain and depend on continual progression in battery, fuel cell and liquid hydrogen propulsion technologies’. If these technologies do become available, it is likely that they will operate only on short routes. 95% of UK aviation emissions are, however, for flights over 500km (<https://www.sustainableaviation.co.uk/wp-content/uploads/2020/10/Sustainable-Aviation-CSR-Submission-FINAL-240920.pdf>), suggesting a very limited role for them in reducing global aviation emissions in the foreseeable future.

We support the aspiration to develop zero carbon aircraft for short routes, for example domestic travel that is difficult to replace with overland options such as flights connecting the Scottish Highlands with the mainland, and note that PSO routes could be used to test such technology. Our view is that the ‘net zero by 2040’ target for domestic aviation should be met through zero emissions flights, rather than offsetting. Only green hydrogen should be used.

We support the work of the Jet Zero Council in considering whether and how these technologies could be accelerated, and we are closely involved in the World Economic Forum’s Target True Zero initiative. However, at this point in time, there is no evidence to suggest that these technologies could feasibly be used on long-haul routes and the Government should avoid overclaiming about its potential.

Q21. In your view, what further measures are needed to support the transition towards zero emission aviation?

Less long-haul flying. Since the zero emission fuels and aircraft are currently a long way from being viable for long-haul commercial routes, the UK’s tourism strategy should focus on promoting both inbound and outbound travel to places that can be reached either with sustainable overland travel, or, as they become available in the future, using zero emission aircraft.

Q22. Do you agree or disagree with our approach for using:

	<u>Strongly agree</u>	<u>Agree</u>	<u>Neither agree nor disagree</u>	<u>Disagree</u>	<u>Strongly disagree</u>	<u>Don't know?</u>
carbon markets to drive down			X			

CO2 emissions?

**greenhouse gas removal methods
to drive down CO2 emissions?**

X

Why?

We agree with the Government's aim "to strengthen carbon pricing for aviation" and to ensure that greenhouse gas removals are delivered. But it has set out few policies for delivering these aims.

Q23. What could be done further or differently to ensure carbon markets and greenhouse gas removal methods are used most effectively?

The current approach is clearly inadequate. The large majority of aviation emissions have no carbon price attached, and fuel is untaxed. We would support changes to the UK ETS to end free allowances for airlines and to align the cap with a net zero trajectory. The UK ETS, especially with these changes, is likely to be more effective than CORSIA given its numerous problems (including an end date of 2035 and reliance on credits from voluntary carbon markets, such that the CCC recommends CORSIA permit should not count towards UK carbon budgets) but will have limited effect by virtue of its scope; less than a third of UK aviation emissions come from flights to Europe (<https://www.sustainableaviation.co.uk/wp-content/uploads/2020/10/Sustainable-Aviation-CSR-Submission-FINAL-240920.pdf>). Methods to remove greenhouse gases permanently, meanwhile, have yet to be rolled out.

Possible steps could therefore include: • Improvements to the UK ETS to align with net zero, and prioritising the sue of UK ETS over CORSIA on routes where these two schemes overlap • Accepting the CCC's recommendation that, without reform, CORSIA units may not be used for compliance with UK climate targets and budgets • Increases in aviation tax to ensure that ticket prices better reflect the carbon cost of flying • Application of the updated BEIS carbon values for policy appraisal to airport expansion proposals • Policies to drive investment in greenhouse gas removals by polluters, or to raise revenue through a carbon charge to cover the cost of Government investment • Modelling of the likely cost of GGRs being included in aviation demand forecasts.

Q24. Do you agree or disagree with the overall focus on influencing consumers?

Neither agree nor disagree

Why?

We agree that it is essential to improve consumer information regarding the CO2 from flights. Consumer pressure on airlines to adopt more efficient practices has largely been absent to date, largely because of the lack of data disclosed by the industry to support meaningful choices, and many surveys indicate that many people do not have an accurate impression of the harm from flying compared with that of other activities.

A focus on influencing consumers should not, however, be seen as an alternative to more effective policies to mitigate aviation emissions, but should include the provision of public information with a view to securing voter support for stronger climate policy. The information provided to consumers should not just be about choosing a more efficient flight over a less efficient one, or about options to buy voluntary carbon offsets, but should encourage people to consider more sustainable modes of transport or of connecting without travel.

Q25. In your view, what more can we do to support consumers to make sustainable aviation travel choices?

Airlines already monitor and hold the information required for compliance with UK ETS and CORSIA requirements, but actual published data is limited. To better inform the public, airlines should be required to make this information available.

We recommend:

- Avoiding misleading labels. Some booking sites already provide some CO2 information to consumers, and advertise the option to as 'book the greenest flight'. There are currently no sustainable aviation travel choices, and no flight options available for sale should be described as 'green'. Every flight that takes off emits CO2 that – unless somehow removed in future – will remain in the atmosphere for hundreds of years, continuing to cause warming.
- Providing actual CO2 data and not percentage improvements. Some flights generate lower emissions per passenger than others (as noted in the Jet Zero consultation based on ICCT's findings). But some existing flight booking sites do not provide users with the total CO2 associated with the flight, instead saying a flight is, for

Re-determination of Manston Airport: Response from Chris Lowe, Interested party: 20014275

example, 8% more efficient than the average for the route. The total amount of CO₂ should be provided in kg or tonnes of CO₂. Consideration should also be given to alternative forms of information provision, to ensure that it is easy to conceptualise. It would be worth testing, for example, whether people relate more readily to information about how many barrels of oil their trip is responsible for than a figure for CO₂ emissions. (see, for example <https://twitter.com/kevpluck/status/1368788614709010432?s=20>)

- Providing data at the point of sale. Information about the relative CO₂ impacts of different flight choices should be available at point of sale (not, for example, just on the CAA's website) and should also be included in all airline advertising. Some airlines do provide CO₂ data for flights but this can be of limited value as it is usually supplied after a booking has been made and in the context of selling offsets.
- Providing data by seat class. Given that travel in first class can emit four times as much CO₂ as travelling in economy (due to the space that a first class seat occupies), data should be provided for each seating class available on a flight.
- Providing an explanation of non-CO₂ impacts. Consumers should be made aware that the climate impact is greater than from its CO₂ emissions alone.

Q26. In your opinion, what could be done further or differently to ensure we tackle non-CO₂ impacts from aviation?

The latest science suggests that the true climate impact of aviation to date has been around 3 times that of its CO₂ emissions alone. In order to avoid dangerous levels of warming, including in the short term, it is essential to reduce aviation's non-CO₂ impact. All proposed mitigation options for CO₂ need to be assessed for their non-CO₂ impact, whether positive or negative. Some SAFs may lead to significantly fewer particulates which contribute to the formation of contrails, potentially reducing some non-CO₂ effects. As highlighted in the response by Safe Landing, however, there is also evidence that increasing engine efficiency may lead to an increase in non-CO₂ impacts (<https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.569.9411&rep=rep1&type=pdf>).

The most effective way of reducing non-CO₂ impacts from flying this is to reduce flight numbers, especially at night when contrails exert the biggest warming effect. Other options include trying to avoid contrail formation by making changes to flight profiles, although climate scientists have warned that further work is necessary before such measures should be rolled out (<https://www.greenairnews.com/?p=1421>). The effectiveness of over-compensating for aviation CO₂ with extra removals as a way of preventing warming from non-CO₂ impacts should also be considered.

Final comments

Q27. Do you have any other comments you would like to add?

Comments:

Overall, the Jet Zero strategy assesses potential for aviation emissions mitigation rather than likelihood. While some of the issues considered help to frame a policy discussion, the proposed measures to decarbonise the sector fall a long way short of the scale of the challenge ahead. The focus appears to be on what targets are most deliverable rather than on how to overcome the challenges identified, and the proposals fail to give a clear steer on the overall direction that the industry needs to take.

Technology ambition is essential, but without a plan to make sure it's delivered, or that the industry pays for it, what confidence can we have that the industry will rapidly step up the pace? And while we recognise the uncertainty about which of those technologies will succeed and which will fail, allowing passenger numbers and airport capacity to grow will allow the aviation emissions problem to worsen while we wait and see, and that feels like a betrayal of the Government's promise to build back better.

In the absence of new aviation policy to deliver the assumptions made in the proposed emissions trajectories, we cannot understand on what evidence the Government feels justified in making specific reference (in endnote 39) to its previous policy of Making Best Use of Existing Runways or why it advises that this earlier policy should "continue to have full effect, for example, as a material consideration in decision-taking on applications for planning permission."

There is an urgent need for the Government to set new, near-term emissions targets. This analysis would, we believe, highlight the need for a much stronger policy approach the one so far considered, including demand management, and airport capacity limits.
