

Sustainability of the aviation industry

(Presented by ERA)

Introduction

For the past years, the aviation industry has been facing greater societal and political pressure due to its environmental impact. In fact, the sector is experiencing a new political environment in which climate matters are on top of the policy agenda at both international and European levels. This is indeed a key period for aviation climate/environmental policies. At European level, there are currently discussions ongoing on the Fit for 55 Package (Ff55) which looks at policies which are aligned to the EU's target to reduce CO₂ emissions by 55% by 2030, including a few relevant for the aviation sector like the EU ETS, ReFuel EU Aviation, and the Energy Taxation Directive.

Whereas, at international level, ICAO will hold its 41st Assembly in autumn, in which it aims to agree on a global Long Term Aspirational Goal (LTAG) for the aviation industry.

However, throughout Europe especially, national measures are either being developed or proposed that could slow down the advancement of sustainability in the sector, such as proposals of EU/national "green" taxes and bans of the short haul routes. As such, in order to ensure the long-term sustainability of the sector, it is necessary that policy makers develop the right policy framework that will allow the sector to decarbonise.

1. What are the regulatory impediments to increasing sustainability? How can regulations be improved to incentivise and facilitate the aviation industry to be more efficient and sustainable?

Outline of the Ff55

In July 2021, the European Commission published its proposals for the Fit for 55 Package (Ff55), which was welcomed by the European Regions Airline Association (ERA). Among the proposals, the EU Emission Trading System revision, the ReFuel EU Aviation Initiative and the Energy Taxation Directive are the legislative files with direct implications on the air transport sector, and therefore need to be carefully assessed in this legislative phase to ensure the long-term sustainability, both economic and environmental, of the sector. In the paragraphs below, ERA outlines its position on how the Ff55 proposals could be improved to ensure a more efficient and sustainable sector.

When it comes to the EU ETS, ERA supports the underlying objective of the regulation, to gradually reduce CO₂ emissions within the European economy, however, it is important to make sure that its revision does not impact disproportionately the smaller air carriers that provide vital regional connectivity.

The proposal suggests a complete phase out of allowances by 2027 and an increase of the yearly linear reduction factor of 4.2% from the original 2.2%. An increase of the auctioning level of allowances will not mitigate the CO₂ emissions from aviation as the environmental impact is determined by the "cap" of the scheme rather than by the free and auctioned allowances. Steeply reducing the free allowances and proposing a complete phase out by 2027 will have a negative impact on European carriers' competitiveness at the global level, due to the higher costs that they must encounter and thus hindering fair competition, especially in the period in which the sector is still recovering from the COVID-19 crisis and is facing huge financial pressures. A solution to this

could be to maintain some free allowances in proportion to the number of passengers transferring from EU hubs to non-EU destinations.

ERA also calls for aviation related EU ETS revenues gained from the auctioned allowances to be used towards the decarbonisation of the sector by, for example, supporting the uptake of SAF and R&D of new aviation technologies. Currently the dedicated Innovation and Modernisation funds lack an aviation focus. This would be a more effective way of reducing the air transport's carbon footprint not only in the short, but also in the mid/long term.

Furthermore, ERA fully supports the purpose of the **ReFuel EU Aviation initiative**: to reduce the environmental footprint of the aviation sector and to boost the supply and demand for sustainable aviation fuels. The aviation sector has been relying on different solutions to reduce its emissions, such as MBMs, technology development and operational improvements. However, these represent solutions for the long term. SAFs play a crucial role in the mitigation of aviation CO₂ emissions as they offer a short-term solution, therefore “quick wins” using existing aircraft and very little changes to the infrastructure at airports. Whilst ERA supports the targets of SAF supplied proposed by the European Commission, there are concerns on the supply at airports: given the scrutiny of the sector, particularly the concerns over short-haul flights, we believe that all airlines operating at any airport should be able to have access to SAF, whilst maintaining the exemption to supply SAF at smaller airports. While we understand that given the current low production it will be difficult to supply all airports with SAFs, we need to ensure access to SAFs to all interested players including regional airlines, which also wish to make use of SAF to reduce their environmental impact.

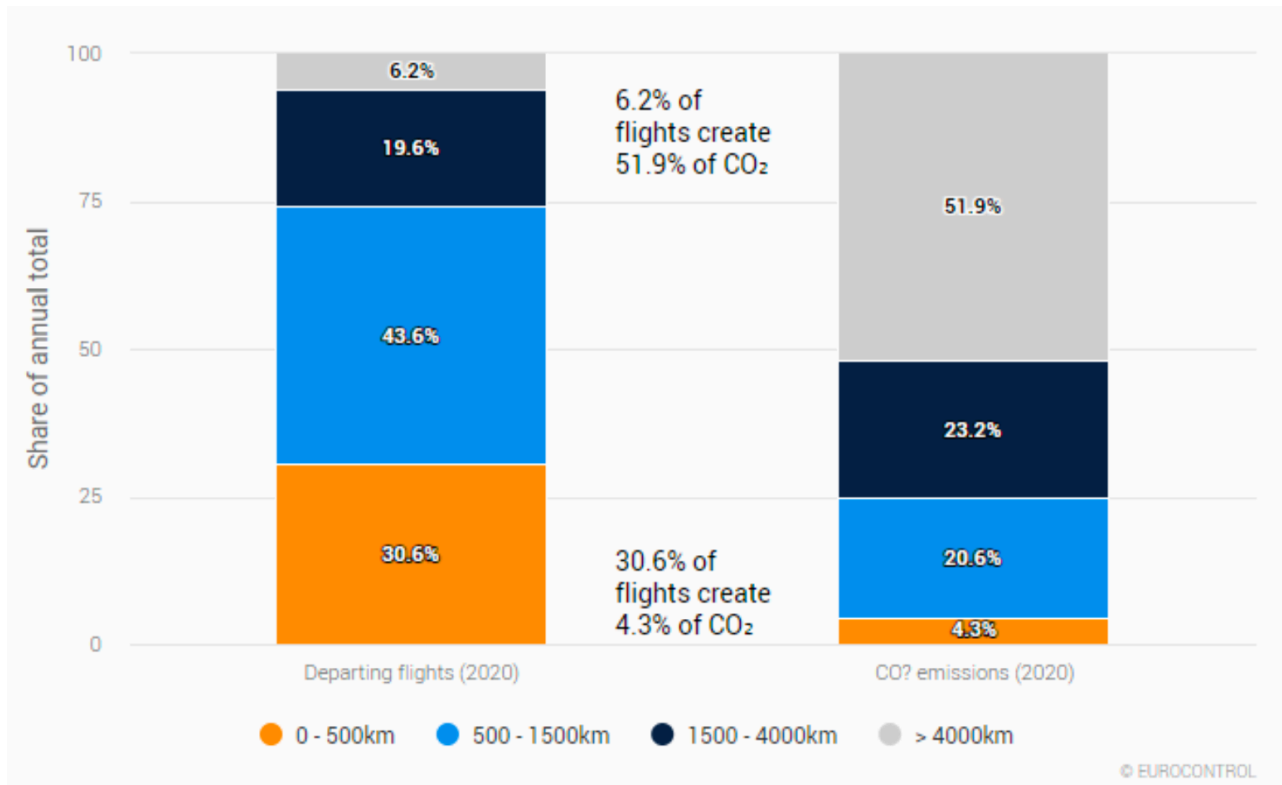
An additional concern is the patchwork of measures being created with **national blending mandates**. It is important to ensure that only a European approach is taken. Some Member States might go ahead with their own national blending mandates despite having an EU obligation in place. This will create a significant administrative burden on airlines and lead to confusion as well as a perception of a lack of unity. An EU approach is, among other things, supposed to address these concerns and having different additional national obligations calls into question the purpose of an EU-wide mandate.

Finally, ERA is also concerned by the European Commission's proposal to start **taxing jet fuel**. While curbing demand by imposing a fuel tax on aviation may look like a promising approach to some, it raises important questions. One aspect to be emphasised is the impact of aviation tax on European regions. There is little doubt that regional communities across Europe have come to depend on air connectivity for their development, allowing them to be connected not only to their national capital, but also other European capitals, regions across Europe and increasingly, non-European markets (these regional routes also often represent the main input for other cross-continental routes). Taxing aviation involves risks as the economics of regional air connectivity are fragile and subject to volatile and changing market dynamics. ERA is understandably concerned that a fuel tax on aviation would hurt regional air connectivity in a disproportionate way: imposing a tax and generally higher costs leads to a risk of further connectivity loss in the regions. Additionally, a tax on jet fuel is unlikely to address the fundamental and crucial issue of the decarbonisation of aviation as funds would not be earmarked for the sector's decarbonisation. This is in addition to rocketing fuel prices and the energy crisis arising from the war in Ukraine.

Short haul bans as well can hinder the progress towards decarbonising the sector. Short haul is the testing ground, bans delay the green transition. Recent European national Government

announcements to ban short-haul routes in Europe could ultimately hinder, rather than help efforts for a more sustainable air transport future, as technological improvements for regional aviation, together with sustainable aviation fuels, offer the best and quickest solution to the decarbonisation of the sector by 2050.

Routes of less than 500km only represent a very small part of European air transport emissions (4.3 per cent¹, see figure below); consequently, such measures will not provide substantial environmental impacts.



Regional aviation, in particular, has found itself at a crossroads between innovation and the political and public pressure to reduce passenger volumes, as recently there have been various announcements throughout Europe on the banning of short-haul routes in order to reduce the environmental impact of aviation. Yet, the regional sector is finding itself justifying its very purpose of existence: providing connectivity in European regions. ERA airline members connect parts of Europe where air transport is both vital and often the only mode of transportation available to inhabitants in remote regions, islands and dispersed areas.

Further to this, the short-haul segment is creating the necessary push towards the decarbonisation of the sector, providing the testing ground for new technologies that will enable the green transition to a more sustainable industry. Electric and hydrogen-powered aircraft, for example, will be made first available on short-haul routes already by 2035 and then on longer routes beyond 2050.

Building new rail infrastructures and networks has significant CO₂ impacts on the environment and is an environmental, financial and time-consuming exercise. Aviation is already advanced in its development of breakthrough technologies with limited to zero environmental impacts, and will be

ready to integrate these into the market within a much shorter timeframe than it will take to build a new rail network.

For further conclusions regarding banning of short haul flights and the factors to be considered in shifting to rail, please see the Oxera study published in March 2022: Short Haul Flight and Sustainable Connectivity https://eraa.org/sites/default/files/era_report_240322.pdf

The aviation sector is already focussing on solutions that are better placed to decarbonise the sector: improved ATM, improved technology, use of SAF and EU ETS/CORSIA. It is therefore important to improve ATM inefficiencies and invest in uptake of SAF and new technologies first before damaging regional air connectivity. It is therefore important that the EU and Member States focus on solutions that can actually provide CO₂ reductions, and not hinder the progress with initiatives like banning short-haul routes. For instance, improving air traffic management through proper implementation of the Single European Sky (SES) would lower CO₂ emissions of intra-EU flights by up to 10 per cent in a relatively short timeframe.²

SES 2+

The SES recast proposal (a.k.a SES2+) as put forward by the European Commission in September 2020 is an opportunity to reform the operation of Air Navigation Service Providers (ANSPs), deliver optimum trajectories, and implement effective regulation where necessary to ensure cost efficient services, reducing flight delays for airlines and ultimately benefitting consumers and the environment. The ambition and benefits of SES, which has been under discussion for nearly two decades, has yet to be realised, much to the frustration of the airspace user community. These benefits were expected to deliver an improvement in safety by a factor of 10, greater capacity and few delays and a 10 per cent reduction in EU aviation emissions as well as underpinning a million extra jobs annually from 2035.

Although there are recommendations and solutions stemming from SESAR, airspace users were aligned that the outcomes from the airspace architecture study or the wise persons group must be implemented. While we know this can be done as technologies allow, we are concerned with the lack of political ambition to implement. SES 2+ (even in its early stages) provides the framework to generate this political will for action. In doing so, SES 2+ and the seamless, digital single European sky will reap the benefits of existing solutions and ensure significant environmental benefit.

The current situation regarding the SES recast proposal is not positive, with significant differences between the Council and Parliament positions, and there remains a real risk that finding common ground on the various chapters will be difficult to achieve and therefore result in the file staying a state of stasis, or worse still, seeing the file being dropped altogether. This would be a travesty and a failure of statesmanship given the need to modernise the ATM system and move into a fit for purpose ATM infrastructure as the industry emerges and recovers from the impacts experienced due to COVID-19.

2. How can industry participants better cooperate to improve sustainability? For example, how can airlines, airports and air navigation providers cooperate to improve sustainability over the next five years?

Collaborating within the industry and with regulators is key to ensure long-term sustainability of the sector. This is especially true now as the policy frameworks which will guide the decarbonisation of European aviation is currently being decided upon (i.e. Ff55). In the past few years, the industry has in fact increased its collaboration on sustainability to ensure alignment between players and a common vision on decarbonising, as seen with the *Aviation Round Table* report and the *Destination 2050* Roadmap.

Destination 2050 – A route to net zero European aviation

In February of 2021, Europe's aviation sector (ERA, alongside A4E, CANSO, ACI Europe and ASD) unveiled its flagship sustainability initiative, *Destination 2050 – A route to net zero European aviation*. Driven by a new independent report which provides a vision and path for meaningful CO₂ emission reduction efforts in Europe and globally, it builds on the Paris Agreement and the European Green Deal and charts the path to how all flights within and departing the EU, UK and EFTA will realise net zero CO₂ emissions by 2050. Recognising that the whole European air transport ecosystem must act together decisively, the intention is to identify the measures which the members of the associations can apply to achieve this decarbonisation collectively.

In fact, the European aviation sector as a whole is committed to the reduction of its carbon footprint. In particular, Destination 2050 identifies four pillars through which the sector will be able to reduce its CO₂ impact, such as the development of sustainable aviation fuels (SAF) and clean technology, operational improvements, and market-based mechanisms (MBMs).

MBMs, like the EU ETS and the Carbon Offsetting Scheme for International Aviation (CORSA), play a crucial role in the decarbonisation in the short and medium term representing 27 per cent of the CO₂ reductions by 2030, while by 2050, as the sector can rely more on in-sector reductions offered by technology and SAFs, MBMs will be responsible for 10 per cent of the net CO₂ reductions. SAF is expected to reduce CO₂ emissions by 46 per cent by 2050, representing 80 per cent of the total fuel consumption in the aviation sector and new technologies, like (hybrid) electric and hydrogen powered aircraft are expected to reduce CO₂ emissions by 38 per cent. Finally, ATM and aircraft operations also play a key role and a quick win for the decarbonisation challenge as the solutions are relatively mature compared to the other solutions. These are expected to reduce CO₂ emissions by at least 6 per cent.

However, industry cannot undertake this decarbonisation journey on its own. Collaboration is key. To be successful, support from European and national policy makers is needed to create the right policy frameworks and, in some cases, to provide financial assistance to develop and apply new technologies.

Following the publication of the Destination 2050 report, the stakeholders involved have been calling for an EU Pact on Sustainable Aviation to be set in place. A first step to achieve this was the endorsement of the **Toulouse Declaration** of February 2022 – the first-ever public-private initiative supporting aviation's decarbonisation goals signed by 35 European countries and more than 100 industry stakeholder groups in Toulouse, including the five leading European aviation associations

represented through Destination 2050. This is a great example of cooperation to advance the decarbonisation of the sector. Now the Destination 2050 partners expect the Toulouse Declaration to be translated into a structured dialogue and concrete policy action, a process by which stakeholders can address the challenges to decarbonise (e.g. SAF production and uptake, increase of costs, zero emission aircraft) and find a common way forward.

Collaborative environmental management

A further example of collaboration between stakeholders is Eurocontrol's Collaborative Environmental Management (CEM), of which some ERA member airlines are part of. CEM is a specification that formalises and facilitates collaboration between relevant stakeholders operating locally around airports, such as aircraft operators, airports, local governments and communities and ANSPs, which have the same objective of minimising the (local) environmental impact of the sector. Therefore, core operational stakeholders are brought together to increase common awareness and understanding of the interdependencies, trade-offs and constraints facing each other's business to develop shared sustainable environmental solutions.

Industry Consultation Body

In January 2022, the Commission's Industry Consultation Body (ICB) published a position paper 'Improving the environmental sustainability of European ATM which discussed the ATM related measures that can contribute to the improvement of verifiable environmental sustainability of aviation in terms of climate impacts, pollutants and noise emissions.

With respect to the medium term, the ICB identified several solutions that have already been proved in the research and development stage but are in need of further industrialisation.

Initiatives such as system-wide information management (SWIM), (which is considered a key enabler for an integrated operation plan, the ICAO led flight and flow in a collaborative environment (FF-ICE) and trajectory based operations), initial trajectory sharing as per Common Project 1 AF-6, common airspace data service provision, virtual centres and 3D weather radar, are all considered as medium term goals for the industry.

3. What are the industry's best practices, already in place, that improve sustainability? How can these best practices be fully implemented throughout the industry?

The aviation sector has always been concerned about its environmental footprint and has been reducing it since the 1980s by reducing its average fuel burn and developing new generation aircraft that are on average 20 per cent more fuel efficient than the model they replace. Additionally, the sector has been relying on additional solutions to tackle its environmental impact: offsetting, use of sustainable aviation fuels and operational improvements (ATM and ground ops).

Apart from regulatory requirements like the EU ETS and CORSIA, some airlines may decide to make use of voluntary **carbon offsetting programs** as part of their efforts to reduce their CO₂ emissions. These programs can be either used by the airlines themselves or by their passengers and allow the customer to compensate for their emissions by buying projects that reduce or remove CO₂ emissions elsewhere (e.g. forestation or renewable energy projects). It is important, however, that the airlines that wish to make use of such programs ensure that the offsets offered are of high sustainability standards.

The airlines can also make use of SAF and go beyond of what is being mandated at both national and EU levels. SAFs are a relatively established technology and are ready to be used as drop-in fuels. However, the production is quite limited (current production capacity is sufficient for 0.1 per cent of worldwide jet fuel demand) and cost between 3-5 times more than conventional jet fuel. Nevertheless, given the potential of CO₂ reductions, there are many R&D projects/partnerships underway, which are also assessing the feasibility of raising the certification of aircraft from 50 per cent blend to 100 per cent use of SAF in the aircraft.

Finally, reducing fuel consumption is important to reducing the sector's impact and, apart from increasing aircraft efficiency via technology development, **operational improvements** are key to reduce fuel waste. A substantial amount of fuel is wasted due to inefficient routing. Better flight routing could reduce inefficient aviation operations growth. In fact, the introduction of free route airspace is estimated to have delivered 2.6 million tonnes of CO₂ emissions reductions since 2014 and the continuous climb and descent operation could reduce CO₂ emissions by 1.1 million tonnes per year³.

It also noted that several SESAR solutions are mature and available, but have not been fully deployed across Europe, but have been shown to deliver tangible benefits where they are in operation. These include Free Route Airspace (FRA) which includes full cross-border implementation, Performance Based Navigation (PBN), continuous climb and descent operations (CCO/CDO), Flexible Use of Airspace (FUA), extended departure and arrival management solutions (DMAN, AMAN and XMAN) and the collaborative decision making.

A list of additional best practices:

- Developing sustainability strategies
- Voluntary carbon offsetting
- Use of sustainable aviation fuels beyond mandated levels
- Reducing fuel consumption
- Cabin waste management
- Single Use Plastic
- Sustainable procurement
- Aircraft decommissioning and recycling

¹ EUROCONTROL Data Snapshot #4 on CO₂ emissions by flight distance

² https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1708

³ <https://www.easa.europa.eu/eaer/topics/air-traffic-management-and-operations#:~:text=The%20introduction%20of%20Free%20Route,been%20implemented%20at%2028%20airports>