



WORKING PAPER

CONFERENCE ON AVIATION AND ALTERNATIVE FUELS

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Agenda Item 3: Challenges and policy making

Agenda Item 4: Defining the ICAO vision on aviation alternative fuels and future objectives

PROPOSALS FOR AN ICAO VISION ON AVIATION AND ALTERNATIVE FUELS AND FOR ENSURING A SMOOTH TRANSITION TO THE PHASE OUT OF CORSIA MBMS

(Presented by Brazil and Indonesia)

SUMMARY

The paper expresses support to the establishment of an ICAO Vision on Aviation and Alternative Fuels, including specific production aspirational goals. It also highlights concerns about i) the means of sustaining the achievement of ICAO's climate goals over the long term, which will require sufficient supply of Sustainable Aviation Alternative Fuels to compensate for aviation's post-2020 growth in carbon emissions, and ii) about the present lack of a mechanism to ensure a smooth and predictable transition path to the phase-out of ICAO's CORSIA Market-Based-Measures in 2035. To address those concerns, the paper proposes a way forward by means of a future revision to the formula for offsetting emissions in the CORSIA SARPs.

Action by the Conference is in paragraph 4.

1. INTRODUCTION

1.1 The first ICAO Conference on Aviation and Alternative Fuels (CAAF), held in Rio de Janeiro in November 2009, endorsed the use of aviation alternative fuels as an important means of reducing aviation emissions. Its main recommendations were later incorporated in ICAO Assembly Resolutions and SAF were included as a key component of ICAO's "Basket of Measures". Since then, ICAO has actively encouraged Member States and industry in the promotion of initiatives for the development of Sustainable Aviation Alternative Fuels (or so called Sustainable Aviation Fuels, hereinafter SAF).

1.2 Resolution A39-2 recognizes that the technological feasibility of drop-in SAF is proven and that the introduction of appropriate policies and incentives to create a long-term market perspective is required; it also requests States to set a coordinated approach in national administrations for policy actions and investment to accelerate the appropriate development, deployment and use of clean and

renewable energy sources for aviation, including the use of SAF, in accordance with their national circumstances.

1.3 ICAO Resolution A39-3 established the ICAO Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) as a complementary solution between 2021 and 2035 to achieve the mid-term ICAO climate aspirational goals (carbon neutral growth after 2020) but affirms the preference for the use of aircraft technologies, operational improvements and sustainable alternative fuels over market-based measures.

1.4 The CORSIA has also included the use of SAF not only as a means for operators to reduce their offsetting requirements under the scheme, but also as the single most important solution to achieve ICAO's emissions reduction goals after the scheme's termination. SAF shall play an essential role in reducing CO₂ emissions from international aviation in the long term.

2. THE NEED FOR ESTABLISHING FUTURE ASPIRATIONAL SUPPLY OBJECTIVES

2.1 Although enormous efforts have been made and progress achieved in proving the technical feasibility of drop-in SAF, the commercial scale-up and availability of supply is still at its very early stages with little real contribution towards ICAO's climate aspirational goals.

2.2 The main barrier, as identified in several studies (1), is that globally many SAF (or bioenergy) policies do not include aviation, or the existing ones do not establish a sufficient incentive in the industry to boost the large-scale production and to bridge the cost gap between fossil fuel and SAF. The current policy landscape favours ground transport over aviation, and incentivizes production to be directed towards road-based end users.

2.3 SAF development and deployment requires important investments and time. New pathways can take many years of research and certification to be developed and normally new production facilities take also a few years to be built.

2.4 In addition, new sustainability criteria in development by ICAO applicable to SAF for international aviation may also limit the available supply and require further efforts from the industry to find sustainable sources of raw material and conversion processes.

2.5 Thus, only long-term stable policies and objectives, including sufficient economic incentives and proper recognition of SAF's positive environmental externalities, can encourage the necessary capital investments from both the public and private sectors.

2.6 ICAO is proposing in this Second International Conference on Aviation and Alternative Fuels (CAAF2) the establishment of a "vision" to encourage its Member States to take the necessary actions for the development and deployment of SAF.

2.7 An important element of such ICAO vision shall be the inclusion of short, mid, and long-term specific SAF production and supply objectives.

(¹)Sustainable Aviation Biofuels for Brazil/(SABB). Report on Policy and Incentives (2013)
IATA Sustainable Aviation Fuel Roadmap (2015);
EU Core-Jet Fuel Final Report on Policies, Incentives and Regulation (2016)

2.8 According to ICAO Trends Assessments, the environmental benefits potential from aircraft technologies and operational improvements may be very limited in reducing sufficient CO₂ emissions to address the growth of international air traffic, in order to maintain the aspirational goal of keeping the global net CO₂ emissions from international aviation from 2020 at the same level.

2.9 The ICAO vision objectives should aspire to achieve and maintain ICAO climate goals after the termination of the CORSIA market-based measures (due in 2035), by achieving the necessary supply volumes of SAF to fill the emissions reductions gap that the rest of the basket of measures cannot cover.

3. MECHANISM TO GUARANTEE A SMOOTH TRANSITION FROM MBM TO SAF FROM 2021 TO 2035

3.1 It is suggested that the present Conference on Aviation and Alternative Fuels provides ICAO with a mandate to develop and implement a mechanism to guarantee a smooth transition from the use of global market-based measures (MBMs) to the use of Sustainable Aviation Fuels as a means to: ensure the long term feasibility of the aspirational goal of keeping the global net CO₂ emissions from international aviation from 2020 at the same level; create a clear, stable and predictable exit path from MBMs; and contribute to create the conditions for more ambitious long-term goals, as is the objective of the industry.

3.2 The present draft CORSIA SARPS Package under review represents a very important, ambitious instrument to achieve ICAO's emissions reductions goals. It creates a scheme for market-based measures as a necessary transitional instrument, in line with Resolution A39-3, proposing the date of 2035 for its phase out, and incorporates SAF as an integral way for aviation operators to comply with offsetting requirements.

3.3 The present version of CORSIA, however, lacks a crucial component: a smooth phase-out exit path that would lead from the current situation, where, due to the lack of sufficient competitive supply of SAF, most of the aviation carbon emissions growth from 2020 will have to be neutralized through offsets from other sectors, to the intended situation post-2035, where all the emissions reductions will need be achieved within the aviation sector itself. The lack of a predictable, gradual path may not only create uncertainty among investors and operators about changes to be due after the end of MBMs, but also risk compromising the global long-term credibility of CORSIA and of ICAO's climate goals.

3.4 Under the present conditions, policies and mechanisms, a probable scenario is that it will be cheaper for aircraft operators to offset their emissions by purchasing Emissions Units (EU) than by covering the price gap between fossil fuels and SAF. Acknowledging the small competitive margins of the airlines, there might be very little incentive for them to use SAF as it is the case today.

3.5 Acknowledging the above concerns, as well as the unavoidable need for each sector to find the ways to reduce their own carbon emissions in a long-term scenario, the transition towards the termination of CORSIA MBMs should necessarily include policy mechanisms to gradually reduce the aviation sector's reliance on MBMs, support the achievement of incremental goals on the use of SAF, and mitigate the risk of an abrupt, disruptive change in 2035, the end-date for MBMs, avoiding competitive market distortions and establishing measures to encourage the aircraft operators to use SAF.

3.6 The mechanism that is proposed by Brazil and Indonesia could be based on a revision of the formula for offsetting emissions in the CORSIA SARPs (present in section 3.2 of the draft Annex 16,

Vol. 4 SARPS) , in order to establish a ceiling on the total amount of the growth in emissions covered by CORSIA post-2021 that could be neutralized through offsetting by Emission Units. This ceiling could be set, for example, at 90% for 2025 and keep being lowered year by year, until the expected phasing-out of the CORSIA MBMs is completed.

3.7 In order to conciliate taking into account special circumstances and respective capabilities but also the principles of non-discrimination and equal and fair opportunities to develop international aviation, it is suggested that the ceiling could be set not per operator, but industry-wide. This would allow some operators which succeed to achieve further emissions reductions through non-MBM measures to compensate for operators still dependent on offsets beyond the sector-wide ceiling.

3.8 The proposed transition mechanism could be included as part of a further revision of the ICAO CORSIA SARPs.

3.9 It is suggested that such mechanism could be further defined by the ICAO Council with the support of the ICAO Committee on Aviation and Environmental Protection (CAEP).

4. **ACTION BY THE CAAF2**

4.1 The CAAF2 is invited to:

- a) note the contents of this paper;
- b) agree on the proposed ICAO vision, and associated short, mid, and long-term specific SAF supply objectives as part of the ICAO Vision on Aviation Alternative Fuels; and
- c) recommend to study and develop a mechanism, to be incorporated as part of the CORSIA review process, to guarantee a smooth transition from the use of global market-based measures to the use of Sustainable Aviation Fuels and ensure the long-term feasibility of the ICAO aspirational climate goals, along the lines of what is proposed in paragraphs 3.1 to 3.9.

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