

What more, if anything, should the Scottish Government and industry do to accelerate the transition to low/zero emission aviation?

The discussion document to inform the development of an aviation strategy describes the vision for the new aviation strategy as:

"For Scotland to have national and international connectivity that allows us to enjoy all the economic and social benefits of air travel while reducing our environmental impact."

Unfortunately the document is woefully lacking in providing an adequate basis for developing a strategy that will deal effectively with the environmental impact reduction aspect of the vision. We have identified two key aspects of this problem:

1. A failure to frame the problem and required emission reduction adequately.
2. A failure to present and discuss the full range of relevant policy tools that will be required to achieve our legally-binding climate targets.

Framing the problem and required emission reductions

The discussion document fails to present a full picture of the Scottish Government's targets for aviation emission reduction. It does set out recent trends in emissions; however, with regard to emission targets, the environmental impact section on pages 13-14 only states "The Scottish Government has committed to work to decarbonise scheduled passenger flights within Scotland by 2040" and the 'Aim' section within the Transition to low and zero emission aviation, page 21 says that the aim is "[t]o reduce the environmental impact of aviation, in line with the Scottish Government's commitment to be a net-zero nation by 2045."

These two quotes comprise the full detail of specific Scottish emission targets provided in the document. Given that this document is meant to be the basis for informing the future aviation strategy, this is extremely poor: it fails to convey the scale in emission reduction that is required and the brief timeframe within which this change needs to be achieved.

Specifically, the document fails to set out the required intermediate emission reduction within this current decade. According to the emission reduction targets in the Climate Change Plan update, emissions from the transport sector are required to be reduced from 14.8 MtCO₂e in 2018¹ by approximately 56% to 6.5 MtCO₂e in 2028.² As one of the most climate-damaging forms of transport, part of this emission reduction must be carried by the aviation sector. As we set out below, it would be grossly inequitable should other sectors be expected to make up for the aviation sector's failure to decarbonise.

The Element Energy 'Decarbonising the Scottish Transport Sector' report, commissioned by the Scottish Government, found that emissions from aviation assigned to Scotland need to be reduced by 33% between 2019 and 2030 to meet climate targets.³ However, as discussed in more detail below, the proposed interventions for reducing carbon emissions in aviation will for the most part not be ready to be deployed at scale within this decade. Whether or not this omission is deliberate, it certainly helps to obscure the fact that

the proposed tools for achieving emission reductions will not be able to deliver the reductions that are necessary in the short and medium term.

Range of relevant policy tools

It is widely recognised that aviation is a challenging sector to decarbonise due to a lack of zero or low carbon aviation technology that is readily available and could be deployed at scale. Nonetheless, the Scottish Government must make a serious effort to reduce emissions from this sector if it wants its efforts in tackling climate change to be taken seriously. Unfortunately the policy tools for reducing the climate impact of the aviation sector that are primarily discussed in the discussion document focus primarily on technologies that are not yet ready and will therefore not be available to provide the necessary emission reductions within this decade.

In order to even begin reducing emissions from the aviation sector in the coming years, the aviation strategy must include demand management measures to reduce the volume of flights that are taken. While the document does discuss the UK Emission Trading Scheme (ETS), there is no clear intention stated by the Scottish Government to influence the UK Government to use this as a tool to reduce flying. On the contrary the stated aim to “grow Scotland’s international air connectivity” (page 27) points towards an intention of expanding the Scottish aviation sector over the coming years. Yet, the previously mentioned Element Energy report finds that “a realistic scenario [...] would need to be paired with some behavioural change in order to meet the overall emission reduction target.”⁴

We strongly urge the Scottish Government to include the following policy tools in its aviation strategy:

1. Taxing aviation appropriately

The Scottish Government should be aiming to resolve questions surrounding the Highland and Islands exemption to the Air Departure Tax to allow this power to be devolved to Scotland. This would allow the Scottish Government to reverse the reduction of the Air Passenger Duty by the UK Government in 2021, setting the right financial incentives. This would allow the Government to deliver upon the position stated by the Cabinet Secretary for Net Zero, Energy and Transport, Michael Matheson, at a Transform Scotland event on 23rd of April, that the SNP do not believe that reducing APD is compatible with climate change objectives and that his party have no intention of changing their position on this in the future.⁵

We recommend that the Scottish Government support the introduction of a Frequent Flyer Levy (FFL). A small minority of passengers take the majority of flights and a FFL could be a useful tool to target this specific group. While the power to introduce a FFL is not devolved to Scotland, the Scottish Government should use its influence with the UK Government to ensure that this measure is brought into UK aviation policy.

There are a range of levies and taxes that could be used to disincentivise flying. Most importantly, policies should be introduced that are aimed at reducing the volume of flights: this could include a frequent flyer levy, aviation fuel taxes or emissions charges, and/or other measures that would incentivise passengers to opt for more sustainable transport alternatives. Introducing such measures would likely find support within the wider population as well: we would note that the Scottish Climate Assembly supported both the introduction of a FFL and the taxation of high carbon aviation fuels.⁶

2. Shifting away from flying

Reducing the number of flights does not necessarily need to come at the cost of connectivity. Aviation is a tool to provide connectivity and should not be treated as an end in itself. It therefore needs to be considered whether there are alternatives to providing connectivity that are less harmful. The aviation strategy should therefore include measures to encourage modal shift from air to rail. This is particularly relevant for the connections between the Central Belt and London, which are some of the busiest flight connections across Europe. Especially on these connections, rail can be both faster and cheaper than flying, although recently commissioned research by LNER has found that there is a lack of awareness of this among the population.⁷ This provides an opportunity for the Scottish Government to work with partners to encourage a shift towards a low carbon form of transport.

In other areas where distance and travel time are considered a barrier to using sustainable transport, the Government should follow best practice by assessing how connectivity can be improved considering improvements to all modes of transport, rather than assuming that air travel is best suited to improving connectivity. There are certainly areas or journeys within the UK that are not easily accessible by rail. However, given the context of the climate crisis and a historic lack of investment in rail infrastructure, the focus should not be exclusively on air travel but to also consider investing in a rail network that not only improves long-distance but also local and regional connectivity.

Additionally the Scottish Government should encourage a shift away from unnecessary air travel that could be replaced by digital connectivity. This will require high speed internet connections across the country. The experience of remote and distributed working during the pandemic has demonstrated the potential of this alternative and has substantially increased its acceptability. Amongst other things, the Scottish Government should be providing instruction to the Scottish Public Bodies that its employees should be avoiding flying except in exceptional circumstances.

At least for as long as alternative technologies cannot provide the necessary emission reductions, the Scottish Government should set targets for the volume of flights that originate and end in Scotland to ensure that emissions from the aviation sector are reduced. Demand management measures that reduce flying are currently the only policy tools available that would be able to produce the required level of emission reduction that must be achieved by 2030.

What can the Scottish Government do to help increase the use of sustainable aviation fuels?

Sustainable Aviation Fuels can play a role in a sector that is challenging to decarbonise and could play a particular role in long haul flights. But without government mandates they are unlikely to be widely adopted due to their currently significantly higher price point. The UK Government consulted on a SAF mandate in 2021, proposing a mandate for 10% SAFs by 2030 and 75% by 2050.⁸ While this would lead to reductions in emissions, the Element Energy report found that to meet its emissions targets, relying solely on biofuel-based SAFs within this decade, Scotland would have to reach a blending rate of 50% by 2030,⁹ far higher than the mandate proposed by the UK Government. It is therefore crucial to be aware that SAFs will not deliver the required emission reductions.

In addition, SAFs are not unproblematic in their use. Crops for biofuel may be grown on agricultural land that might otherwise be used for food crops or forestry, creating land use problems and with biofuels predicted to not being able to meet fuel demand in the long run, e-fuels, which are very energy intensive, will be required to satisfy demand for SAFs. A Transport & Environment report has found that by 2050 energy demand for e-fuels for aviation might be as high as 912 TWh, which would be equal to 28.2% of Europe's total energy production in 2015.¹⁰ So even when using SAFs or zero carbon technologies, flying will remain an energy intensive form of transport and it should therefore be considered whether limited resources should be allocated to aviation where there are more efficient alternatives available. The Scottish Government must ensure that the aviation strategy does not overly rely on SAFs as the solution to reaching climate targets in the aviation sector.

What do you think the Scottish Government can do to help ensure a just transition to net-zero for the Scottish aviation sector?

The Scottish Government must ensure that the net-zero transition of the aviation sector does not exclude people who rely on flying, particularly with regard to Highland & Island communities. However, it must be recognised that flying is primarily the privilege of a well-off minority of the population, with just 1% of the UK population taking 20% of all international flights and nearly half the population (48%) not taking any international flights within a year.¹¹ The cost of flying to the climate affects the wider population, while the benefits are enjoyed by a relatively small group of people. It would therefore be unjust to allow the aviation sector to continue its climate-destroying practices while carbon reductions are made elsewhere. The Element Energy report states that:

*"[...] it is clear that under a just and equitable decarbonisation transition the ambition in the aviation sector needs to increase significantly. This step change in ambition is needed in order for the cost of decarbonisation to be shared fairly, rather than sectors such as cars, vans, and public transport, where cost rises disproportionate impact low-income groups, having to make up for emissions not reduced in the aviation sector, where cost increases are focused on higher income groups."*¹²

The Scottish Government must ensure that the already-privileged aviation sector is not let off the hook when it comes to bearing responsibility within the net-zero transition.

Considering the future challenges and opportunities, what changes, if any, should we make to our approach to help achieve our aim for international connectivity?

As discussed above, the Scottish Government should consider how the focus from physical connectivity with international partners can be shifted towards a wider conception of connectivity that includes digital connectivity as well as supporting rail connections with close European neighbours.

How do we incentivise the use of more efficient aircraft, whilst still ensuring that we secure the routes Scotland needs?

As discussed above, the Scottish Government should consider connectivity independent from mode and support improved connectivity through low carbon transport options such as rail where possible, rather than relying on air connections as a default. Air connections to island communities are important lifelines for local communities, so the Scottish Government should encourage the use of more efficient aircraft on these routes but this should not prevent reducing air travel on routes where climate-friendlier land-based transport would be possible.

Do you think the Scottish Government should encourage airlines to offer plane-plus train tickets?

We support a scheme that would encourage the use of public transport, including trains, where public transport would replace private motor transport. However, plane-plus-train tickets should not be used to encourage replacing a train journey for a plane journey, e.g. encouraging flying from London to Edinburgh with an onward train ticket to a destination in Scotland.

What more, if anything, do you think the Scottish Government can do to help promote efficient and sustainable airfreight transport?

Given the high climate impact of flying, the Scottish Government should discourage the use of air freight where possible.

•••••

Notes:

- ¹ SPICe, 2021. Update to the Climate Change Plan - Key Sectors. <https://sp-bpr-en-prod-cdne.azureedge.net/published/2021/1/12/109b01e8-6212-11ea-8c12-000d3a23af40/SB%2021-02.pdf>
- ² Scottish Government, 2020. Securing a green recovery on a path to net zero: climate change plan 2018–2032 - update. <https://www.gov.scot/publications/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/documents/>
- ³ Element Energy, 2021. Decarbonising the Scottish Transport Sector. <https://www.transport.gov.scot/media/50354/decarbonising-the-scottish-transport-sector-summary-report-september-2021.pdf>
- ⁴ <https://www.transport.gov.scot/media/50354/decarbonising-the-scottish-transport-sector-summary-report-september-2021.pdf>
- ⁵ Michael Matheson MSP, speaking at Transform Scotland event on 23 April 2021. Available at <https://www.youtube.com/watch?v=NB6u-NKGrLM> Alasdair Dalton: "Has cutting air passenger duty been shelved for good?" Michael Matheson: "We don't think it's compatible with our climate change objectives, so that's why we had a change in our policy, a change in our approach, which we set out I think it must be about 18 months ago around that so and there are no intentions for us to change our our policy position on that Alasdair."
- ⁶ Scotland's Climate Assembly, 2021. Full Report. <https://www.climateassembly.scot/full-report>
- ⁷ LNER, 2021. Lack of knowledge of the benefits of rail travel are harming efforts to achieve net zero. <https://www.lner.co.uk/news/lack-of-knowledge-of-the-benefits-of-rail-travel-are-harming-efforts-to-achieve-net-zero/>
- ⁸ Department for Transport, 2021. Sustainable aviation fuels mandate. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005382/sustainable-aviation-fuels-mandate-consultation-on-reducing-the-greenhouse-gas-emissions-of-aviation-fuels-in-the-uk.pdf
- ⁹ Element Energy, 2021. Decarbonising the Scottish Transport Sector. <https://www.transport.gov.scot/media/50354/decarbonising-the-scottish-transport-sector-summary-report-september-2021.pdf>
- ¹⁰ Transport & Environment, 2018. Roadmap to decarbonising European aviation. https://www.transportenvironment.org/wp-content/uploads/2021/07/2018_10_Aviation_decarbonisation_paper_final.pdf
- ¹¹ <https://www.transport.gov.scot/media/50354/decarbonising-the-scottish-transport-sector-summary-report-september-2021.pdf>, page 35
- ¹² <https://www.transport.gov.scot/media/50354/decarbonising-the-scottish-transport-sector-summary-report-september-2021.pdf>, page 35

Scotland's alliance for sustainable transport

Transform Scotland
5 Rose Street, Edinburgh, EH2 2PR
t: 0131 243 2690
e: info@transform.scot
w: transform.scot

transform
scotland

We campaign for walking, cycling and public transport to be the easiest and most affordable options for everyone. Our diverse membership brings together public, private and third sector organisations from across Scotland. We are a registered Scottish charity (SC041516).