

Written evidence from the International Consolidated Airlines Group (IAG)

Introduction to International Consolidated Airlines Group (IAG)

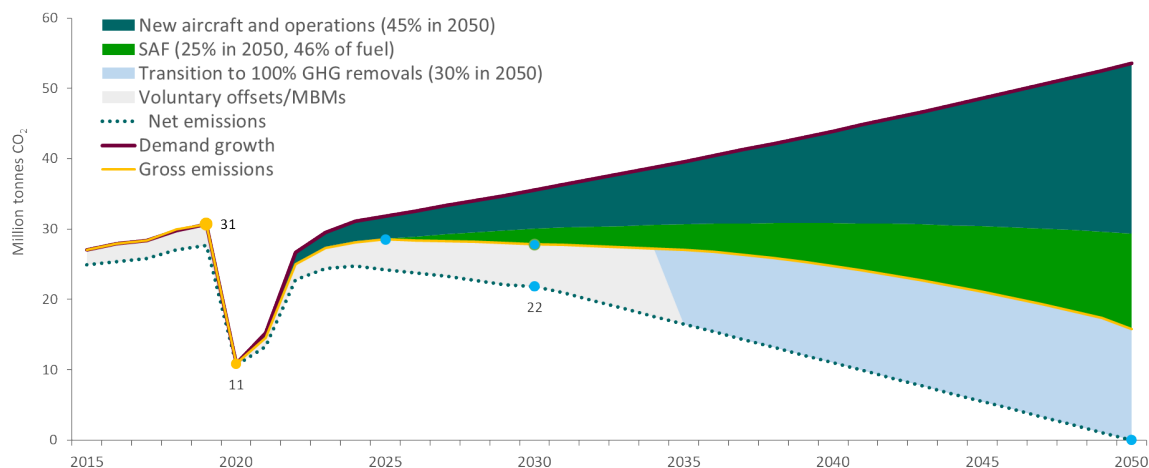
IAG is one of the world's largest airline groups, with leading airlines in Spain, the UK and Ireland. Before the impact of the COVID-19 pandemic, IAG operated to 279 destinations and carried around 118 million passengers each year. IAG's airlines are British Airways, Iberia, Vueling, Aer Lingus and LEVEL and the Group includes the subsidiaries IAG Global Business Services (IAG GBS), IAG Loyalty, IAG Cargo and IAG Tech.

IAG is submitting evidence to this inquiry as our ambition is to be the world's most sustainable airline group. That means using our scale, influence and track record to not only transform our business - but through our work with peers, suppliers and policymakers - drive the system-wide change required to create a truly sustainable aviation industry.

In 2019, IAG became the first airline group in the world to commit to achieving net zero CO2 emissions by 2050, including a 30-year published roadmap for how to deliver this goal along with 2025 and 2030 targets, and the first airline group to sign the UN Business Ambition for 1.5 degrees pledge. In 2021 IAG built on these commitments by committing to 10% of fuel being sustainable aviation fuels by 2030 and extending its net zero commitment to its supply chain. IAG continues to lead efforts to make flying as environmental as possible, working with stakeholders to successfully secure net zero commitments and roadmaps for UK aviation, European aviation, and the oneworld global airline alliance. IAG was the first airline to help to deliver aviation net zero commitments and roadmaps across national, regional and global levels. In 2020 we were one of just 10 global companies recognised by the UN for their ambitious carbon targets.

Response to eight consultation questions

1. What contribution can operational efficiencies make to reduce emissions from aircraft / shipping vessels and over what timescale could these have an effect on emissions?



Source: IAG Flightpath net zero roadmap, as published in the IAG 2020 Annual Report but including 10% SAF by 2030 commitment.

As defined by the EAC, operational efficiencies include the combined effect of buying and operating new carbon-efficient aircraft based on existing technology (not new technology such as hybrid, electric and hydrogen), and operating these aircraft more efficiently i.e. through airspace modernisation. The IAG CO₂ roadmap published in 2020 sees the cumulative benefit of operational efficiencies over the next 30 years - across our flights to and from UK, Irish and Spanish hubs - as approximately 300 MT of CO₂, which represents 40% of the total saving to 2050.

To deliver these operating efficiencies, the most effective action the UK government can take is to urgently progress its airspace modernisation plan.

2. **A. How close are zero carbon fuels to commercialisation for aviation / shipping?**
- B. How effective will the Jet Zero Council be in catalysing zero emissions technologies?**
- C. What role should transitional fuels such as alternative hydrocarbon fuels play?**

Sustainable aviation fuels (SAF) deliver at least 70% lower carbon emissions over their lifecycle than fossil-based fuels and this percentage will steadily increase to eventually deliver 100% of carbon savings relative to fossil-based fuels, meaning that zero-carbon fuels will be available by the 2040s.

SAF is already commercially available in 2021, but current levels of supply are very low. However, we believe that with timely and appropriate policy support, the potential UK supply volume of SAF can increase from less than 0.1% in 2021 to 10% of uplifted aviation fuels by 2030 and to over 50% by 2050.

Critically, significant policy progress will be needed, over and above current levels of support, to achieve this. Key policies to deliver a UK SAF industry most urgently include providing a demand signal through a mandate, and in addition a price support mechanism – which could lead to the

construction of up to 14 UK plants generating over 1 million tonnes of sustainable fuel by the 2030s, and at least 50% of UK aviation fuels by 2050;

B. The Jet Zero Council (JZC) has a key role to play in designing effective government policy that meets multiple stakeholder needs. The JZC has already been effective in supporting appropriate policy development for a SAF mandate, and needs to continue to support the development of a further price stability mechanism to enable investment in first-of-a-kind SAF plants here in the UK.

C. We don't believe that SAF represent transitional fuels as per the diagram in the next response below. We believe they not only have a short-term role, but a medium-term and long-term role to play in the decarbonisation of aviation and will include a range of pathways such as waste-to-liquids, alcohol-to-liquids, and power-to-liquids.

3. What new technologies are there to reduce emissions from aircraft / shipping vessels and how close to commercialisation are they?

Prototype aircraft powered by zero-emission technologies such as hydrogen or electric propulsion are currently in development. For example, British Airways has invested in ZeroAvia, which flew the world's first commercial hydrogen fuel cell powered flight in 2020.

We support the below assessment of the potential and timings of new technologies for aviation. We think the first commercially available large-scale zero-emission aircraft will enter service in the mid-2030s, but it is essential that the UK government continues to support the development of electric and hydrogen technology. It is also important that government accelerates the development and implementation of supporting infrastructure such as nationwide hydrogen distribution systems, plus airport electric and hydrogen charging and fuelling infrastructure.

	2020	2025	2030	2035	2040	2045	2050
Commuter » 9-50 seats » < 60 minute flights » <1% of industry CO ₂	SAF	Electric and/or SAF	Electric and/or SAF	Electric and/or SAF	Electric and/or SAF	Electric and/or SAF	Electric and/or SAF
Regional » 50-100 seats » 30-90 minute flights » ~3% of industry CO ₂	SAF	SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF
Short haul » 100-150 seats » 45-120 minute flights » ~24% of industry CO ₂	SAF	SAF	SAF	SAF	Electric or Hydrogen combustion and/or SAF	Electric or Hydrogen combustion and/or SAF	Electric or Hydrogen combustion and/or SAF
Medium haul » 100-250 seats » 60-150 minute flights » ~43% of industry CO ₂	SAF	SAF	SAF	SAF	SAF	SAF	SAF potentially some Hydrogen
Long haul » 250+ seats » 150 minute + flights » ~30% of industry CO ₂	SAF	SAF	SAF	SAF	SAF	SAF	SAF

Source: Page 48 [Waypoint 2050 Global aviation roadmap](#)

Beyond this there is also a need to commercialise and scale up carbon capture and removal technologies. Aviation will become a major investor in these products for two reasons:

- To deliver the next generation of carbon neutral sustainable aviation fuel, using captured carbon, green hydrogen, and renewable energy
- To address residual emissions through carbon removals. IAG, the Committee on Climate Change and the Department of Transport all agree use of removals will be required for the UK to meet its net zero targets by 2050. The quantity of residual emissions for UK aviation needing carbon removal is forecasted to be 23-25 MtCO₂ in 2050.

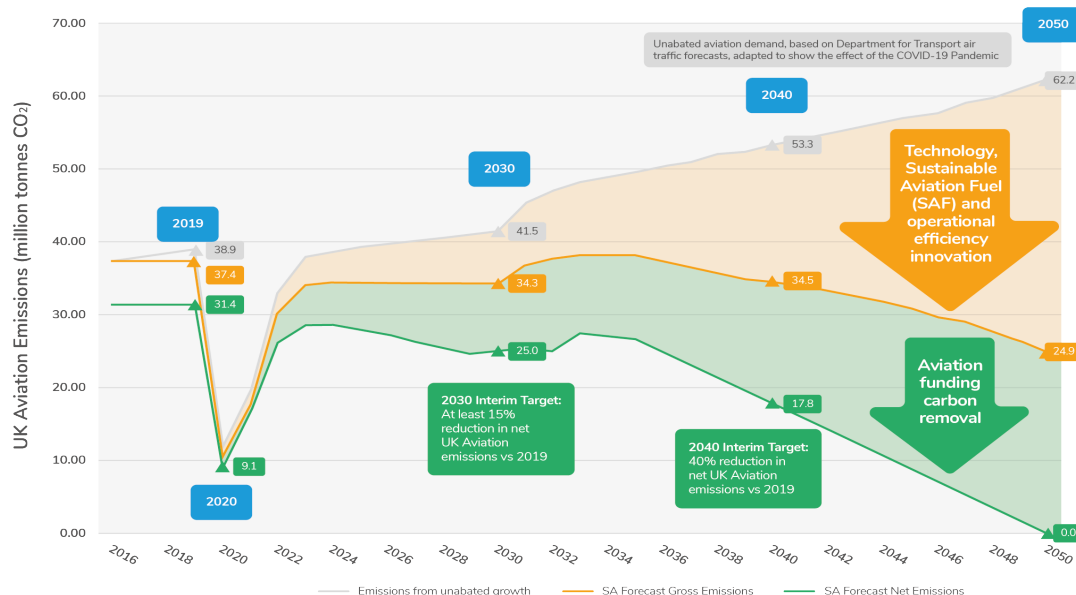
4. How should the Government's net zero aviation strategy support UK industry in the development and uptake of technologies, fuels and infrastructure to deliver net zero shipping and aviation?

Key areas for the UK government support are:

- The **completion of an airspace modernisation plan** generating significant carbon savings through more efficient flying and shorter journey times;
- Key policies to **deliver a UK SAF industry** most urgently include providing a demand signal through a mandate, and in addition a price support mechanism – which could lead to the construction of up to 14 UK plants generating over 1 million tonnes of sustainable fuel by the 2030s, and at least 50% of UK aviation fuels by 2050;
- Long-term **investment in aerospace technology** supporting the development of hybrid, electric and hydrogen-powered aircraft, through funding for the Aerospace Technology Institute;
- Policies that **incentivise the commercialisation of carbon removal technologies** that both a) enable carbon neutral or carbon negative aviation fuel, and b) allow the industry to address any residual emissions;
- **Integrating national energy and jet zero ground infrastructure:** It will be critical to support development and delivery of additional infrastructure on the ground to enable zero emission flight. This includes integrating national energy policies with Jet Zero policies to ensure there is sufficient electrical and hydrogen generation and supply to airports to support increased demand.

5. What is the most equitable way to reduce aircraft passenger numbers (e.g. reforming air passenger duty and taxes, frequent flyer levies, bans on domestic flights where trains are available, restrictions on airport capacity)? Are there any policy mechanisms that could reduce our reliance on shipping?

Aviation provides huge benefits and is a vital part of modern life connecting people and businesses across the world. Global Britain needs aviation. We fundamentally believe a sustainable aviation industry can be developed whilst growing passenger numbers. This will enable the industry to continue to provide substantial economic and social benefits to the UK. The UK trade association Sustainable Aviation has already outlined a path for UK aviation to deliver net zero emissions by 2050 whilst increasing passenger numbers by 70%.



Source: [Sustainable Aviation](#)

We support the implementation of full carbon pricing for aviation, where airlines pay for every tonne of carbon they emit, and the cost per tonne is the same regardless of airline or region. This will enable the industry to most cost-effectively reduce its emissions and provide the appropriate incentives to invest in low-carbon technologies. Critically, carbon pricing must be established at a global level to minimise any competitive distortion and carbon leakage.

As well as incentivising investment in low-carbon technologies, carbon pricing will also have a demand impact on flying. The relative cost of flying will increase as the industry incorporates the cost of carbon. The 2020 Sustainable Aviation decarbonisation roadmap forecast the demand impact from carbon pricing as a 6% relative reduction in passenger volumes in 2050 over the existing growth forecast.

Carbon pricing is the most equitable and efficient way to address aviation's carbon emissions and passenger demand, while minimising any negative economic impacts.

Taxing flights, such as through APD, is an extremely ineffective way to try to cut carbon emissions. It will limit airlines' ability to invest in sustainable jet fuels, new aircraft and technologies. Studies by ICAO provide robust evidence that carbon taxes are as much as 20 times more expensive per tonne of carbon than well designed measures such as emissions trading schemes and the UN Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).

What's more, taxation for flights leaving the UK creates carbon leakage, where people choose to route their aircraft journeys to avoid UK tax and generate carbon emissions elsewhere.

Effective carbon pricing requires that every tonne of carbon has an equal cost and so is charged accordingly. Frequent flyers automatically pay more under carbon pricing, as they produce more carbon, but at the same price per tonne of carbon. Frequent flyer levies distort this principle by providing a distortive pricing per tonne of carbon – e.g. the price per tonne increases with increasing flights. This will have negative impacts in their implementation, and they are also extremely difficult to implement in practice due to data privacy issues.

Bans on short-haul domestic flying would impose large costs on consumers due to the huge price differential between aviation and alternative modes of travel. Such bans would also have only a marginal impact on UK aviation emissions as only 4% are produced from UK domestic short-haul routes.

6. What further action is needed by the International Civil Aviation Organization and International Maritime Organization to drive emissions reductions? What can the UK Government do to drive international action on emissions?

These are the primary actions that we support at the ICAO General Assembly in 2022:

- Agreement on the global Long-Term Target of net zero aviation emissions by 2050
- SAF ambition of 10% by 2030 and at least 50% by 2050
- Agree to need for a global market-based measure beyond 2035

The UK government have been very influential at ICAO so we believe that they can play an important role at enabling these actions at next year's General Assembly.

7. How effective will the global offsetting scheme for international airlines (ICAO's CORSIA) and the UK and EU ETS be at stimulating technology improvement and/ or behaviour change to reduce emissions from aviation / shipping?

We believe that carbon pricing is the overall most effective mechanism at incentivising investment in low-carbon technology and impacting demand management. We fully expect that as we move into the mandatory phase of CORSIA from 2027, and there is international agreement to improve the robustness of CORSIA, that the price signal of this global scheme will rise and affect technology investments and demand impacts.

We fully support the UK Government's recognition of CORSIA as the primary mechanism for global aviation to reduce its emissions, and we welcome its continued support for this scheme.

8. How should the UK define its ownership of international aviation and shipping emissions (i.e. arrivals, departures or both) in order to include them in legislative targets?

The internationally recognised protocol for emissions reporting is to define national ownership by the emissions from all departing flights. Emissions from arriving flights, and from other aircraft flying through UK airspace without landing, are owned by the countries which those aircraft departed from. It would be inappropriate for the UK to redefine this definition as it could result in overlapping and duplicating policy for the same carbon emissions – if every country accounted for departing flights, arriving flights and flights through their respective airspaces, airlines would end up paying more than once for their carbon emissions. In addition, a revised UK definition could have damaging economic impacts on UK connectivity – UK airlines could face greater costs than competitors, and traffic flows might migrate somewhere else.

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