



CONFERENCE ON AVIATION AND ALTERNATIVE FUELS

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Agenda Item 3: Challenges and policy making

CONSIDERATION OF SUSTAINABLE AVIATION FUELS IN THE CARBON OFFSETTING AND REDUCTION SCHEME FOR INTERNATIONAL AVIATION (CORSA)

(Presented by the ICAO Secretariat)

SUMMARY

This Information Paper provides an overview of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSA), which was adopted by the 39th Session of the ICAO Assembly in 2016.

1. INTRODUCTION

1.1 The 39th Session of the ICAO Assembly, held from 27 September to 6 October 2016 in Montréal, Canada, adopted Assembly Resolution A39-3, “Consolidated statement of continuing ICAO policies and practices related to environmental protection – Global Market-based Measure (MBM) scheme”.

1.2 The Assembly agreed to implement a global MBM scheme in the form of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSA), to address any annual increase in total CO₂ emissions from international civil aviation above the 2020 levels. CORSA complements a broader basket of measures for the reduction of CO₂ emissions from international aviation, which includes aircraft technologies, operational improvements, and sustainable aviation fuels.

2. GENERAL DESIGN AND IMPLEMENTATION FEATURES OF CORSA

2.1 CORSA has a phased implementation approach, with a pilot phase from 2021 through 2023; a first phase from 2024 through 2026; and a second phase from 2027 through 2035.

2.2 For the first two phases from 2021 to 2026, participation by States is voluntary. As of 26 September 2017, 72 States – representing about 87.7 per cent of international aviation activity

(measured in Revenue Tonne Kilometres (RTK)) – had announced their intention to participate in the CORSIA from its outset. For the second phase from 2027, all States that have an individual share of 2018 RTKs higher than 0.5 per cent of total RTKs or whose cumulative share in the list of States from the highest to the lowest amount of RTKs reaches 90 per cent of total RTKs are required to participate, except Least Developed Countries (LDCs), Small Island Developing States (SIDS) and Landlocked Developing Countries (LLDCs), unless they volunteer.

2.3 CORSIA is based on a route-based approach. This means that emissions from international flights between two States, where both the origin and destination States participate in the CORSIA, are covered by the offsetting requirements of the scheme. On the other hand, emissions from international flights between two States, where the origin and/or destination States do not participate in the CORSIA, are excluded from the offsetting requirements of the scheme.

2.4 Every year from 2021, participating States and routes between the participating States to be covered by the CORSIA will be defined, as described above, and the amount of CO₂ offsetting requirements for individual aircraft operators will be calculated. Offsetting requirements under CORSIA will be determined, at operator level, on an annual basis; however, operators will reconcile their offsetting requirements in CORSIA following a three-year compliance cycle, starting with the first cycle from 2021 to 2023.

2.5 During the period from 2021 through 2029, the amount of CO₂ offsetting requirements will be calculated by multiplying the operators' annual emissions with a single sectoral growth factor every year, following a "100 per cent sectoral" approach. From 2030, the amount of CO₂ offsetting requirements will be calculated following a "hybrid" approach that takes into account both the sectoral growth factor and growth factors of individual operators; the individual factors' contribution to the calculation will be at least 20 per cent from 2030 to 2032; and at least 70 per cent from 2033 to 2035.

2.6 Starting in 2022, CORSIA will be periodically reviewed, every three years, by the ICAO Council. The review will include, among other features, the assessment of its impact on the growth of international aviation, and the results of this assessment will serve as an important basis for the Council to recommend, as appropriate, adjustments to the scheme for the consideration by the Assembly.

2.7 Regarding the implementation of CORSIA, Resolution A39-3 requests the Council to develop, with the technical contribution of the ICAO Council's Committee on Aviation Environmental Protection (CAEP), Standards and Recommended Practices (SARPs) and relevant guidance material for the implementation of CORSIA by 2018. CAEP's Steering Group meeting, held in Montréal, Canada from 11 to 15 September 2017, delivered its recommendation on a package of CORSIA-related draft SARPs and guidance, to be put forward for the ICAO review and approval process.

3. ACCOUNTING OF EMISSIONS REDUCTIONS FROM THE USE OF SUSTAINABLE AVIATION FUELS UNDER CORSIA

3.1 Assembly Resolution A39-3 requests the Council to develop a methodology "to ensure that an aircraft operator's offsetting requirements under the scheme [CORSIA] in a given year can be reduced through the use of sustainable alternative fuels, so that all elements of the basket of measures are reflected" (Resolution A39-3, paragraph 6 refers).

3.2 To address this request, CAEP developed recommendations on a procedure to determine how operators with offsetting requirements in CORSIA will be able to claim emissions reductions from

the use of aviation alternative fuels. These recommendations have been incorporated to the package of CORSIA-related draft SARPs and guidance agreed upon by CAEP, for consideration by the ICAO Council during its upcoming 212th Session.

3.3 CAEP recommended that, in order for an operator to be able to claim emissions reductions from the use of aviation alternative fuels, the following requirements will have to be met:

- a) The aviation alternative fuel has to be categorized as a sustainable aviation fuel, for which it will have to meet a set of ICAO-established sustainability criteria (“CORSIA Sustainability Criteria for Sustainable Aviation Fuels”). CAEP recommended a set of Sustainability Criteria for aviation alternative fuels, including that sustainable aviation fuel shall achieve net greenhouse gas emissions reductions of at least 10 per cent compared to conventional aviation fuel on a life cycle basis; CAEP also provided guidance for the application of sustainability criteria associated with social and economic sustainability themes; and
- b) The sustainable aviation fuel will have to be produced by fuel producers that are certified by an ICAO-approved Sustainable Certification Scheme (SCS). For such a scheme to be approved by ICAO, it will have to meet a set of requirements (“CORSIA Eligibility Framework and Requirements for Sustainability Certification Schemes”) to be determined by ICAO; in this regard, CAEP recommended the establishment of a specialized technical body to assist the ICAO Council in deciding which SCS would be eligible to determine the sustainability of aviation alternative fuels.

3.4 For a given batch of aviation alternative fuels catalogued as sustainable aviation fuel, and produced by a fuel producer certified by an ICAO-approved Sustainable Certification Scheme, the operator that intends to claim emissions reductions from the use of such fuel will need to determine the Life Cycle Emissions value of the fuel (LSf, measured in [gCO₂e/MJ]). In order to do so, the operator will have two options:

- a) Use a Default Life Cycle Emissions value approved by ICAO (“CORSIA Default Life Cycle Emissions Values for Sustainable Aviation Fuels”); or
- b) Use an Actual Life Cycle Emissions value; in this case, an approved Sustainability Certification Scheme shall ensure that an ICAO-approved methodology (“CORSIA Methodology for Calculating Actual Life Cycle Emissions Values”) has been applied correctly.

3.5 Regarding the definition of Default Life Cycle Emissions values (LSf), CAEP recommended that such values be determined considering two factors:

- a) Core Life Cycle Assessment(LCA) values, which designate the emissions from the feedstock production to the tank of the aircraft, land use change emissions being excluded.
- b) Induced Land Use Change (ILUC) emissions factors, for pathways that are subject to such emissions. CAEP recommended the use of 25 years as the amortization period for the calculation of ILUC emissions.

3.6 CAEP recommendations take into account that aviation fuel supply chains are not segregated at airports, and that sustainable aviation fuels will be typically co-mingled at various points in the fuel supply infrastructure (e.g., pipelines, storage terminals, airport fuel storage systems). In this context, it will not be feasible to determine how the sustainable aviation fuel purchased by a particular operator is distributed among various aircraft. Therefore, CAEP recommends that claims of emissions reductions from the use of sustainable aviation fuels by an operator are based on mass of sustainable aviation fuels according to purchasing and blending records.

3.7 In line with paragraph 3.6 above, CAEP recommendations include the reporting requirements that an operator will have to comply with in order to be able to claim emissions reductions from the use of sustainable aviation fuels, as well as the documentary proof for verification and approval of emissions reductions from the use of sustainable aviation fuels.

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