The Scottish Government's Aviation Statement and policy:

A review by Stop Climate Chaos Scotland
August 2024

Summary

This briefing seeks to set out and review the key elements, and proposed actions, set out in the "Aviation Statement and Key Priorities", published by Transport Scotland in July 2024.

The statement is critically lacking in ambition regarding emissions reductions and endorses actions that are unlikely to meet even the insufficient targets outlined. In seeking to meet the desired outcomes, the statement completely ignores the evidence that demand management will be crucial and offers no suggestion or policies to this end - indeed, it even suggests continued growth.

The actions related to net zero and emissions reduction relate exclusively to adopting new technologies for fuelling aviation (that is, electrification and/or hydrogen or so-called sustainable aviation fuel). There is no recognition of the challenges that these technologies present, or realistic assessment of how, when or to what extent they might be viable/available.

The statement, when reviewed, should be:-
● amended to address this flaw in the approach to its connectivity objective - so that all the means to connect (when appropriate) are considered and compared, and aviation only supported when essential.
● amended to recognise and introduce a commitment to demand management as a key component of the strategy, and to introduce policies designed to achieve appropriate demand reduction.
● amended to include a realistic assessment of the potential deliverability of the ambitions for electrification, hydrogen and so-called sustainable aviation fuel, as well as an analysis of the knock-on impacts of maximising their production/use for other sectors.
● amended to support revision of the UK Government's Jet Zero strategy to also address demand management and the high risks associated with over-reliance on new technologies.

Introduction

In October 2021, Transport Scotland published a discussion paper to inform the development of a Scottish Government Aviation Strategy. As part of the consultation associated with this process Stop Climate Chaos Scotland (SCCS) was pleased to be invited to, and to participate in, the Transport Scotland event entitled "Developing an aviation strategy: Low and Zero Emission Aviation Workshop" held on 3rd December 2021. The notes of that event, circulated subsequently, included the comments made by SCCS' representative. In addition to participation in that event, SCCS also made a written submission to the public consultation, reiterating those comments and providing greater detail.

Although it is no longer described as a 'strategy', Transport Scotland published, in July 2024, their "Aviation Statement and Key Priorities" document which seeks to set out "*the strategic importance of aviation to Scotland and the specific actions the Scottish Government will take to help ensure we can continue to enjoy its many benefits while significantly reducing its emissions in line with our net zero ambitions*".

This briefing seeks to set out and review the key elements, and proposed actions, set out in the Aviation Statement. It also makes recommendations in relation to additions and next steps in order for the policy to be a genuine contribution to the achievement of net zero by 2045.

Although no longer entitled a 'strategy', the statement takes the form of a strategy in setting out the context, describing outcomes to be achieved (and, in some case, target dates), and then the actions to be taken to achieve those outcomes.

The key outcomes set out in the statement are:

- Continually improve Scotland's international connectivity to key markets for inbound tourism, business connectivity and export growth.

By 2025:

- More efficient airport operations in the Highlands and Islands.
- Realising the full environmental, social and economic benefits of deploying new aviation technology in Scotland.

By the 2030s:

- Aviation emissions reduced compared to 2019 levels, with the sector on track to become net-zero by 2045.
- Contribute to the global effort to reduce CO_2 emissions in international aviation by 5% by 2030.
- Scotland's airports are net-zero.

By the 2040s:

- Domestic flights to reach net zero and the Highlands and Islands to be a zero-emission aviation region.

By 2045:

- Aviation net-zero.

In themselves, these outcomes are welcome, especially the purported net zero target and the interim targets in relation to emissions reduction and reaching local or domestic net zero before 2045.

However, while some of these outcomes are welcome - the overall focus on connectivity, and in particular the way in which this is defined and the actions related to it, suggest that the statement/policy is to support the current levels of aviation or indeed to secure growth in 'air-miles'. Moreover, the Scottish Government's adoption of the incredibly low target of 5% emissions reduction by 2030 (as used by the International Civil Aviation Organisation for global targets) is not only letting it off the hook but also adding pressure to other sectors to have to increase the amount and rate of their emissions reductions further in order to meet the overall national targets.

Furthermore, the actions related to net zero and emissions reduction relate exclusively to adopting new technologies for fuelling aviation (that is, electrification and/or hydrogen or so-called sustainable aviation fuel). Each of these technologies has their challenges, not least in their likelihood of being commercially deployable in time to make the necessary emissions reductions, but also in their environmental impact (including emissions that would be added to in non-aviation sectors).

The statement is therefore critically lacking in ambition regarding emissions reductions and endorses actions that are unlikely to meet even the insufficient targets outlined. There is therefore action needed on a number of issues, especially recognition of the importance of **demand management** and **greater analysis/clarity on the limitations of technological solutions** and how to overcome those issues.

Connectivity

Ensuring connectivity is important, both socially and economically. The Aviation Statement states that:

> "*Strong international connections enable a flow of trade, investment, labour and visitors to Scotland, all of which benefit the Scottish economy as a whole. Good domestic connectivity provides similar advantages at a local level. It also ensures the operation of essential routes between rural and island communities and the mainland; routes within those communities; and other domestic routes where rail does not yet provide the ability to do a day's business and return the same day.*"

The statement also asserts that: "*Scotland's geographical location means that air services are essential for securing our place in the world by providing international and domestic connectivity*" (added emphasis). This is an inappropriate conclusion - some air services may be essential to the provision of connectivity, but many are not, especially where alternative (including slower travel or non-travel) options are available or can be made available.

The statement is therefore fundamentally flawed in its approach to connectivity in assuming that all air services are desirable and that these and others should continue and grow. Moreover, it fails to assess the availability of alternative means of connectivity (actual or potential) or assess these against the aviation options. It is therefore fundamentally non-strategic - but, rather, an approach that assumes aviation is always the answer.

Accordingly, **the statement, when reviewed, should be amended to address this flaw in the approach to its connectivity objective - so that all the means to connect (when appropriate) are considered and compared, and aviation only supported when essential**.

Demand management

As a result of the approach described above, the aviation statement avoids the issue of demand reduction as a way of limiting the environmental impact of flying, and instead relies heavily on supply-side options such as new or replacement fuels, such as batteries, hydrogen or so-called sustainable aviation fuel. Given that the deployment of these technologies is likely to take decades but the need to reduce emissions is urgent, this is an irresponsible strategy.

At the 3rd December workshop, "*Environmental NGOs commented that the discussion document is lacking a strategic consideration of how much aviation there should be in future and the role that demand management needs to play in reducing aviation emissions*"[1]. This remains the single most important, strategic concern with the consultation and proposed strategy.

As the most effective way to reduce emissions from aviation is to not travel or use alternative means of travel, the aviation strategy should begin by asking "how much aviation is necessary (as opposed to desired/demanded)?" Policy mechanisms to reduce demand to this level (as well as to support the alternative, less carbon intensive means of travel) should be adopted as the highest level of a policy hierarchy. With regard to demand management, the Climate Change Committee (CCC), the Scottish Government's formal advisors, have observed, in their 2021 progress report to the Scottish Parliament that, in relation to aviation:

> "*A demand management framework will need to be developed (by 2022) and be in place by the mid-2020s to annually assess and, if required, control sector GHG emissions and non-CO_2 effects*"[2].

In October 2022, the CCC noted on the UK Government's similar heavy focus on sustainable aviation fuel and zero/low-emission aircrafts that: "*These technologies have potential, but there are significant risks in their delivery. In the near term, managing demand would have a much greater benefit for the climate*"[3]. Further, CCC's report to the Scottish Parliament in 2022 highlighted that the Scottish Government has made "*no commitments to use its devolved powers, such as airport expansion control and Air Departure Tax, to curb aviation growth*"[4].

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[1] From the Transport Scotland notes reporting the "Developing an aviation strategy: Low and Zero Emission Aviation Workshop" held on 3rd December 2021.

[2] https://www.theccc.org.uk/publication/progress-reducing-emissions-in-scotland-2021-report-to-parliament/ (page 112)

[3] https://www.chathamhouse.org/2023/11/net-zero-and-role-aviation-industry/04-balancing-demand-management-and-reliance-future

[4] https://spice-spotlight.scot/2024/01/16/climate-change-and-scottish-parliament-committees-net-zero-energy-and-transport-committee-sectors/

Modelling done by Chatham House shows the importance of demand side measures not just in and of themselves to reduce emissions, but also for buying time for the development of supply-side decarbonisation solutions. Among a number of suggestions for managing demand, it says: "*In the UK the top fifth of earners fly five times more often than the poorest fifth. It may be possible to achieve a 36 per cent reduction in demand by 2030 if a future demand-management policy shifted behaviour so that most people who currently take more than one return flight per year reduced that number by one return flight and took no more than four. This would leave the 77 per cent of the UK population who currently take no more than one return flight unaffected. This is a moderate level of behaviour change to put the aviation sector on a climate-compatible trajectory*"[5].

The evidence, submitted to the consultation, available from formal advisors and from expert analysts suggests that demand management should be a key component of any credible aviation strategy. Yet the Aviation Statement, as published, does not recognise (or even refer to) this evidence. It offers no suggestion that demand management has been considered or any measures to this end. Indeed, it actually proposes that:

"*Our key aspiration is to help Scotland become at least as well connected as our peer nations and regions by growing demand for existing and new routes that are vital for inbound tourism, business connectivity and exports*" (added emphasis).

This approach is contrary to the advice from the CCC, which said in its 2023 report to the UK Parliament that there is a "*need for a framework to manage airport capacity. There has been continued airport expansion in recent years, counter to our assessment that there should be no net airport expansion across the UK*"[6].

In the light of this, **the statement, when reviewed, should be amended to recognise and introduce a commitment to demand management as a key component of the strategy.** This will need to include (a) recognition that services that are not essential (because suitable alternatives exist or can be supported) should be reduced and (b) the introduction of appropriate policies to limit or reduce demand, including: -

● Pressing the UK Government to introduce appropriate demand management policies in relation to appropriate reserved policies;
● Using its devolved powers to curb growth in non-essential aviation through, for instance, planning restriction on airport expansion and the targeted application of Air Departure Tax[7];
● Applying its public transport policies, especially in rail, to promote more viable alternatives to aviation;
● Applying its public procurement policies and public education/engagement activities to avoid and/or discourage non-essential aviation, and to encourage behaviour change in business and the public sector to 'connect' more sustainably.

The limitations of technological solutions

The actions related to net zero and emissions reduction relate exclusively to adopting new technologies for fuelling aviation (that is, electrification and/or hydrogen or so-called sustainable aviation fuel). There is no recognition of the challenges that these technologies present, or realistic assessment of how, when or to what extent they might be viable/available.

For example, the US Institute for Policy Studies analysis suggests that "*there is currently no realistic or scalable alternative to kerosene-based fuels that would meet current aviation needs, let alone projections of future growth. And at present, SAF technologies are not moving at the speed of climate change*"[8].

[5] https://www.chathamhouse.org/2023/11/net-zero-and-role-aviation-industry/summary
[6] https://www.theccc.org.uk/publication/2023-progress-report-to-parliament/
[7] We note and welcome the commitment, announced on 18 April, to "set out the high-level principles of ADT, including how it will support emissions reductions". We look forward to hearing when and how this will be done, and how stakeholders may input.
[8] https://ips-dc.org/wp-content/uploads/2023/04/Report-Greenwashing-the-Skies.pdf

While, in the UK, the Royal Society notes that "*meeting existing UK aviation demand entirely with energy crops would require around half of UK agricultural land. While producing sufficient green hydrogen fuel to meet existing UK aviation demand would require 2.4 - 3.4 times the UK's 2020 renewable (wind and solar) electricity generation*"[9].

Reliance on hydrogen, further, would require policies related to how that is to be produced (to ensure it is 'green hydrogen') and an assessment of the knock-on impacts on the renewable electricity supply/demand, as well as potential for diverting hydrogen from use in decarbonising other sectors, such as heavy industry.

The Aviation Statement, as present, relies almost exclusively on the development and deployment of these new technologies/fuels, with no assessment of when and how they might be available or viable, nor of the knock-on consequences for other sectors. As a result, even the unambitious emissions reduction targets set in the statement are unlikely to be met - indeed, given the policy of further growth and uncertainty over new technologies, it is more likely that, in the short term, this statement will result in continued increase in emissions.

The risks associated with the development of these new technologies (and the speed with which they may be developed) are high - there is clearly no guarantee that they will be available to a sufficient extent or in time for the aviation industry (at current or increased levels of activity) to meet the emissions reductions targets. This risk has been identified by the CCC who noted, in its 2023 report to the UK Parliament that:

> "*The Jet Zero Strategy approach is high risk due to its reliance on nascent technology – especially rapid SAF uptake and aircraft efficiency savings – over the period up to the Sixth Carbon Budget. The Government does not have a policy framework in place to ensure that emissions reductions in the aviation sector occur if these technologies are not delivered on time and at sufficient scale*"[10].

While the above advice refers to the UK Government's "Jet Zero Strategy" (see below), the Scottish Government's Aviation Statement adopts the same approach and is therefore subject to the same concerns. Yet, when asked, in a written Parliamentary Question, "what consideration it has given to the UK Climate Change Committee's 2023 report to the UK Parliament that this is "high risk" due to its reliance on nascent technology, and what policy frameworks it will put in place to ensure that emissions reductions in the aviation sector occur if these technologies are not delivered on time and at sufficient scale", the Scottish Government failed to address the issue at the heart of this risk[11].

Accordingly, **the statement, when reviewed, should be amended to include a realistic assessment of the potential deliverability of the ambitions for electrification, hydrogen and so-called sustainable aviation fuel, as well as an analysis of the knock-on impacts of maximising their production/use for other sectors.**

Matters reserved to the UK Government/Parliament

The Aviation Statement, rightly, notes that a number of policies affecting aviation and its emissions are reserved to the UK Government/Parliament, and that the UK Government's Jet Zero Strategy will apply throughout the UK. The statement indicates that the Scottish Government will "continue to encourage the UK Government to ensure that its Jet Zero aviation strategy benefits Scotland" and this is welcome.

However, the statement is silent on what and how it will encourage the UK Government to amend in its approach to aviation in order to ensure that these reserved policies are working to reduce emissions, or to amend the strategy to meet the concerns expressed by the CCC. Currently, neither

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[9] https://royalsociety.org/news/2023/02/net-zero-aviation-fuels-report/

[10] https://www.theccc.org.uk/wp-content/uploads/2023/06/Progress-in-reducing-UK-emissions-2023-Report-to-Parliament-1.pdf

[11] https://www.parliament.scot/chamber-and-committees/questions-and-answers/question?ref=S6W-28765

the UK Government's Jet Zero Strategy nor the Scottish Government's Aviation Statement are adequate. **The latter should be revised to address the issues above - but also to indicate that the Scottish Government will press the UK Government to amend its strategy to address the same issues.**

Conclusion and recommendations

If the Scottish Government is really committed to its aviation strategy being fully embedded in its overall just transition to net zero and a fairer, greener future for all, then its decisions and actions on aviation must be made in the context of the following reality:

Those who have contributed the least to the climate crisis are already suffering the most from its consequences, here and around the world. Those countries and individuals who have benefitted, and continue to benefit, from the burning of fossil fuels must act first and fastest to urgently reduce their emissions. Only a small minority of the world's population flies: in 2018, only 2-4% of the world's population flew internationally, about 80% have never flown at all. At the same time, 1% of the world's population is responsible for half of all aviation emissions. This small minority is also the wealthiest. The wealthiest top 10 % use 75% of air transport energy[12].

It's widely accepted that the decade between 2020 and 2030 is crucial for action to reduce emissions at the speed and by the amount necessary to keep global average temperatures within safe limits. And indeed, the United Nations has stated that to limit global warming to 1.5°C above pre-industrial levels emissions need to be reduced globally by almost half by 2030.

The aviation industry has historically also been given benefits that other sectors don't have, for example jet fuel has also always been exempt from tax in the UK, and a first class airline ticket is in the same VAT category as food and medicine while petrol for cars is taxed at the full rate of 20%. Having such a low emissions reduction target is giving the industry a further advantage.

In the light of this a fair, just transition to a sustainable, net zero aviation system needs to take a more robust approach - with genuine connectivity at its heart, and a significant emphasis on demand management (focused on reducing/taxing non-essential journeys, especially by the wealthy) and a more realistic and ecologically coherent approach to new technologies.

Thus, the statement, when reviewed, should be:-
● amended to address this flaw in the approach to its connectivity objective - so that all the means to connect (when appropriate) are considered and compared, and aviation only supported when essential.
● amended to recognise and introduce a commitment to demand management as a key component of the strategy, and to introduce policies designed to achieve appropriate demand reduction.
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[12] Gössling/Humpe (2022): The global scale, distribution and growth of aviation https://bit.ly/401aRvZ. Cited in https://stay-grounded.org/wp-content/uploads/2021/11/SG-Climate-Justice-and-Aviation-Factsheet.pdf